The Northair Group

DIAMOND DRILL LOG

2.1

52F07NE2003 2.18765 BOYER LAKE

010

HOLE NO.:E-98-05 Drilling Co.: NORTHWEST GEOPHYSICS		Collar Elevation: 0.0	Azimuth: 300°	Total Meterage: 109.7	Dip of Hole at: Collar			Drill Hole Location: 50+72N, 0+63W	Location: (Goldrock) Upper Manitou	Page No.: 1
Date Hole Started: April 24/98	Date Hole Completed: April 25/98	Date Logged:	Logged By: Krista Nelson		-65°			Core Stored At: MNDM Drill Core Library - Kenora	Property Name: ELORA	Core Size: BQ thin wall
					-66°					
Exploration Co., Owner or Optionee: NEWWHAWK GOLD MINES LTD.		Date Submitted:	Submitted by: (Signature) Krista Nelson					Claim No.: HP 301		

Meterage From	Meterage To	Rock Type	Description (colour, grain size, texture.)	Alteration Sil	Alteration Chl	Alteration Ser	Alteration Carb	% Py	% Po	% Cp	Sample #	From	To	Length	Au ppb	Au Check
0.0	14.6	IV	Intermediate Volcanic Light greenish-beige to greenish-grey, aphanitic to very fine grained, glassy, less mafic looking than the rest of the unit. Well foliated (especially the first 9m) and on occasion almost laminated looking (eg. black aphanitic - fine grained laminae). 5% carbonate stringers and quartz ± carbonate veins give the unit a messed up look. Matrix is strongly calcareous. . Only <1% py as fine grained blebs slightly elongate with foliation. At 1, foliation measured at 32° to core axis. 7.5 - 8.2: 50% quartz (white to grey mottled) including a 20 cm quartz vein at 35° to core axis. Pyrite is brownish in parts (not magnetic), trace chalcopyrite. At 30 cm downhole, looks laminated with trace mafic clast. 8.2 - 14.6: less foliated and lose the intense carbonate stringers. At 10.1 foliation measured at 38° to core axis, 12-15.5 is really gradational into more mafic looking rock (gets less glassy and more green instead of beigey). 12.8 - 13.3: <1% dark grey, 0.5 - 2 cm quartz patches. 13.3 - 14.6: trace mafic (mottled with felsic) clasts, <1.5 cm elongate. Bottom contact gradational, taken where core becomes predominantly green (versus beigey) and loses the more glassy look and starts becoming disrupted.		M		S	<1								
14.6	28.6	MV	Mafic Volcanic - Disrupted - Flow/Pillow Top? Dark green, mainly aphanitic to fine grained with lesser patches of medium grained. Has a highly disrupted look to it, almost brecciated in parts. No regular foliation to it. Approximately 15% large, 5-20 cm, masses (almost brecciated) of greenish beige, opaque quartz(?), hard. Approximately 5% dark grey, hard quartz as smaller stringers and anastomosing patches and blobs; 1% <2 cm mafic, soft, fine grained clasts, rounded and elongate. Has a general messed up look to it. <1% pyrrhotite mainly as small blebs to stringers associated with the quartz (dark grey) veins and patches with trace chalcopyrite associated with it and trace pyrite; virtually no sulphides in the matrix. Matrix weakly calcareous with pervasive carbonate stringers and patches throughout.	M	S		W		<1	tr						

Meterage From	Meterage To	Rock Type	Description (colour, grain size, texture)	Alteration Sil	Alteration Chl	Alteration Ser	Alteration Carb	% Py	% Po	% Cp	Sample #	From	To	Length	Au ppb	Au check
			17.2 - 18.0: a relatively undisrupted section with 1%, 0.2-1.0 cm, feldspar crystals/gloms which are mafic rich. 25.6 - 25.8: white and grey quartz flooding approximately 75% of core, at 35° to core axis but irregular and slightly crenulated in parts. 5% pyrrhotite discontinuous beds and stringers and blebs, <1% pyrite. 25.8 - 26.4: wavily bedded with 2-3 discontinuous (<.5 cm), irregular beds of pyrrhotite and trace chalcopyrite. 26.4 - 28.6: more massive looking but still disrupted. Patches of felsic with mafic porphyritic. At 28.6: sharp contact marked by a carbonate-quartz stringer 3 mm wide at 54° to core axis.	S				<1	5		5240	25.6	26.4	0.8	6	
28.6	47.85	GMV	Glomeroporphyritic Mafic Volcanic Matrix weakly calcareous. 28.6 - 37.2 subunit Fine grained with some aphanitic and patches of medium grained, moderate green. Some lighter patches make this subunit look like it is bordering on intermediate. <<1% pyrrhotite as 1-3 mm fine grained blebs (most diffuse, good ones at 35.1) in mafic spots and small blebs in quartz veins, ± chalcopyrite, ± pyrite (trace of both of these). 28.6 -30.5: massive, undisrupted with 2% <1 cm feldspar, anhedral, crystals and gloms, no grading, sharp contact at 30.05 at 38° to core axis marked by 8 mm quartz-carbonate vein. 30.5 - 37.2: disrupted portion, aphanitic to medium grained. Hairline, irregular stringers (anastomosing) and patches of white-grey quartz and black mafic material (volcanic or argillite). Messed up look. Feldspar, anhedral crystals and gloms (<0.5 cm - 8 cm), no average and no grading (although they are only 1% at 35.9-37.2). The gloms are also messed up and sometimes brecciated with dark green and black stringers.		S		W	tr	<<1	tr						

Meterage From	Meterage To	Rock Type	Description (colour, grain size, texture)	Alteration Sil	Alteration Chl	Alteration Ser	Alteration Carb	% Py	% Po	% Cp	Sample #	From	To	Length	Au ppb	Au check
			37.2 - 39.5: subunit Mafic Lapilli Tuff (?) Gradational contacts at either end. This subunit has no feldspar crystals or gloms. Instead has soft mafic clasts. 5% 0.2 - 2 cm long and all elongate with a weak foliation (bedding?); subrounded. Matrix is fine grained and strongly calcareous. No grading to clasts. Possible lapilli tuff unit. Slightly greyish-green. Trace disseminated pyrite on fractures. Foliation at 30° to core axis.		S		S	tr								
			39.5 - 47.85: subunit Fine grained for first approximately 1.0m and then grades into a medium-coarse grained rock. Dark green. Approximately 3% feldspar anhedral crystals and gloms up to 2 cm but average 3-6 mm. No grading. Some of the core is diffuse coarse grained mafic porphyritic but not the distinct "leopard rock" in other holes. Actually from approximately 42 - 48.1 a majority is medium to coarse diffusely mafic porphyritic. <1% pyrite (fine to medium grained) trace pyrrhotite, trace chalcopyrite on fracture and in quartz-carbonate veins randomly oriented. One spot of diffuse pyrrhotite at 42.95. Bottom contact taken where mottled mafic porphyritic glomeroporphyritic has stopped and the weakly foliated with no gloms starts. Sharp at 45° to core axis and marked by a grey quartz-carbonate stringer (could be apparent?).		S		W	<1	tr	tr						
47.85	54.3	MV	Mafic Volcanic - weakly foliated. Dark green, varies from fine grained to medium grained, mafic porphyritic. 1 feldspar glom at 53.5m, 1 cm wide. 47.85 - 51.35 subunit Fine grained quickly grades into medium grained. Has 1% <1 cm elongate soft mafic clasts. Some with diffuse boundaries, no grading. Looks different from the above subunit in 37.2 - 39.5; coarser grained and not as clean. From 50.9 grades into aphanitic by bottom of section which could have also been included in the next section. Lower aphanitic section has <1% medium to coarse crystals of pyrite (only trace on fractures and in quartz stringers to that point). Foliation measured at 49.3 is 42° to core axis. 51.35 - 54.3: Fine grained to aphanitic with less than 1% fine to medium grained crystals of pyrite, disseminated and in discontinuous stringers with quartz. Broken up by 3 sections of well bedded interflow pyritic sediments which vary from beigey cherty to greenish grey sediments to almost black argillite; fine to coarse pyrite crystals (up to 4 mm) long interbedded. Gradational into these sediments and out of them. Interflow sediments located at: 51.35 - 51.55: bedding at 36° to core axis. 52.5 - 52.65: bedding at 25° to core axis (also shows coarsening down hole in beds). 53.0 - 53.2: bedding at 30° to coarse axis. Bedded on mm to 2 cm scale and generally slightly wavey. Gradational bottom into next section.		S			tr to <1			5241	51.25	51.65	0.4	15	

Meterage From	Meterage To	Rock Type	Description (colour, grain size, texture)	Alteration Sil	Alteration Chl	Alteration Ser	Alteration Carb	% Py	% Po	% Cp	Sample #	From	To	Length	Au ppb	Au check
54.3	67.6	MV	Mafic Volcanic-Strongly Foliated Starts becoming a brown-green colour. Varies from aphanitic to fine to medium grained (gradational). Messed up looking due to >5% white carbonate +/- quartz stringers and white to grey quartz stringrsr (well-defined and irregular-anastomosing) and patches. Also 2-3% soft, black mafic/ argillic fine grained beds and patches (<0.5 cm wide). Many veins/beds follow foliation at 28-33° to core axis. Matrix is weakly calcareous, tr to <1% pyrite and occasional 1% concentrations of medium crystals with quartz veins. 54.3 - 56.7: possible flow top with patch of the greenish-beige opaque quartz (moderately brecciated) and a 20 cm long section of black quartz vein at 32° to core axis. At 65.5: starts looking striped with beigish bleaching of the mafic volcanic around the quartz veins which are moderately boudined and bordered by combs of carbonate. Quartz veins and stringers predominantly at 18° to core axis. Becomes weakly iron carbonate altered as shown by bleaching of core. Weakly sericitic, small yellowish whisps and pits. At 65.7: one quartz stringer is highly crenulated. Bottom contact gradational and taken where core becomes mainly light and grey quartz veins prominent.		S		W	tr-<1								
			Mineralized and Altered Zone.													
67.6	68.75	CSSH	Carbonate-Sericite-Schist. Altered volcanic-probably the mafic wallrock. Yellowy-beige to grey. Grades from upper unit and starts to look bedded (aphanitic to fine grained) 30 cm down. Fine grained matrix with yellowish sericite whisps and laminae. 5% grey quartz stringers and veins with lesser white patches and minor carbonate combing. A few veins are boudined and generally parallel foliation/bedding at 29° to core axis. Pyrite <1% as fine to medium crystals and occasional bed near bottom. A couple of quartz veins are crenulated. 3 cm of white-grey quartz at bottom of section. Matrix bleaches with HCL.			S	S	<1			5242	67.6	68.75	1.15	938	
68.75	70.35	F	Felsite (A) - Tuff or Schisted Dike (?). Pale beige colour. Fine grained and hard (siliceous). By 20 cm down has developed a purple, splotchy colour, probably the quartz. Yellowy beige laminae of sericite define the bedding/foliation at 17° to core axis. Sericite also seen as sheen and pitting. Bleaches with carbonate. Sharp top contact at 22° to core axis and bottom (sharp) at 34° to core axis (both are wavy). Foliation seems to turn back on itself (crosses core in one direction and then cruves back to the other direction).	S		S	S				5243 5244	68.75 69.55	69.55 70.35	0.8 0.8	9 <5	

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70.35	72.6	QV and Py Seds	Quartz Vein and Pyrite Sediment 70.35 - 71.1 subunit Quartz vein. White mottled with lesser grey and minor streaks of almost black material. Only a trace of pyrite (fine crystals).	S				tr				5245	70.35	71.1	0.75	19	39
			71.1 - 71.65 subunit Similar quartz vein but with more grey patches. Starts becoming irregularly bedded with 25% pyritic sediments. 5% pyrite as fine to medium grained laminae laminated with brown to beige, aphanitic to fine grained sediments. Laminae are wavy, randomly oriented at top of section and more regularly oriented at bottom at 20° to core axis. Trace sphalerite (reddish-brown) along margins of quartz vein.	S				5			tr	5246	71.1	71.65	0.55	1803	
			71.65 - 72.05 subunit Bedded siliceous pyritic sediments (LIF?). Laminae straight at 38° to core axis. Core is essentially the pyritic sediments with 10% quartz veining (flooding?). Quartz is dark grey to black. 10% pyrite as fine to medium grained beds with pyrrhotite 2-3% as fine grained beds and whisps. There is a general brown look to the core. Bottom contact marked by reappearance of white quartz vein at 39° to core axis.	S				10	2-3			5247	71.65	72.05	0.40	1875	
			72.05 - 72.6 subunit Quartz vein and felsite. Quartz vein is similar to 70.35 - 71.1 but a little bit greyer. At 72.1 - 72.3, section of beige felsite (b) with 5% purply-grey quartz stringers and blebs randomly oriented but with a general sense of direction at 30° to core axis. Pyrite approximately 1% overall, mainly concentrated in grey quartz in the felsite along with <1% pyrrhotite. Trace sphalerite along vein margins.	S				~1			tr	5248	72.05	72.6	0.55	363	
72.6	74.6	F	Massive Felsite(A) - dike? Beige and aphanitic. Weakly foliated but doesn't have the more laminated look of 68.75 - 70.35. Weak foliation defined by short whisps of yellowy sericite at 25° to core axis and at the beginning, by short, green whisps of fuchsite(?). Both contacts are sharp but wavy and irregular and marked by quartz vein (top at 37° to core axis and bottom at 10° to core axis). Only a trace of fine grained, disseminated pyrite. Trace greyish quartz stringers. Hard core - siliceous. Bleaches white with acid . (Last 15 cm have ½ the core of quartz vein from underlying unit).	S		S	S	tr				5249 5250	72.6 73.6	73.6 74.6	1 1	62 268	
74.6	75.4	QV and Py Seds	Quartz Vein with 50% bedded pyritic sediments. White to greyish quartz vein forms approximately 50% of unit. Rest is laminated aphanitic to fine grained sediments, beige to brown and includes a 10 cm width of the felsite (pyrite and pyrrhotite mineralized with greyish quartz stringers similar to felsite (b) in 72.05 - 72.6). Approximately 5% fine to medium grained pyrite beds and 1% pyrrhotite, fine grained disseminated and whisps. Trace sphalerite. Sharp bottom contact at 22° to core axis.	S				5	1		tr	5301	74.6	75.4	0.8	1599	

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75.4	76.0	MV	Mafic Volcanic. Moderate beigey green with 1% grey quartz stringers around which the wallrock has been bleached (similar to the end of 54.3 - 67.6). Trace pyrite and pyrrhotite. Bottom contact sharp at 28° to core axis and marked by quartz stringer.		M	M	M	tr	tr			5302	75.4	76.0	0.6	12	
76.0	81.25	LIF and Seds	Lean Iron Formation and Bedded Sediments. This unit is essentially varingly bedded sediments with sulphides. Bleaches white with acid.														
			76.0 - 78.45 subunit LIF. This unit starts off with 10cm of the greyish quartz veined and sulphide-rich felsite and then become well bedded/laminated on 1-4 mm scale with aphanitic to fine grained sediment beds (beige to green to black with an overall dark grey look to the core). Bedding is at 25° to core axis from relatively straight to slightly wavy. Approximately 10% white to grey quartz veins (wavy to boudined, 1 mm - 2 cm wide and sometimes bordered by carbonate combs). Approximately 15% sulphides with 10% pyrite fine to medium crystal beds and 5% fine grained pyrrhotite discontinuous beds and whisps.					10	5			5303	76.0	77.2	1.2	581	
			77.2 - 77.95: this part is distinctly different in that the sulphides and quartz are vuggy and pitted out in places and quartz veins are folded in places. Pyrite approximately 10% and pyrrhotite approximately 10% as mainly fine grained flooded with the grey quartz. First 30cm are a dark brown, vuggy and crumbly section of sulphides and grey quartz. After that it is well laminated mainly on mm scale.					10	10			5304	77.2	77.95	0.75	181	
			77.95 - 78.45: similar to start of subunit but pyrrhotite > pyrite (approximately 5%:2% respectively) and decreases downhole. Trace reddish brown sphalerite.					2	5		tr	5305	77.95	78.45	0.5	46	
			Bottom contact taken where main mineralization ends but really gradational.														
			78.45-81.25 subunit Bedded Felsite(B). No more strong laminations. Bedding more on half cm to 1.5 cm scale. Not straight across, beds are more discontinuous and pinch and swell. Similar fine grained felsite as before; grey-beige, greenish laminae. Core is still moderately siliceous and bleaches with acid. Approximately 2% fine grained pyrrhotite blebs and whisps throughout. Only weakly sericitic. <1% fine grained pyrite.	M		W		<1	2			5306 5307	78.45 79.35	79.35 80.15	0.9 0.8	8 6	<5
			80.15 - 81.25: becomes distinctly bedded in 5-20 cm patches separated by more massive sediments and core becomes darker grey down hole. Pyrrhotite forms laminations at top of section with medium to coarse pyrite (up to 0.5cm) more common down hole.									5308	80.15	81.25	1.1	1.1	
			Bottom contact sharp (?) taken where distinct beds end and more foliation begins.														
			End of Mineralized and Altered Zone														

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81.25	89.6	MV	Foliated Mafic Volcanic Dark grey-green, aphanitic to fine grained. Approximately 3% carbonate stringers, 1-4 mm wide and 2-4% oval blebs (elongate with foliation) of carbonate (amygdules?) which also start at top of this unit. Strongly foliated to 82.3 with carbonate stringers (1-2 mm) following foliation and <1% medium grained pyrite crystals. Foliation at 33° to core axis. Matrix strongly calcareous but bleaching only minor at top of unit. Soft, easily scratched. 82.0 - 82.3: pyrrhotite approximately 5% in a minor laminated section with quartz and carbonate and mafics (or sediments). Dark grey colour. Rest of unit (from 82.3 down hole) is weakly foliated (mainly defined by whitish and lesser greyish streaks/ whisps). Carbonate veins more 3-4 mm and oriented across foliation at 40-60° to core axis. Weak foliation is at 23° to core axis. Diffuse patches (almost brecciates the unit in places) of soft, mafic material also occur. Approximately 3% carbonate amygdules continues to approximately 87.5. Bottom contact is gradational and shown by increase in green colour and by more massive look.		S		S	<1	5		5309	81.25	82.25	1.0	<5	
89.6	109.4	MMV	Massive Mafic Volcanic Dark green, massive mafic volcanic, medium grained (occasionally feldspar diffusely porphyritic). Matrix weakly to strongly calcareous, 2-3% carbonate ± quartz veins. Grades from the grey, weakly foliated section above it. Trace pyrite and pyrrhotite, fine grained blebs and disseminated mainly in fractures/stringers.		S		W-S	tr	tr							
			109.4 - END OF HOLE.													

The Northair Group

2.18

52F07NE2003 2.18765 BOYER LAKE

020

DIAMOND DRILL LOG

HOLE NO.: E-98-06		Collar Elevation:	Azimuth:	Total Meterage:	Dip of Hole at: -50°				Drill Hole Location:	Location: (Goldrock) Upper Manitou	Page No.: 1
Drilling Co.: NORTHWEST GEOPHYSICS		0.0	300°	91.4	Collar				50+29.5N, 0+37.5W		
Date Hole Started:	Date Hole Completed:	Date Logged:	Logged By:		-50°				Core Stored At:	Property Name:	Core Size:
April 21/98	April 22/98		Krista Nelson		- 49°				MNDM Drill Core Library - Kenora	Elora	BQ thin wall
Exploration Co., Owner or Optionee:		Date Submitted:	Submitted by: (Signature)						Claim No.		
NEWHAWK GOLD MINES LTD.			Krista Nelson						HP 301		

Meterage From	Meterage To	Rock Type	Description (colour, grain size, texture.)	Alteration Sil	Alteration Chl	Alteration Ser	Alteration Carb	% Py	% Cp	% Po		Sample #	From	To	Length	Au ppb	Au check
1.7	12.6	IV	Intermediate Volcanic Light greenish-grey, aphanitic (mostly) to fine grained, moderately well foliated with some parts massive. Foliation defined by light grey to almost black streaks/laminations, carbonate± quartz stringers and varying shades of the volcanic rock and on occasion discontinuous pyrite stringer. Matrix strongly calcareous. 1.7 - 11.5: light greenish-grey with lots of the dark grey to black foliations (often concentrated into bands). <1% pyrite throughout as fine grained crystals as disseminations and stringers mainly concentrated within quartz and dark grey stringers and spots. 2.4 - 2.6: wavy, disrupted portion, hairline fractures with distinct iron oxide staining into wallrock at 65° to core axis. 3.4: weak foliation at 45° to core axis. at 5: laminations at 60° to core axis. At 5.2: 10 cm width with tiny black specks non-magnetic, following foliation, amphibole? At 8.6: foliation measured at 42° to core axis. 12.0 - 12.6: well banded/laminated (interflow sed?), (top?) including quartz stringers and 2 thick veins (6 cm wide at 60° to core axis and 3 cm wide at 40° to core axis), laminations wavy in parts.		M		S	<1								

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12.6	18.7	I-MV	Intermediate to Mafic - foliated Zone is gradational from intermediate into the underlying massive mafic unit. Light grey-green to grey and still very fine grained to aphanitic. Matrix is strongly calcareous. The foliation is defined mainly by grey laminae and quartz-carbonate stringers with one carbonate vein "boudined" with quartz. <1% pyrite, fine grained as disseminations and as selvages to quartz ± carbonate stringers. Gradational from previous unit where starts to look less glassy and more green. 15.6: foliation at 40° to core axis. 16.4: quartz stringers and foliation/laminations at 40° to core axis. 18.7: last well distinct foliation before massive but contact is really gradational.		S		S	<1									
18.7	36.1	MMV	Massive Mafic Volcanic Light grey-green and medium grained. Trace grey stringers and 1-2% carbonate stringers, randomly oriented. Matrix weakly calcareous. Two, 10-20 cm aphanitic to fine grained, mildly disrupted, light green-grey to dark grey sections. Essentially no pyrite. Mafics are at lower end of mafic content compared to Laurentian holes. 19.7 - 22.8: 1% quartz and minor carbonate veins, 1-6 cm wide, randomly oriented. 24.75 - 24.85: 10% anhedral feldspar crystals white and solid, at top of 20 cm disrupted zone. 26.2 - 27.8: aphanitic to fine grained, weakly foliated, increase in randomly oriented grey streaks and quartz-carbonate veins. Minor anhedral feldspar in 2 patches. 27.8 - 30.0: trace anhedral, individual feldspar crystals and possible "gloms", <1 cm. 30.0 - 36.1: similar foliated volcanic as 12.6 - 18.7 but all mafic. Essentially no pyrite in this section. Foliation at 40° to core axis.		S		S					5279	35.1	36.1	1.0	<5	
36.1	38.0	Min. Seds	Mineralized Interflow Seds (in Mafic Volc). Intensely laminated/bedded zone (not straight beds) and well mineralized with pyrrhotite. Moderate grey and light greenish beds (aphanitic to fine grained) and carbonate and quartz beds. Strongly calcareous. Laminations are irregular and wavily banded and can be discontinuous and blebby. Pyrrhotite approximately 5% over length and concentrated in "beds" up to 25%; forms discontinuous stringers and bands and fine disseminated specks. Fine disseminated pyrite				S	1	tr	5		5280 5281	36.1 37.1	37.1 38.0	1.0 0.9	<5 <5	

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			approximately 1%. Trace chalcopyrite (on split surfaces) associated with small specks of quartz. Top contact sharp marked by wavy quartz-carbonate band at 42° to core axis. Rest of banding/foliation about the same. Lower contact gradational.														
38.0	51.1	GMV	Glomeroporphyritic Mafic Volcanic Light greenish-grey (darker than previous), fine to medium grained. <1% carbonate-quartz stringers, randomly oriented and trace grey stringers. Matrix weakly calcareous. Some sections are weakly mafic porphyritic. 3-5% feldspar "gloms"; anhedral to subhedral, 2 mm to 5 cm, average 0.5 - 1 cm, singular grains to gloms. Not gradational in size although most of the very large ones are concentrated from 44.5 - 48.5 (this may be a separate unit as marked by wavy laminations at 44.5, at 35° to core axis, and by abrupt change to a greyer colour at 48.5, at 45° to core axis). This subunit (44.5-48.5) also hosts all of the mafic porphyritic "clasts". <1% pyrite, on fractures. The core sometimes has a lighter, more intermediate look. 47.9 - 48.2 subunit Dark grey aphanitic mafic volcanic dyke with top contact sharp but wavy at approximately 40° to core axis, bottom contact sharp and at 37° to core axis.		S		W	<1				5282	38.0	39.0	1.0	50	
51.1	58.6	CGMV	Coarse Grained (leopard rock) and Glomeroporphyritic Mafic Volcanic Approximately 50% dark green/black mafic spots coarse grained to 3 mm in a more felsic groundmass. Similarly glomeroporphyritic as previous section. Matrix weakly calcareous, <1% pyrite disseminations and discontinuous stringers in quartz-carbonate stringers. Not foliated. 51.1 - 52.0: mafic "spots" are diffuse and patchy, greater concentrations of gloms, approximately 5%. 52.0 - 58.6: mafic "spots" more distinct; gradational from above into distinct From 57.6, grades downhole through fine grained into an aphanitic greenish unit.		S		W	<1									

Meterage From	Meterage To	Rock Type	Description (colour, grain size, texture.)	Alteration Sil	Alteration Chl	Alteration Ser	Alteration Carb	% Py	% Cp	% Po	% Sp	% Bt	% V.G.	Sample #	From	To	Length	Au ppb	Au check
58.6	69.75	MMV	Massive Mafic Volcanic Medium greenish-grey, medium to fine grained (grades finer downhole in a general sense). Matrix becomes more calcareous downhole (W-S) and more iron rich. Only trace carbonate and lesser quartz stringers. <1% pyrite on fractures, trace chalcopyrite. 58.6 - 59.1: bedded interflow sediment (flow top?). Dark grey, dark green, wavily laminated and slightly sheared to massive, aphanitic to very fine grained, with 1% medium to coarse crystals and discontinues stringers. 69.3: starts developing a weak foliation at 45° to core axis. 69.75: sharp (?) contact at 46° to core axis, defined by sudden change from green to yellow beige.		S		W/S	<1 1	tr					5338 5339	68.75 69.25	69.25 69.75	0.5 0.5	<5 6	
			Mineralized Zone																
69.75	70.2	F	Felsite (A) - tuff, dyke? Weakly shisted, light beige (bleaches white with HCl), well laminated or beded (?) at 45° to core axis, defined by laminations and whisps of yellowish sericite (minor pitting) and lesser chlorite and grey quartz; aphanitic to fine grained (compositional difference ?). Becoming wavier around bottom contact. 69.75: sharp(?) top contact at 46° to core axis. 69.95 - 70.05: Sediments. 10 cm of bedded sediments grade into the felsite. This section is well laminated on mm to 0.5 cm scale, aphanitic (cherty) to fine grained. 1% pyrite, fine grained stringers whispy, elongate blebs usually associated with the grey quartz patches and the 1 cm, grey, irregular diffuse quartz vein; medium crystals also scattered throughout. Only trace pyrite in rest of unit.		W	S	S	tr 1						5283	69.75	70.2	0.45	3654	
70.2	71.7	QV	Quartz Vein and Bedded Siliceous LIF 70.2-70.85: subunit. Quartz Vein. Mottled looking light grey to white glassy; opaque white quartz forms 5% irregular masses to 1 cm. Inclusions of irregular, anastomosing and wavy stringers and masses of wallrock and mineralization approximately 15%. Brownish inclusions of the felsic wallrock generally with dark grey borders and adjacent small blebs. Pyrite fine grained whisps, stringers and blebs with medium crystals. Trace chalcopyrite diffuse blebs up to 2 mm (in grey parts of quartz vein), trace sphalerite in darker brownish sections. 1 mm speck of visible gold and telluride on split surface of sample 5284 along with sphalerite.	S				5	tr		tr	tr	tr	5284	70.2	71.15	0.95	8795	

Meterage From	Meterage To	Rock Type	Description (colour, grain size, texture.)	Alteration Sil	Alteration Chl	Alteration Ser	Alteration Carb	% Py	% Cp	% Po	% Sp	% BT	Sample #	From	To	Length	Au ppb	Au check
			70.85 - 71.15 subunit Bedded(?) section (siliceous LIF?). Top contact banding at 45° to core axis. Bedding (fine grained to aphanitic) defined by quartz (carbonate?), laminated on 1 mm to 0.5 cm scale with sericite (sheen on fracture); carbonate schisted felsic host rock; and pyrite bands. Light beige to greenish-grey. Beds are wavy and on occasion crenulated. Pyrite approximately 10% forms very fine grained whisps and laminae and also discontinuous medium grained stringers and blebs. Trace sphalerite in quartz vein (specks to very short, 0.5 cm, stringer). Bottom contact wavy, approximately 20-25° to core axis, and has slight concentration of chalcopyrite and sphalerite (along with pyrite) and 1 speck of Bismuth Telluride.	S		S	S	10	tr		tr	tr						
			71.15 - 71.5 subunit Solid quartz vein without the bedding inclusions and mineralization.	S									5285	71.15	71.7	0.55	1943	2478
			71.5 - 71.7 subunit Similar to 70.2 - 70.85 with a slight brecciated look in last 5 cm. 2 cm "stringer" of chalcopyrite 1mm wide. Bottom contact wavy and sharp at 50° to core axis. Overall mineralization is pyrite >> sphalerite > chalcopyrite >> Bismuth Telluride.	S				5	tr		tr						
71.7	72.9	LIF + F	Lean Iron Formation with Minor Felsite Interbeds 71.7 - 71.85 subunit Bedded felsite. Beigey felsic unit with whips of carbonate-sericite. First 5 cm are laminated with quartz (at 55° to core axis), more light greenish and greyish laminae and fine to medium grained pyrite ± sphalerite. Bedded similar to 69.95 - 70.05, tuff or dyke? 0.5 - 2 cm quartz vein, mottle white-grey at 45° to core axis. Start picking up whisps and discontinuous stringers of very fine grained, pyrrhotite near bottom.					1		tr	tr		5286	71.7	72.9	1.2	406	
			71.85 - 72.9 subunit Lean iron formation. Well banded, regular to wavy at 31° to core axis at top and 42° near bottom. Dark grey/black look which is aphanitic argillite, lesser graphite and possibly magnetite (magnetic but may be caused by the fine grained whips of pyrrhotite). Laminae of quartz and calcite. Black part is actually, finely mottled with quartz. Approximately 15% sulphides with pyrite> pyrrhotite. Pyrite as fine grained laminations and medium crystals pyrrhotite as fine grained whisps within the black part and associated with (ie. rims) the pyrite. Quartz approximately 10-20% of unit. Trace sphalerite (reddish-brown). 72.2 - 72.5: 75% sediments of fine grained to medium grained. These sediments may occur between two separate more argillitic events. Laminated at 39° to core axis. End of Lean Iron Formation. Contact at 48° to core axis					15 (py + po)			tr						

Meterage From	Meterage To	Rock Type	Description (colour, grain size, texture.)	Alteration Sil	Alteration Chl	Alteration Ser	Alteration Carb	% Py	% Cp	% Po	% Sp	Sample #	From	To	Length	Au ppb	Au check
72.9	74.7	F + Seds (LIF)	Felsite (B) - massive with bedded sections Felsite has the carb-sericite wispy alteration. 72.9 - 73.1 subunit Felsite (B) with grey hairline (quartz?) stringers, randomly oriented, anastomosing. Minor grey/white quartz patches to 1 cm width. 1% fine grained dots and whisps of pyrrhotite. Massive - no foliation, fine grained. 73.1 - 73.25 subunit Bedded section of similar felsite to 72.9 to 73.1 which graded into this section. Quartz and lesser carbonate (calcite) 20% of unit. Wavy, 15% sulphides; pyrite > pyrrhotite, <1% sphalerite, 42° to core axis. Rest is beds (aphanitic to fine grained) of grey, beige wallrock, fine to medium grained. 73.25 - 74.0 subunit Felsite (A). Without the hairline grey stringers. 1-2 mm faint angle green diffuse patches of fuchsite? No sulphides. Sericite laminae - tuff or dyke. 74.0 - 74.3 subunit As per 73.1 - 73.25. 35° to core axis. 74.3 - 74.7 subunit Felsite (B) as per 72.9 - 73.1.					15 (py + po) 15 (py+po)		1 1	<1 <1	5287 5288	72.9 73.8	73.8 74.7	0.9 0.9	1386 2631	
74.7	76.8	Seds (LIF) + F	Bedded Unit Similar felsite grading into laminated sediments. 74.7 - 76.2 subunit Weakly bedded Felsite (B). Bedding is very wavy and irregular. Slightly crenulated in parts. Felsite (blotchy and uneven) is approximately 40% of unit; quartz, approximately 40% of unit (flooded?), is largely grey including hairline stringers throughout the felsic unit and also includes the white opaque quartz (carbonate combs?). Sulphides 15% with pyrrhotite > pyrite (whisps, laminations etc.), trace chalcopyrite and sphalerite. 75.6 - to end: laminations generally straight at 32° to core axis. 75.85 - 76.0: 25% sulphides. 76.2 - 76.8 subunit Becomes darker and more mafic looking downhole (more sedimentary instead of the felsite). Sulphides (pyrite > pyrrhotite) approximately 5% with medium crystals of pyrite common and whisps of pyrrhotite; trace chalcopyrite. Bedding at 40° to core axis and straight, not wavy. Bottom contact sharp (?) and taken at the last pyrrhotite lamination and where it looks like foliated mafic instead of well bedded sediment. **End of Mineralized Zone**					15 (py + po) 15 (py + Po)	tr tr		tr 	5289 5290 5291	74.7 75.6 76.2	75.6 76.2 76.8	0.9 0.6 0.6	8675 336 81	

Meterage From	Meterage To	Rock Type	Description (colour, grain size, texture.)	Alteration Sil	Alteration Chl	Alteration Ser	Alteration Carb	% Py	% Cp	% Po		Sample #	From	To	Length	Au ppb	Au check
76.8	91.14	MMV	Massive Mafic Volcanic Moderate green, fine to medium grained, <1% carbonate stringers and 1% quartz and carbonate, 1-3 cm veins, all randomly oriented. Trace disseminated and small blebs of pyrite and pyrrhotite. Matrix varying weak to strongly calcareous. 76.8 - 79.8: transition zone to the mafic massive volcanic. Weakly foliated (at 45° to core axis), but not strongly laminated. Includes small (2-4 mm) oval (with foliation) carbonate-quartz dots(???). 85.2 - 86.8: zone of white, diffuse feldspar spots (1-2 mm).		S		W-S	tr		tr		5292	76.8	77.8	1.0	<5	
			91.4 - END OF HOLE.														

030

The Northair Group

DIAMOND DRILL LOG

HOLE NO.: E-98-07 Drilling Co.: Northwest Geophysics		Collar Elevation: 0.0	Azimuth: 300°	Total Meterage: 115.5	Dip of Hole at: Collar -62°				Drill Hole Location: 50+29.5N, 0+37.5W	Location: (Upper Manitou) Goldrock	Page No.: 1
Date Hole Started: April 22, 1998	Date Hole Completed: April 23, 1998	Date Logged:	Logged By: Krista Nelson / Brian Nelson						Core Stored At: MNDM Drill Core Library, Kenora	Property Name: Elora	Core Size: BQ thin wall
Exploration Co., Owner or Optionee: NEWHAWK GOLD MINES LTD.		Date Submitted:	Submitted by: (Signature) Krista Nelson						Claim No. HP 301		

Meterage From	Meterage To	Rock Type	Description (colour, grain size, texture.)	Alteration Sil	Alteration Chl	Alteration Ser	Alteration Carb	% Py	% Cp	% Po			Sample #	From	To	Length	Au ppb	Au check
1.5	24.2	IV	Intermediate Volcanic Greenish-grey, aphanitic (predominantly) to fine grained, massive to well foliated. 2-3% carbonate stringers, 1-4 mm ± quartz, randomly oriented, straight and blotchy. Has a general uneven look to it; dark whisps and stringers (foliation) and large blotches common. Some areas approximately 10 cm thick, more concentrated. Slightly hard but still scratchable. Some patches look more mafic. 2.5: vuggy iron oxide fracture at 49° to core axis, (from 10 cm uphole of this point - core has a bleached, very light green, more felsic look), (at 3.5 m foliation at 32° to core axis). 4.9: tiny amphiboles (?). 7.4: a couple of <0.5 cm mafic (soft), round clasts. 13.9 to 15.4: there was an increase in quartz and lesser carbonate veins, (0.5-3 cm wide) with the veins 1 cm, boudined and anastomosing. At 14.1: foliation measured at 25° to core axis. 15.4 to 15.5: Bedded sediment? Well banded zone, (at 30° to core axis) with bedded, aphanitic material, quartz and lesser carbonate veins and blebs (irregular and wavy). Veins are approximately 25%; brown very fine grained, pyrrhotite, (approximately 3% of unit overall) with <1% pyrite. At 16.0: 0.5 - 1 cm foliated zone with 1 mm of pyrrhotite. At 18.7: start getting anhedral feldspar crystals, 0.2 - 0.5 cm (some mafic rich) present to 21.5 (<1%). 19.0 - 20.0: Flow top or pillow top? Wavily foliated throughout length of section (large wave) with minor opaque white quartz. Concentration of dark grey/black laminations at bottom end with pyrrhotite > pyrite. At 20.9: 5 cm concentration of the black material with pyrrhotite. 23.0 - 24.2: gradually becomes more medium grey-green and fine grained. Tiny, streaky white-feldspar define foliation at 35° to core axis. At 24.2 Sharp bottom contact at 34° to core axis.	M	M		S	tr					5295	14.45	15.5	1.05	7	
								<1		3								

Meterage From	Meterage To	Rock Type	Description (colour, grain size, texture.)	Alteration Sil	Alteration Chl	Alteration Ser	Alteration Carb	% Py	% Cp	% Po			Sample #	From	To	Length	Au ppb	Au check
24.2	41.5	MMV	Massive Mafic Volcanic Moderate green, medium grained, 1% carbonate ± quartz stringers, matrix weakly calcareous. No foliation, barely a trace of pyrite in quartz stringers, none in matrix. 28.9 - 29.0: quartz, irregularly and diffusely banded with mafic material, top contact at 60° to core axis and bottom at 65° to core axis. At 31.9: start getting small (2-5 mm) round, distinct, mafic "clasts" or spots, <1% of unit. Many have fine grained pyrite ± pyrrhotite (?) in centres. Present to end of section. 34.5 - 35.7 and at 36.8 - 37.1: aphanitic sections (similar to 1.5 - 24 but greener) and slightly disrupted (irregular, wavy black concentration and weak brecciation of parts of volcanic). 37.6 - start getting small (0.2 - 1 cm) feldspar anhedral crystals and small "gloms" (some are mafic rich). Large black chlorite/argillite patches (minor amount) in last 1.5m. Last 50 cm core is becoming lighter green and finer grained.		S		W	none to tr										
41.5	51.1	MZ-Seds	Disrupted and Mineralized Zone (in mafic volcanic) - probably interflow sediments. Bedding not straight. Light green, fine grained to aphanitic, anhedral feldspar crystal continue into this section as do small mafic clasts. 41.5 - 44.4 subunit Light green section. Approximately 50% of core is disrupted. Aphanitic sections are partly light green beige and sometimes cherty. Darker green (but still light green) material within makes these sections look almost brecciated. Some sections "ringed" with the different coloured material. 5% irregular and anastomosing patches and "veins" of black chlorite/argillite with quartz. Trace pyrite and pyrrhotite including a large bleb approximately 1 cm of pyrrhotite. 44.4 - 47.25 subunit This section becomes greyer and a bit darker. Bedding is better developed but still irregular and wavy. Bedding defined by black chlorite/argillite, dark grey to black quartz (including a 2 cm vein at 40° to core axis), white carbonate ± quartz, pyrrhotite, grey streaks and colour variation within the mafic. Sulphides trace until 46.4 and then increase to 2% by end of section. At first, sulphides concentrated within quartz in the bedded sections as fine grained discontinuous stringers and blebs; by end of section also as whisps within the volcanic. Trace pyrite with the pyrrhotite. Bedding at 28° to core axis. Non-volcanic component is approximately 20%. Some bands aphanitic, some fine grained - sediments? Bedding grades though this section into the massive one below. 47.25 - 48.15 subunit Main pyrrhotite mineralized section. Banding is highly irregular and clotty; crenulated and discontinuous with sections bleeding into each other. Non-volcanic component approximately 50%, white opaque quartz(?) bands are a lot stronger. Pyrrhotite is 10% of unit - strong bands and clots as well as fine whisps.					tr tr		tr 2 10			5296 5297	46.4 47.25	47.25 48.15	0.85 0.9	<5 12	

Meterage From	Meterage To	Rock Type	Description (colour, grain size, texture.)	Alteration Sil	Alteration Chl	Alteration Ser	Alteration Carb	% Py	% Cp	% Po			Sample #	From	To	Length	Au ppb	Au check
			48.15 - 51.1 subunit Similar to previous section but pyrrhotite only approximately 1% and subunit is more volcanic. 49.1 - 51.1: bedding is not as disrupted as in 47.25 - 48.15 but still varying (30-50° to core axis). More opaque greenish-white quartz or feldspar now bordering quartz veins and as masses (diffuse and solid). Bottom contact gradational.							1			5298	48.15	49.1	0.95	<5	<5
51.1	70.4	GMV	Glomeroporphyritic Mafic Volcanic Medium green, fine to medium grained (in general fine grained to 60 and then medium grained). Does not have a clean look to it - sections with whispy and irregular carbonate hairline stringers and grey stringers; 1-3 mm randomly oriented carbonate stringers (<1%); 1% quartz vein (blebby and irregular, 0.5 - 5 cm wide) ± grey selvages; some sections mottled with diffuse, 1-2 mm opaque, greenish beige feldspar(?). Matrix is weakly calcareous. Different sections mainly grade into each other. 51.1 - 61.7: subunit Possibly 1 flow. 2% anhedral (occasionally subhedral) feldspar crystals and gloms, <1 cm. Sulphides <1% with pyrrhotite > pyrite mainly as tiny blebs, 1-2 mm in mafic concentration or clast (diffuse boundaries) and lesser in quartz veins and as stringers and blebs (e.g. at 53.8). Grades into next unit. 61.7 - 70.4: subunit Possibly another flow. Essentially no sulphides. 61.7 - 63.25: generally fine grained and more disrupted looking with a large portion of the wide irregular, randomly oriented anastomosing in parts, quartz vein. A lot of the streaky grey. Weak laminations at top at 40° to core axis. Bottom 10 cm is brecciated wallrock, quartz-carbonate. Feldspar gloms are large, up to 2 to 3 cm and average 1 cm, approximately 5% of unit. Rest of subunit is patchy medium to coarse grained mafic volcanic. Gloms are about the same size but not as fresh looking (ie have lots of mafic inclusions - almost look like plutonic clasts; some altered to a yellowy glassy, soft substance). For the last 3 m clasts are 50-100% mafic material. Actually may be another subunit, sharp contact at 67.1 (at 30° to core axis) between coarser unit uphole and medium unit downhole with the mafic clasts/phenos.		S		W	<1 (py + po) none									

Meterage From	Meterage To	Rock Type	Description (colour, grain size, texture.)	Alteration Sil	Alteration Chl	Alteration Ser	Alteration Carb	% Py	% Cp	% Po			Sample #	From	To	Length	Au ppb	Au check
70.4	79.5	CMV GMV	Coarse-grained and glomeroporphyritic mafic volcanic: Both contacst are gradational. Similar to previous section but cleaner looking - not as much irregular carbonate and grey stringer alteration. Matrix weakly calcareous. Generally coarse grained (leopard rock) with patches of more medium grained. Essentially no pyrite with only a trace on a couple of fractures. 70.4 - 75.7 possibly subunit In a general sense grades from coarse grained to medium grained porphyritic with large (2 cm) yellow glassy feldspar gloms in the first 50 cm and the rest of the unit usually has <1.0 cm gloms with <0.5 cm gloms common in last meter (gloms are approximately 5% of unit overall). 75.7 - 77.4 possible subunit Very coarse grained for most of unit. At 77.2 becomes more medium grained porphyritic and grades into foliated section at start of next unit. Gloms up to 4 cm at start of unit. Grade down to 0.5 cm and form 1% of unit. 77.4 - 79.5 possible subunit First 20 cm (possible top?), mafics are more diffuse and there is weak foliation including carbonate stringers at 30° to core axis. Unit is more medium grained, mafic porphyritic with the mafic "clasts" only; they are <1%, <0.5 cm with larger 1-2 cm in last 40 cm.		S		W										
79.5	90.3	MMV	Massive Mafic Volcanic Medium grained with only weak foliation. Approximately 5% carbonate stringers randomly oriented and blotchy in parts. Trace pyrite. 79.5-81.05 subunit Flow Top/Interflow Sediments At 79.5: sharp contact at 32° to core axis 79.5-80.1: blotchy with diffuse feldspar crystals throughout. <1% pyrite. Weak foliation at bottom at 30° to core axis (may be part of previous section). 80.1-81.05: moderate grey, well bedded (aphanitic to fine grained; bedded on mm to cm scale). Discontinuous layers/stringers of medium to coarse pyrite; aphanitic to very fine grained. Bedding at 28° to core axis. Pyrite approximately 2%. 81.05-87.2 subunit Generally medium grained with weak foliation, no pyrite. Slight iron stain to matrix. 87.2-87.6 subunit 10% carbonate stringers (5-6 distinct) boudinaged around quartz with medium (1-2 mm), 1%, pyrite crystals.					tr <1 2									

Meterage From	Meterage To	Rock Type	Description (colour, grain size, texture.)	Alteration Sil	Alteration Chl	Alteration Ser	Alteration Carb	% Py	% Cp	% Po			Sample #	From	To	Length	Au ppb	Au check
			87.6-90.3 subunit This section becomes better foliated (whisps and white streaks) at 34° to core axis. Pyrite <1% including meduim grained crystals and small fine grained blebs. Has a greyer look to it. Weak carbonate bleaching. Grades into next section or is it sharp at 32° to core axis ?? Same contact as at 69.75 in E-98-6.					<1					5340 5341	89.3 89.8	89.8 90.3	0.5 0.5	7 23	
			Mineralized Zone															
90.3	102.35		90.3 - 93.45: logged in detail by Brian Nelson; comparison here to my logging hole 6 so we're calling everything the same. B.N. 90.3 - 90.9: same as E-98-06: 69.75 - 70.05. B.N. 90.9 - 91.6: same as E-98-06: 70.05 - 70.2 B.N. 91.6 - 95.6: same as E-98-06: 70.2 - 72.9 with B.N. 94.3-95.6. same as E-98-06: 71.85-72.9. B.N. 95.6 - 96.4: same as E-98-06 72.9 - 73.1. Brian's quick log begins here. ? - 90.3: Intermediate Volcanic-Mafic Volcanic 5% quartz-carbonate-stringers, vague assimilated contact at 90.3. 90.3 - 90.9: Interbedded Sediment-Tuff and pyrite beds (lean iron formation) Three 5 mm scale massive pyrite beds, bedding @ 30° to core axis. 90.9 - 91.6: Felsic Tuff (dyke??) Light beige-buff, hard and moderately foliated @ 35° to core axis, moderate sericite as 1 to 2 mm bands paralleling foliation. - sharp contact at 90.9 @ 30° to core axis marked by 1 - 2cm wide quartz veinlet. - sharp irregular contact at 91.6 at 30 to 60° to core axis. 91.6 - 93.45: lean iron formation (pyritic sediment) Grey to browny grey, fine grained to medium grained very hard and well bedded on < 1mm to 3 cm scale, bedding at 30° to core axis. - local moderate sericite as bands, beds. - overall 10% bluey-grey quartz stringers and veinlets parallel to bedding and 5-10% white quartz veins on a 5 to 10m scale containing 40% mafic inclusions. - overall 10-15% medium grained pyrite as 1 mm to 1 cm scale beds. 5451 - 90.93 - 90.9 Light to medium grey, very fine grained, very hard and well bedded on a 2 mm to 3 cm scale. 2-3% white grey quartz-calcite veinlets paralleling bedding. 2-3% massive to semi-massive 5 mm to 1.5 cm pyrite beds. - overall 5% stringer pyrite.										5451	90.3	90.9	0.6	980	

Meterage From	Meterage To	Rock Type	Description (colour, grain size, texture.)	Alteration Sil	Alteration Chl	Alteration Ser	Alteration Carb	% Py	% Cp	% Po			Sample #	From	To	Length	Au ppb	Au check
			5452 -90.9 - 91.6 Felsic tuff - fine grained, hard and foliated, very minor quartz-carbonate stringers, no visible pyrite. - local trace chalcopyrite, local trace sphalerite. - one 0.5 mm scale speck of Visible Gold @ 91.8m. - sharp contact at 93.45 @ 30° to core axis.										5452	90.9	91.6	0.7	114	
			5453 - 91.6 -92.1 Fine grained, bedded sediments containing 30% bluey-grey quartz stringers and 20% white quartz veining. - 10% medium grained disseminated by mainly within discrete beds. - one 0.5 mm speck of Visible Gold at 91.8m.										5453	91.6	92.1	0.5	5752	4930
			5454 - 92.1 - 92.6 Lean iron formation. - 10% creamy-grey to bluey-grey 1 mm to 5 mm scale quartz veinlets. - 5% pyrite as 1 to 3 mm scale beds.										5454	92.1	92.5	0.4	2573	
			5455 - 92.6 - 93.45 Lean iron formation and brecciated quartz veins. - one 30 cm wide and one 10 cm wide white quartz veins containing 40-50% host rock inclusions. - overall 5% disseminated to bedded pyrite.										5455	92.5	93.45	0.95	3603	
			93.45 - 94.3 Quartz Vein - grey-white quartz vein, moderately fractured and cut by narrow mm scale stockwork darker grey quartz stringers. - local irregular milky-white blotches. - 5% irregular to veining looking dark grey host rock inclusions. - minor fine grained disseminated and fracture filling tellurides? - minor very fine grained specks of Visible Gold associated with tellurides. - local trace pyrite, local trace chalcopyrite associated with telluride. - sharp irregular contact at 94.3 @ approximately 30° to core axis.										5459	93.45	94.3	0.85	64424	
			5459 - 93.45 - 94.3 Quartz Vein, minor tellurides, minor chalcopyrite, minor specks of gold associated with telluride, local trace pyrite.															
			94.3 - 95.6 Lean Sulphide Iron Formation - grey to browny grey, fine grained hard and well bedded @ 30° to core axis to locally mottled with individual pyrite rich beds, bedding on a 1 mm to 25m scale. - overall 3% crosscutting to erratic grey quartz veinlets. - overall 25% disseminated to bedded pyrite, local minor pyrrhotite. - bedding @ 30° to core axis. - contact at 95.6 @ 30° to core axis.										5456	94.3	94.8	0.5	770	
			5456 - 94.3 - 94.8 35% disseminated to bedded pyrite, minor associated pyrrhotite. - locally bedded to mottled texture. - minor disrupted bluey-grey 5 mm scale quartz veinlets.										5457	94.8	95.6	0.7	2082	
			5457 - 94.8 -95.6 3% bedded to disseminated pyrite. - bedding @ 30-40° to core axis. - minor 5 mm scale crosscutting bluey-grey quartz veinlets.															

Meterage From	Meterage To	Rock Type	Description (colour, grain size, texture.)	Alteration Sil	Alteration Chl	Alteration Ser	Alteration Carb	% Py	% Cp	% Po	% Bt	% Sp	Sample #	From	To	Length	Au ppb	Au check
			95.6 - 96.4: Felsic Tuff (Int Tuff), Felsite? Light green - buff grey, very fine grained, quite hard, and massive to locally moderately foliated @ 30° to core axis. - 5% 1 to 3 mm scale stockwork, like blue-grey quartz stringers locally containing minor fine grained disseminated pyrite, as approach lower contact quartz stringer parallel uphole and downhole bedding @ 30° to core axis. - contact at 96.4 at 30° marked by 1 to 3 cm wide bluey-grey quartz vein sharp but somewhat irregular contact. - sharp conformable upper and lower contacts. 5458 - 95.6 - 95.4 IT - FT (Felsite) - 5% bluey grey quartz stringers. - trace disseminated pyrite associated with quartz stringers. Brian's quick log ends here!										5458	95.6	96.4	0.8	7	
		Krista's logging continued.																
96.4	99.25	F	Bedded felsite (B) to massive Bedded unit (same as 73.1 - 73.25 in E-98-06) of felsite (aphanitic to fine grained; carbonate and sericite altered- pitted and bleaches with acid; mildly schisted) and sulphides. Strong quartz as veins up to 4 cm wide (± carbonate combs) and probably flooded(?), grey quartz blebs and stringers common throughout, irregular and bleby (approximately 20% of unit is quartz). 96.4 - 97.5 subunit Bedded felsite (B). Very well bedded with sulphides. Approximately 10% laminations of pyrite and pyrrhotite (pyrite up to 1 mm crystals and pyrrhotite fine grained), blebs of medium grained pyrite and whisps of pyrrhotite in the felsite (pyrite≥ pyrrhotite). Generally bedded on mm to 0.5 cm scale. Bedding wavy at 22° to core axis. Trace chalcopyrite with pyrrhotite in quartz veins. Trace reddish brown sphalerite. 97.5 -98.8 subunit Section is more massive felsite (B) with large patches of quartz (white and grey) and the grey quartz patches and stringers. <1% pyrite fine to medium crystals and trace pyrrhotite whisps. BT trace in quartz vein. 98.25 - 98.8: mostly felsite, with approximately 5% quartz. 98.8 - 99.25 subunit Same as 96.4 - 97.5 but coarse pyrite up to 8 mm and pyrite >> pyrrhotite (approximately 8% and 2% respectively). Bedding at 26° to core axis on siliceous/pyritic section of above felsite.	S		S	S	 ~5 <1 ~8	 tr tr	 ~5 tr ~2	 tr 	 tr tr	 5299 5300 5209 5210	 96.4 97.5 98.25 98.8	 97.5 98.25 98.8 99.25	 1.1 0.75 0.55 0.45	 269 414 77 5513	
99.25	100.35	F	99.25 - 100.35: Felsite (A)-tuff or schisted dike? (same as 73.25 - 74.0 in E-98-06) Massive without the grey hairline stringers of quartz. Hard, siliceous. Strong iron carbonate-bleaches white with acid. Yellowy grey sericitic whisps (sheen and pits). Weakly foliated at 22° to core axis (or tuffaceous bedding). <1% medium pyrite crystals to fine grained blebs. <1% apple-green, 1-3 mm streaks (with foliation) of fuschite (?). Sharp top contact at 40° to core axis (quartz stringer).	S		S	S	<1					5211	99.25	100.35	1.10	80	

Meterage From	Meterage To	Rock Type	Description (colour, grain size, texture.)	Alteration Sil	Alteration Chl	Alteration Ser	Alteration Carb	% Py	% Cp	% Po	% Tour	% Sp	Sample #	From	To	Length	Au ppb	Au check
100.35	102.35	F	Bedded Felsite (B) Bedded on mm to cm scale, aphanitic to medium grained, (with?) light greenish beige to dark green predominantly mafic material generally fairly soft. 100.35 - 101.6 subunit Very well mineralized. Top of unit sharp and marked by a sharp 35 cm quartz vein at 39° to core axis (patchy grey-white with laminated inclusions of underlying section). Underlying section (100.7-101.6) is wavily bedded at 22° to core axis, felsic > mafic, 10% quartz veins (white-grey, up to 4 cm wide; moderately boudined and bordered by carbonate combs). 15% sulphides, mainly pyrite with lesser pyrrhotite (1-2%) forming fine to medium grained beds and laminations. 1% reddish-brown sphalerite and trace chalcopyrite. Trace black radiating tourmaline(?) in quartz vein. 101.6 - 102.35 subunit Sulphides dropped off to approximately 1%. Contact (bottom) taken where sulphides dropped to <1% at 23° to core axis. Section has straight beds, aphanitic to fine grained sedimentary (cherty) as well as the felsite.			S	S	10-15	tr	1-2	tr	1	5212 5213 5214	100.35 100.7 101.6	100.7 101.6 102.35	0.35 0.9 0.75	4366 3265 353	
			End of Mineralized Zone															
102.35	115.52	MMV	Massive Mafic Volcanic Dark green, massive volcanic, medium green. 2-3% carbonate-quartz stringers many irregular or anastomosing. Matrix weakly calcareous. Trace pyrite. 102.35 - 104.8: grey and well foliated (grades out downhole). Transition zone with weak bedding (?) at top. Trace fine grained pyrite, pyrrhotite and chalcopyrite. Matrix strongly calcareous. Foliated at 25° to core axis. Short carbonate-quartz streaks. Sericite and iron carbonate weak and grading out downhole. Possible amygdules and fragments?? 115.52 - END OF HOLE					tr	tr	tr			5215	102.35	103.35	1.0	10	

CLARK-EVELEIGH CONSULTING

2.1

DIAMOND DRILL LOG

Drilling Co.:	Collar Elevation:	Bearing:	Total Meterage:	Dip of Hole at:	Drill Hole Location:	Location: (Goldrock) Upper Manitou	Hole No.:	Page No.:
NORTHWEST GEOPHYSICS	0.0	300°	42.4	Collar: -50°	49+90.5N, 0+57.5W		E-98-08	1

Date Hole Started:	Date Hole Completed:	Date Logged:	Logged By:	42.4m	-51°	Core Stored At:	Property Name:	Core Size:
April 23/98	April 24/98	April 28/98	Brian Nelson			MNDM Drill Core Library - Kenora	ELORA	BQ (thin wall)

Exploration Co., Owner or Optionee:	Date Submitted:	Submitted by: (Signature)	Claim No.:
NEWHAWK GOLD MINES LTD.			HP301

GEOLOGICAL ASSOCIATION OF CANADA
I.G. CLARK
F 6448
FELLOW
ASSOCIATION GÉOLOGIQUE DU CANADA

Meterage From	Meterage To	Rock Type	Description (colour, grain size, texture, minerals, alteration, etc.)	Sample #	From	To	Length	Au ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm
0.0	2.4	Overburden										
2.4	3.5	Mafic Flow (pillowed)	Green-grey to dark grey, very fine grained, massive to locally brecciated, 5% erratic 2 mm to 2 cm scale white quartz-calcite veinlets, moderate chlorite, local minor stringer pyrrhotite. Overall looks like either narrow mafic flows (beds) or small mafic pillows alternating with brecciated pillow selvages or interflow sediments infilled with quartz-calcite cement. 5460 - 2.5 - 3.5: 5% quartz-calcite stringers, minor stringer pyrrhotite..	5460	2.5	3.5	1.0	<5				
3.5	31.0	Porphyritic Mafic Flow	Greeny-grey, fine grained to locally medium grained, massive and soft containing minor to 5% 2 mm to 3 cm scale, anhedral-rounded creamy-white feldspar crystals set in a very fine grained greenish-grey matrix, minor erratic 1 mm to 3 cm side white quartz-calcite stringers and veinlets, trace fine grained disseminated to narrow stringer pyrite and pyrrhotite. Note: unit could likely be called a glomeroporphyritic andesite (basalt?). 3.5 - 11.2: 5% 3 mm to 3 cm scale anhedral, sub-rounded, feldspar phenocryts. 11.2 - 17.1: greenish-grey, medium grained containing 40% 2 mm scale chloritized mafic crystals, slightly flattened defining a weak foliation at 45° to core axis, minor to locally 2% anhedral 1 mm to 3 cm scale feldspar phenocryts. - minor erratic white quartz-calcite stringers. - trace fine grained disseminated pyrite. 11.5 - 12.0: blocky-broken core with rusty hematitic staining on fractures.									

Meterage From	Meterage To	Rock Type	Description (colour, grain size, texture, minerals alteration, etc.)	Sample #	From	To	Length	Au ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm
			17.1 - 18.0: interflow sediment, grey, fine grained to very fine grained, moderately hard to very hard and well banded/bedded at 30° to core axis. - finely bedded/laminated on a 1 mm to 2 cm scale. - 1% pyrite and pyrrhotite as very fine grained disseminations and narrow 1 to 2 mm stringers. - Sharp contact at 17.1m @ 30° to core axis, broken blocky core at 18.0m contact.									
			5461 - 17.1 - 18.0: interflow sediment, very minor quartz-calcite stringers, 1% disseminated to stringer pyrite and pyrrhotite.	5461	17.1	18.0	0.9	<5				
			18.0 - 19.0: 10% erratic white 2 mm to 3 cm scale quartz-calcite veinlets.									
			5463 - 18.0 - 19.0: 10% quartz-calcite veinlets, no pyrite, moderate chlorite.	5463	18.0	19.0	1.0	6				
			19.0 - 31.0: greenish-grey, very fine grained, massive quite hard containing very minor anhedral 1 mm to 1 cm scale feldspar phenocrysts set in a fine grained matrix. - minor erratic 1 mm to 2 cm scale white quartz-calcite stringers and veinlets. - trace very fine grained, disseminated pyrite. 25.6 - 25.75: slightly darker green with 10% erratic mm scale quartz-calcite stringers.									
			At 25.65 - intersected old ddh (1930's), smaller size core, hole oriented at 10° to core axis, followed old hole for approximately 20 cm. 30.0 - 31.0: grey to greenish-grey, very fine grained, quite soft with minor grey quartz stringers oriented at 50° to core axis, foliated at 50° to core axis along with 2 mm scale pyrite beds, (stringers) paralleling foliation in last 10 cm above 31.0m contact.									
			5464 - 30.0 - 31.0: mafic volcanic, minor quartz stringers, locally 3% pyrite over 10 cm.	5464	30.0	31.0	1.0	21				
31.0	37.1	Jubilee Zone	Interbedded Graphitic-Pyritic Argillite, Intermediate to Felsic Ash Beds, (sills), and lean pyritic iron formation intruded by 3 mm to 30 cm scale, white-grey to bluish grey quartz veining locally containing fine specks, dusting of VG.									
			31.0 - 31.3: Felsic Ash Tuff-Bed/Sill?? - slightly greenish-buff, very fine grained, very hard and very weakly foliated @ 50° to core axis. No pyrite. - sharp contact at 31.0 @ 50° to core axis. - sharp contact at 31.3 @ 50° to core axis.									
			5465 - 31.0 - 31.3 - Felsic Tuff, no quartz veining, no pyrite.	5465	31.0	31.3	0.3	148				

Meterage From	Meterage To	Rock Type	Description (colour, grain size, texture, minerals alteration, etc.)	Sample #	From	To	Length	Au ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm
			31.3 - 31.6: Quartz Veining, three grey-white to bluish-grey 1 cm to 10 cm wide quartz veins, one 3 cm wide felsic tuff bed plus graphitic pyritic argillite beds, overall 60% quartz veining, 10% felsic tuff and 30% argillite. - bedding/foliation @ 60° to core axis. - overall 5% pyrite as narrow beds and stringers. - local minor chalcopyrite. - fine dusting of VG (0.1 mm specks) associated with blue-grey tellurides and pyrite stringers., quartz veins contact at 31.6 @ 55° to core axis.									
			5466 - 31.3 - 31.6: quartz veins, felsic tuff and argillite, 5% pyrite, minor chalcopyrite, minor sphalerite, local minor telluride, few specks of VG.	5466	31.3	31.6	0.3	6675				
			31.6 - 32.45: Graphitic-pyritic argillite, dark grey to black, fine grained, soft tuff and intensely foliated @ 60° to core axis, 10% grey-white to bluey-grey brecciated to contorted 2 mm to 1 cm scale quartz veinlets. - 5% pyrite as medium grained disseminations, clots (fragments), and stringers (beds?) paralleling foliation.									
			31.8 - 32.1: lighter grey (doesn't quite look like argillite) - 2-3% very fine grained disseminated pyrite, contact at 31.8 @ 50° to core axis, contact at 32.1 @ 40° to core axis.									
			32.3 - 32.45: intensely foliated @ 80-90° to core axis, moderate iron carbonate and sericite, 25% bluey-grey quartz veining, 3% medium grained pyrite.									
			5467 - 31.6 - 32.45: Graphitic-Pyritic-Argillite, 5% disseminated to stringer pyrite, 10% disrupted brecciated to deformed quartz veins at approximately 90° to core axis.	5467	31.6	32.45	0.85	155				
			5468 - 32.45 - 32.70: quartz vein, milky white moderately fractured, local minor 2 mm to 5 m sub-angular, hard, white crystals (phenocrysts), quartz?, 5% 1 to 3 mm scale weakly contorted folded pyrite stringers predominantly at 60 to 70° to core axis. - one 2 cm wide section in middle of quartz vein contains 5% wirey-anhedral disseminations of bluey-grey telluride (same habit as gold), minor fine grained wirey specks of VG up to 0.3 mm in size intimately associated with tellurides. - gold and tellurides are confined to this one 2 to 3 cm wide section within quartz vein. Note: best looking gold - telluride mineralization seen to date, sharp contact @ 52.70 @ 65° to core axis.	5468	32.45	32.70	0.25	216,846				
			5469 - 32.7 - 34.25: interbedded graphitic argillite and intermediate ash tuff. - black to grey, very fine grained so felsic tuff (argillite) to hard (ash tuff) and intensely bedded and foliated, orientation of bedding and foliation @ 60° to core axis. - bedding on a 3 mm to 20 cm scale with sharp conformable to locally weakly irregular contacts. - local moderate iron carbonate as narrow stringer paralleling fabric. - overall minor bluey-grey quartz veinlets paralleling foliation. - overall 2% pyrite as fine grained disseminations, 1 to 3 mm scale stringers paralleling foliation and occasionally as narrow crosscutting stringers.	5469	32.70	34.25	1.55	249				

Meterage From	Meterage To	Rock Type	Description (colour, grain size, texture, minerals alteration, etc.)	Sample #	From	To	Length	Au ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm
			- local moderate pyrrhotite associated with pyrite stringers. - sharp contact at 34.25 @ 60° to core axis.									
			5470 - 34.25 - 35.0: Felsic Ash Tuff (sill?) - light greenish-grey, fine grained very hard with very weak hint of foliation @ 60° to core axis, very slight hint of 5 mm scale quartz fragments, quartz-rich (silicified?), very minor 1 mm scale pyrite stringers, sharp contact at 35.0 @ 45° to core axis.	5470	34.25	35.0	0.75	122				
			35.0 - 37.1: interbedded lean pyrite iron formation and ash tuff, light to dark grey, fine grained, locally hard to soft tuff and intensely foliated and bedded @ 40° to locally 75° to core axis. - bedding/banding on a 2 mm to 10 cm scale. - local moderately deformed folded to brecciated over 10 cm. - overall 10% grey to bluish-grey, quartz veinlets predominantly concentrated within upper half of section. - overall 10% fine grained to medium grained disseminated to banded pyrite predominantly concentrated within upper ½ of section. - contact at 37.1 @ 55° to core axis. Note: unit could be broken down further.									
			35.0 - 35.65: banded iron formation with quartz veining. 35.65 - 37.1: ash tuff with minor pyritic beds, contact between sub-units marked by 15 cm of quartz injected brecciation.	5471	35.0	35.65	0.65	6568				
			3471 - 35.0 - 35.65: banded sulphide iron formation. - well banded and foliated. - 20% white-grey to bluey-grey 2 mm to 2 cm scale quartz veinlets, some look like cherty beds. - 20% 1 mm to 1 cm scale pyrite beds/bands.									
			3472 - 35.65 -36.6: Ash Tuff (Intermediate) - grey to greenish-grey, very fine grained, hard and intensely bedded and foliated @ 50° to core axis. - bedding on a 1 mm to 10 cm scale. - minor bedded to crosscutting stringer pyrite. - minor grey to blueish-grey quartz veinlets and stringers. - from 35.65 - 35.8 brecciated and quartz injected. - no sharp contact at 36.6	5472	35.65	36.6	0.95	54				
			5462 - 36.6 - 38.1: 30% intermediate tuff and 70% pillowed mafic volcanic, 3% quartz-calcite veinlets, local minor pyrite.	5462	36.6	38.1	1.5	<5				

Meterage From	Meterage To	Rock Type	Description (colour, grain size, texture, minerals alteration, etc.)	Sample #	From	To	Length	Au ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm
37.1	42.4	Mafic Volcanic (Pillowed to Pillow Breccia)	Dark greenish-grey, fine grained, very so felsic tuff to moderately sofelsic tuff, and locally foliated to brecciated. - 5% erratic 1 mm to 3 cm scale white quartz calcite stingers and veinlets, strong matrix calcite. - very minor grey white quartz veining, moderate to locally strong chlorite. - overall minor fine grained - medium grained disseminated pyrite. - local minor stringer pyrrhotite. Note: texturally very heterogeneous foliated mafic flows and brecciated quartz-carbonate sections (pillow breccia). - locally moderately foliated @ 55° to core axis. - alternate foliated pillows and brecciated inter-pillow sediments and hyaloclastite with intense quartz-carbonate interfragment cement. 40.7 - 41.3: porphyritic section, 10% 2 mm scale round quartz-calcite spots set in fine grained groundmass. 41.5 - 42.4: slightly lighter greenish-grey, hard and massive intermediate (mafic) flow. - minor grey-white quartz-calcite stringers. - trace fine grained disseminated pyrite. - weak chlorite. Note: possibly separate more massive and slightly more felsic flow. 42.4 - END OF HOLE.									

The Northair Group

DIAMOND DRILL LOG

HOLE NO.: E-98-09	Collar Elevation:	Azimuth:	Total Meterage:	Dip of Hole at:	Drill Hole Location:	Location:	Page No.:
Drilling Co.: Northwest Geophysics	0.0	300°	79.3	Collar -70°	49+90.5N, 0+57W	Upper Manitou (Goldrock)	1

Date Hole Started:	Date Hole Completed:	Date Logged:	Logged By:	Core Stored At:	Property Name:	Core Size:
April 24, 1998	April 24, 1998		Krista Nelson	MNDM Drill Core Library Kenora	Elora	BQ thin wall

Exploration Co., Owner or Optionee:	Date Submitted:	Submitted by: (Signature)	Claim No.
NEWHAWK GOLD MINES LTD.		Krista Nelson	HP 301

Meterage From	Meterage To	Rock Type	Description (colour, grain size, texture.)	Alteration Sil	Alteration Chl	Alteration Ser	Alteration Carb	% Py	% Cp	% Po			Sample #	From	To	Length	Au ppb	Au check
0.0	2.15		Overburden															
2.15	23.9	GMV	Glomeroporphyritic Mafic Volcanic Dark green, fine to medium grained (grading into each other). Matrix weakly calcareous. Anhedral to subhedral feldspar crystals and "gloms." 2.15 - 3.05: Zone of strong (10%) anastomosing and irregular carbonate ± quartz and mafic material stringers and patches which look almost brecciated in parts, fine grained. 3.05 - 3.95: dark grey mafic dike with sharp contacts at 26° to core axis, fine grained. 3.95 - 4.4: as per 2.15 - 3.05. 4.4 - 12.25: typical glomeroporphyritic mafic volcanic. 2% feldspar crystals and gloms ranging from 0.2 - 1.5 cm and average <0.5 cm. 1 large glom at 6.2 is 7 cm long. No real grading but most of the >0.5 cm gloms are from 3.05 - 9 with 1% <0.5 cm gloms from 9 to the end. Fine to medium grained grade into each other. 1% carbonate ± quartz stringers randomly oriented. 1% 2-3 mm patches of very fine pyrrhotite ± chalcopyrite and small blebs in quartz stringers. 11.5 - 11.8: 5% irregular carbonate - quartz stockwork zone. 12.25 - 20.75: more disrupted zone from fine grained to patchy coarse grained. Gloms are more mafic and broken by fracturing. Some contacts (between grain sizes) are sharp, eg. at 12.25, contact at 35° to core axis. More irregular anastomosing, stockwork quartz (white and grey) and carbonate. Gloms are larger, average 1 cm and ranging up to 3 cm. From 15.7 - 19.1; gloms have yellowish glassy patches. Trace pyrrhotite and chalcopyrite patches. - another sharp contact at 18.1 at 80° to core axis, between coarse grained uphole and fine grained down hole At 19.1: grades into leopard rock with generally <.5 cm gloms and trace mafic clast. Sharp contact at 20.75 with underlying fine grained; marked by carbonate stringer. 20.75 - 23.9: as per 9-12.25 (ie. 1%, <0.5 cm gloms). No grading.						tr	tr								
									tr	tr								

Meterage From	Meterage To	Rock Type	Description (colour, grain size, texture.)	Alteration Sil	Alteration Chl	Alteration Ser	Alteration Carb	% Py	% Cp	% Po			Sample #	From	To	Length	Au ppb	Au check
23.9	32.4	CGMV	Coarse Grained Glomeroporphyritic Mafic Volcanic Top contact gradational. Medium to coarse grained leopard rock. Essentially no pyrite except trace on fracture. 23.9 - 27.0: subunit Grades from diffuse mafic mottled into medium grained into distinctly very coarse grained by 27. 1% feldspar gloms <1.5 cm average 3-6 cm. Contact at carbonate-quartz vein? 27.0 - 32.4 subunit Grades back down to medium grained porphyritic by 29.6m. At 29.55 - may be a contact shown by hairline fracture at 37° to core axis. Only trace large (0.5 - 2 cm) feldspar gloms uphole (ie. 27-29.55). None downhole but have <1% soft, mafic clasts, subrounded, 0.5 - 1.5 cm.		S												
32.4	53.65	MMV	Massive Mafic Volcanic Typical medium green, medium grained massive mafic volcanic. May actually be part of the glomeroporphyritic unit uphole as there are <1% anhedral feldspar crystals (no real gloms). All are <1 cm and average 2-4 mm. Matrix is weakly calcareous. Essentially no pyrite in matrix, trace to <1% fine grained on fractures and in quartz stringers (one at 39.2 and one at 41.5 have trace chalcopyrite). Approximately 5% carbonate ± quartz stringers and thick quartz veins (1-3 cm) and patches. Quartz veins at 45-60° to core axis usually. At 32.4: sharp top contact at 45° to core axis between mafic porphyritic uphole and fine grained massive downhole marked by a 1-4 mm quartz-carbonate stringer. 32.4 - 32.95: massive with <1% elongate (with weak foliation?) mafic clasts, soft <1.5 cm long. Weak foliation (alignment of clasts) at 35° to core axis. 32.95 - 33.8 subunit Dark grey to green-grey and beige, bedded sediments (?). Bedding defined by aphanitic to fine and medium grained beds from mm to 15 cm. Weak grading (coarsening downhole) of some beds. Beige beds are hard and cherty looking. <1% pyrite (fine disseminated blebs, medium to coarse crystals up to 3 mm) form discontinuous beds. Pyrrhotite (<1% elongate blebs up to 0.8 cm and small whisps) also follows foliation. Strongest concentration in first 15 cm at top.		S		W	tr-<1 <1	tr	<1			5216	32.95	33.8	0.85	7	

Meterage From	Meterage To	Rock Type	Description (colour, grain size, texture.)	Alteration Sil	Alteration Chl	Alteration Ser	Alteration Carb	% Py	% Cp	% Po	% Sp		Sample #	From	To	Length	Au ppb	Au check
			42.0: mainly from this point down hole start seeing trace diffuse blackish spots with very fine grained pyrrhotite and occasionally chalcopyrite (pyrite?) so fine grained hard to tell if some is magnetic 46.2 -53.65: core becomes gradually grey from about this point (46.2), no more feldspar crystals but trace mafic clasts, medium grained. Weak iron carbonate developing downhole as seen by bleaching with acid. Weak foliation of matrix starts developing around 48 m which carbonate stringers subsequently follow further down hole. At 50.5 it is at 30° to core axis, at 53.6 it is 18° to core axis. At 51.3: start developing, hairline stringers and patches, irregular and anastomosing grey quartz (wallrock often 'bleached" around them).						tr	tr			5217	52.65	53.65	1.0	6	
			Mineralized Zone															
53.65	54.05	CSMV	Carbonate-Sericite Altered Mafic Volcanic(?) Beigey grey felsic looking unit with no distinct fabric. Top contact is gradational and taken where unit becomes beige and where sulphides start. Trace white and grey irregular quartz-carbonate stringers, discontinuous but at approximately 10-30° to core axis. 1% pyrrhotite as small 1-4 mm elongate blebs (sometimes with pyrite or very tiny speck of chalcopyrite) and as tiny whisps throughout matrix. Sericite alteration to matrix? Hard but weakly scratable. Since gradational from last probably an altered mafic (or may be a more felsic unit??)	M		?	S			1			5218	53.65	54.05	0.4	9	18
54.05	55.15	Py-Seds	Bedded Pyritic Sediments (Lean Iron Formation?) Top contact sharp at 10° to core axis which has sphalerite dotted along it. Dark grey overall look to it. Bedding on mm to 5 cm scale. Light beigey aphanitic to fine grained and darker grey, more medium to fine grained sediments (?). Beds are fairly regular but wavy. Weak graphite? 1-2% wavy to boudined greyish to mottled white-grey quartz veins, 0.5 -3 cm wide. 2% pyrite including beds of fine-medium crystals. 2% pyrrhotite mainly fine grained whisps and discontinuous blebs to stringers. <1% sphalerite usually in or bordering quartz, trace chalcopyrite specks usually associated with pyrrhotite. Dark grey caused by fine-grained argillite (?), black chlorite (?), sheen to fractures.					2	tr	2	<1		5219	54.05	55.15	1.1	79	

Meterage From	Meterage To	Rock Type	Description (colour, grain size, texture.)	Alteration Sil	Alteration Chl	Alteration Ser	Alteration Carb	% Py	% Cp	% Po	% Bis. Tel.	% Sp	Sample #	From	To	Length	Au ppb	Au check
55.15	56.0	F	Felsite (A) - (bedded tuff or schisted dike). Pale beige colour with yellowish laminae every 2-5 mm of sericite (pitted and has a sheen) at 18° to core axis. Trace grey 1 mm stringers of quartz, trace elongate 2 mm blebs of green fuchsite (?). Trace fine tiny blebs of pyrite and pyrrhotite (?). Carbonate (iron-bleaches with acid) in matrix. Top contact sharp at 24° to core axis. Possible, rip up clast. At 55.9 contact along a grey, 1 mm quartz vein. Core (from 55.9 to 56.0) is similarly felsic as above but not strongly laminated with sericite. Within this section is a few 0.5 - 5 cm long rip up clasts (parallel to lower contact). Upper unit (55.15 to 55.9) a dike and lower unit (55.9-56.0) a flow (or probably a chill margin)?					tr		tr			5220	55.15	56.0	0.85	14	
56.0	57.45	LIF	Lean Iron Formation (sulphide flooded) Fine to medium grained sediments (?) which have been flooded and bedded with sulphides, approximately 10% pyrite and 10% pyrrhotite. Bedding generally on mm scale with fine to medium grained pyrite and fine grained pyrrhotite (crystals and discontinuous blebs as well). Sulphides give it an overall brownish look. Bedding is generally straight but locally wavy and on occasion crenulated. <1% sphalerite (reddish brown) and trace chalcopyrite associated with the pyrrhotite. 10% grey quartz as veins parallel to bedding and crosscutting (some parts almost look flooded.) Bedding at 18° to core axis.					10	<1	10		tr	5221 5222	56.0 56.65	56.65 57.45	0.65 0.8	793 1331	
57.45	58.8	QV	Quartz Vein Top contact at 27° to core axis, but is moderately bedded into above unit. White quartz vein, slightly mottled with greyish patches. Approximately 10% fragments, 2-4 mm long, of underlying felsic unit. <1% combined pyrite, pyrrhotite and chalcopyrite (with <1% pyrrhotite in felsic fragments). One speck of bismuth telluride. 58.35 - 58.8: patches and then laminations of underlying felsite (approximately 50%). Approximately 2% pyrrhotite and 1% pyrite discontinuous laminations, whisps and elongate blebs, <1% sphalerite, trace chalcopyrite. Sharp bottom contact at 26° to core axis.	S				<<1 1	tr tr	<<1 2	tr	 <1	5223 5224	57.45 58.35	58.35 58.8	0.9 0.45	1309 3385	
58.8	59.9	F	Felsite (B) Dike? Tuff? No distinct bedding or foliation. Has a greyish-beige colour. Broken up look to it by hairline to 3 mm grey quartz stringers. Anastomosing and irregular but a general orientation of 40° to core axis. They give the core a brecciated look in the last 20 cm. 1% pyrrhotite as fine grained whisps and small blebs. Trace pyrite. Sharp bottom contact at 32° to core axis, quartz-carbonate vein.					tr		1			5225	58.8	59.9	1.1	10	

Meterage From	Meterage To	Rock Type	Description (colour, grain size, texture.)	Alteration Sil	Alteration Chl	Alteration Ser	Alteration Carb	% Py	% Cp	% Po	% Sp	% Bis. Tel.	Sample #	From	To	Length	Au ppb	Au check
59.9	61.6	LIF + F	Lean iron formation and bedded felsite. 59.9 - 60.75 subunit Similar to 56.0 - 57.45 but a better bedded look to the sulphides instead of the flooding and more sediment/felsite laminations. Bedding straight to wavy at 32° to core axis. Sulphides approximately 15% with only 2-3% pyrrhotite. Pyrite, fine to medium grained crystals forming beds. <1% sphalerite (reddish brown). 25% quartz beds/flooding mostly grey, 1 white vein 5 cm wide at 25° to core axis (some has a peachish colour). Bottom contact taken at first bed of felsite at 31° to core axis. Dark look to bottom half due to black argillite (?).					>10		2-3	<1		5226	59.9	60.75	0.85	5297	
			60.75 - 61.6 subunit Unit is bedded (approximately 50%) with felsite (B) similar to 58.8 - 59.9. Approximately 5% sulphides with pyrite ~ pyrrhotite. Mottled and discontinuous bedding of sulphides, grey quartz and black argillite. Sharp bottom contact at 35° to core axis.					2-3		2-3			5227	60.75	61.6	0.85	1122	1091
61.6	62.9	F	Felsite (A) - tuff or schisted dike (?) Weakly bedded or foliated. Fine grained greyish beige, bleaches with acid (iron carbonate). Weakly laminated with sericite (pitted and sheen on surface). Trace green fuchsite (?). Essentially no sulphides. Lamination/foliation at 31° to core axis. Bottom contact sharp but wavy at 18° to core axis, looks like it is sinking into lower unit in some parts, (trace small rip up clasts?)			W	S						5228 5229	61.6 62.2	62.2 62.9	0.6 0.7	86 490	
62.9	63.95	QV	Quartz Vein White with lesser greyish patches. Veined/brecciated with sulphides (laminated for first 2-5 cm of vein). 10% sulphides-pyrite finely flooded to medium crystals; 2-3% pyrrhotite, fine grained, <1% sphalerite (reddish-brown); trace chalcopyrite; speck of bismuth telluride at 63.7 m.	S				10	tr	2-3	<1	tr	5230 5231	62.9 63.4	63.4 63.95	0.5 0.55	13219 23709	
63.95	67.6	LIF	Lean Iron Formation and bedded felsite/sediments All contacts gradational unless specified. 63.95 - 64.8 subunit Lean Iron Formation. 15% sulphides pyrrhotite ~ pyrite. Wavily bedded and laminated at approximately 20° to core axis, trace chalcopyrite and sphalerite. 15% greyish quartz and minor bordering by carbonate combs. General brown colour to core with blackish argillite beds.					7-8	tr	7-8	tr		5232	63.95	64.8	0.85	7974	
			64.8 - 65.45 subunit Sulphides drop to 3% as beds are more sediments then sulphides with pyrite> pyrrhotite. Quartz 5% and generally white instead of grey. Sections of cherty sediments (bedded) with felsite (bedded).					~2		~1			5233	64.8	65.65	0.85	215	
			65.45 - 65.65 subunit As per 63.95-64.8. End of Lean Iron Formation.					7-8	tr	7-8	tr							

Meterage From	Meterage To	Rock Type	Description (colour, grain size, texture.)	Alteration Sil	Alteration Chl	Alteration Ser	Alteration Carb	% Py	% Cp	% Po			Sample #	From	To	Length	Au ppb	Au check
			65.65 - 66.8 subunit As per 64.8 - 65.45 but more massive with less beds. Coarse pyrite up to 3 mm. Upper contact sharp at 30° to core axis. Quartz greyer again. Most sections have light greenish beige felsic look to them and have sericitic whisps/laminations and grey hairline stringers, minor black argillite beds.					~2		~1			5234	65.65	66.8	1.15	34	
			66.8 - 67.6 subunit Distinctly different in that bedding is all straight and regular (not wavy) and now includes black fine grained more mafic material. 1% pyrite in beds, coarse crystals up to 3 mm. Sediment beds aphanitic to fine grained and sometimes cherty.					1					5235	66.8	67.6	0.8	18	
			End of Mineralized Zone															
67.6	72.4	MMV	Massive Mafic Volcanic Dark grey, aphanitic to fine grained, 5% carbonate +/- quartz stringers and blebs (amygdules), a messed up look. <1% pyrite (fine to coarse crystals) patchy and usually associated with the quartz veins/patches. Matrix strongly calcareous and weakly bleaches. Top contact sharp (?) at 22° to core axis and taken where last distinct bed of previous unit ends. 67.6 - 68.3: may be part of preceding section or transition into mafics. Weak bedding on occasion and ends in 10 cm of lamination with pyrite.				S	<1					5236	67.6	68.3	0.7	18	22
72.4	76.4	Bx??	Breccia?? (Two??) Sharp contact at 72.4 at 45° to core axis. 72.4 - 73.5 subunit Not sorted, fragments from <0.5 cm to bomb size, subangular to subrounded (don't look like lapilli) some elongate forming pseudo fabric at 30° to core axis, light brownish and aphanitic, soft sediment? Brecciated by an aphanitic mafic material. Further mottled by carbonate stringers and patches. Approximately 1% pyrrhotite, disseminated and fine grained blebs and patches; <1% pyrite and trace chalcopyrite. 73.5 - 73.9 subunit Less brecciation and more massive (gradational on both ends). 73.9 - 76.4 subunit Fine grained mafics (slightly harder but scratchable) are now the fragments (<0.5 cm to bomb size) angular to subrounded, many elongate forming fabric at 22° to core axis. Matrix is of white quartz and minor carbonate. Pyrite and pyrrhotite are ~2% each within matrix and in fractures and disseminated in mafic fragments, trace chalcopyrite. Sharp bottom contact at 42° to core axis.					<1 2	tr	~1 2			5237 5238 5239	73.9 74.4 75.4	74.4 75.4 76.4	0.5 1.0 1.0	23 21 17	

Meterage From	Meterage To	Rock Type	Description (colour, grain size, texture.)	Alteration Sil	Alteration Chl	Alteration Ser	Alteration Carb	% Py	% Cp	% Po			Sample #	From	To	Length	Au ppb	Au check
76.4	77.75	Sed	Bedded Sediment (Interflow Sediment) Dark grey, aphanitic to fine grained, bedded on mm to 1 cm scale. More massive for first 30 cm and then distinct bedding developed. <1% pyrite and <1% pyrrhotite beds including coarse pyrite to 0.5 cm. Similar to 32.95 to 33.8 m. Last 20 cm beds are pulled apart or they are elongate clasts up to 6 cm long (greenish-grey, aphanitic and soft). Sharp bottom contact at 19° to core axis.					<1		<1								
77.45	79.6	MMV	Massive Mafic Volcanic Dark green, massive, fine grained, trace pyrite.					tr										
			79.6 END OF HOLE.															

The Northair Group

2.18

DIAMOND DRILL LOG

HOLE NO.: E-98-10 Drilling Co.: NORTHWEST GEOPHYSICS		Collar Elevation: 0+00	Azimuth: 300°	Total Meterage: 130.8	Dip of Hole at: Collar -78°				Drill Hole Location: 50+72N, 0+63W	Location: (Goldrock) Upper Manitou	Page No.: 1
Date Hole Started: April 25, 1998	Date Hole Completed: April 26, 1998	Date Logged:	Logged By: Krista Nelson		-78°	97.2			Core Stored At: MNDM Drill Core Library - Kenora	Property Name: ELORA	Core Size: BQ thin wall
					-78°	130.8					
Exploration Co., Owner or Optionee: NEWHAWK GOLD MINE LTD.		Date Submitted:	Submitted by: (Signature) Krista Nelson						Claim No. HP 301		

Meterage From	Meterage To	Rock Type	Description (colour, grain size, texture.)	Alteration Sil	Alteration Chl	Alteration Ser	Alteration Carb	% Py	% Cp	% Po			Sample #	From	To	Length	Au ppb	Au check
0.0	1.25	OB	Overburden															
1.25	19.1	IV	Intermediate Volcanic Brownish beige to light greenish-grey, aphanitic (mostly) to fine grained. Moderately glassy looking. Becomes grey and less brown looking downhole and softer. Not clean looking - highly foliated and probably laminated (i.e. aphanitic to fine grained laminae and many soft, black, mafic or argillitic laminae). Carbonate ± quartz stringers follow foliation and crosscut it as do minor white to grey quartz veins. To about 9, may actually be a bedded sediment with the rest more massive with discrete sections of bedding. Matrix strongly calcareous. <1% pyrite as fine to medium disseminated crystals mainly in the more laminated sections. Bedding/foliation predominantly in the 18-22° range but also up to 30° to core axis. Bottom contact taken where unit is predominantly green to greyish green colour and becomes highly disrupted instead of foliated/laminated.		W		S	<1										

Meterage From	Meterage To	Rock Type	Description (colour, grain size, texture.)	Alteration Sil	Alteration Chl	Alteration Ser	Alteration Carb	% Py	% Cp	% Po			Sample #	From	To	Length	Au ppb	Au check
19.1	38.9	MV	Mafic Volcanic (Possible Flow Top Due to High Disruption) Moderate green to greyish green. Aphanitic to fine grained with lesser patches of medium grained. Unit is highly disrupted, sharply mottled different coloured greens; large patches (5-30 cm) of the opaque greenish beige quartz along with hairline whisps and stockwork patches; brecciated sections of the mafic volcanic with dark grey and the opaque beige quartz; soft black, mafic to argillite irregular patches/beds. Some discontinuous pseudo bedding, irregular to crenulated. Strong disruption/brecciation affects approximately 50% of the unit with the rest weak to moderate. Disruption increases in a general sense downhole. Highly messed up. Some sections have sharp contacts, others gradational. Less than 1% pyrrhotite as fine grained blebs/stringers in the disrupted/bedded portions. Trace disseminated pyrite. To approximately 29: 1% feldspar gloms, 0.3 - 2 cm, no real average, also messed up looking - mafic rich to glassy yellow.		M-S			tr		<1								
38.9	45.85	Bx	Breccia Clasts: brownish-grey aphanitic to fine grained, fairly soft sediment or volcanic and light greyish-beige to greenish beige, hard chert. Not sorted or graded, elongate up to 8:1, subangular to subrounded (probably not lapillis), from <.5 cm to longer than core width. Matrix of a black fine grained mafic/argillitic material and of calcite, but largely of a dark grey quartz; also some white quartz grains, ie. very mottled looking. Highly brecciated sections grade into section of the sediment or volcanic material which are weakly bedded and calcareous, (some fragments are others are not). (43.6 - 44.5 is medium grained and weakly foliated sediment or volcanic?) Top contact is gradational from the above disrupted section and the bottom contact is sharp (at approximately 30° to core axis, wavy) marked by a carbonate stringer and appearance of mafic clasts below. Trace pyrite, fine grained to medium. Elongation of clasts at 30° to core axis. Random sample of the well brecciated part.				S	tr					5310	40.8	41.7	0.9	<5	
45.85	51.1	MLT	Mafic Lapilli Tuff Moderate grey. Matrix roughly grades downhole from fine to medium grained and more foliated (white streaks). Soft, black, mafic, fine grained lapillis make up 5% of the unit; range <0.5 - 15 cm long and are elongate with foliation at 35° to 20° to core axis. The centres of larger clasts have been altered to a yellowy calcareous material. No grading to lapillis but mainly only trace small ones to 49. Matrix strongly calcareous. Trace disseminated pyrite. Bottom contact sharp marked by carbonate stringer at 10° to core axis, slightly wavy (only mafics clasts uphole and feldspar gloms downhole).		M		S	tr					5311	50.5	51.5	1.0	<5	

Meterage From	Meterage To	Rock Type	Description (colour, grain size, texture.)	Alteration Sil	Alteration Chl	Alteration Ser	Alteration Carb	% Py	% Cp	% Po			Sample #	From	To	Length	Au ppb	Au check
51.1	87.7	GMV	Glomeroporphyritic Mafic Volcanic Typical medium green, fine to medium grained (slightly mafic porphyritic) glomeroporphyritic mafic volcanic. 51.1 - 65.3: subunit Fine to medium grained sections grade into each other. 2% feldspar gloms - range from <0.5 cm to 8 cm and average approximately 1 cm; no grading; gloms are well altered - mafic rich or yellow glassy or almost brecciated, edges are not straight, more pitted and diffuse. At 61.6 starts getting more fine grained to aphanitic, feldspar gloms have disappeared by 62.6. To end of section have 1% soft, black, mafic, fine grained clasts elongate up to 4 cm. Sharp bottom contact at 30° to core axis, marked by a 1 mm carbonate stringer (down hole is medium grained again and feldspar crystals appear again; contact at one point waves over a crystal). Minor sections are diffusely mafic coarse grained. Essentially no pyrite, barely a trace of fine grained on fracture. Also gets moderately foliated from 63 down at 25° to core axis. Matrix gets strongly calcareous down hole.		S		W/S	n-tr									
			65.3 - 87.7: subunit Medium green, mainly medium grained but grades into fine grained patches and occasional diffusely coarse grained. Feldspar crystals (anhedral) and gloms approximately 5% of unit from 2 mm to 5 cm average 0.5 to 1.5 cm. Gloms are weakly altered/cracked but not strongly messed up like in previous section. No grading. Matrix is mainly weakly calcareous with patches of strong. <1% pyrite (fine to medium crystals) and trace pyrrhotite on fractures and bordering stringers. 78.0 - 80.7: finer grained with weak foliation at 25° to core axis. No feldspar gloms but 1% mafic clast <3 cm, elongate, soft. Contacts gradational. Clasts slightly diffuse, elongate to round. 85.7: last feldspar glom, grades into a fine grained, aphanitic unit with <1% <1 cm mafic clasts, rounded to slightly elongate.		S		W	<1		tr							
87.7	112.7	MMV	Massive Mafic Volcanic Moderate green, generally medium grained with gradational patches of fine grained. Matrix variably calcareous, strong to weak to strong downhole, approximately with abundance of carbonate ± quartz stringers roughly reflecting this change. 87.7 - 88.7 subunit Interbedded sediments. Becomes better bedded/laminated down hole on mm to 5-10 cm scale. Composed of: grey, fine to medium grained sediments; beigy-aphanitic cherty beds; fine to coarse (up to 3 mm) pyrite crystals (<1%); trace carbonate-quartz veins to 1.5 cm wide. Wavily laminated at 26° to core axis. Top contact obscured by fractured core, bottom sharp at 25° to core axis.					<1					5312	87.7	88.7	1	26	
			88.7 - 96.9 subunit Finer grained volcanic grading into medium grained. Slightly mottled look due to irregular to pseudo stockwork of 3% quartz ± carbonate and black, aphanitic soft mafic/argillic material veins and patches and <1% straight carbonate stringers. <1% scattered feldspar crystals/gloms, <1 cm and average 0.5 cm and often with mafic inclusions. Matrix generally strongly calcareous. Weak foliation at bottom (white streaks) at 40° to core axis. <1% pyrite, fine to medium crystals (up to 3 mm) generally associated with stringers and blebs of quartz or mafic material. Bottom contact		S		S	<1									

Meterage From	Meterage To	Rock Type	Description (colour, grain size, texture.)	Alteration Sil	Alteration Chl	Alteration Ser	Alteration Carb	% Py	% Cp	% Po			Sample #	From	To	Length	Au ppb	Au check
			gradational. 96.9 - 105.0 subunit Typical medium grained unit. Weakly calcareous with <1% carbonate ± quartz stringers, some have grey borders and are irregular. <1% pyrite fine grained, disseminated blebs and crystals up to 3 mm in the volcanics and in fractures/stringers.		S		W	<1										
			105.0 - 105.5 subunit Dike or quartz vein. Moderate grey quartz vein or felsic dyke. Hard - all siliceous. Sharp contact at top at 27° to core axis (slightly wavy). Fine laminations of black chlorite (?) at 29° to core axis. <1% fine to medium grained disseminated pyrite crystals. Sharp but wavy bottom contact at 25° to core axis.	S				<1							–			
			105.5 - 109.5 subunit Same as 96.9-105 but carbonate stringers, (straight and irregular), randomly oriented and crosscutting, 1-4 mm; up to 5%. <1% fine to medium grained disseminated pyrite including 1 clot at 106.65 of coarse grained (up to 3 mm), approximately 2 cm big, in a quartz patch. Matrix strongly calcareous.		S		W	<1										
			109.5 - 112.7 subunit Similar to above but grades downhole into weakly to strongly foliated (possible sharp contact at a carbonate-quartz stringer at 25° to core axis but this may really be apparent). Matrix strongly calcareous. Weak foliation of white streaks/whisp at 35° to core axis. From 110.9, approximately 5%, white to slightly grey quartz veins, 0.2 to 1.5 cm wide; mild striped, bleached look around the stringers; weak $FeC0_3$ as seen by slight bleaching with acid. Last 20 cm has a lighter more felsic or carbonate-sericite altered look to it with hairline greyish, random stringers of quartz (1% pyrite with trace pyrrhotite specks also). Slightly laminated look to it. Top contact may be marked by quartz vein at 58° to core axis. Felsite?		S		W	<1-1		n-tr			5313	112.0	112.5	0.5	27	
			Mineralized Zone															
112.7	112.85	Seds	Laminated Seds Top contact taken where first distinct laminae appear at 57° to core axis, but probably gradational from above unit. Fine grained, quartz rich sediments beige to green laminated with sericitic laminae graded into a well laminated (mm to 0.5 cm scale) wavy, fine grained sediments with 20% quartz-blotchy white quartz veins (flooding? could just be laminated top of underlying quartz vein) with 2% fine to medium crystals.	S		M		2					5314	112.5	112.85	0.35	132	

Meterage From	Meterage To	Rock Type	Description (colour, grain size, texture.)	Alteration Sil	Alteration Chl	Alteration Ser	Alteration Carb	% Py	% Cp	% Po	% Bt	% Sp	Sample #	From	To	Length	Au ppb	Au check
112.85	116.05	QV	Quartz Vein Top contact at 60° to core axis. 112.85 - 114.95 subunit Glassy white quartz vein mottled with lighter grey patches and opaque white blotches. 25% of unit is patchy brown-grey with inclusions (brecciated fragments of brown and grey aphanitic sediments). Anastomosing, discontinuous, wavy to crenulated stringers of: 1) pyrite crystals, fine to medium grained and 2) aphanitic to fine grained, dark grey sulphides. Pyrite is fairly brassy colour. Also, 3% pyrite distributed as fine to medium crystals, <<1% sphalerite as small dots, a speck of Bismuth Telluride at 113.7 and 114.1. From 113.7 down, reddish brown sphalerite increases to 1% and see trace chalcopyrite, and <1% fine grained pyrrhotite bands as well.	S				3	n-tr	<1	tr	<<1-1	5315 5316	112.85 113.7	113.7 114.95	0.85 1.25	673 1021	1117
			114.95 - 116.05 subunit Similar white and lesser grey mottled but without the sulphides and sediments inclusions. More massive with splotches of the white opaque quartz. Slight increase in grey colour in last 50 cm. Bottom contact at 21° to core axis (wavy).										5317 5318	114.95 115.55	115.55 116.05	0.6 0.5	<5 350	
116.05	116.7	Py Sed	Pyritic Sediments (Bedded - Lean Iron Formation/Felsite B) Laminated on mm to bedded on 2 cm scale, aphanitic cherty layers to fine grained sericitic, beige to grey felsic (B) layers. 10% quartz as veining and flooding, a general grey colour to the quartz with some 1-2 mm stringers boudined. Bedding at 43° to core axis, slightly wavy. Approximately 7% pyrite mainly as fine grained beds with lesser medium crystals (5 cm of strong concentration at top); more flooded than discrete beds. Approximately 2% fine grained pyrrhotite in beds and as whisps in the more felsic sediments (some of these felsic sediments look the same as the underlying unit). Bottom contact sharp at 43° to core axis marked by quartz vein.					7		2			5319	116.05	116.7	0.65	1049	
116.7	117.25	F	Felsite (B) Yellowy-grey (but bleaches with acid) to light grey, massive with no distinct foliation or lamination. 1% hairline to 2 mm stringers of grey (bluish) quartz, random and anastomosing (trace crenulated), small patches of similar quartz also. Weakly sericitic and trace clayey patches. Bottom contact gradational. Trace pyrite and pyrrhotite.					tr		tr			5320	116.7	117.25	0.45	7	
117.25	118.05	F + QV	Felsite (B) with Quartz Veins Yellowy-grey. Above felsite becomes 20% quartz veined and flooded (?). Main quartz veins are white mottled grey and lesser stringers and patches are grey. Main quartz veins run parallel to subparallel to core axis. Starts developing a sericite laminae, whispy look down hole and developing fine laminations and small stringers of sulphides. 3-4% pyrite and 1-2% pyrrhotite overall, but increases down hole. Pyrite as fine grained disseminations and laminations and as up to 2mm crystals. Pyrrhotite as fine grained laminae and whisps.					3-4		1-2			5321	117.25	118.05	0.8	387	

Meterage From	Meterage To	Rock Type	Description (colour, grain size, texture.)	Alteration Sil	Alteration Chl	Alteration Ser	Alteration Carb	% Py	% Cp	% Po	% Sp		Sample #	From	To	Length	Au ppb	Au check
118.05	118.75	Contact Zone	At 118.05: above quartz vein unit starts developing contact with underlying Lean Iron Formation. Contact is subparallel to core axis, ie at 118.5 it is 87° to core axis and it runs to 118.75. Sharp contact. At 118.6 Lean Iron Formation laminations at 9° to core axis. Sulphide content variable; each half of the zone is same as the unit above and below the contact.										5322	118.05	118.75	0.7	382	
118.75	120.0	LIF	Lean Iron Formation -strong Very brown-grey look to the whole core. Well laminated/bedded on mm to cm scale (1 cm at thickest- most beds 1-2 mm). Approximately 10% quartz; grey stringers (boudined, 1-3 mm thick) and flooding (?). Approximately 25% sulphides (15% pyrrhotite and 10% pyrite) as mainly fine grained flooding/laminations of both with lesser medium crystals of pyrite. Only trace chalcopyrite and sphalerite. Rest is aphanitic to fine grained sediments from beige - green- grey-brown. At 119.45 sulphides decreased to 10% and see more sediment layers (and felsite b). Bottom contact sharp at 13° to core axis, slightly wavy and marked by a 2 cm white-grey mottled quartz vein (within this unit). Laminations are wavy; at 118.95 at 12° to core axis, at 119.55 at 16° to core axis.					10	tr	15	tr		5323 5324	118.75 119.45	119.45 120.0	0.7 0.55	664 3853	
120.0	121.15	F	Felsite (A)-tuff or dike Massive, fine grained, light beige colour. Laminations/whisps of sericite defining foliation/bedding at 23° to core axis. Sericite pitting and sheen. Bleaches with acid. <1% grey quartz stringers (1-2 mm) generally paralleling foliation. <1% bright apple green, 2-3 mm whisps of fuchsite. Barely a trace of fine grey pyrite. Sharp bottom contact at 22°, slightly wavy and marked by a 3 cm vein (quartz) in next unit.					tr					5326	120.0	121.5	1.15	819	730
121.15	122.45	F	Bedded Felsite (B) Similar felsite to 117.25 - 118.05 (more grey than yellow) and reversed (quartz and sulphide laminations decrease down hole). First 35 cm are quartz veined and well laminated with sulphides at 32° to core axis. Rest of unit is mainly weakly laminated with sulphides (with a 20 cm blotch of flooding) and weak sericitic laminations. Never really becomes the massive felsite (b) in 116.7-117.25. At 122.2 bedding at 18° to core axis. Overall pyrrhotite approximately 5% and pyrite 1-2%; mainly fine grained beds and disseminations throughout felsite with trace medium crystals of pyrite. Generally fine grained.					1-2		5			5327 5328	121.15 121.5	121.5 122.45	0.35 0.95	1140 117	

Meterage From	Meterage To	Rock Type	Description (colour, grain size, texture.)	Alteration Sil	Alteration Chl	Alteration Ser	Alteration Carb	% Py	% Cp	Po	Sp		Sample #	From	To	Length	Au ppb	Au check
122.45	123.2	LIF	Lean Iron Formation Dark striped look. Well bedded/laminated mostly at 1-2 mm scale but up to 0.5 cm scale. Aphanitic quartz and cherty layers to fine grained felsic layers. Sulphides are more discrete laminae than the previous flooding. Overall sulphides of approximately 15% (pyrite approximately 5% and pyrrhotite 10%), trace chalcopyrite, sphalerite. 10% quartz discrete laminae and flooding(?), core is hard and mainly grey. In last 20 cm grey quartz veins bordered by white - peach quartz and are highly boudined and crenulated (medium grained pyrite crystals also more common and beds slightly vuggy). Straight bedding near top at 22° to core axis. Bottom contact taken where laminations become predominantly felsite, at 20° to core axis.					5		10	tr		5329	122.45	123.2	0.75	258	
123.2	125.2	F	Bedded Felsite (B) Greyish beige to light grey, aphanitic to medium grained felsite; occasional beige, aphanitic chert bed (hard) up to 1 cm. Starting to get more green, chloritic laminae. Laminated to massive 10 cm widths. To 123.8 subunit Well laminated. Laminations are straight at 13° to core axis with 5% pyrrhotite especially concentrated into a 15 cm width. Pyrite approximately 1%. 123.8 - 125.2 subunit Laminations drop off and become more diffuse and wavy on a large scale, at 8-15° to core axis. Blotchy as well (beds are discontinuous and abruptly end). Pyrrhotite approximately 3% and pyrite approximately 2% (especially concentrated as medium to fine crystals in last 20 cm). Bottom contact taken where predominantly sediment layers, at 24° to core axis.					1 2		5 3			5330 5331 5332	123.2 123.8 124.5	123.8 124.5 125.2	0.6 0.7 0.7	123 7 20	
125.2	127.5	Seds	Bedded Sediments 2 main sections of well laminated and bedded sediments (at 125.45-125.8 and at 126.65-127.05). First section bedded at 18° to core axis and bottom section (very straight) at 20° to core axis. Laminations (and the whole sections) have a greener look to them than in previous sections of felsite. Laminae are aphanitic (sometimes cherty) to fine grained, green, greenish-beigy, light grey, on 1 mm to 1 cm scale. Bleaches with acid. White medium grained speckles of throughout. The section in between these two laminated sections is diffusely mottled with discontinuous laminae and patches of carbonate. 1% pyrite (up to medium crystals) and 1% pyrrhotite mainly concentrated in laminated sections. 127.05 - 127.45 is another massive unit but without the large amount of mottling. 5 cm laminated section at end is taken to be contact with underlying volcanic (at 21° to core axis) but massive sections below and above may really be gradational. **End of Mineralized Zone**					1		1			5333 5334 5335	125.2 125.8 126.65	125.8 126.65 127.5	0.6 0.85 0.85	7 <5 <5	<5

Meterage From	Meterage To	Rock Type	Description (colour, grain size, texture.)	Alteration Sil	Alteration Chl	Alteration Ser	Alteration Carb	% Py	% Cp	% Po			Sample #	From	To	Length	Au ppb	Au check
127.5	130.76	MV	Mafic Volcanic Moderate greyish-green, medium to fine grained. Weakly foliated at 35° to core axis. Approximately 10% carbonate stringers ± boudined quartz and patches of quartz veins/carbonate stringers up to 8 cm long. <1% pyrrhotite, <1% pyrite. Matrix strongly calcareous. <1% elongate 1-4 mm, carbonate or quartz (grey) with carbonate rims, oval amygdules (?).		S		S	<1		<1			5336 5337	127.5 128.0	128.0 129.3	0.5 1.3	<5 6	
			130.76 END OF HOLE.												-			

CLARK-EVELEIGH CONSULTING

DIAMOND DRILL LOG

2.18

Drilling Co.:	Collar Elevation:	Bearing:	Total Meterage:	Dip of Hole at: -50°	Drill Hole Location:	Location:	Hole No.:	Page No.: 1
NORTHWEST GEOPHYSICS	0+0	315°	94.2	Collar:	56+00N, 3+89.3W	Goldrock Upper Manitou	E-98-11	

Date Hole Started:	Date Hole Completed:	Date Logged:	Logged By:	94.2	-45°	Core Stored At:	Property Name:	Core Size:
April 26, 1998	April 27, 1998	May 4, 1998	Brian Nelson			MNDM - Kenora Drill Core Library	ELORA	BQ-thin wall

Exploration Co., Owner or Optionee:	Date Submitted:	Submitted by: (Signature)	Claim Number:
NEWHAWK GOLD MINES LTD.			HP371

GEOLOGICAL ASSOCIATION OF CANADA
I.G. CLARK
F 6248
FELLOW
ASSOCIATION GÉOLOGIQUE DU CANADA

Meterage From	Meterage To	Rock Type	Description (colour, grain size, texture, minerals, alteration, etc.)	Sample #	From	To	Length	Au ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm
0.0	3.1	Overburden	0.6 metres of (2.5 to 3.1) - fragments and small <5 cm scale pieces of drill core, no foreign lithologies.									
3.1	10.3	Mafic Volcanic	Greyish-green to greenish grey, fine grained to very locally finer medium grained, soft and massive to locally well foliated @ 40° to core axis. - overall 3% 1 mm to 2 cm scale erratic white quartz-calcite veinlets and stringers. - moderate to locally strong chlorite on fractures. - trace to minor fine grained to coarse grained disseminated cubic pyrite. Note: rock looks a little more coarse grained and foliated as approach 10.3m - diffuse contact at 10.3 marked by cm scale quartz veining. 5473 - 7.0 - 8.5: mafic volcanic, 5% erratic white quartz-calcite stringers and veinlets, minor 0.5 to 1 cm grey-white quartz veinlets at 45° to core axis. - quartz calcite stringers crosscut grey quartz veins. - moderate chlorite. - trace to local minor fine grained to coarse grained, disseminated pyrite.	5473	7.0	8.5	1.5	<5				
10.3	15.3	Felsic Tuff (~Quartz-Sericite Schist)	Light grey to light greenish-grey, fine grained to medium grained, soft, well foliated @ 45° to core axis, foliation defined by lighter grey and medium grey alternating 1 to 5 mm scale bands and grey quartz stringers paralleling the compositional banding. - local flattened creamy-white feldspar crystals also help define foliation. - strong light green-grey sericite, quite strong grey silicification (in form of quartz stringers and veinlets, and very weak iron carbonate.									

Meterage From	Meterage To	Rock Type	Description (colour, grain size, texture, minerals alteration, etc.)	Sample #	From	To	Length	Au ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm
			- overall trace disseminated pyrite. - overall 3-5% discrete quartz stringers and veinlets. - local minor 1 to 3 cm scale white quartz veinlets parallel to foliation to 90° to core axis. - local minor limonite staining on fractures @ 13.0 5 cm. - upper and lower contacts diffuse (gradational) marked by darker (green) increased chlorite. 5474 - 13.1 - 14.6: quartz-sericite schist, strong sericite, 3-5% grey conformable quartz stringers, minor white quartz veinlets, minor fine grained to medium grained disseminated pyrite, local very minor iron carbonate.	5474	13.1	14.6	1.5	<5				
15.3	22.7	Interbedded Intermediate and Mafic Tuff	Grey to greenish grey, very fine grained to finer medium grained, soft moderately to intensely foliated @ 45° to core axis. - strong sericite, weak to locally strong chlorite. - overall 3% grey-blue to white quartz stringers and veinlets. - trace to locally minor disseminated pyrite. - moderate to strong matrix calcite. 15.3 - 17.85: intermediate tuff to mafic tuff, 7% bluey-grey quartz stringers and veinlets, two irregular 3 cm to 5 cm scale white quartz veins containing mafic inclusions, local minor pyrite and local very minor chalcopyrite. Moderate chlorite, moderate sericite, local strong wispy iron carbonate. 5475 - 14.6 - 16.1: Intermediate tuff to mafic tuff, well foliated, 2% grey quartz stringers and veinlets, trace disseminated pyrite. 5476 - 16.1 - 17.1: Intermediate tuff to mafic tuff, moderate chlorite, moderate sericite, strong iron carbonate, 7% erratic bluey-grey quartz stringers and 5% erratic white 3 cm to 5 cm scale quartz veins, local minor pyrite, local very minor chalcopyrite. 17.85 - 22.7: intermediate to locally mafic ash tuff, local very slight hint of flattened lapilli, grey to greenish-grey fine grained to locally medium grained, soft and intensely foliated @ 45° to core axis, overall minor white quartz veining locally, 5% cm scale quartz veining at 55° to core axis, overall trace pyrite. At 21.6 - very sharp bedding contact @ 45° to core axis, contact between to fine grained ash beds, uphole bed slightly coarser grained and slightly more leucocratic. 5477 - 17.1 - 18.1: 3 to 5% bluey-grey quartz veinlets oriented at 50° to core axis, trace very fine grained pyrite. 5478 - 18.1 - 19.1: 3-5% white quartz veinlets oriented @ 50° to core axis.	5475 5476 5477 5478	14.6 16.1 17.1 18.1	16.1 17.1 18.1 19.1	1.5 1.0 1.0 1.0	<5 <5 <5 <5				

Meterage From	Meterage To	Rock Type	Description (colour, grain size, texture, minerals alteration, etc.)	Sample #	From	To	Length	Au ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm
22.7	52.1	Mafic Flow	Green to greyish-green, very fine grained to locally medium grained, moderately soft to very soft and predominantly well foliated @ 55° to core axis. - cut by 3% erratic white quartz-calcite stringers and veinlets. - overall very strong calcite. - overall strong chlorite. - overall trace to locally minor pyrite. - locally unit contains some medium grained massive looking sections on a 1 to 2 metre scale, mafic phyric coarser grained flow centers/sills?, contain 50% 2 mm scale sub-rounded mafic crystals (chloritized amphiboles?), these sections do not contain either the strong stringer or matrix calcite. - local hint of quartz calcite amygdules over 10 to 30 cm. - local interflow sediments, brecciated, intense calcite cementing, intensely foliated with 1 to 5% 3 to 5 mm scale bedded pyrite. - sharp contact @ 52.1 @ 30° to core axis. 22.7 - 24.8: Mafic Flow, massive, medium grained with spotted texture, (Krista's Leopard Rock?), mafic phyric. 26.0 - 28.1: Mafic Flow (centre), massive, medium grained, mafic phyric. 5479 - 29.2 - 29.7: Interflow sediment, 20% white 1 to 3 mm quartz-calcite stringers, 3% fine grained to medium grained bedded pyrite, bedding @ 45° to core axis. 23.9 - 35.9: local epidote associated with quartz stringers. 5480 - 38.3 - 38.8: Interflow sediment, 25% erratic white quartz-calcite stringers and veins, 1-2% banded pyrite. 39.0 - 41.1: Flow centre (sill/dyke?), medium green, medium grained, spotted with 50% sub-rounded 2 mm scale dark green mafic phenocrysts, set in a finer grained lighter greenish-grey groundmass, upper and lower contacts foliated and diffuse over 5 to 10 cm. 41.1 - 41.4 - Interfow sediment?, 5% 1 to 3% cm scale grey-white quartz-calcite veinlets, strong chlorite. 41.7 - 41.8: 40% erratic white to grey quartz-carbonate veining. 41.8 - 45.4: medium grained mafic flow centre?, 30-40% 1 to 2 mm scale rounded to locally flattened chloritized mafic crystals, minor quartz-calcite stringers and veinlets. At 43.3 - 10 cm wide quartz-calcite vein @ 35° to core axis, 10% mafic inclusions, moderate epidote, trace disseminated pyrite. 45.4 - 48.5: fine grained, mafic volcanic peppered with 20% tiny 0.5 mm scale white feldspar crystals.	5479	29.2	29.7	0.5	15				
				5480	38.3	38.8	0.5	677				

Meterage From	Meterage To	Rock Type	Description (colour, grain size, texture, minerals alteration, etc.)	Sample #	From	To	Length	Au ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm
			5481 - 46.9 - 47.6: 15% 3 cm to 7 cm scale white quartz-calcite veins containing brecciated grey quartz fragments and minor host inclusions and 5% narrow 1 to 3 mm scale bluey-grey quartz-carbonate stringers at high angles to core axis, *moderate to strong chlorite, trace pyrite.* 48.5 - 52.1: very fine grained to finer medium grained mafic volcanic, two glomeroporphyritic feldspar phenos noted, one - 5 mm and on 1.5 cm in size, gradational fining of unit downhole, local chlorite-calcite stringers also increase downhole, possibly brecciated chert beds @ 51.0m, flattened amygdules/porphyritic feldspar crytsals, up to 20% in last ½ metre of unit.	5481	46.9	47.6	0.7	6				
			5482 - 50.6 - 52.1: mafic volcanics very fine grained, strong chlorite, 3% bluey-grey quartz stringers, local possibly brecciated chert beds, local minor medium grained disseminated pyrite. 51.5 - 52.1: 10% flattened 5 mm to 3 cm scale amygdules/feldspar phenocrysts, locally containing disseminated pyrite (think they're the latter), concentration of amygdules/phenocrysts increases downhole to lower contact, well foliated @ 35° to core axis.	5482	50.6	52.1	1.5	<5				
52.1	54.4	Semi-Massive to Massive Sulphides (Induced Polarization Conductors) (Sulphide Iron Formation)	Semi-massive sulphide beds (pyrite and pyrrhotite) on a 20 cm to 50 cm scale, brecciated chert-pyrite beds and one 30 cm chloritized mafic volcanic flow/large clast? - overall 30% brecciated grey beds and fragments plus white-grey quartz veinlets, stringers and fragments, 25% pyrite and pyrrhotite (ratio 5:1?) .15% mafic volcanic, xenoliths and fragments, and 30% fine grained white calcite matrix cement. - pyrrhotite rich (quite magnetic) near top of section and pyrite rich as more down-section (not magnetic to very weakly magnetic). - generally texture is brecciated to an intensely deformed, relict bedded texture, remnant bedding/foliation @ 40° to core axis. - sharp bedding contact @ 52.1 @ 35° to core axis. - sharp bedding contact @ 54.4 @ 35° to core axis. 5483 - 52.1 - 52.5: semi-massive sulphide bed, brassy, fine grained and brecciated composed of 30% pyrite and pyrrhotite and 30% angular chert, mafic volcanic and quartz vein fragments set in very fine grained calcite rich cement. - fragment size range from 2 mm to 3 cm, larger fragments near contacts. - sharp contact at 52.5 @ 35° to core axis. 5484 - 52.5 - 52.8: mafic flow/bed/xenoliths, dark green, very fine grained, massive, strong chlorite, minor mm scale white calcite stringers. - 1% very fine grained disseminated pyrite. - sharp somewhat irregular contact @ 35-40° to core axis.	5483 5484	52.1 52.5	52.5 53.3	0.4 0.5	7 7				

Meterage From	Meterage To	Rock Type	Description (colour, grain size, texture, minerals alteration, etc.)	Sample #	From	To	Length	Au ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm
			5485 - 52.8 - 53.3: brecciated semi-massive sulphides , very similar to section 52.1 - 52.5 except not magnetic (very minor or no pyrrhotite) and less mafic volcanics fragments.	5485	52.8	53.3	0.5	12				
			5486 - 53.3 - 54.2: brecciated to remnant bedded chert-pyrite iron formation, fine grained, alternate brassy to grey and soft to hard and well foliated/remnant and bedded @ 40° to core axis. - upper 30 cm intensely brecciated and composed of 25% blotchy/clotting pyrite, 50% subrounded to angular chert and quartz vein fragments and minor mafic volcanic fragments set in fine grained calcite rich cement. - one 3 to 4 cm scale fragment at 53.2 exhibits very distinct 3 mm to 5mm scale chert and intermediate beds with minor pyrite. Note: coincidence or not remnant foliation in brecciated beds and fragment at same orientation (must be coincidence?). - lower 70 cm still weakly to moderately brecciated but more of a bedded texture, composed of 15-20% 2 mm to 1 cm scale pyrite beds 50% chert beds plus conformable quartz veinlets and minor flattened mafic volcanic fragments set in fine grained calcite rich cement. - sharp contact at 54.2 @ 40° to core axis.	5486	53.3	54.2	0.9	7				
			5487 - 54.2 - 54.4: massive pyrite bed, brassy brownish, fine grained, massive and soft. - composed of 75% pyrite, 10% mafic inclusions near contacts and 15% calcite rich cement. - sharp but somewhat irregular contact at 54.4 @ 40° to core axis.	5487	54.2	54.4	0.2	45				
54.4	58.6	Mafic Tuff/Intermediate Tuff	Greenish-grey, very fine grained, soft and well foliated @ 30° to core axis. - locally contains sub-rounded bluey-grey chert (fragments?) on a 1 cm to 5 cm scale with associated medium grained to coarse grained pyrite. - 10% 1 mm to 5 cm scale calcite rich stringers (beds) containing minor to 70% medium grained to coarse grained brassy pyrite paralleling foliation @ 30° to core axis. - strong stringer calcite, moderate matrix calcite. - unit appears to become less mafic and more intermediate downhole through section. - overall 3% pyrite.									
			5488 - 54.4 - 55.9: mafic volcanic, 7% rounded bluey-grey chert clasts, 10% calcite stringers/beds contains medium to coarse grained pyrite, overall 5% pyrite.	5488	54.4	55.9	1.5	<5				
			5489 - 55.9 - 57.2: mafic volcanic, minor rounded bluey-grey chert clasts, 5-7% calcite stringers/beds, 1-2% pyrite.	5489	55.9	57.2	1.3	<5				

Meterage From	Meterage To	Rock Type	Description (colour, grain size, texture, minerals alteration, etc.)	Sample #	From	To	Length	Au ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm
			5490 - 57.2 - 58.6: mafic volcanics, no chert clasts, 10-15% calcite veinlets and veins and associated pyrite, over <1% pyrite.	5490	57.2	58.6	1.4	<5				
58.6	68.7	Mafic Volcanic/ Intermediate Volcanic	Greenish-grey, very fine grained, soft and moderately to intensely foliated @ 30° to core axis. - cut by 5 to 8% erratic white 1 mm to 10 cm scale quartz-calcite stringers, strong matrix calcite. - moderate to locally strong chlorite, local moderate sericite. - quartz-calcite veinlets both conformable and crosscutting. - local 1 cm to ½m grey-white quartz veinlets and veins. - overall trace to locally minor disseminated pyrite. - local very minor pyrrhotite and chalcopyrite. 61.7 - 62.2: white-grey quartz vein containing 35% chlorite altered mafic inclusions, local very minor pyrite, pyrrhotite and chalcopyrite.									
			5491 - 60.7 - 61.7: mafic volcanic, 10% bluey grey quartz stringers @ 30° to core axis, one 8 cm white quartz-calcite veinlet, minor fine grained disseminated pyrite.	5491	60.7	61.7	1.0	6				
			5492 - 61.7 - 62.2: quartz vein, white to slightly grey vein containing 35% chloritized volcanic inclusions, crude foliation within vein defined by flattened mafic inclusions @ 50° to core axis, local minor pyrite, minor pyrrhotite, minor chalcopyrite, diffuse contact at 61.7 @ 30° to core axis, sharp contact at 62.2 @ 50° to core axis.	5492	61.7	62.2	0.5	17				
			5493 - 62.2 - 64.2: mafic volcanic, 10% erratic white quartz-calcite stringers and veinlets, trace fine grained disseminated pyrite.	5493	62.2	64.2	2.0	6				
68.7	74.9	Diabase Dyke	Dark grey to almost black, fine grained, very hard and massive, cut by minor erratic mm scale stringers commonly with narrow bleached alteration haloes, moderately magnetic, glassy aphanitic chill margins extend approximately 25 cm from upper and lower contacts into dyke, wavy contact at 68.7 at low angle to core axis (10-30°), sharp contact at 74.9 @ 30° to the core axis.									

Meterage From	Meterage To	Rock Type	Description (colour, grain size, texture, minerals alteration, etc.)	Sample #	From	To	Length	Au ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm
74.9	76.85	Intermediate Ash Tuff	Dark to light grey, very fine grained to medium grained, quite soft and moderately to well foliated to banded @ 45° to 50° to core axis. - unit becomes less mafic looking and more felsic downhole through section. - strong calcite, moderate sericite, moderate chlorite. - unit could be broken down into 2 sub-units 1) 74.9 - 76.4: medium grained, more massive ash tuff and 2) 76.4 - 76.85: finely laminated and foliated @ 45-50° to core axis, intermediate ash tuff. - laminated on a 1 to 5 mm scale. - diffuse contact at 76.85. - trace fine grained disseminated pyrite.									
76.85	77.3	Contact Zone	Locally bleached, very fine grained, hard mottled and brecciated cut by minor 1 to 3 mm scale quartz-calcite stringers. - can't put finger on contact, looks like downhole diabase has absorbed and/or forked around host ash tuff beds. - local minor disseminated pyrite. 5494 - 76.4 - 77.3: intermediate/felsic ash tuff, well laminated and dyke, tuff contact zone. - minor quartz calcite stringers. - local minor disseminated pyrite.	5494	76.4	77.3	0.9	28				
77.3	79.7	Diabase Dyke	Dark grey to almost black, fine grained, very hard and massive, moderately magnetic. - trace fine grained disseminated pyrite to locally minor medium grained disseminated pyrite. - very weak calcite stringers. - upper and lower contacts marked by distinct aphanitic chill margins. - actual meterage of upper contact questionable marked by contact zone. - contact at 79.7 somewhat wavy and at a low angle approximately 25° to the core axis.									
79.7	83.4	Intermediate Ash/Lapilli? Tuff	Light grey to greenish-grey, fine grained, soft with a distinct foliation defined by alternate light grey and darker brownish grey 5 mm to 1 cm scale bands (flattened) fragments?, foliation @ 35° to 40° to core axis. - composed of 80% light to medium grey bands (ash beds) some possibly flattened lapilli fragments and 20% interbed/fragment calcite rich blotches and veinlets. - very minor erratic 1 to 2 mm scale white calcite stringers. - local minor fragmented quartz pods. - trace fine grained disseminated pyrite.									

Meterage From	Meterage To	Rock Type	Description (colour, grain size, texture, minerals alteration, etc.)	Sample #	From	To	Length	Au ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm
			- local minor iron carbonate, local moderate chlorite and sericite Comment: definitely has a weakly contorted banded appearance, likely fine bedding but also hint of lapilli fragments and local hint of brecciation. 5495 - 80.5 - 82.0: ash/lapilli tuff, 80% beds and fragments?, 20% quartz-calcite veinlet, very minor quartz calcite stringers, trace fine grained disseminated pyrite.	5495	80.5	82.0	1.5	<5				
83.4	90.5	Intermediate Ash Tuff	Grey, fine grained to finer medium grained, moderately hard and massive to weakly foliated @ 45° to core axis. - strong matrix calcite. - 1-2% 1 mm to 3 cm scale erratic quartz-calcite stringers and veinlets. - very minor bluey-grey quartz veinlets. - minor fine grained disseminated to medium grained bleby pyrite. Note: nothing to say either tuff or flow, best guess ash tuff? 5496 - 85.0 - 86.5: ash tuff, strong matrix calcite, minor white quartz-calcite stringers and veinlets, local minor bleby pyrite.	5496	85.0	86.5	1.5	<5				
90.5	92.2	Felsic Lapilli Tuff	Light to medium grey, fine grained to very fine grained, locally very hard felsic lapilli to soft calcite-chlorite rich inter-fragment ash foliation defined by preferred dimensional orientation of fragments @ 40° to core axis. - most of the grey to creamy-grey felsic fragments are flattened (ration 3 to 5:1) but a few as sub-rounded to angular. - most lapilli appear to be altered (bleached) with no particular preference to fragment margins, centers etc., radom bleaching. - lapilli tuff appears bracketed at top and bottom of unit by very fine grained felsic ash beds. - strong chlorite and calcite, minor bleby pyrite. 90.5 - 90.7: felsic ash tuff. 90.7 - 92.0: felsic lapilli tuff 92.0 - 92.2: felsic ash tuff, bedding @ 40° to core axis. 5497 - 90.5 - 92.0: felsic lapilli tuff and minor ash tuff, strong calcite and strong chlorite, minor bleby pyrite.	5497	90.5	92.0	1.5	<5				

Meterage From	Meterage To	Rock Type	Description (colour, grain size, texture, minerals alteration, etc.)	Sample #	From	To	Length	Au ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm
92.2	94.2	Intermediate Ash Tuff	Very similar to unit 83.4 to 90.5, possible flow? - weakly foliated @ 45° to core axis. - very minor mm scale quartz-calcite stringers. - local minor medium grained bleby pyrite.									
			94.2: END OF HOLE.									

ELORA PROJECT - DRILLING

Proposed Hole	Location	Azimuth	Dip	Length (m)	# Samples	Target	Significant Assay Results (grams gold / metres)
E-98-05	50+72N, 0+63W	300°	-65°	109.4	20	Jubilee Vein NE at 30m vertical	0.83g / 4.3m from 71.1m to 75.4m, including 1.8g / 0.95m from 71.1m to 72.05m
E-98-06	50+29.5N, 0+37.5W	300°	-50°	91.1	16	Jubilee Vein NE at 55m vertical.	3.95g / 5.85m from 69.75m to 75.60m, including 5.75g / 1.95m from 69.75m to 71.70m and 4.23g / 2.70m from 72.90m to 75.60m
E-98-07	50+29.5N, 0+37.5W	300°	-62°	115.5	24	Jubilee Vein NE at 90m vertical.	6.4g / 11.3m from 90.3m to 101.6m including 12.19g / 5.30m from 90.3m to 95.6m with 22.92g / 2.7m from 91.6m to 94.3m and including 2.51g / 2.80m from 98.8m to 101.6m
E-98-08	49+90.5N, 0+57.5W	300°	-50°	42.4	13	Jubilee Vein SW at 25m vertical.	14.04g / 4.35m from 31.30m to 35.65m including 216.85g / 0.25m from 32.45m to 32.70m
E-98-09	49+90.5N, 0+57.5W	300°	-70°	79.3	24	Jubilee Vein SW at 55m vertical.	4.15g / 8.80m from 56.00m to 64.80m including 13.91g / 1.90m from 62.90m to 64.80m
E-98-10	50+72N, 0+63W	300°	-78°	130.8	28	Jubilee Vein SW at 60m vertical	1.66g / 2.05m from 119.45m to 121.50m including 3.8g /0.55m from 119.45m to 120.0m
E-98-11	56+00N, 3+89.3W	300°	-50°	94.2	25	IP Anomaly	0.68g / 0.50m from 38.3m to 38.8m
				Total 662.74	Total 150		

ACCURASSAY LABORATORIES
A DIVISION OF ASSAY LABORATORY SERVICES INC.

1070 LITHIUM DRIVE, UNIT 2
THUNDER BAY, ONTARIO P7B 6G3
PHONE (807) 623-6448
FAX (807) 623-6820

CLARK-EVELEIGH CONSULTING
1000 ALLOY DRIVE
THUNDER BAY, ONTARIO
P7B 6A5

May 7, 1998

Job# 9840258

Pro:Newhawk

SAMPLE # Accurassay	Customer	Gold ppb	Gold Oz/t
120	5492	16	<0.001
121 Check	5492	17	<0.001
122	5493	6	<0.001
123	5494	28	<0.001
124	5495	<5	<0.001
125	5496	<5	<0.001
126	5497	<5	<0.001

E98-11

Certified By: 

ACCURASSAY LABORATORIES
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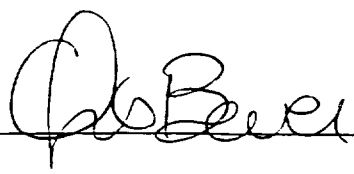
Pro:Newhawk

SAMPLE # Accurassay	Customer	Gold ppb	Gold Oz/t
90	5335	<5	<0.001
91 Check	5335	<5	<0.001
92	5336	<5	<0.001
93	5337	6	<0.001
94	5338	<5	<0.001
95	5339	6	<0.001
96	5340	7	<0.001
97	5341	23	<0.001
98	5458	7	<0.001
99	5473	<5	<0.001
100	5474	<5	<0.001
101 Check	5474	<5	<0.001
102	5475	<5	<0.001
103	5476	<5	<0.001
104	5477	<5	<0.001
105	5478	<5	<0.001
106	5479	15	<0.001
107	5480	677	0.020
108	5481	6	<0.001
109	5482	<5	<0.001
110	5483	7	<0.001
111 Check	5483	7	<0.001
112	5484	<5	<0.001
113	5485	12	<0.001
114	5486	7	<0.001
115	5487	45	0.001
116	5488	<5	<0.001
117	5489	<5	<0.001
118	5490	<5	<0.001
119	5491	6	<0.001

E98-10
E98-06
E98-07
E98-07
E98-11

Certified By: 

ACCURASSAY LABORATORIES
A DIVISION OF ASSAY LABORATORY SERVICES INC.

1070 LITHIUM DRIVE, UNIT 2
THUNDER BAY, ONTARIO P7B 6G3
PHONE (807) 623-6448
FAX (807) 623-6820

CLARK-EVELEIGH CONSULTING
1000 ALLOY DRIVE
THUNDER BAY, ONTARIO
P7B 6A5

May 7, 1998

Job# 9840258

Pro:Newhawk

SAMPLE # Accurassay	Customer	Gold ppb	Gold Oz/t
60	5307	6	<0.001
61 Check	5307	<5	<0.001
62	5308	12	<0.001
63	5309	<5	<0.001
64	5310	<5	<0.001
65	5311	<5	<0.001
66	5312	26	<0.001
67	5313	27	<0.001
68	5314	132	0.004
69	5315	673	0.020
70	5316	1021	0.030
71 Check	5316	1117	0.033
72	5317	<5	<0.001
73	5318	350	0.010
74	5319	1049	0.031
75	5320	7	<0.001
76	5321	387	0.011
77	5322	382	0.011
78	5323	664	0.019
79	5324	3853	0.112
80	5326	819	0.024
81 Check	5326	730	0.021
82	5327	1140	0.033
83	5328	117	0.003
84	5329	258	0.008
85	5330	123	0.004
86	5331	7	<0.001
87	5332	20	<0.001
88	5333	7	<0.001
89	5334	<5	<0.001

E9805

E98-10

Certified By:

ACCURASSAY LABORATORIES
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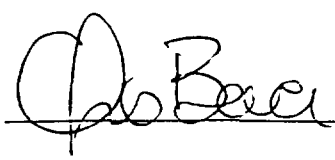
CLARK-EVELEIGH CONSULTING
1000 ALLOY DRIVE
THUNDER BAY, ONTARIO
P7B 6A5

May 7, 1998

Job# 9840258

Pro:Newhawk

SAMPLE # Accurassay	Customer	Gold ppb	Gold Oz/t	
30	5236	18	<0.001	
31 Check	5236	22	<0.001	
32	5237	23	<0.001	E98-09
33	5238	21	<0.001	
34	5239	17	<0.001	
35	5240	6	<0.001	
36	5241	15	<0.001	
37	5242	938	0.027	
38	5243	9	<0.001	
39	5244	<5	<0.001	
40	5245	19	<0.001	E98-05
41 Check	5245	39	0.001	
42	5246	1803	0.053	
43	5247	1875	0.055	
44	5248	363	0.011	
45	5249	62	0.002	
46	5250	268	0.008	
47	5295	7	<0.001	
48	5296	<5	<0.001	E98-07
49	5297	12	<0.001	
50	5298	<5	<0.001	
51 Check	5298	<5	<0.001	E98-07
52	5299	269	0.008	
53	5300	414	0.012	
54	5301	1599	0.047	
55	5302	12	<0.001	
56	5303	581	0.017	E98-05
57	5304	181	0.005	
58	5305	46	0.001	
59	5306	8	<0.001	

Certified By: 

ACCURASSAY LABORATORIES
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CLARK-EVELEIGH CONSULTING
1000 ALLOY DRIVE
THUNDER BAY, ONTARIO
P7B 6A5

May 7, 1998

Job# 9840258

Pro:Newhawk

SAMPLE # Accurassay	Customer	Gold ppb	Gold Oz/t
1	5209	77	0.002
2	5210	5513	0.161
3	5211	80	0.002
4	5212	4366	0.127
5	5213	3265	0.095
6	5214	353	0.010
7	5215	10	<0.001
8	5216	7	<0.001
9	5217	6	<0.001
10	5218	9	<0.001
11 Check	5218	18	<0.001
12	5219	79	0.002
13	5220	14	<0.001
14	5221	793	0.023
15	5222	1331	0.039
16	5223	1309	0.038
17	5224	3385	0.099
18	5225	10	<0.001
19	5226	5297	0.155
20	5227	1122	0.033
21 Check	5227	1091	0.032
22	5228	86	0.002
23	5229	490	0.014
24	5230	13219	0.386
25	5231	23709	0.692
26	5232	7974	0.233
27	5233	215	0.006
28	5234	34	0.001
29	5235	18	<0.001

E98-07

E98-09

Certified By: A.J. Beer

ACCURASSAY LABORATORIES
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CLARK-EVELEIGH CONSULTING
1000 ALLOY DRIVE
THUNDER BAY, ONTARIO
P7B 6A5

Apr 30, 1998

Job# 9840238

Pro:Newhawk

SAMPLE # Accurassay	Customer	Gold ppb	Gold Oz/t
30	5294	17	<0.001
31	Check 5294	19	<0.001
32	5460	<5	<0.001
33	5461	<5	<0.001
34	5463	6	<0.001

E98-05

Certified By:

ACCURASSAY LABORATORIES
A DIVISION OF ASSAY LABORATORY SERVICES INC.

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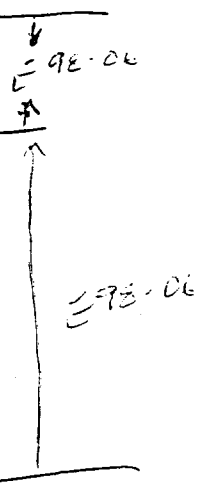
CLARK-EVELEIGH CONSULTING
1000 ALLOY DRIVE
THUNDER BAY, ONTARIO
P7B 6A5

Apr 30, 1998

Job# 9840238

Pro:Newhawk

SAMPLE # Accurassay	Customer		Gold ppb	Gold Oz/t
1		5267	25	<0.001
2		5268	68	0.002
3		5269	30	<0.001
4		5270	74	0.002
5		5271	19	<0.001
6		5272	<5	<0.001
7		5273	<5	<0.001
8		5274	<5	<0.001
9		5275	<5	<0.001
10		5276	274	0.008
11	Check	5276	249	0.007
12		5277	49	0.001
13		5278	6	<0.001
14		5279	<5	<0.001
15		5280	<5	<0.001
16		5281	<5	<0.001
17		5282	50	0.001
18		5283	3654	0.107
19		5284	8795	0.257
20		5285	1943	0.057
21	Check	5285	2478	0.072
22		5286	406	0.012
23		5287	1386	0.040
24		5288	2631	0.077
25		5289	8675	0.253
26		5290	336	0.010
27		5291	81	0.002
28		5292	<5	<0.001
29		5293	<5	<0.001



Certified By:

ACCURASSAY LABORATORIES
A DIVISION OF ASSAY LABORATORY SERVICES INC.

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THUNDER BAY, ONTARIO P7B 6G3
PHONE (807) 623-6448
FAX (807) 623-6820

CLARK-EVELEIGH CONSULTING
1000 ALLOY DRIVE
THUNDER BAY, ONTARIO
P7B 6A5

Apr 29, 1998

Job# 9840228

Pro: Newhawk

SAMPLE # Accurassay	Customer		Gold ppb	Gold Oz/t
30		5251	8	<0.001
31	Check	5251	7	<0.001
32		5252	<5	<0.001
33		5253	<5	<0.001
34		5254	<5	<0.001
35		5255	<5	<0.001
36		5256	<5	<0.001
37		5257	<5	<0.001
38		5258	<5	<0.001
39		5259	<5	<0.001
40		5260	<5	<0.001
41	Check	5260	6	<0.001
42		5261	358	0.010
43		5262	823	0.024
44		5263	<5	<0.001
45		5264	6	<0.001
46		5265	<5	<0.001
47		5266	<5	<0.001
48		5451	980	0.029
49		5452	114	0.003
50		5453	5752	0.168
51	Check	5453	4930	0.144
52		5454	2573	0.075
53		5455	3603	0.105
54		5456	770	0.022
55		5457	2082	0.061
56		5458	No Sample Received	
57		5459	64424	1.879

E-98-07

Certified By:

ACCURASSAY LABORATORIES
A DIVISION OF ASSAY LABORATORY SERVICES INC.

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CLARK-EVELEIGH CONSULTING
1000 ALLOY DRIVE
THUNDER BAY, ONTARIO
P7B 6A5

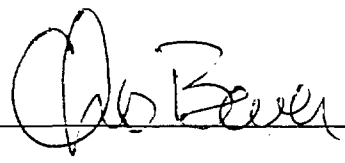
Apr 29, 1998

Job# 9840228

Pro: Newhawk

SAMPLE # Accurassay	Customer	Gold ppb	Gold Oz/t
30	5251	8	<0.001
31 Check	5251	7	<0.001
32	5252	<5	<0.001
33	5253	<5	<0.001
34	5254	<5	<0.001
35	5255	<5	<0.001
36	5256	<5	<0.001
37	5257	<5	<0.001
38	5258	<5	<0.001
39	5259	<5	<0.001
40	5260	<5	<0.001
41 Check	5260	6	<0.001
42	5261	358	0.010
43	5262	823	0.024
44	5263	<5	<0.001
45	5264	6	<0.001
46	5265	<5	<0.001
47	5266	<5	<0.001
48	5451	980	0.029
49	5452	114	0.003
50	5453	5752	0.168
51 Check	5453	4930	0.144
52	5454	2573	0.075
53	5455	3603	0.105
54	5456	770	0.022
55	5457	2082	0.061
56	5458	No Sample Received	
57	5459	64424	1.879

E-98-07

Certified By: 

ACCURASSAY LABORATORIES
A DIVISION OF ASSAY LABORATORY SERVICES INC.

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PHONE (807) 623-6448
FAX (807) 623-6820

CLARK-EVELEIGH CONSULTING
1000 ALLOY DRIVE
THUNDER BAY, ONTARIO
P7B 6A5

May 4, 1998

Job# 9840247

Pro:Newhawk

SAMPLE # Accurassay	Customer	Gold ppb	Gold Oz/t
1	5462	<5	<0.001
2	5464	21	<0.001
3	5465	148	0.004
4	5466	6675	0.195
5	5467	155	0.005
6	5468	216846	6.325
7	5469	249	0.007
8	5470	122	0.004
9	5471	6568	0.192
10	5472	59	0.002
11 Check	5472	54	0.002

E98-08

Certified By: Don Beer

Ontario Ministry of Northern Development and Mines

Declaration of Assessment Work Performed on Mining Land

Mining Act, Subsection 65(2) and 66(3), R.S.O. 1990

Transaction Number (office use)
W9810.00114
Assessment Files Research Imaging

52F07NE2003 2.18765 BOYER LAKE 900

ubsections 65(2) and 66(3) of the Mining Act. Under section 8 of the Mining Act, ssesment work and correspond with the mining land holder. Questions about this orthern Development and Mines, 3rd Floor, 933 Ramsey Lake Road, Sudbury,

Instructions: - For work performed on Crown Lands before **recording** a claim, use form 0240.
- Please type or print in ink.

2.18765

1. Recorded holder(s) (Attach a list if necessary)

Name: Glora Gold Mines Ltd / Newhawk Gold Mines Ltd	Client Number: / 302135
Address: c/o 1000 Alloy Dr. Thunder Bay ON. P7B6A5	Telephone Number: 807-625-9291
	Fax Number: 807-625-9293
Name: Jim Redden / Mike Woitowicz	Client Number: 186315 / 209766
Address: Box 117, Wabigoon ON P0V 2W0	Telephone Number: 807-938-6915
	Fax Number: 807-938-6915

2. Type of work performed: Check (✓) and report on only ONE of the following groups for this declaration.

Geotechnical: prospecting, surveys, assays and work under section 18 (regs) | Physical: drilling stripping, trenching and associated assays | Rehabilitation

	Office Use
Work Type: Diamond Drilling	Commodity
	Total $ Value of Work Claimed: 88,185
Dates Work Performed From: 20 (Day) 04 (Month) 98 (Year) To: 06 (Day) 08 (Month) 98 (Year)	NTS Reference
Global Positioning System Data (if available) — Township/Area: Boyer Lake	Mining Division: Kenora
M or G-Plan Number: G-2572	Resident Geologist District: Kenora

Please remember to:
- obtain a work permit from the Ministry of Natural Resources as required;
- provide proper notice to surface rights holders before starting work;
- complete and attach a Statement of Costs, form 0212;
- provide a map showing contiguous mining lands that are linked for assigning work;
- include two copies of your technical report.

3. Person or companies who prepared the technical report (Attach a list if necessary)

Name: Garry Clark - Clark-Eveleigh Consulting	Telephone Number: 807-625-9291
Address: 1000 Alloy Dr. Thunder Bay.	Fax Number: 807-625-9293
Name	Telephone Number
Address	Fax Number
Name	Telephone Number
Address	Fax Number

RECEIVED
AUG 12 1998
3:05
GEOSCIENCE ASSESSMENT OFFICE

4. Certification by Recorded Holder or Agent

I, J. Garry Clark. (Print Name), do hereby certify that I have personal knowledge of the facts set forth in this Declaration of Assessment Work having caused the work to be performed or witnessed the same during or after its completion and, to the best of my knowledge, the annexed report is true.

Signature of Recorded Holder or Agent			Date: Aug 11/98
Agent's Address: 1000 Alloy Dr. Thunder Bay P7B6A5		Telephone Number: 807-625-9291	Fax Number: 807-625-9293

0241 (03/97)

Deemed Nov 10/98

5. **Work to be recorded and distributed.** Work can only be assigned to claims that are contiguous (adjoining) to the mining land where work was performed, at the time work was performed. A map showing the contiguous link must accompany this form.

W9810.00114

	Mining Claim Number. Or if work was done on other eligible mining land, show in this column the location number indicated on the claim map.	**Number of Claim Units.** For other mining land, list hectares.	**Value of work performed** on this claim or other mining land.	**Value of work applied** to this claim.	**Value of work assigned** to other mining claims.	**Bank.** Value of work to be distributed at a future date
eg	TB 7827	16 ha	$26,825	N/A	$24,000	$2,825
eg	1234567	12	0	$24,000	0	0
eg	1234568	2	$ 8,892	$ 4,000	0	$4,892
1	HP 3011000184	15 ha	75651		20800	54851
2	HW 3711000185	21 ha	12534			12534
3	K 1160890	1		400		
4	K 1160892	2		800		
5	K 1162593	3		1200		
6	K 1162594	4		1600		
7	K 1124847	1		800		
8	K 1104543	1		400		
9	K 740275	1		400		
10	K 851370	1		400		
11	K 1161473	1		400		
12	K 1053000	1		800		
13	K 1053001	1		800		
14	K 1053010	1		800		
15	K 1124842	1		800		
	Column Totals	21	88185			

I, J. Garry Clark, (Print Name) do hereby certify that the above work credits are eligible under subsection 7 (1) of the Assessment Work Regulation 6/96 for assignment to contiguous claims or for application to the claim where the work was done.

Signature of Recorded Holder or Agent Authorized in Writing	Date
	Aug 11/98

6. **Instructions for cutting back credits that are not approved.**

Some of the credits claimed in this declaration may be cut back. Please check (✓) in the boxes below to show how you wish to prioritize the deletion of credits:

☐ 1. Credits are to be cut back from the Bank first, followed by option 2 or 3 or 4 as indicated.

☐ 2. Credits are to be cut back starting with the claims listed last, working backwards; or

☐ 3. Credits are to be cut back equally over all claims listed in this declaration; or

☐ 4. Credits are to be cut back as prioritized on the attached appendix or as follows (describe):

Note: If you have not indicated how your credits are to be deleted, credits will be cut back from the Bank first, followed by option number 2 if necessary.

For Office Use Only

Received Stamp	Deemed Approved Date	Date Notification Sent
	Date Approved	Total Value of Credit Approved
	Approved for Recording by Mining Recorder (Signature)	

2.18765

5. **Work to be recorded and distributed.** Work can only be assigned to claims that are contiguous (adjoining) to the mining land where work was performed, at the time work was performed. A map showing the contiguous link must accompany this form.

W9810.00114

	Mining Claim Number. Or if work was done on other eligible mining land, show in this column the location number indicated on the claim map.	**Number of Claim Units.** For other mining land, list hectares.	**Value of work performed** on this claim or other mining land.	**Value of work applied** to this claim.	**Value of work assigned** to other mining claims.	**Bank.** Value of work to be distributed at a future date
eg	TB 7827	16 ha	$26,825	N/A	$24,000	$2,825
eg	1234567	12	0	$24,000	0	0
eg	1234568	2	$ 8,892	$ 4,000	0	$4,892
1	K 1124843	1		800		
2	K 1124844	1		800		
3	K 1124845	1		800		
4	K 1124846	1		800		
5	K 1104528	1		400		
6	K 1104529	1		400		
7	K 1104530	1		400		
8	K 1104531	1		400		
9	K 1104532	1		400		
10	K 1104533	1		400		
11	K 1104534	1		400		
12	K 1104541	1		400		
13	K 1104543	1		400		
14	K 1085885	1		800		
15	K 1085890	1		400		
	Column Totals	15.				

I, J. Garry Clark (Print Name), do hereby certify that the above work credits are eligible under subsection 7 (1) of the Assessment Work Regulation 6/96 for assignment to contiguous claims or for application to the claim where the work was done.

Signature of Recorded Holder or Agent Authorized in Writing	Date
	Aug 11/98

6. **Instructions for cutting back credits that are not approved.**

Some of the credits claimed in this declaration may be cut back. Please check (✓) in the boxes below to show how you wish to prioritize the deletion of credits:

☐ 1. Credits are to be cut back from the Bank first, followed by option 2 or 3 or 4 as indicated.

☐ 2. Credits are to be cut back starting with the claims listed last, working backwards; or

☐ 3. Credits are to be cut back equally over all claims listed in this declaration; or

☐ 4. Credits are to be cut back as prioritized on the attached appendix or as follows (describe):

Note: If you have not indicated how your credits are to be deleted, credits will be cut back from the Bank first, followed by option number 2 if necessary.

For Office Use Only

Received Stamp	Deemed Approved Date	Date Notification Sent
	Date Approved	Total Value of Credit Approved
	Approved for Recording by Mining Recorder (Signature)	

2.18765

Ontario Ministry of Northern Development and Mines

Statement of Costs for Assessment Credit

Transaction Number (office use): W9810.00114

Personal information collected on this form is obtained under the authority of subsection 6 (1) of the Assessment Work Regulation 6/96. Under section 8 of the Mining Act, this information is a public record. This information will be used to review the assessment work and correspond with the mining land holder. Questions about this collection should be directed to a Provincial Mining Recorder, Ministry of Northern Development and Mines, 3rd Floor, 933 Ramsey Lake Road, Sudbury, Ontario, P3E 6B5.

Work Type	Units of work Depending on the type of work, list the number of hours/days worked, metres of drilling, kilometres of grid line, number of samples, etc.	Cost Per Unit of work	Total Cost
Diamond Drilling	662.74 metres	82.00/m.	54345.00
Logging + Management	21 days (3 workers)	800/day	16,800.00
Supervision	4 days	500/day.	2,000.00
Associated Costs (e.g. supplies, mobilization and demobilization).			
Flights from Vancouver - 2 round trips		3000.00	3000.00
Supplies			600.00
Core racks. (2)			1000.00
Splitter Rental		10/day/21days	210.00
Assays.	150 samples	$15/sample	2250.00
Transportation Costs			
Truck	21 days.	100/day	2100.00
Quad.	21 days.	80/day	1680.00
Food and Lodging Costs			
Acc + Food.	3 people 21 days.	200/day.	4200.00
		Total Value of Assessment Work	88,185.00

Calculations of Filing Discounts:

1. Work filed within two years of performance is claimed at 100% of the above Total Value of Assessment Work.
2. If work is filed after two years and up to five years after performance, it can only be claimed at 50% of the Total Value of Assessment Work. If this situation applies to your claims, use the calculation below:

TOTAL VALUE OF ASSESSMENT WORK x 0.50 = Total $ value of worked claimed.

Note:
- Work older than 5 years is not eligible for credit.
- A recorded holder may be required to verify expenditures claimed in this statement of costs within 45 days of a request for verification and/or correction/clarification. If verification and/or correction/clarification is not made, the Minister may reject all or part of the assessment work submitted.

Certification verifying costs:

I, J. Garry Clark. (please print full name), do hereby certify, that the amounts shown are as accurate as may reasonably be determined and the costs were incurred while conducting assessment work on the lands indicated on the accompanying Declaration of Work form as Agent (recorded holder, agent, or state company position with signing authority) I am authorized to make this certification.

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AUG 12 1998
3.18765
GEOSCIENCE ASSESSMENT OFFICE

Signature: [signature] Date: Aug 11/98

2.18765

Ministry of
Northern Development
and Mines

Ministère du
Développement du Nord
et des Mines

Ontario

Geoscience Assessment Office
933 Ramsey Lake Road
6th Floor
Sudbury, Ontario
P3E 6B5

Telephone: (888) 415-9846
Fax: (877) 670-1555

Visit our website at:
www.gov.on.ca/MNDM/MINES/LANDS/mlsmnpge.htm

December 16, 1998

NEWHAWK GOLD MINES LTD.
SUITE 860-625 HOWE STREET
VANCOUVER, BC
V7P-2H2

Dear Sir or Madam:

Submission Number: 2.18765

		Status
Subject: Transaction Number(s):	W9810.00114	Approval After Notice

We have reviewed your Assessment Work submission with the above noted Transaction Number(s). The attached summary page(s) indicate the results of the review. WE RECOMMEND YOU READ THIS SUMMARY FOR THE DETAILS PERTAINING TO YOUR ASSESSMENT WORK.

If the status for a transaction is a 45 Day Notice, the summary will outline the reasons for the notice, and any steps you can take to remedy deficiencies. The 90-day deemed approval provision, subsection 6(7) of the Assessment Work Regulation, will no longer be in effect for assessment work which has received a 45 Day Notice. Allowable changes to your credit distribution can be made by contacting the Geoscience Assessment Office within this 45 Day period, otherwise assessment credit will be cut back and distributed as outlined in Section #6 of the Declaration of Assessment work form.

Please note any revisions must be submitted in DUPLICATE to the Geoscience Assessment Office, by the response date on the summary.

If you have any questions regarding this correspondence, please contact Bruce Gates by e-mail at bruce.gates@ndm.gov.on.ca or by telephone at (705) 670-5856.

Yours sincerely,

ORIGINAL SIGNED BY
Blair Kite
Supervisor, Geoscience Assessment Office
Mining Lands Section

Correspondence ID: 13181
Copy for: Assessment Library

Work Report Assessment Results

Submission Number: 2.18765

Date Correspondence Sent: December 16, 1998 **Assessor:** Bruce Gates

Transaction Number	First Claim Number	Township(s) / Area(s)	Status	Approval Date
W9810.00114	HP301	BOYER LAKE	Approval After Notice	December 13, 1998

Section:
16 Drilling PDRILL

The 45 days outlined in the Notice dated October 29, 1998 have passed.

Assessment work credit has been approved as outlined on the attached Distribution of Assessment Work Credit sheet.

Correspondence to:

Resident Geologist
Kenora, ON

Assessment Files Library
Sudbury, ON

Recorded Holder(s) and/or Agent(s):

J.Garry Clark
THUNDER BAY, ONTARIO

NEWHAWK GOLD MINES LTD.
VANCOUVER, BC

JAMES WILLIAM REDDEN
WABIGOON, Ontario

MIKE WOITOWICZ
DRYDEN, ONTARIO

Correspondence ID: 13181

Distribution of Assessment Work Credit

The following credit distribution reflects the value of assessment work performed on the mining land(s).

Date: December 16, 1998

Submission Number: 2.18765

Transaction Number: W9810.00114

Claim Number	Value Of Work Performed
HP301	65,115.00
HW371	10,790.00
Total: $	75,905.00

Correspondence ID: 13181

TRIM LINE

Turtlepond Lake - G-2595

92°45' 92°30' 49°30' 49°22'30"

Harper Lake - G-2584

Kawashegamuk Lake - G-2585

Meggisi Lake - G-2688

2. 18765 PDRILL

1209933 1209934 1209935 1150601 1177963 1177962 1162594 1162593 1178120 1178119 1178121 1178206 1178112 1178059 1178087 1178086 1178084 1178083 1178082 1178085 1178080 1178081 1216933 1162740 1162743 1178205 1085892 1085890 1085891

Pincher Lake, Naswal L., Cloud Lake, Trafalgar Lake, Upper Bachan Lake, Manitou Lake, Mosher Bay, Sosawet Lake, Peat Lake, Boyer Lake, Walmsley Lake, Shongwashy Lake, Kamanatogama Lake, Wolf Howl Lake, Mountdew Lake, Rattlesnake Lake, Taylor Lake, Kenny Lake, Washeibemaga Lake, Kennewapekko Lake, Levit Lake, Seppenning Lake

LEGEND

- HIGHWAY AND ROUTE No.
- OTHER ROADS
- TRAILS
- SURVEYED LINES
  - TOWNSHIPS, BASE LINES ETC.
  - LOTS, MINING CLAIMS, PARCELS ETC.
- UNSURVEYED LINES
  - LOT LINES
  - PARCEL BOUNDARY
  - MINING CLAIMS ETC.
- RAILWAY AND RIGHT OF WAY
- UTILITY LINES
- NON PERENNIAL STREAM
- FLOODING OR FLOODING RIGHTS
- SUBDIVISION OR COMPOSITE PLAN
- RESERVATIONS
- ORIGINAL SHORELINE
- MARSH OR MUSKEG
- MINES
- TRAVERSE MONUMENT

DISPOSITION OF CROWN LANDS

TYPE OF DOCUMENT	SYMBOL
PATENT SURFACE & MINING RIGHTS	
SURFACE RIGHTS ONLY	
MINING RIGHTS ONLY	
LEASE SURFACE & MINING RIGHTS	
SURFACE RIGHTS ONLY	
MINING RIGHTS ONLY	
LICENCE OF OCCUPATION	
ORDER IN COUNCIL	OC
RESERVATION	
CANCELLED	
SAND & GRAVEL	

NOTE MINING RIGHTS IN PARCELS PATENTED PRIOR TO MAY 6 1913 VESTED IN ORIGINAL PATENTEE BY THE PUBLIC LANDS ACT R.S.O. 1970 CHAP. 380 SEC. 63 SUBSEC. 1

REFERENCES

AREAS WITHDRAWN FROM DISPOSITION

M.R.O. MINING RIGHTS ONLY
S.R.O. SURFACE RIGHTS ONLY
M.+S. MINING AND SURFACE RIGHTS

Description	Order No.	Date	Disposition	File

UPDATED

DATE OF ISSUE
MAR 3 1 1989
PROVINCIAL RECORDING OFFICE - SUDBURY

SCALE 1 INCH = 40 CHAINS

1000 0 2000 4000 6000 8000
METRES 500 0 1000 2000
1 K.M. (2 KMS.)

AREA
BOYER LAKE
M.N.R. ADMINISTRATIVE DISTRICT
DRYDEN
MINING DIVISION
KENORA
LAND TITLES / REGISTRY DIVISION
KENORA

Ontario Ministry of Natural Resources — Land Management Branch

Date JANUARY 1994 | Number G-2572

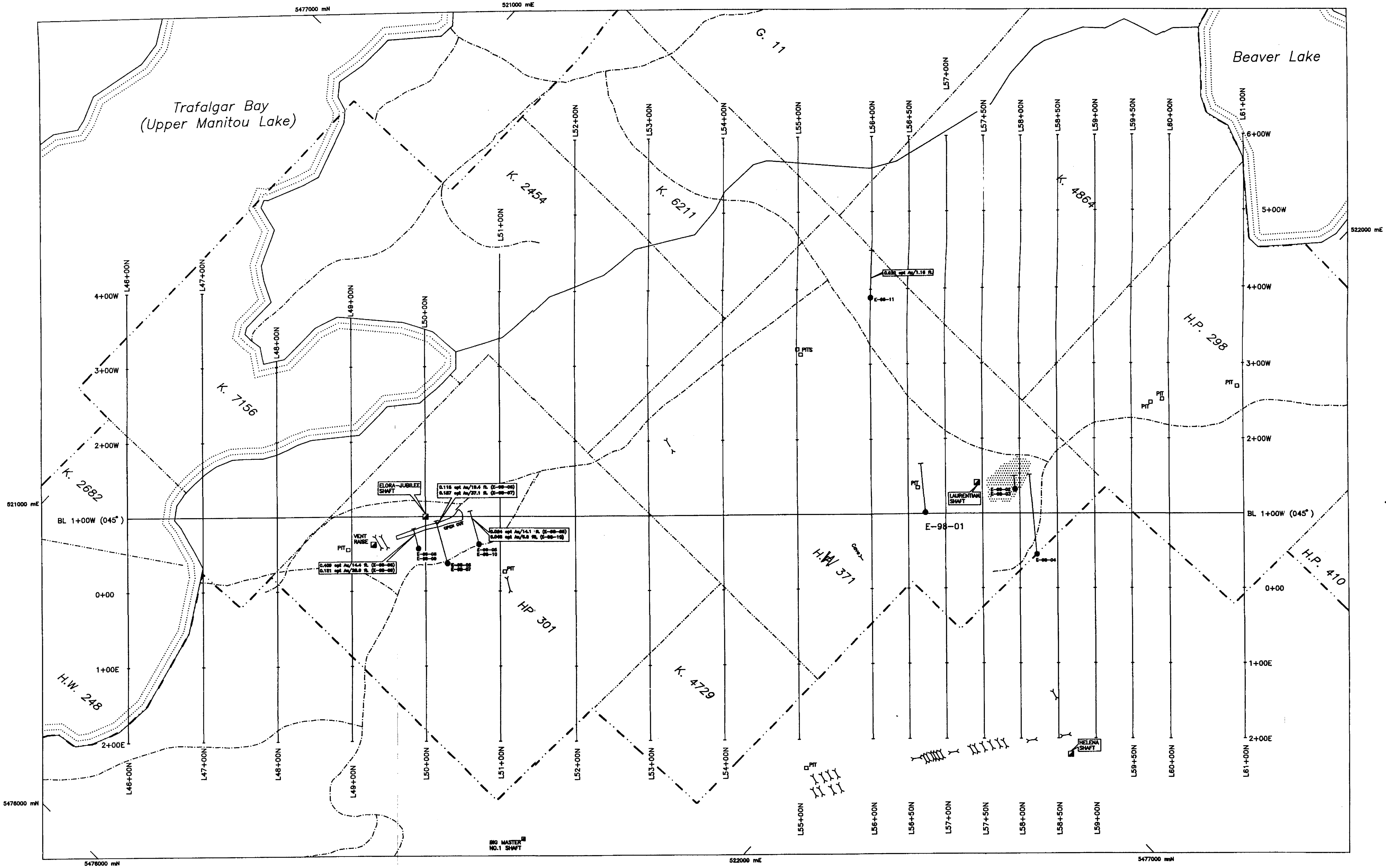
M-2582

DATE PUT IN SERVICE
JUL 23 1996
KENORA
MINING DIVISION

THE INFORMATION THAT APPEARS ON THIS MAP HAS BEEN COMPILED FROM VARIOUS SOURCES, AND ACCURACY IS NOT GUARANTEED. THOSE WISHING TO STAKE MINING CLAIMS SHOULD CONSULT WITH THE MINING RECORDER, MINISTRY OF NORTHERN DEVELOPMENT AND MINES, FOR ADDITIONAL INFORMATION ON THE STATUS OF THE LANDS SHOWN HEREON.

494923

TRIM LINE



Road

Mine Shaft

Trench

Pit

1998 Diamond Drill Hole

Claim Boundary

Property Boundary

2.18765

Scale 1:2500

0 100 200

metres

NEWHAWK GOLD MINES LTD.

ELORA GOLD MINES PROPERTY

UPPER MANITOU LAKE AREA

Drill Plan

Digital Cartography: D.B. McKay | July, 1998

CLARK - EVELEIGH CONSULTING

250W 200W 150W 100W 50W 0E 50E 100E

5000N

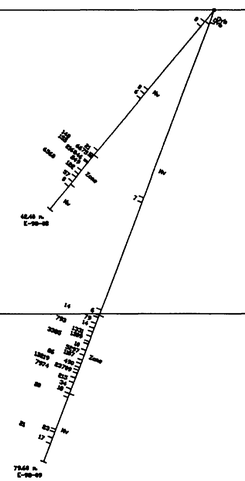
0

-50

-100

-150

-200



Diamond Drill Holes
E-98-08
4990.5N, 57.5W
Azimuth 300, Dip -50
Length 42.5 metres
13 samples

E-98-09
4990.5N, 57.5W
Azimuth 300, Dip -70
Length 79.3 metres
24 samples

SCALE
(metres)
0 25

Drilled on Patent HP 301

Legend
OV/OVB Overburden
MV Mafic Volcanic
It Intermediate Tuff
IF Iron Formation
Zone Gold Mineralization

2.18765

Newhawk Gold Mines Ltd

ELORA PROJECT

SECTION 5000N

Assays, ppb Gold

DATE: 98/07/28 | SCALE: 1/500

250W 200W 150W 100W 50W 0 50E 100E

5030N

E-98-07
E-98-06

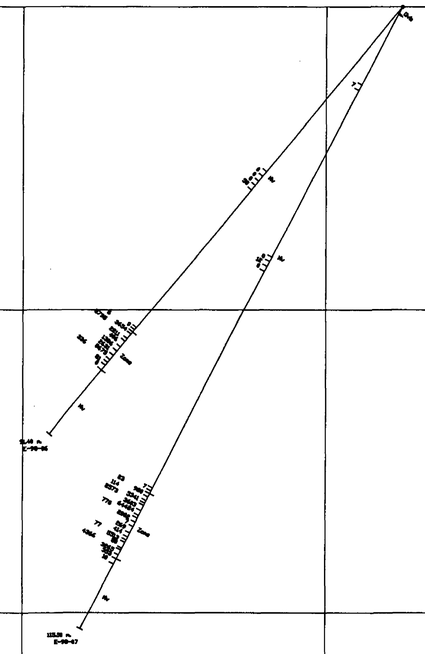
0

-50

-100

-150

-200



Diamond Drill Holes
E-98-06
5029.5N, 37.5W
Azimuth 300, Dip -50
Length 91.1 metres
16 samples

E-98-07
5029.5N, 63W
Azimuth 300, Dip -62
Length 115.5 metres
24 samples

SCALE
(metres)
0 25

Drilled on Patent HP 301

Legend
□V/□VB □verburden
MV Mafic Volcanic
It Intermediate Tuff
IF Iron Formation
Zone Gold Mineralization

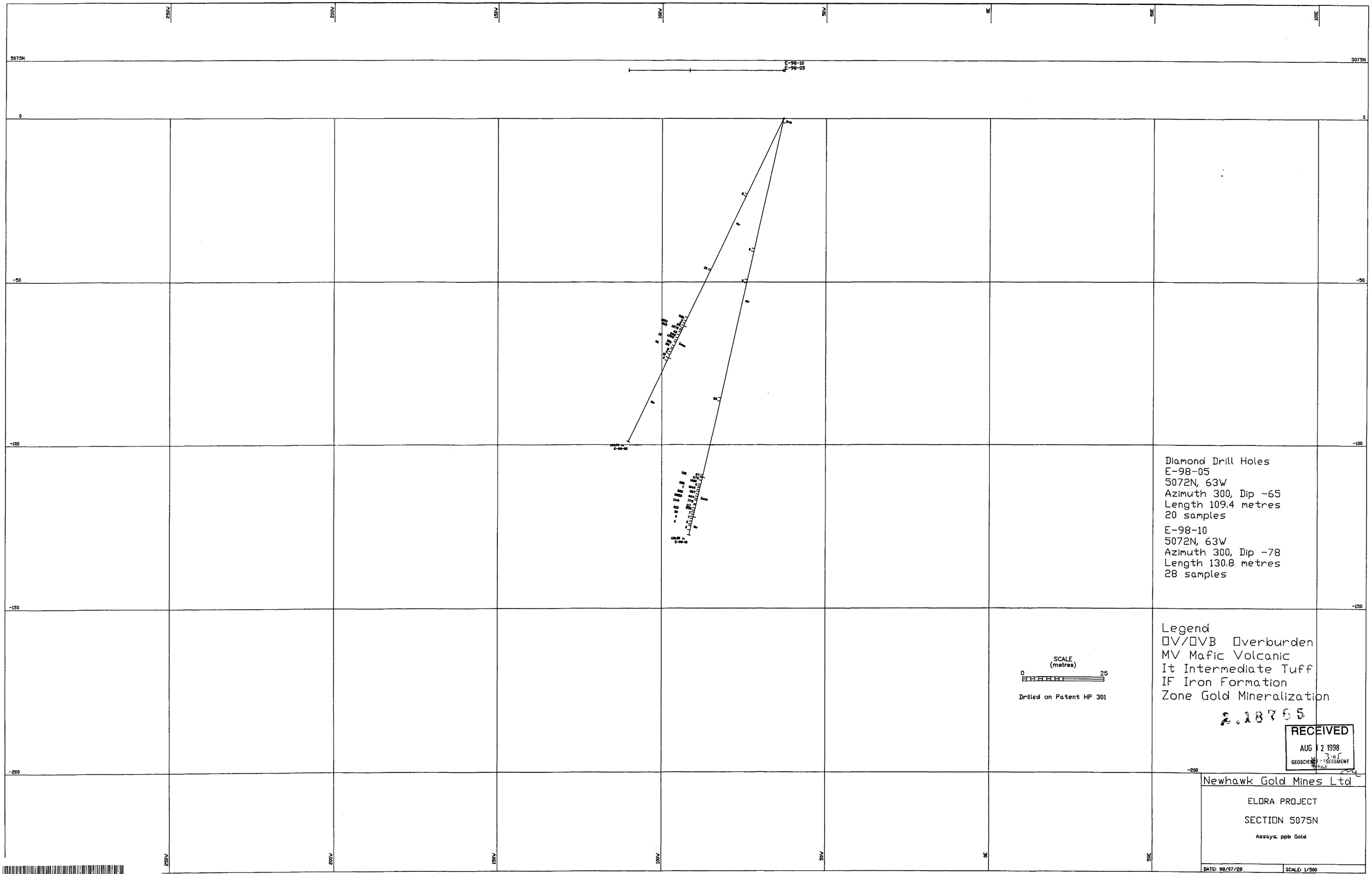
Newhawk Gold Mines Ltd

ELORA PROJECT

SECTION 5030N

Assays, ppb Gold

DATE: 98/07/28 SCALE: 1/500



Diamond Drill Holes
E-98-05
5072N, 63W
Azimuth 300, Dip -65
Length 109.4 metres
20 samples

E-98-10
5072N, 63W
Azimuth 300, Dip -78
Length 130.8 metres
28 samples

SCALE
(metres)
0 25

Drilled on Patent HP 301

Legend
OV/OVB Overburden
MV Mafic Volcanic
It Intermediate Tuff
IF Iron Formation
Zone Gold Mineralization

2.18765

Newhawk Gold Mines Ltd

ELORA PROJECT

SECTION 5075N

Assays, ppb Gold

DATE: 98/07/28 | SCALE: 1/500

450V 400V 350V 300V 250V 200V 150V 100V

5600N

E-98-11

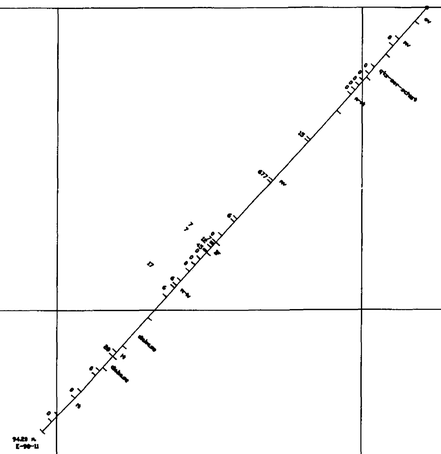
0

-50

-100

-150

-200



Diamond Drill Hole
E-98-11
4600N, 389.3W
Azimuth 300, Dip -50
Length 94.2 metres
25 samples

SCALE
(metres)
0 25

Drilled on Patent HP 371

Legend
OV/OVB Overburden
MV Mafic Volcanic
It Intermediate Tuff
IF Iron Formation
Zone Gold Mineralization

Newhawk Gold Mines Ltd

ELORA PROJECT

SECTION 5600N

Assays, ppb Gold

DATE: 98/07/28 SCALE: 1/500