DRILL REPORT
DRILL HOLE AK08-03
AMALGAMATED KIRKLAND PROPERTY
KIRKLAND LAKE, ONTARIO
LARDER LAKE MINING DIVISION
NTS 42-A-01

WAYNE R. BENHAM, P. GEO.
QUEENSTON MINING INC.

TORONTO, ONTARIO
September 15, 2009

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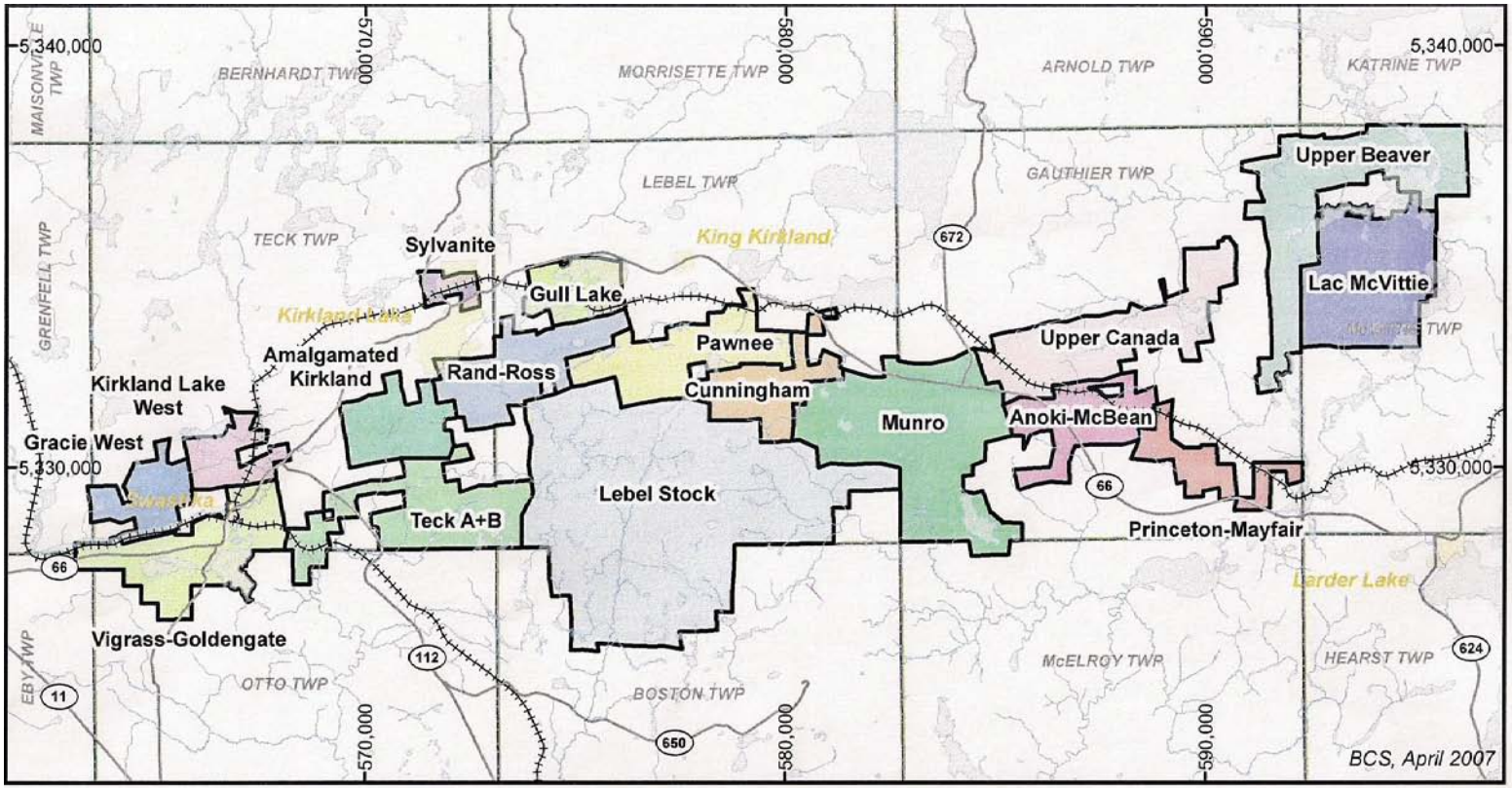
1.0 INTRODUCTION

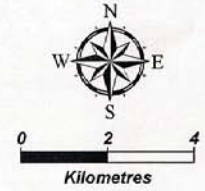
In October 2007, Queenston Mining Inc. (QMI) initiated a deep surface drilling program on the Amalgamated Kirkland property (AK), located in Teck Township in northeastern Ontario. The purpose of this drilling was to test for the eastern strike extension of the South Mine Complex (SMC) which is currently being explored and mined by Kirkland Lake Gold Inc on the Macassa property on the 5300 foot level near the northwest corner of the AK property. The possible eastern extension of the SMC was interested in hole AK08-02W2, W 3 and W4, 300 metres to the east. Hole AK08-03 was planned to test the SMC closer to the northwest corner of the property This report describes results of hole AK08-03.

2.0 PROPERTY, LOCATION and ACCESS

The AK property is located in the southeastern quadrant Teck Township south of Chaput Hughes in the Town of Kirkland Lake in the Larder Lake Mining Division in northeastern Ontario Figure 1. Highway 66 (Government Road West) crosses the northwestern corner of the property and Archer Drive traverses the northern portion the property from west to east. The property is contiguous to the Teck A property to the south and the Rand property to the east. Excellent access is provided by old drill roads leading off Archer Drive.

The property, as shown on Figure 2, consists of one mining lease # 106667, CLM 328, (Mining Rights Only), 417.658 hectares, which is due for renewal June 1, 2012. The surface rights are owned by the Town of Kirkland Lake who has been developing an Industrial Park on this land since 1992.

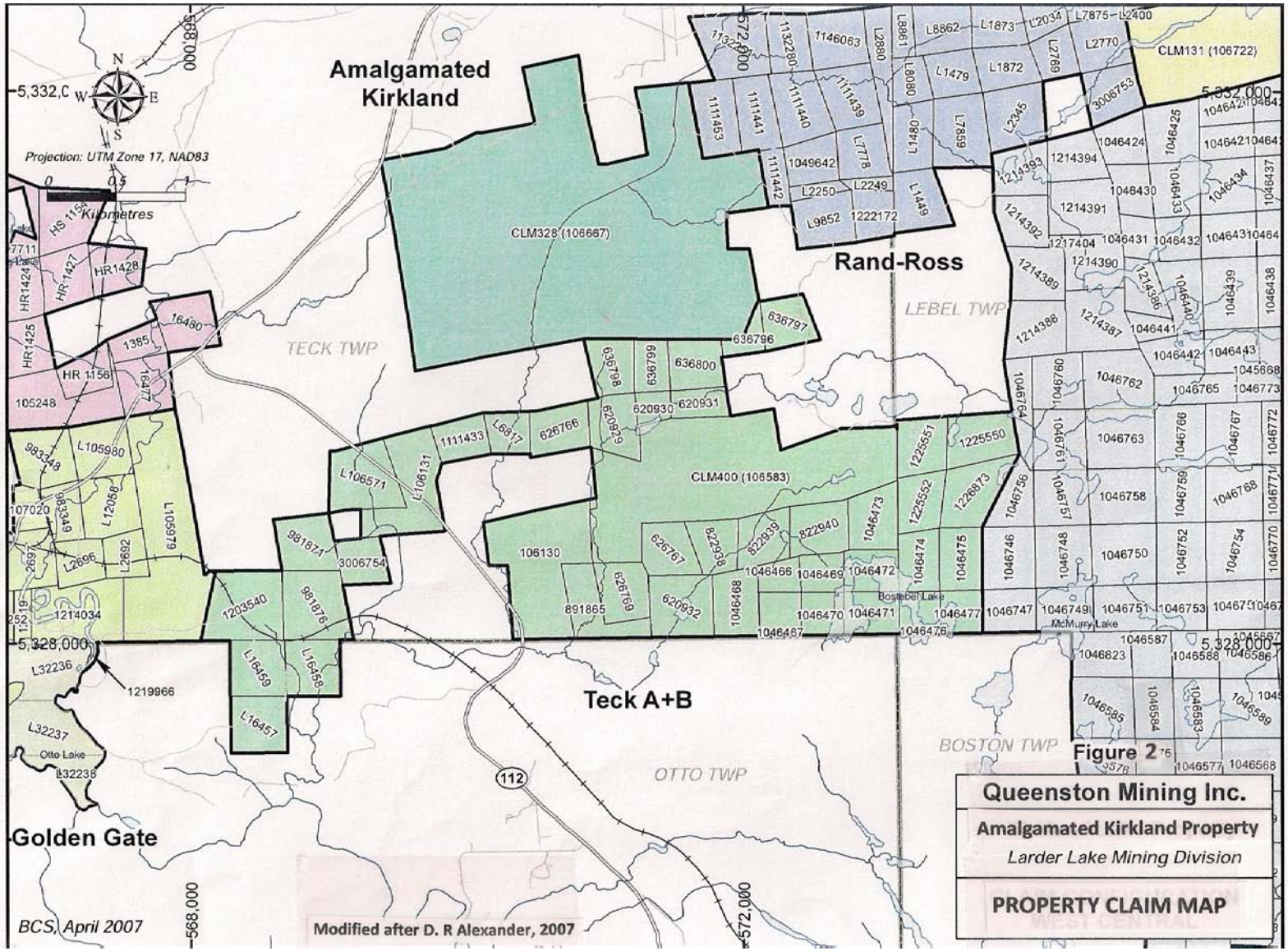




After D. R Alexander, 2007

Figure 1

Queenston Mining Inc.
Kirkland Lake Gold Camp *Larder Lake Mining Division*
PROPERTY MAP


Amalgamated Kirkland
Rand-Ross
Teck A+B
Golden Gate
CLM328 (106667)
CLM400 (106583)
CLM131 (106722)
TECK TWP
LEBEL TWP
OTTO TWP
BOSTON TWP
Bosebel Lake
McMurry Lake
Otto Lake
Projection: UTM Zone 17, NAD83
Kilometres
5,332,000
5,328,000
568,000
572,000
112
BCS, April 2007
Modified after D. R Alexander, 2007
Figure 2
Queenston Mining Inc.
Amalgamated Kirkland Property
Larder Lake Mining Division
PROPERTY CLAIM MAP

3.0 PREVIOUS WORK

The initial discovery of gold at the AK was in 1920 when the Hunton shaft was sunk on the northern portion of the property to a depth of 120 m with four levels being established. From 1925 to 1939 the Hunton shaft was deepened to 750 feet where further lateral development and drilling was completed. From 1939 to 1988 various interests owned the property and a variety of exploration was completed including 9 programs of diamond drilling. In 1989 Queenston acquired the property and formed a joint venture with Battle Mountain Canada who completed geophysics, trenching and diamond drilling that led to the discovery of the AK gold deposit. In 1993 Cyprus Canada optioned the property, completed further diamond drilling and outlined a mineral resource of 1,800,000 tonnes grading 5.5 g/t Au including 1,300,000 tonnes grading 6.8 g/t. In 1996 Queenston regained full title to the property and formed a joint venture with Franco Nevada Mining Corporation who later formed Newmont Mining Corporation of Canada Limited. In 1997 a new inferred resource was calculated totaling 2,639,338 tonnes grading 4.46 g/t Au. These historic resources are NI 43-101 noncompliant. In 2002 Queenston purchased Newmont's interest in the property and in 2003 and 2005 completed further diamond drilling on the property.

A summary of previous work on the property follows:

***1911-13**: Hunton Gold Mines incorporated (1913) on a claim staked in 1911; surface trenching.*
***1920-25**: Hunton Gold Mines; shaft to 400 ft, levels at 125, 250 and 375 ft; north crosscut started on 375-ft level (main exploration level with 550 m development and 1,220 m diamond drilling); further surface and underground drilling.*
***1921**: Canadian Kirkland Mines; shaft to 100 ft on current AK property; further work immediately west of claim group reported as shaft to 816 ft, levels at 80, 250, 400, 800 ft with 641 m lateral development, and; a third shaft some 610 m west with 122 m lateral development on 65 and 125 ft levels; 2,439 m of diamond drilling to 1939 (?) – separate from Hunton property.*
54
***1922-23**: Highland Kirkland Gold Mines; 4 drill holes (977 m), 1,220 m surface trenching, inclined shaft to 100 ft (at –65 degrees) with some development on 60-ft level – south and east of Canadian Kirkland and Hunton prospects in Tisdale assemblage rocks.*
***1925-39**: Kirkland Hunton Gold Mines; inclined winze from 375-ft to 675-ft level (1925), later extended to 750-ft level; shaft deepened to 500 ft (1928); 476 m underground development, 2,918 m of diamond drilling.*
***1936-37**: Florena Kirkland Gold Mines; magnetic survey, 7 surface drill holes (2,396 m) on previous Highland Kirkland ground.*
***1939-44**: Amalgamated Kirkland Mines (incorporated 1939) as amalgamation of Hunton, Honer and Canadian Kirkland lands (10 claims of current group); 27 surface drill holes (3,724 m); crosscut from Macassa 3000-ft level extended toward Amalgamated ground, 2 drill holes (844 m) drilled in 1944.*
***1945**: Frobisher Exploration; 14 surface holes (1,305 m) on Amalgamated lands.*
***1972**: Mayfield Explorations and Development; 11 surface drill holes (855 m).*
***1973**: Orme Prospecting Syndicate; one drill hole (37 m) under Highland Kirkland inclined shaft.*
***1974**: Kerr Addison Mines; magnetic surveys, mapping, trenching, 4 surface holes (101 m) into carb rocks.*
***1978**: Newmont Exploration of Canada; geophysics (includes IP), mapping, 7 drill holes (1,903 m) on former Highland Kirkland / Florena property.*
***1981**: Lampe Resources; one surface drill hole (61 m).*
***1983-84**: Eden Rock Mineral Corp; three drill holes (359 m).*
***1986**: Accord Resources; stripping, sampling at Hunton area.*

***1989**: Queenston Gold Mines acquires current claim group.*
***1989-92**: Battle Mountain Canada; airborne magnetic and VLF-EM survey; ground magnetic and IP surveys, mapping, stripping / trenching, 45 drill holes (11,838 m), AK Zone discovered.*
***1993-95**: Cyprus Canada; mapping, 23 drill holes and extensions (14,368 m); first resource estimate.*
***1996**: Canadian Golden Dragon Resources; three drill holes (1,721 m).*
***1997-98**: property sold to Franco-Nevada (1997); property becomes part of Kirkland Lake Joint Venture (Queenston – Franco-Nevada) in 1998; no new work undertaken.*
***2002-03**: Queenston purchased Franco-Nevada (then Newmont Mining Corp) interest; 3,010.7 m surface drilling in 7 holes.*
***2005**: Queenston; 7 drill holes and a deepening of a prior Cyprus drill hole (6,126 m).*

Note: from Technical Report on QMI-Kirkland Lake, D. Alexander, November, 2007

2007-08 Queesnton, surface deep drilling to test for the SMC on the AK property, 3 holes and 9 wedge cuts (7,901 m).

4.0 PROPERTY GEOLOGY and MINERALIZATION

The AK property is bisected by the Cadillac-Larder Lake Break. In this area, the break follows the northern fringe of the Murdoch Creek Stock (syenite) and is represented by sheared ultramafics and green carbonate rocks of the Tisdale assemblage with local shearing in the adjacent Timiskaming suite to the north. The Tisdale assemblage is best developed in the eastern part of the property, but occurs as a relatively thin veneer (to 200 m thick) around the north contact of the Murdoch Creek Stock. The Timiskaming assemblage is dominated by fine to coarse clastic sedimentary rocks with lesser alkalic volcanics including fine to coarse pyroclastics, flows and intrusives.

The Murdoch Creek syenite stock trends parallel to the regional deformation fabric and is the dominant feature in the south part of the property. Its north contact is less contaminated than the southern contact on the Teck A & B lands but mafic syenite sections and carb rocks are found within the system and in the contact aureole. Other syntectonic syenites are found in the north part of the property – most prominent at the Hunton shaft area (north). The volcanic and sedimentary rocks are cut by east-west and north-south Keewatin diabase dykes (See Figures 3 and 4).

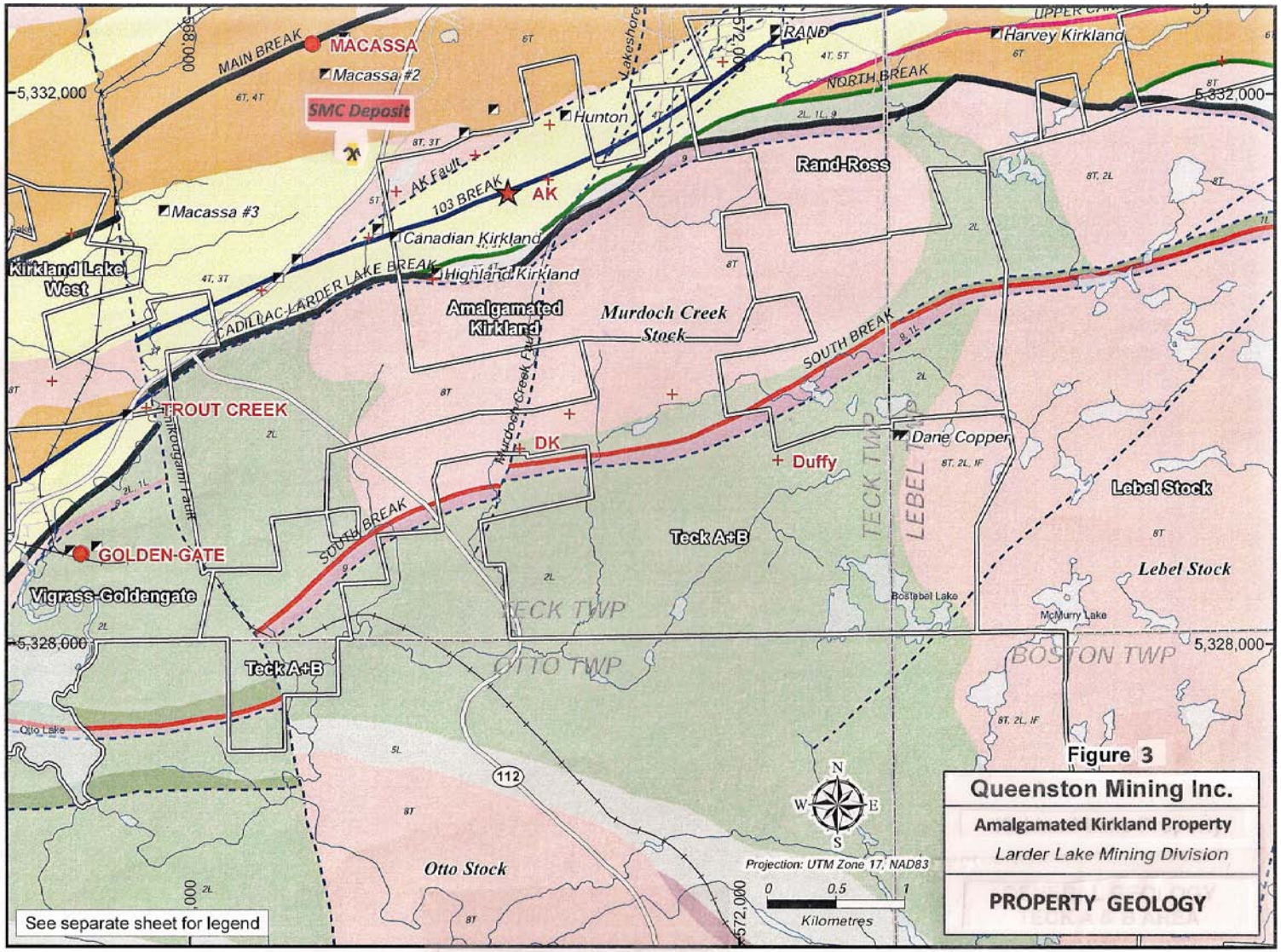


Figure 3

Queenston Mining Inc.

Amalgamated Kirkland Property

Larder Lake Mining Division

PROPERTY GEOLOGY

Modified after D. R Alexander, 2007

BCS, July 2007

Figure 4

LEGEND for GEOLOGY and DRILLING FIGURES

SURFACE FEATURES

- Local Road
- Highway
- Rail
- Lake/River
- Creek

GOLD DEPOSITS

- Past Producer
- Advanced Prospect
- Current Resource
- Historic Resource
- Showing
- Shaft/Adit

RECENT DRILLING

- Collar
- Surface Trace

FAULTS

- Cadillac-Larder Lake Break
- Main Break
- South Break
- Upper Canada Break
- Upper Canada Break (South Branch)
- North Break
- 103 Break
- Minor Fault

LITHOLOGY

LATE STAGE

- 12 - Diabase
- 11 - Huronian Sediments
- 10 - Deformation/Alteration Zone (carbonated trachyte)
- 9 - Deformation/Alteration Zone (carbonated komatiite)

TIMISKAMING ASSEMBLAGE

- 8T - Alkalic Intrusive
- 6T - Conglomerate-Greywacke
- 5T - Greywacke-Conglomerate
- 4T - Alkalic Tuff
- 3T - Alkalic Flow

BLAKE RIVER ASSEMBLAGE

- 8B - Felsic Intrusive
- 7B - Mafic Intrusive
- 4B - Felsic-Intermediate Tuff
- 3B - Felsic-Intermediate Flow

LOWER BLAKE RIVER ASSEMBLAGE

- 8K - Felsic Intrusive
- 7K - Mafic Intrusive
- 2K - Mafic Flow

TISDALE ASSEMBLAGE

- 8L - Felsic Intrusive
- 7L - Mafic Intrusive
- IF - Iron Formation
- 6L - Conglomerate - Greywacke
- 5L - Greywacke - Conglomerate
- 4L - Felsic-Intermediate Tuff (Upper Tisdale Group)
- 2L - Mafic Flow
- 1L - Ultramafic Flow

After D. R Alexander, 2007

The AK deposit consists of lode-style gold mineralization hosted by altered and pyritic Timiskaming trachytic volcanics. The volcanics wedge out or thin at depth between two sedimentary units. The zone strikes at 070 degrees, dips steeply south, and, exhibits a westerly plunge of 50 degrees.

Mineralization is characterized by blue-grey, brecciated and 'wormy', quartz-ankerite veins which contain up to 10% fine-grained pyrite and lesser amounts of galena, chalcopyrite, sphalerite, molybdenite and visible gold. The sulphides and gold commonly occur along fractures and wallrock inclusions in the veins. Native gold occurs as fine pinpoints distributed in one to five mm sized clusters of up to ten or more grains. Auriferous veins are found within a quartz-ankerite-sericite-pyrite alteration assemblage that is enveloped by a broader zone of ankerite-sericite-pyrite +/- hematite and quartz alteration up to 60 m wide.

The AK deposit is estimated by QMI to contain historic (NI 43-101 Noncompliant) inferred resources of 2,639,338 tonnes grading 5.5 g/t Au.

5.0 DRILL PROGRAM

In October 2007, QMI commenced a surface deep diamond drilling program on the property. The primary target for this program is the New South Mine Complex ("SMC") currently being explored, developed and mined by Kirkland Lake Gold Inc. ("KL Gold") on the adjacent Macassa property. A secondary target was the western strike extension of the AK deposit at depth.

The SMC is interpreted to dip onto the AK property at a depth of approximately 1,800 - 2,200 m (6,000 – 8,200 ft). The SMC is a multiple-zone gold system discovered by KL Gold in 2005. It represents a new-style of mineralization in the camp located some 600 m south of the main Kirkland Lake productive trend at a depth of 1200 m (5300 ft). Since the discovery, sufficient work has already been completed to calculate proven and probable reserves in the SMC totaling 358,000 oz. of gold (485,000 tons grading 0.74 oz/ton (25.4 g/t)) plus measured and indicated resources comprising 144,500 oz. of gold (213,000 tons grading 0.68 oz/ton (23.3 g/t)) and inferred resources of 526,000 oz. of gold (622,000 tons grading 0.85 oz/ton (29.1 g/t)) (KL Gold news release dated July 18, 2007). The SMC remains open in all directions and recent definition drilling announced by Queenston and KL Gold on February 13, 2008 has returned continued high-grade intersections on the adjoining JV South Claims property to the west where hole 50-901 intersected the SMC assaying 0.75 oz/ton over a core length of 49.5 feet. This intersection is reported to lie within 100 metres of the northwestern boundary of the AK property.

A total of 7,901 metres of NQ diameter drilling in 3 holes and 9 wedge cuts were drilled by Benoit Diamond Drilling Ltd. from Val d'Or, Quebec from October 2007 to November 2008. Encouraging anomalous gold mineralization was intersected in wedge holes AK08-02W2, W3 and W4, 300 m to the east of the KL Gold SMC deposit. Hole AK08-03 was collared to test the SMC zone closer to the northwest corner of the property.

Hole AK08-03 was started on December 2, 2008 and it was completed on December 14, 2008 for a total of 619 m . The drill program was planned and supervised by Wayne R. Benham P.Geo., Queenston Mining Inc. The core was logged and sampled by QMI Project Geologist Frank Ploeger P.Geo. at Queenston's Upper Canada mine site. The drill core is stored at the Upper Canada mine site. A total of 6 core samples were cut with a diamond saw by QMI technicians Terry Playford and Shawn Playford. Swastika Laboratories Ltd. at Swastika, Ontario assayed all samples for geochemical gold ppb (Fire Assay - one assay ton). Samples with > 1000 ppb gold were check by fire assay using a gravimetric finish.

The drill hole was spotted at the same location as hole AK07-01. Reflex down hole azimuth and dip tests were taken at 60-80 metre intervals down the hole by the drillers. The results of December, 2008 drilling are described in drill log AK08-03, (Appendix I) and Assay certificate is located in Appendix II. The drill hole location and drill hole trace are shown on a drill plan at a scale of 1:2,500 and shown on drill hole cross sections looking 251^0 Azimuth at a scale of 1:2,500. (Appendix III).

6.0 CORE LOGGING, SAMPLING, ASSAYING

The core is placed in wooden boxes by the drillers. The boxes are picked up by Queenston technicians at the drill site and delivered to the core-logging facility at the former Upper Canada mine site.

Core logging protocol by Queenston geologists is summarized as follows:

The core is first measured to check that the driller's metre blocks are correct. The metreage is marked at the start of each box. Any lost or ground core is noted and zones of poor RQD are note (i.e. <75%).

The core is logged in detail and recorded in a digital format using an excel spreadsheet. Special attention is given to alteration mineralization and structural information. Mineralization and alteration are sampled. The samples are marked by the geologist and sample tickets are inserted. Depending on the lithology, alteration and mineralization, sample widths vary from 0.30 m to 1.4 m average 1.0 m. The samples are entered on the drill logs. For each sample the percentage of quartz-carbonate veining, % pyrite are estimated and entered on the log.

The samples are then cut in half by a Queenston technician using a diamond core saw. Half the core is placed in a plastic bag with a sample ticket and the other half is put back in the box with a duplicate sample ticket at the end of the sampled interval. Samples with visible gold are flagged and the core cutter is advised to take special care to clean the saw blade after cutting the potentially high grade sample in order to avoid contamination of the next sample. The assay lab is also advised of visible gold samples to avoid batch contamination.

Metal tags with the hole number and the depth of hole for the contained core interval. The boxes are placed in racks outside for future reference. The unmineralized sections of the drill holes with no samples are stacked on wooden pallets to save core rack space. The samples are placed in plastic pails, a lab work order is prepared and the samples are delivered by truck to Swastika Laboratories Ltd.

The primary lab for the AK samples is Swastika Laboratories Ltd, Swastika, Ontario. All samples were assayed by geochemical methods using atomic absorption spectrometer for Au ppb (1AT). Samples assaying equal or greater than 1 g/t Au were reassayed with gravimetric finish using a second pulp from the reject. (See Appendix IV for sample preparation and assaying procedures)

7.0 DRILL RESULTS

Drill hole AK08-03 was flattening to fast and would have over-shot the target depth. The hole was stopped at 619 m and a new hole AK09-04 was collared at the same location but with a steeper dip.

Hole AK08-03 intersected unaltered to weakly altered mudstones greywackes and conglomerates intruded by minor quartz-carbonate veining. Six samples were assayed and returned nil to trace gold.

8.0 CONCLUSIONS and RECOMMENDATIONS

Hole AK08-03 flattened to quickly and had to be abandoned. A new hole was collared to test the SMC mineralization closer to the northwest corner of the property and to the west of the anomalous gold mineralization that was previously encountered in drill hole AK08-02W3.

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Wayne R. Benham
September 15, 2009

9.0 REFERENCES

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2. Ayer, J.A. and Trowell, N.F., 2000: Geological Compilation of the Kirkland Lake area, Abitibi greenstone belt; Ontario Geological Survey (OGS), Preliminary Map P.3425, scale 1:100,000

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APPENDIX I

DIAMOND DRILL LOGS

PROPERTY: Amalgamated Kirkland			HOLE NUMBER AK08-03					
Province:	Ontario	**DATE LOGGED:** Dec 8- 14, 2008	**Grid:**	**7600 E**	**Method**	**Depth**	**Az**	**Dip**
Township	Teck	**LOGGED BY:** FR Ploeger		10080 N	Compass	Collar		
Started:	02-Dec-08	**DRILLED BY:** Benoit Diamond Drilling	**UTM:**	**569788 E**	reflex	12	321.9	-79.9
Completed:	14-Dec-08	**UNITS:** Metres	**NAD 83**	**5330703N**		15	324.1	-79.8
CORE SIZE:	NQ	**CORE LOCATION:** Upper Canada	**ELEV :**	**337 m**		21	328.9	-79.7
			LENGTH:	619 m		51	329.1	-78.9
		Location: leased clm 328 (106667)				102	325.4	-77.0
PURPOSE:						174	323.3	-74.1
						250	327.8	-72.3
COMMENTS:						327	322.9	-70.4
						399	324.4	-69.8
						474	325.8	-69.1
						549	327.2	-67.9

SUMMARY LOG		AK08-03						
From	**To**	**Lithology**	**From**	**To**	**Metres**	**Au g/t**		
0.00	**3.10**	**OVB**						
3.10	**55.40**	**S1/ S3**						
55.40	**88.80**	**S3**						
88.80	**104.00**	**S7**						
104.00	**286.84**	**S3**						
286.84	**315.35**	**S1**						
315.35	**411.55**	**S3**						
411.55	**468.65**	**S1**						
468.65	**529.20**	**S3**						
529.20	**546.50**	**S7**						
546.50	**574.52**	**3D**						
574.52	**574.54**	**FAZ**						
574.54	**619.00**	**S3**						
619.00		**EOH**						
Sample	Numbers	Certificates						
65363	65368	8W-3565-RG1 (Dec 19/ 08)						

DESCRIPTION (Hole no AK08-03)						Samples / Assays							
From (m)	To (m)	Description	Qcv (%)	Py/Po (%)	Dip	Desc	Sample Number	From	To	Length	Au g/t	Au Chk
0.00	3.10	OVB										
		Coring begins at 3.10m.										
		During the coarse of logging, all holes were systematically checked for the carbonate composition of the matrix and veining as well as for the magnetic component. The carbonate was determined by using dilute hydrochloric acid (HCl) to test for calcite (fizzes) and potassium ferricyanide (KFC) which stains blue in the presence of ankerite. The magnetic susceptibility (MS) is checked either with a model KT-6 Kappameter which yields an absolute reading or pen magnet when the MS metre is malfunctioning. In addition, the RQD was estimated for the entire length of the hole.										
3.10	55.40	S1/ S3										
		The hole is collared in a pebbly wacke that grades from conglomerate lenses to massive wacke lenses containing scattered pebbles to gritty lenses. The clasts are polymict although in many lenses, more then 50% are syenitic/ trachytic (alkalic) in provenance. As mentioned, most tend to occur in various shades of light to medium orange/ red/ pink brown/ beige (alkalic) ranging from fine to coarse grained and porphyritic in texture along with light to dark green and grey ones as well as rare red jaspers. They are generally subrounded and ovoid to blocky in shape with sizes ranging from grit sizes (<0.5cm) to 10cm in diameter.										
		Testing with a magnet indicates that the matrix is weakly magnetic, and, testing for carbonate composition reveals that the matrix is pervaded with ankerite with a sense of weak pervasive hematite or K spar alteration as well. The core is well veined with 3-5% white and pale pink ankerite (/ K spar/ quartz) fractures, veinlets and gashy stringers which often exhibit weak pink alteration halos. Despite the significant fracturing/ veining, no sulphides were noted in the upper section of the hole.										
55.40	88.80	S3										
		There is a subtle decrease in the overall congolomerate and pebble content of the unit with a corresponding increase in the finer grained to grritty, massive, granular textured lenses. Pebbles/ clasts greater then 1.5cm occur in rare (5%) pebbly lenses and the occasional scattered/ isolated clast in the matrix. The colour is mottled in cloudy shades of light / medium greenish/ yellowish/ pinkish grey in which the subtle changes are due to pervasive hematite/ K spar, sericite or ankerite. In addition, the host is cut by 3- 5% creamy white ankerite veinlets and stringers along with sericitic altered zones. Some of the sericitic fractures/ slips/ zones are mineralized with trace fine pyrite (Py and splashes of chalcopyrite (Cp).										
		67.40- 67.60 : QCVZ										
		The interval consists of 65% dull grey quartz and white to pink ankerite trending roughly @ 60 DTCA. The matrix is laced with fine, thready, pale yellow green sericitic veinlets but contains nil trace sulphides.										
88.80	104.00	S7										
		At this point, the sediment becomes streaked with yellowish sericitic foliations @ 55 DTCA over approximately 1m before becoming fairly massive textured, very fine grained and light yellowish green grey coloured with only occasional lime yellow streaked (bedded/ laminated) zones. Some of these streaked zones appear to oincide with soft sediment deformation features such as slumping and rip up beds. Secondary veining, consisting of white ankerite fractures, veinlets and stringers, is strongest with 3-4m of the contacts (10- 15%) and weak through the middle (1- 3%). The matrix is moderately pervaded with ankerite as well as sericite but minealization runs only trace very fine Py.										
		103.45- 103.65 : FAZ	18	tr			65363	102.00	103.00	1.00	NIL	NIL
		Fairly strong carbonate- chlorite vein/ fault @ 15 DTCA consisting of bounding 2.5cm, gashy dull white	20	tr	15	FAZ	65364	103.00	104.00	1.00	0.01	-

DESCRIPTION (Hole no AK08-03)						Samples / Assays						
From (m)	To (m)	Description	Qcv (%)	Py/Po (%)	Dip	Desc	Sample Number	From	To	Length	Au g/t	Au Chk
		ankerite stringers enveloping a central 2.5cm, streaky, chlorite- ankerite core zone. The zone is	10	tr			65365	104.00	105.00	1.00	0.02	-
		mineralized with trace to very slightly anomlaous fine Py with some shearing continuing for another 35cm										
		down hole to the contact.										
104.00	**286.84**	**S3**										
		The interval begins pebbly with a few streaky yellow sericitized mudstone lenses to about 107.50m, below										
		which, the wacke becomes massive, homogenous, fine grained, granular textured, and light/ medium										
		yellowish green coloured. It contains rare (<<0.5%) small pebbles to 1cm, incuding jaspers and green										
		carbonate alered ones, and local gritty lenses. Small/ sand size jasper grains were noted throughout the										
		interval. Apart from some irregular gashy carbonate within 3' of the contact, veining amounts to 1- 2%										
		white ankerite fractures, veinlets and stringers while the matrix is moderately well pervaded with ankerite										
		and sericite. Sulphides run nil/ trace.										
		136.20- 162.00 : S3 (alt'd)										
		There is a distinctive difference in the colour and texture of the interval compared with the typical wacke.										
		The protolith remains fine grained and granular textured with local widely scattered clasts and occasional										
		very fine grained (mudstone) lenses and rip up beds, however, the colour becomes mottled in shades of										
		pale/ light pastel maroon/ pinkish grey to yellowish/ greenish beige and medium greenish grey. The										
		pinkish tinge may result from primary increases in alkalic component or pervasive K spar/ hematite										
		alteration while the yellowish tones are due to pervasive sericite and ankerite. Only very rare red jasper										
		grains were noted in the interval suggesting a primary change in composition. Mineralization comprises										
		trace fine Py & Cp associated with the 6- 8% irregular white ankerite (/quartz) fractures, veinlets, stringers										
		and gashy veins cutting the unit.										
		139.30- 139.92 : FAZ										
		This is actually a zone of weak to strong crushing, mainly along the contacts, beginning with a 3mm mud										
		slip @ 20 DTCA and ending with chlorite slip and crushing @ 22 DTCA. Only trace fine Py was noted.										
		147.10- 147.40 : QCVZ	4	tr			65366	146.00	147.00	1.00	NIL	NIL
		Zone of white ankerite breccia/ fracturing ending with a weak, 2.5cm, quartz- carbonate vein/ structure @	35	1	40	QCVZ	65367	147.00	147.50	0.50	NIL	-
		40 DTCA, the vein structure being mineralized with 5- 7% fractures and streaks of Py.	8	tr			65368	147.50	148.50	1.00	NIL	-
		161.75- 162.00 : FAZ/ QCVZ										
		This streaky/ gashy ankerite- quartz vein @ 10 DTCA forms the lower contact of the altered zone.										
		162.00- 164.25 : S1										
		There is a short pebbly zone immediately below the bounding FAZ that is characterized by a variety of										
		lithologies including jaspers and green carbonate, a finely fractured/ microfractured texture with whispy										
		sericitic fillings, poorly defined clasts (10- 20%) to 3cm that appear to be partially deformed/ flattened, and										
		a fine grained, grungy dark/ medium grey green, fine grained wacke matrix.										
		191.85- 191.92 : FAZ										
		The FAZ comprises a series of chlorite slips/ fractures @ 40 DTCA accompanied by lightening (weak										
		bleaching) of the walls and moderate light yellowish green grey sericite- ankerite alteration for 7m down										
		hole.										
		208.80- 217.00 : S1										
		The interval represents a pebbly wacke to conglomerate in which the clasts are generally monolithic,										
		composed (90%) of light greysih/ greenish buff yellow trachyte(?) clasts to 6cm in a fine grained to gritty										

DESCRIPTION (Hole no AK08-03)						Samples / Assays							
From (m)	To (m)	Description	Qcv (%)	Py/Po (%)	Dip	Desc	Sample Number	From	To	Length	Au g/t	Au Chk
		wacke matrix. The matrix includes jasper grains but not jasper clasts.										
		216.65- 217.00 : FAZ										
		A choritic cataclastic/ breccia zone @ 50 DTCA forms the lower contact of the conglomerate lens.										
		222.05- 228.95 : S7										
		A very fine to fine grained mudstone horizon exhibits sharp contacts that meander along the core axis for										
		0.4m and 1.45m at the beginning and end of the interval, respectively. The mudstone is medium yellowish										
		olive green to medium/ dark greyish green coloured and massive with local soft sediment structures/										
		textures such as ball/ flame, slump, and jumbled/ rip up features.										
		225.30- 226.25 : QCVZ										
		A white fractured (chlorite/ sericite), 2.5cm ankerite vein snakes along the core axis overprinting the										
		mudstone. No significant sulphides were noted associated with the vein.										
		226.25- XXXX : S3										
		Below the quartz vein, the wacke becomes monotonous, being fine grained, granular textured, light										
		yellowish grey green coloured, massive, homogenous with no hint of bedding. It is pervaded with sericite										
		and ankerite and contains negligible veining (<0.5%) and trace sulphides.										
		266.35- 274.35 : S1										
		The massive wacke is interrupted by a conglomerate lens that incorporates 80% light greenish yellow										
		clasts that range from grit sizes up to 9cm and are subrounded to subangular in shape. The matrix										
		contains rare red jasper grains although no clasts were noted. Contacts are gradational and the lower 2m										
		is composed mainly of grit to 1cm.										
		274.35- 286.84 : S3										
		The wacke is typical, as described above, massive, fine grained, granular textured, light yellowish green										
		coloured, but contains one irregular 1cm wide calcite vein (at 278.90m) while the matrix and the other 1%										
		veins are ankeritic.										
286.84	**315.35**	**S1**										
		The hole enters a thicker conglomerate lens, which, because of the subangular to subrounded nature of										
		the clasts, exhibits a terrazo type appearance in places. Generally, the conglomerate is polymict, although										
		75% of the pebbles are light yellowish grey/ beige to light greysih pink coloured, with a clast supported										
		(intact) framework, and pebbles ranging to 10cm in size. The larger clast occur in a central cobbly lens										
		whereas most clasts tend to be less then 3cm in size. Some jaspers and green carbonate grains and										
		clasts were noteed but they are not common. The matrix consists of wacke.										
		Staining indicates that the unit remains pervaded with ankerite and veining runs around 0.5% ankerite										
		fractures and veinlets. Only rare Py grains were noted in the conglomerate.										
		299.65- 299.69 : BBC/ FAZ										
		There is a small pile of ground core here with a rounded/ ground end on the core suggesting the presence										
		of a slip or fault @ 30 DTCA.										
315.35	**411.55**	**S3**										
		Gradation back into massive, fine to very fine grained, granular textured, medium greyish green coloured										
		wacke that contains a few gritty horizons and zones of rip up/ fragmented beds with wacke matrix. It										
		appears that the pervasive sericite and ankerite alteration is weakening as evidenced by the darkening of										
		the colour down hole. Also lacking are the red jasper grains suggesting a possible change in provenance										

DESCRIPTION (Hole no AK08-03)						Samples / Assays						
From (m)	To (m)	Description	Qcv (%)	Py/Po (%)	Dip	Desc	Sample Number	From	To	Length	Au g/t	Au Chk
		of the sediment. Veining remains minimal at <0.5% and sulphides contin ue to run trace/ nil.										
		319.30- 323.00 : S1										
		Zone of gritty wacke with some pebbles to 2- 5cm (5%) but most smaller then 1cm.										
		346.05- 356.20 : S1										
		Another conglomerate lens with extensive gritty sections with clasts up to 8cm although most range from										
		grit sizes to 2.5cm. They are heterolithic, but withiout jasper grains or clasts, subrounded to subangular in										
		shape, clast to matrix supported, and matrixed by fine wacke and grit. The overall colour is medium/ dark										
		grungy greyish green and clast boundaries are somewhat diffuse as a result of fine intragranular										
		microfracturing and ankerite alteration. Veining remains low at around 0.5% fine pink calcite fractures and										
		veinlets with minor white ankerite. Mineralization continues to run trace.										
		356.20- 390.70 : S3										
		Return to the typical conglomerate (without jasper grains) that includes scattered pebbles, lenses of grit										
		and weak conglomerate. The matrix remains pervasively ankeritic but many of the 0.5- 1% fractures and										
		veinlets are calcitic with minor ankerite. Sulphides average trace.										
		390.70- 391.10 : QCVZ/ FAZ										
		The interval comprises a zone of fracturing/ crushing accompanied by spotty light/ medium orange and										
		pink alteration and 2- 3cm streaky carbonate veining @ 45 DTCA. Only trace fine Py was noted.										
411.55	**468.65**	**S1**										
		The hole grades into a more pebble rich sediment in which the clasts tend to be:75% of alkalic origin, i.e.										
		light to dark shades of orange and pink (no jasper); subrounded (to subangular) in shape; matrix rich with										
		a fine grained to gritty wacke matrix and lenses; overall dark/ medium greenish grey coloured; and, locally										
		conglomeratic to pebbly wih perhaps 5% by volume of clasts over 2cm in size. There is a general										
		appearance of pea gravel and terrazo textures to much of the interval with gritty and conglomerate zones.										
		It is weakly pervasively ankeritic with calcitic patches and poorly veined with 0.5% creamy white ankerite										
		stringers and veinlets while mineralization consists of trace Py.										
		448.04- 449.59 : S7										
		There is a sharp contact @ 75 DTCA into a fine/ very fine grained, massive, dark green grey coloured										
		mudstone and a sharp trailing contact @ 40 DTCA back into conglomerate.										
		455.65- 462.0 : S7										
		Through ball structures and load casts, the hole traverses another fine/ very fine grained, medium dark										
		greenish grey coloured, massive mudstone. The trailing contact grades into a fine wacke which continues										
		back into conglomerate.										
468.65	**529.20**	**S3**										
		At this point, the conglomerate lens ends although a few scattered clasts and narrow pebbly lenses (3%										
		total by volume), as well as 3% soft sediment deformed mudstones, are distributed through the wacke.										
		Overall, it is medium/ dark greyish green coloured, massive, homogenous, fine grained, and granular										
		textured with rare jasper grains. It is very weakly pervaded with ankerite and becomes progressively more										
		strongly veined down hole with 3- 5% white ankerite (/ quartz/ calcite) stringers and veinlets. Sulphides										
		continue to run trace.										
529.20	**546.50**	**S7**										

DESCRIPTION (Hole no AK08-03)						Samples / Assays							
From (m)	To (m)	Description	Qcv (%)	Py/Po (%)	Dip	Desc	Sample Number	From	To	Length	Au g/t	Au Chk
		The hole enters a mudstone unit through a long finger of the finer sediment followed by jumbled/										
		contorted slump features. Generally, the mudstones are very fine grained, light yellowish grey/ green to										
		medium greenish grey coloured, and massive to finely bedded @ various angles with gradations into fine										
		wacke sections. They tend to be soft sediment deformed by slumping and are veined with 1- 2% white										
		calcitic (sericitic) fractures and irregular patchy veins. The matrix is non reactive to weakly pervasively										
		ankeritic and mineralized with trace fine sulphides.										
		538.35- 546.50 : S7/ S3										
		There is a transition into a massive, dark/ medium greenish grey coloured, very fine to fine grained										
		sediment that probavly straddles the boundary between mudstone/ wacke, being very finely granular. It is										
		cut by 1% very fine white calcite fractures and is weakly calcitic to non reactive. Mineralization runs nil/										
		trace.										
546.50	**574.52**	**3D**										
		There is a very subtle but well defined contact @ 45 DTCA into a mafic intrusive that is characterized by a										
		medium to coarse grain size, massive homogenous nature, and medium greenish to yellowish grey										
		colour. In places, when viewed with a lens, it exhibits a radiating type acicular/ felted texture similar to										
		some diabases. It is veined with 1- 2% fine white (and yellow) calcite (and sericite) fractures, and,										
		unusually for a diabase, is non magnetic. It is also weakly pervaded with ankerite when tested for										
		carbonate and unmineralized. The lower 1.5m approaching the contact are fine grained, suggesting a										
		chilled margin.										
574.52	**574.54**	**FAZ**										
		Although there is a wide chilled margin to the dike, the actual contact was taken at this fairly strong										
		granulated gouge fault @ 40 DTCA.										
574.54	**619.00**	**S3**										
		Despite the FAZ, it appears that the sediment was cooked (metamorphosed) over 8m into a very fine										
		grained, grungy light/ medium greyish brown coloured, finely fractured/ microfractured mass by the dike.										
		Below, the wacke character becomes more evident, being fine grained, massive homogenous granular										
		textured (including jasper grains), and light / medium greenish to yellowish grey coloured with local										
		scattered pebbles and pebbly zones. It was found to be weakly pervaded by calcite and sericite with minor										
		ankerite patches and veined with 1% creamy white calcite fractures and veinlets. It is mineralized with										
		trace fine grains and splashes of Cp and Py.										
		599.90- 608.63 : S1										
		The wacke becomes mainly gritty textured through this interval with local scattered pebbles to 7cm and										
		the odd pebbly lens.										
		616.15- 619.00 : S7										
		There is a shallow contact @ 15 DTCA into a light/ medium olive green, very fine grained mudstone that										
		is jumbled with lenses of regular fine grained, medium greenish grey coloured wacke exhibiting soft										
		sediment deformation textures such as slumping and flame structures.										
619.00		**EOH**										
		The hole ws stopped at this point because it was flattening too quickly.										

DRILL REPORT
DRILL HOLE AK08-03
AMALGAMATED KIRKLAND PROPERTY
KIRKLAND LAKE, ONTARIO
LARDER LAKE MINING DIVISION
NTS 42-A-01

APPENDIX II

ASSAY CERTIFICATES

Swastika Laboratories Ltd

Established 1928

Assaying - Consulting - Representation

Geochemical Analysis Certificate

8W-3565-RG1

Company: **QUEENSTON MINING INC.**
Project: A.K.
Attn: WAYNE BENHAM

Date: DEC-19-08

We hereby certify the following Geochemical Analysis of 6 1/2 CORE samples submitted DEC-12-08 by .

Sample Number	Au ppb	Au Check ppb	Au g/tonne	Au Check g/tonne
65363	3	3	NIL	NIL
65364	5	-	0.01	-
65365	19	-	0.02	-
65366	NIL	NIL	NIL	NIL
65367	NIL	-	NIL	-
65368	3	-	NIL	-
BLANK	NIL	-	NIL	-
STD OxJ64	2379	-	2.38	-

Certified by Dennis Chaster

1 Cameron Ave., P.O. Box 10, Swastika, Ontario P0K 1T0
Telephone (705) 642-3244 Fax (705) 642-3300

DRILL REPORT
DRILL HOLE AK08-03
AMALGAMATED KIRKLAND PROPERTY
KIRKLAND LAKE, ONTARIO
LARDER LAKE MINING DIVISION
NTS 42-A-01

APPENDIX III

DRILL PLAN and CROSS SECTIONS

569500E

570000E

570500E

5332500N

5332000N

5331500N

5331000N

Macassa #1

MAIN BREAK

-900 METRE LEVEL

LAKE KIRKLAND

HWY. 66

Town of
Chaput Hughes

#225112

Lac Minerals Ltd.
Macassa Div.
-900m Level

Kirkland
Kalgoorlie

BREAK

KIRKLAND

AMALGAMATED

Chaput Hughes Bypass

Industrial
Plaza

L-5686

Canadian
Kirkland

400' Level

250' Level

CREEK

MORGAN

BL 10,000 N

BMCI BASELINE
AZ. 072%%D

Highland
Kirkland

MORGAN PROPERTY

N

LEGEND

AK07_01 PLANNED

AK07_01C

NAD 83

0 100 200 300 400

METERS

QUEENSTON MINING INC.

AMALGAMATED KIRKLAND PROJECT
Larder Lake Mining District
2008 DRILL PLAN
CLM 328, #106667

DATE: AUG 2009	TECK TWP.	SCALE 1 : 2500

569500E
570000E
570500E
5332500N
5332000N
5331500N
5331000N
Macassa #1
HWY. 66
BREAK
MAIN
-900 METRE LEVEL
LAKE
KIRKLAND
Town of
Chaput Hughes
#225112
Lac Minerals Ltd.
Macassa Div.
-900m Level
AMALGAMATED
Chaput Hughes Bypass
Industrial
Plaza
Canadian
Kirkland
400' Level
250' Level
Highland
Kirkland
Kirkland
Kalgoorlie
L-5686
CREEK
MORGAN
MORGAN PROPERTY
BL 10,000 N
BMCI BASELINE
AZ. 072°00'D
N
LEGEND
DDH
NAD 83
0
100
200
300
400
METERS

QUEENSTON MINING INC.

AMALGAMATED KIRKLAND PROJECT
Larder Lake Mining District
2008 AND HISTORICAL DRILL PLAN
CLM 328, #106667

DATE: AUG 2009	TECK TWP.	SCALE 1 : 5000

9400 N
9600 N
9800 N
10000 N
10200 N
10400 N
10600 N
10800 N

100m elev
0m elev
-100m elev
-300m elev
-500m elev
-700m elev
-900m elev
-1100m elev
-1300m elev
-1500m elev
-1700m elev
-1900m elev
-2100m elev

161

341

#225112

AK94-62

AK05_10

AK91-37

AK05_12

AK05_11

AK05_08

AK05_10

AK08_01D

AK07_01C

0.44g/0.2m
1.46g/ 0.50m
0.46g/0.59m
0.35g/1.65m
0.25g/0.2m
0.25g/3.3m
0.39g/1.8cm
1.06g/4.7m
0.39g/1.8m

0 20 40 60 80 100
meters

QUEENSTON MINING INC.
AMALGAMATED KIRKLAND PROJECT
50m SECTION 7500E LOOKING 251°
LITHOLOGY with GOLD COMPOSITES

1 : 2500	TECK TWP	AUG 2009

HISTOGRAMS
- Au - 10m = 1g/t Au

ALTERATION / VEINING
- BX - BRECCIA
- CARB - CARBONATED ZONE
- DZ - DEFORMATION ZONE
- FAZ - FAULT ZONE
- GCZ - GREEN CARBONATED
- LLB - LARDER LAKE BREAK
- MNZ - MINERALIZED ZONE
- PYSZ - PYRITIC SILICIFIED
- QCVZ - QTZ-CARBONATE VEIN
- QVZ - QUARTZ VEIN ZONE
- SHZ - SHEAR ZONE

OTHER
- CAS - Casing
- CTZ - CONTACT ZONE
- BBC - BROKEN BLOCKY CORE
- SDZ - START DEFORMATION ZONE

VOLCANICS
- V4 - TRACHYTE
- 4T - TRACHYTE TUFF
- V7 - BASALT
- V9 - TUFF
- V9L - LAPILLI TUFF
- V10 - AGGLOMERATE
- V13 - ULTRAMAFIC FLOW

INTRUSIVES
- 1F - FELSITE
- 1G - GRANITE
- 1P - APLITE
- 1S - SYENITE
- 1SMa - MAFIC SYENITE
- 1Sp - PORPHYRITIC SYENITE
- 1Sa - ALTERED SYENITE
- 3D - DIABASE
- FD - FELSIC DYKE
- MI - MAFIC INTRUSIVE

SEDIMENTS
- F2 - SULPHIDE IRON FORMATION
- GS - GRAPHITIC SEDIMENTS
- S1 - CONGLOMERATE
- S3 - GREYWACKE
- S3AP - ALT.GYW. w FLDS. PORPH.
- S3C - CHLORITIC GREYWACKE
- S3P - GREYWACKE w FLDS. PORPH.
- S4 - ARGILLITE/MUDSTONE
- S6 - SILTSTONE
- S7 - MUDSTONE

-2100m elev

#225112

HISTOGRAMS

Au - 10m = 1g/t Au

ALTERATION / VEINING

BX - BRECCIA
CARB - CARBONATED ZONE
DZ - DEFORMATION ZONE
FAZ - FAULT ZONE
GCZ - GREEN CARBONATED
LLB - LARDER LAKE BREAK
MNZ - MINERALIZED ZONE
PYSZ - PYRITIC SILICIFIED
QCVZ - QTZ-CARBONATE VEIN
QVZ - QUARTZ VEIN ZONE
SHZ - SHEAR ZONE

OTHER

CAS - Casing
CTZ - CONTACT ZONE
BBC - BROKEN BLOCKY CORE
SDZ - START DEFORMATION ZONE

VOLCANICS

V4 - TRACHYTE
4T - TRACHYTE TUFF
V7 - BASALT
V9 - TUFF
V9L - LAPILLI TUFF
V10 - AGGLOMERATE
V13 - ULTRAMAFIC FLOW

INTRUSIVES

1F - FELSITE
1G - GRANITE
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1Sa - ALTERED SYENITE
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SEDIMENTS

F2 - SULPHIDE IRON FORMATION
GS - GRAPHITIC SEDIMENTS
S1 - CONGLOMERATE
S3 - GREYWACKE
S3AP - ALT.GYW. w FLDS. PORPH.
S3C - CHLORITIC GREYWACKE
S3P - GREYWACKE w FLDS. PORPH.
S4 - ARGILLITE/MUDSTONE
S6 - SILTSTONE
S7 - MUDSTONE

0 20 40 60 80 100
meters

QUEENSTON MINING INC.
AMALGAMATED KIRKLAND PROJECT
50m SECTION 7600E LOOKING 251°
LITHOLOGY with GOLD COMPOSITES

1 : 2500	TECK TWP	AUG 2009

#225112

9400 N | 9600 N | 9800 N | 10000 N | 10200 N | 10400 N | 10600 N | 10800 N #225112 | 11000 N #225112 | 11200 N

100m elev

161

341

0m elev

-100m elev

-300m elev

-500m elev

-700m elev

-900m elev

-1100m elev

-1300m elev

-1500m elev

-1700m elev

-1900m elev

-2100m elev

AK94-62

AK94-62

AK05_12

AK05_11

AK05_11

AK05_11

AK05_08

0.51g/0.4m

1.03g/4.15m

AK05_08

AK08_03

1900

AK08_03

AK08_01D

AK08_01D

AK08_01D

0.59g/1.0m

1935.00

AK08_2W3

AK08_2W3

AK07_01C

#225112

#225112

#225112

HISTOGRAMS

Au - 10m = 1g/t Au

ALTERATION / VEINING

BX - BRECCIA

CARB - CARBONATED ZONE

DZ - DEFORMATION ZONE

FAZ - FAULT ZONE

GCZ - GREEN CARBONATED

LLB - LARDER LAKE BREAK

MNZ - MINERALIZED ZONE

PYSZ - PYRITIC SIILICIFIED

QCVZ - QTZ-CARBONATE VEIN

QVZ - QUARTZ VEIN ZONE

SHZ - SHEAR ZONE

OTHER

CAS - Casing

CTZ - CONTACT ZONE

BBC - BROKEN BLOCKY CORE

SDZ - START DEFORMATION ZONE

VOLCANICS

V4 - TRACHYTE

4T - TRACHYTE TUFF

V7 - BASALT

V9 - TUFF

V9L - LAPILLI TUFF

V10 - AGGLOMERATE

V13 - ULTRAMAFIC FLOW

INTRUSIVES

1F - FELSITE

1G - GRANITE

1P - APLITE

1S - SYENITE

1SMa - MAFIC SYENITE

1Sp - PORPHYRITIC SYENITE

1Sa - ALTERED SYENITE

3D - DIABASE

FD - FELSIC DYKE

MI - MAFIC INTRUSIVE

SEDIMENTS

F2 - SULPHIDE IRON FORMATION

GS - GRAPHITIC SEDIMENTS

S1 - CONGLOMERATE

S3 - GREYWACKE

S3AP - ALT.GYW. w FLDS. PORPH.

S3C - CHLORITIC GREYWACKE

S3P - GREYWACKE w FLDS. PORPH.

S4 - ARGILLITE/MUDSTONE

S6 - SILTSTONE

S7 - MUDSTONE

0 20 40 60 80 100

meters

QUEENSTON MINING INC.
AMALGAMATED KIRKLAND PROJECT
50m SECTION 7550E LOOKING 251°
LITHOLOGY with GOLD COMPOSITES

1 : 2500	TECK TWP	AUG 2009

DRILL REPORT
2007-2008 DRILL PROGRAM
AMALGAMATED KIRKLAND PROPERTY
KIRKLAND LAKE, ONTARIO
LARDER LAKE MINING DIVISION
NTS 42-A-01

APPENDIX V

SWASTIKA LABORATORY LTD. PROCEDURES

Swastika Laboratories Ltd.
Sample Preparation & Assay Procedures

Department: Sample Preparation

Product/Process: Sample crushing, splitting and pulverizing

Document Owner: Swastika Laboratories Ltd.

Version	Date	Author	Change Description
SP-1	3.24.08	D. Chartre	

Purpose:

To produce pulp samples from customer drill core and chip samples meeting the following criteria:

- 90 – 95% of pulverized material passes through 100 mesh screen
- Final pulp sample weight of 300-400g

Applications:

Customer sample sizes up to 5kg. of varying material hardness and moisture content

Procedure:

1. Depending on the moisture content of the customer sample, the sample is either air dried or oven dried in a clean metal pan prior to crushing.
2. The dried sample is passed through a jaw crusher and then through a rolls crusher to arrive at a prepared sample of 6 – 10 mesh. The mesh size depends on the hardness and texture of the rock material. The crushed material is split successively in a riffle divider to arrive at a subsample of 300 – 400g. The subsample is placed in a labeled manila envelope for pulverizing.

3. The subsample is pulverized in a ring & puck pulverizer for sufficient time enabling 90 – 95% of the material to pass through a 100 mesh screen. Methyl hydrate is added to the sample prior to pulverizing to prevent clumping.
4. The pulverized material from the bowl, ring and puck is carefully brushed onto a rubber mat from which it is poured back into the labeled manila envelope.

Precautions:

5. The crushers are cleaned with compressed air after each sample pass. Barren material is crushed subsequent to each customer run to minimize sample contamination.
6. Compressed air is used to clean the riffle divider after the final split of each sample.
7. Compressed air is used to clean the bowl, ring, puck and rubber mat after each sample is pulverized.
8. A screen test is performed on pulverized samples at the beginning of each shift, or more frequently when material hardness is in question, to ensure particle size remains within prescribed limits.

Swastika Laboratories Ltd.
Gold Assay Procedures

Department: Wet Chemistry & Instrument Laboratories

Product/Process: Gold assays

Document Owner: Swastika Laboratories Ltd.

Version	Date	Author	Change Description
GA-1	3.24.08	D. Chartre	
		P. Chartre	

Purpose:

Assay of precious metal beads from the cupel furnace for gold content using atomic absorption spectrometry or gravimetric techniques.

Applications:

Drill core and rock samples said to contain gold and other precious metals

Materials:

Porcelain cups
Watch glasses
Aqua regia
Nitric acid
Distilled water
Element standards and blanks

Procedure:

The gold bead is carefully removed from the cupel and placed in a porcelain cup containing parting acid (7:1 concentration of nitric acid and distilled water). The contents are heated in a hot water bath and the solution is thereafter decanted. The bead is dried in a hot water bath and a visual assessment is made to proceed with either a gravimetric technique or an atomic absorption spectrometry technique.

Gravimetric Technique

9. Gold bead is carefully removed from the porcelain cup and weighed using a micro balance.
10. The gold calculation is based on a sample amount of 29.166g

Atomic Absorption Spectrometry Technique

1. The gold bead is dissolved in 5ml of aqua regia (40% concentration) in a porcelain cup and then allowed to cool to room temperature.
2. The solution is analyzed by an atomic absorption spectrometer and the readings are used to determine the gold content results.

Precautions:

- 10% of samples are re-assayed as part of our internal quality control procedures