### Yukon Mining Incentives Program file # 05-001

# **Prospecting and Geological Technical Report**

Claims: "Sugar" YC 39527-35 "Honey" YC 39536-42

# Location: NTS 105 M/15 UTM NAD83 506000-510000 EAST 7074000-7079000 NORTH

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YMIP fieldwork completed between 19 June - 6 July, 2005

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# **B.6.3.2.** List of the claims

A total of 16 claims were staked during the course of this work:

"Sugar" YC 39527-35	held by Greg Lynch
"Honey" YC 39536-42	held by Greg Lynch

#### **B.6.3.3. Description of work done**

A description of the work done is contained within the attached technical report below, as well as within the daily reports which are also included.

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# **B.4.4.1.1** Summary of previous relevant investigations

Early regional scale geologic mapping was completed by Bostock (1948), and later 1:50 000 scale mapping was completed by Green (1971). A recent synthesis of the local and regional geology was prepared by Roots (1997). Investigations of the adjacent Keno Hill Mining District were done by Boyle (1965) and by Lynch (1989). Hydrothermal veining in the immediate area of interest was reported by Lynch (1989), however economic mineralization was not established. Previously, claims did not exist over the current target and features of interest.

The prospecting area is situated 20 km southeast of the Keno Hill mining district (Fig. 1), along the northern fringe of the Selwyn Basin, within map sheet 105 M/15 (Green, 1971). Distinct gold-bearing altered members of the Mississippian Keno Hill quartzite unit are the subject of the investigation. Mapping and sampling were conducted northeast of Mayo Lake (105 M/15) at a scale of 1:10,000 in order to trace the key altered units along the 4 km long strike extent of available exposures. Two detailed maps are presented. Sampling was conducted to include both altered host rock and vein materials, and assay results are tabulated and discussed within the paper. Although the gold assays returned modest results, the values are distinctly anomalous.

Recently, in considering the regional setting of the Selwyn Basin and its associated plutonic rocks, it has been suggested that sediment-hosted disseminated gold deposits may be prospective in this area of the Yukon (Poulsen et al., 1997; Roots, 1997). On the other hand an important class of gold vein deposits has now been defined for this region which relate to Cretaceous granitic bodies, comprising the Tombstone Gold Belt (Stephens et al., 2004). Also, zoned large-scale polymetallic hydrothermal vein systems, such as at Keno Hill and Dublin Gulch occur within the district (Boyle, 1965; Lynch, 1989a,b).

Sediment-hosted disseminated gold deposits comprise a diverse class of deposits whose characteristics continue to be refined world-wide as research and exploration progress (e.g. Bagby and Berger, 1985; Arehart, 1996; Ilchick and Barton, 1997; Peters, 2004). Most famously, in the Carlin district of Nevada, deposits are typically hosted within Paleozoic-aged impure silty carbonaceous carbonates and feature discrete clay mineral and silica alteration patterns, accompanied by disseminated gold amenable to bulk mining (Bagby and Berger, 1985). However, host rock types are known to be variable and can include carbonaceous sandstone and chert, among others. Regional lineaments and structure, large scale hydrothermal circulation, and proximity to granitic bodies are also thought to be key (Bagby and Berger, 1985; Arehart, 1996; Lefebure et al., 1999).

Nonetheless, reports of sediment-hosted disseminated gold occurrences remain rare for the Selwyn Basin, owing possibly to the often subtle nature of this type of mineralization, or to difficulties and ambiguities relating to classification. This report describes an altered member of the Keno Hill quartzite unit displaying stratabound alteration and veining with associated disseminated gold values. From a descriptive standpoint, designation as sediment-hosted disseminated gold occurrences seems reasonable. However, the example presented here displays mesothermal characteristics, whereas those from type areas tend to be more commonly, though not uniquely, epithermal in character. The significance of this contribution resides in the identification and characterization of a new type of mineralization for the area, which may ultimately help guide further exploration and study.

The Mississippian Keno Hill quartzite (Tempelman-Kluit, 1970; Mortenson and Thompson, 1990; Roots and Murphy, 1992; Roots, 1997), is contained within the ancient continental margin succession of the Paleoproterozoic to Paleozoic western North American miogeocline, near the northern edge of the Selwyn Basin (Abbott et al., 1986; Gordey and Anderson, 1993). The region forms the northern extension of the Omenica Crystalline Belt (Monger et al., 1982), and has been affected by late Jurassic to middle Cretaceous deformation, metamorphism, and igneous activity (Roots, 1997). The Keno Hill quartzite extends continuously along strike for 220 km, from the Tintina Fault in the west to central Yukon in the east (Tempelman-Kluit, 1970). Strata dip generally south as a result of northerly thrusting, and the quartzite may be as much as 1 km thick where affected by imbrication and structural thickening. The southern flank of the quartzite is bound by the Robert Service thrust which juxtaposes Neoproterozoic to Cambrian units of the Hyland Group onto the Mississippian Keno Hill quartzite (Roots and Murphy, 1992; Thompson, 1995; Roots, 1997). Regional considerations bracket the thrusting to between the deformed middle Jurassic strata and Late Cretaceous granitoid magmatism which postdates deformation. Middle Triassic gabbro and diorite sills are dispersed in the Keno Hill quartzite and underlying units (Mortensen and Thompson, 1990), and have been strongly affected by shearing during thrusting.

The deformed sedimentary rocks of the region are crosscut by a northwest trending belt of Cretaceous granitic plutons and dykes termed the Tombstone Plutonic Suite (Anderson, 1987; Poulsen et al., 1997), dated by U-Pb zircon geochronology at 90-95 Ma (Mortensen et al., 1996) and include the large Roop Lakes pluton, dated at 92.8 +/- 0.5 Ma (Roots, 1997), which intrudes the quartzite east of the Keno Hill mining district. The Keno Hill quartzite unit comprises a number of lithologies, including dark grey to black graphitic quartzite containing variable amounts of muscovite, chlorite, tourmaline, carbonate and detrital zircon. Calcareous quartzite also occurs (Roots, 1997), though thin limestone beds are dispersed or rare. Interbedded schist and graphitic phyllite are also typical. Furthermore, tuffaceous metavolcanic rocks are contained within the Keno Hill quartzite succession (Roots, 1997).

A contact metamorphic halo within the Keno Hill quartzite extends up to 4 km away from exposures of the Roop Lakes pluton (Lynch, 1989a,b). Sillimanite schist at the contact passes outwards to garnet-staurolite-plagioclase-biotite-muscovite schist, whereas the outermost halo is characterized by graphite-andalusite schist or locally biotitemuscovite schist. Porphyroblasts within the metamorphic halo typically overgrow earlier deformation fabrics. Mineral assemblages within the halo permit characterization of pressure and temperature conditions during emplacement of the Roop Lakes pluton. Microprobe analyses for coexisting garnet-staurolite-plagioclase-biotite-muscovite-quartz returned pressure-temperature determinations, based on the intersection point of three independent reactions (e.g., Berman, 1991), near 3500 bar and 530° C (Lynch, unpublished data). As a lithostatic pressure determination, 3500 bar reflects a similar crustal depth to the 1500 bar pressure determination for hydrostatic conditions recorded in the veins of the Keno Hill mining district (Lynch, 1989b; Lynch et al., 1990).

Fault and fracture controlled hydrothermal veins within the quartzite extend from the margin of the metamorphic halo towards the west into the Keno Hill mining district, forming a vein system distributed across 40 km. Hydrothermal alteration along the veins in the mining district has been dated at 84 Ma by K-Ar analysis of wallrock alteration (Sinclair et al., 1980). Typically veins are coarse grained, vuggy, with euhedral to subhedral crystals, display banding textures, are structurally discordant and locally may have well developed alteration haloes. Much of the vein material is unstrained, but parts of some veins contain sheared and deformed crystals, whereas other portions display cyclical brecciation and cementation, indicating contemporaneity between veining, hydrothermal circulation, and brittle faulting.

In the study area, the Roop Lakes pluton (Roots, 1997) dominates the centre of map105 M/15, and is the largest granitic body within the Tombstone plutonic suite. From east to west veining is zoned away from the pluton, with changing hydrothermal assemblages interpreted to reflect evolving physical-chemical conditions in the fluids (Lynch et al., 1990). Seven mineralogical zones have been defined, which are described in Lynch (1989a, b). Quartz-feldspar-tourmaline veins occur immediately west of this intrusive body, whereas a tungsten skarn is found at its southeastern contact. Outward from the quartz-feldspar veins are vuggy quartz-calcite veins. Further west still, this family of veins transitions into the sulphide-rich quartz-siderite veins of the Keno Hill Ag-Pb-Zn mining district. Considerations of the regional zoning pattern suggest that gold may be found between the Roop Lakes pluton and the Keno Hill district (Lynch, 1986). District scale zoning in the Keno Hill system is also reflected in the tetrahedrite-freibergite solid solution, with tetrahedrite occurring in the east and changing gradually to freibergite in the west (Lynch, 1989a; Sack et al. 2003). Veins in the mining district show a regular paragenetic association by their growth textures and cross cutting relationships, characterized mainly by early coarse grained quartz, followed by siderite and sulphides, and at the western end of the system a late fine grained quartz stage overgrows the middle siderite stage. Furthermore, tetrahedrite has been shown to be a useful petrogenetic indicator; compositions of this mineral in the Keno Hill veins indicate hydrothermal mineralization occurred predominantly within the range 250° - 310° C, although some analyses do indicate that temperatures in the veins may have reached up to approximately 400° C (Sack et al., 2003).

## B.4.4.1.2/B.4.4.2.2 Details of surface evaluation and geological information

Two detailed maps of the adjacent study areas are presented in Figures 2 and 3, from field work completed at a scale of 1:10,000. The first map considered (Fig. 2) covers an area along a stream gully situated at the northeast end of Mayo Lake. Here the sloping ridge face above the lake provides adequate outcrop exposure across an altitude range

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from 3000-4500 feet above sea level. Five mapable units from within the Keno Hill quartzite unit can be defined at the present scale of work. These are in ascending order (1) interbedded grey-black quartzite, graphitic schist and phyllite, with minor greenstone; (2) a unit of thinly bedded competent dark green tuffaceous volcanic rocks and trachytic andesite; (3) pervasively altered porous white sandstone; (4) interbedded silver-grey and brown coloured schist and phyllite; and (5) foliated to massive feldspathic greenstone or metadiorite. Because of deformation and lack of top indicators the true stratigraphic position of these units remains uncertain, and the sequence of 1-5 above represents the present relative positions of the layered sequence. All, except unit five above are thought to be subdivisions of the Mississippian Keno Hill quartzite unit. The greenstone-metadiorite is likely Triassic in age (Mortensen and Thompson, 1990). The principal unit of interest is the pervasively altered porous white sandstone which was informally labelled the Sugar member during the course of fieldwork, because in places it has the appearance of granulated white sugar.

Bedding strikes north-northwest and dips moderately east-northeast (Fig. 2). Two penetrative fabrics are generally preserved within the micaceous units, and to varying degrees within the more competent rocks. The earliest and strongest foliation is parallel or sub-parallel to bedding, and is characterized by aligned mica and locally a schistose fabric. The fabric is axial planar to isoclinal folds which are sometimes observed at hand sample or outcrop scales. Highly sheared detached intrafolial folds, boudins, and fault rock were observed at a contact along a series of outcrops in the center of the map (Fig. 2), which has been interpreted as a likely thrust fault. This fault was extended to a mylonitized greenstone outcrop in the north-centre of the map. The second fabric is comprised of an upright spaced cleavage which strikes northwest-southeast, and is axial planar to open folds which plunge moderately to the southeast. The two stages of deformation are well known in the district and can be related, in succession, to early thrusting in association with the Roberts Service Thrust, followed by later upright folding in association with the Mayo Lake anticline.

The Sugar member stands out as a distinct white sandstone strip within the layered sequence, exposed in a number of outcrops running up the slope obliquely across the stream gully (Fig. 2). The unit is approximately 20 m thick and is underlain by a competent well bedded dark coloured volcanic lapilli and ash tuff or locally trachytic andesite. A number of characteristics make the Sugar member unique. The rock is porous, white, and has been almost entirely bleached of graphite or dark organic matter. Rare remnant patches of grey-black graphite remain in segments of outcrops giving hints of the protolith, but the graphite is entirely removed in proximity of quartz veins and along alteration haloes which affect most of the unit. The rock has clearly been decarbonatized. The porous nature of the rock is also peculiar; the intergranular porosity is estimated to be up to 10 % and greater. Water poured onto the rock readily soaks into the formation and disappears. It should be emphasized that sandstone which has been deformed and metamorphosed to the degree that these rocks have cannot retain any primary porosity. A lack of flattening or annealing of the porosity is a distinct character, however irregularly oriented stylolites with black organic-rich seams are sometimes observed. All porosity is likely the effect of secondary leaching, and postdates penetrative deformation. Removal of organic matter would have created only a small portion of the porosity. Leaching of a prominent cement such as calcite (decalcification) likely contributed most of the porosity; calcite is locally an important component of the Keno Hill quartzite (Green, 1971; Roots, 1997). A further consequence of the secondary porosity is the generally friable nature of the rock, which crumbles between the hands in some samples. Outcrops have rounded as opposed to angular weathering profiles. The unit does outcrop well though and rock competency is variable due to widespread sericitization and patchy silicification. Small flakes of satin-white to transparent muscovite/sericite are disseminated throughout the Sugar member. Locally apple green flakes of Cr-muscovite or fuschite are observed, which is consistent with the generally high Cr assay values recorded throughout the unit. A very light brown to buff colouration is also common from the weathering of small quantities of disseminated pyrite. This unit is thought to be equivalent to the hydrothermally altered "powdery sandstone" of Roots (1997) described from a locality near Mount Albert, or the "crush breccias" of Green (1971).

Quartz veins are abundant along the entire strike of the Sugar member. The veins are often vuggy with comb texture, and are very regularly oriented as near vertical northeastsouthwest striking fracture-controlled planar features. Fractures and joints which control the veins are oriented approximately perpendicular to late-stage southeast-plunging fold axes. Folding appears to have influenced fracture orientations. Veins terminate at the upper and lower contacts of the Sugar member. Overlying and underlying units are almost entirely barren of veins. One exception is an irregular quartz vein breccia body hosted in the underlying grey-black Keno Hill quartzite beneath the Sugar member at the south end of the map (Fig. 2). It is clear that the intense vein system is largely stratabound to the Sugar member. Mineralogically, subhedral-euhedral quartz is the dominant mineral in the veins, however grey-brown botreoidal crusts occur along the walls of some veins, and white clay minerals have been observed as a late vug filling. A black mineral, possibly tourmaline, was observed but remains to be confirmed. It is noteworthy that a second layer or occurrence of the Sugar member is drawn on the map (Fig. 2), projected from an outcrop situated on the upper ridge at the margin of the map, immediately to the north. It is uncertain if this is a second independent occurrence of the same facies in the normal stratigraphic succession, or if it is a structural repetition of a single unit. The available outcrop distribution does not allow for a clear distinction to be made. Nonetheless, the unit shows the same attributes of alteration and veining as the Sugar member elsewhere.

Figure 3 is a map of the Sugar member extending northwest from Figure 2. The area covers a portion of the ridge top above Mayo Lake where the topography is flatter. Here outcrops are more scattered, however the Sugar member is well exposed in a series of outcrops running along the west side of the map. In a large outcrop which is continuous for at least 100 meters, the unit was measured to be 15 m thick, though this is a minimum since upper and lower contacts are not exposed. Underlying rocks consist of green metavolcanic and greenstone units, which rest above grey-black quartzite and phyllite. Overlying rocks are dominated by metasedimentary lithologies including graphitic quartzite, schist and phyllite, as well as one occurrence of sandstone-pebble

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conglomerate. In contrast to the mapped area to the southeast, a broad continuous unit of greenstone above the Sugar member does not occur. However a second level of the porous, altered, and bleached Sugar member is mapped in the southeast corner of the map (Fig. 3). Structurally the rocks dip moderately to the east-northeast (Fig. 3). An early micaceous bedding parallel fabric is also recorded. A sheared contact at the top of the Sugar member with detached isoclinal intrafolial folds is found in the southwest portion of the map, interpreted here as a likely early deformation stage thrust fault. Later upright southeast plunging open folds are observed in outcrop overprinting the earlier fabrics, and locally have an associated upright spaced cleavage. A map-scale fold has been interpreted from surface data. Alteration of the Sugar member is consistent through this area, featuring; a bleached white appearance within a porous sandstone, sericitization and crumbly texture with intense quartz veining. Planar sub-vertical northeast-southwest striking vuggy quartz veins are abundant and stratabound to the member. The orientation of the veins is remarkably consistent with the veins in the area to the southeast. Disseminated pyrite has been largely oxidized to rust streaks in the rock, or occurs along vein margins.

Interestingly, one occurrence of andalusite within black graphitic schist has been found in the mapped area along the ridge. Andalusite is characteristic of the outer contact metamorphic halo to the Roop Lakes pluton (Lynch, 1989), and indicates a certain proximity to and influence from the underlying pluton.

# **B.4.4.1.4 Description of sampling methods**

Samples were collected only from outcrops using a rock hammer and chisel. Most samples are approximately fist-sized or slightly larger. Samples include either quartz vein only, quartz vein and altered host rock, or altered host rock only fragments (Table 1). An attempt was made to distribute sampling across as much of the mapped areas as possible, within altered and quartz-veined units. Table 1 summarizes sample descriptions and includes GPS UTM coordinates for exact positioning.

#### **B.4.4.1.5** Analytical methods and results

Samples were analysed at Loring Laboratories in Calgary (<u>www.loringlabs.net</u>). Fourtyfive samples were analyzed by ICPMS for a thirty-one suite of elements, and gold was analyzed separately by fire assay. Within the detection limits, gold ranges from 5 to 50 ppb, with one outlier that returned a value of 480 ppb (Figt. 4). In total 14 samples returned gold values distributed along much of the 4 km long strike extent of the unit, although the northwest end appears barren. The anomalous value of 480 ppb is from a distinct sample which includes quartz vein material, altered host rock, and a 1 cm thick grey-brown botreoidal goethite rim along the vein margin. None of the other samples include the botreoidal goethite, though this material was noted in the field at other localities such as within the hydrothermal breccia underlying the southernmost end of the Sugar member (Fig. 3); future sampling needs to revisit this site now that it has been established that the goethite is gold bearing. Sampling was originally conducted to test for the possibility of widespread low-grade gold values, targeting a bulk mining scenario. Positive correlations were not established between gold and the other elements. Most of the other metals are very low in the samples. An exception is Cr which is typically high and correlates positively with Ni. Values for Cr range up to 335 ppm, well above any contributions which may arise from contamination by the Cr-Mo crusher, and are above background values from control samples. Furthermore the crusher used does not contain Ni, and so the positive correlation between Ni-Cr indicates a natural trend. The likely source of Cr in the rocks is from muscovite, which in nature is known contain up to 6 %  $Cr_2O_3$ . Muscovite is also reported to be Cr-bearing in metasedimentary rocks elsewhere in the Rockies (Heinrich, 1965). High Cr mica, termed fuschite, is a common alteration product in certain gold districts. However, further mineralogical work is needed to confirm the composition of the muscovite.

In considering the geochemical results and assays it is important to take into account the particular nature of the host rock. The Sugar member is abnormally porous and susceptible to the effects of surface waters as well as groundwater. Water is readily absorbed into the unit which has undoubtedly been thoroughly flushed over the years. Samples taken from surface outcrops are largely representative of the present day vadose zone where strong geochemical gradients and element remobilization are common. Consequently, a representative evaluation of the Sugar member would require sampling in drill core from below the water table. Gold associated with pyrite, such as is typical in sediment-hosted disseminated deposits, would be largely remobilized in surface exposures as most of the pyrite here has been oxidized to rust streaks. A higher gold content in association with the botreoidal limonite crust for one sample indicates that gold was indeed remobilized in the low temperature oxidizing environment – refractory ore is postulated at depth.

#### **B.4.4.2.3 Interpretation of geological observations**

This Technical Repport describes a new type of gold occurrence east of the Keno Hill mining district, along the northern fringe of the Selwyn Basin. The occurrence may be classified as a sediment-hosted disseminated gold deposit, on the basis of the stratabound nature of the alteration and veining, the disseminated low-grade gold values, and on the basis of the observed decarbonatization and apparent decalcification. However, characteristics suggest that the hydrothermal activity occurred within the mesothermal regime by virtue of the coarse grained euhedral morphology of quartz crystals within veins, and predominance of sericite-pyrite (phyllic) alteration. This contrasts with the more epithermal character of well established sediment-hosted disseminated gold deposits where fine grained cherty quartz and clay (argillic) alteration are more prevalent (Bagby and Berger, 1985; Lefebure et al., 1999), though characteristics of deeper-seated deposits are also known (e.g. Peters, 2004).

It should be noted however that the geochemical characteristics of the occurrence is somewhat peculiar and not particularly characteristic of sediment-hosted disseminated gold deposits. Here, only Cr, Ni, and Au are truly anomalous within the clastic sedimentary host; whereas sediment-hosted disseminated gold deposits typically have high associated As, Sb, Ba, Hg contents, among other metals. Clastic rocks with elevated Au and Cr might be interpreted as paleoplacers where detrital Au and chromite are known to occur together. However, the hydrothermal effects on the Sugar member are clearly evident, but it is entirely possible that the alteration has remobilized gold to some extent from within a pre-existing paleoplacer. The implications of such an interpretation are that the Sugar member might actually be Jurassic-Cretaceous in age instead of Mississippian, as is required for the derivation of detrital chromite from the erosion of obducted ophiolites. Further work is needed to establish the age of this unit.

The exact timing of hydrothermal activity is uncertain, however alteration and veining post-date stages of penetrative deformation. Furthermore the porous nature of the altered rock precludes flattening as recorded in the surrounding units. These relationships roughly place a Jurassic age as the lower limit on the timing. More likely the hydrothermal circulation is coincident with the adjacent Roop Lakes pluton of mid-Cretaceous age, which also post-dates deformation. Consequently, the veins and altered host rocks may be linked to the Tombstone Gold Belt.

It is also worth considering the position of the altered Sugar member relative to the zoned Keno Hill hydrothermal system (Lynch, 1989a,b). The site occupies a position at the outer fringe of the contact metamorphic halo which surrounds the Roop Lakes pluton (Fig. 1), a position inboard of quartz-calcite veins which are widespread immediately to the west of the present study area and overlap with the veins of the Keno Hill Ag-Pb-Zn district. It is noteworthy that calcite veins typically form a halo surrounding sedimenthosted disseminated gold deposits in the Carlin district, which have been affected by decalcification (Bagby and Berger, 1985). From a mass balance perspective decalcification in the orebodies is matched by calcite precipitation in veins adjacent to the deposits. This principle may also apply here where delcalcification of the Sugar member and surrounding rocks is countered with calcite veining immediately west of the study area, and indicates the possible scale of the system to which alteration in the Sugar member is linked. As a porous hydrothermal aquifer the Sugar member and similar units may have acted as important conduits for regional hydrothermal circulation. The regular set of fractures and confined stratabound nature of associated quartz veins within the Sugar member suggest that the interparticle porosity was present during hydrothermal circulation, creating elevated pore fluid pressures which promoted in situ fracturing (e.g. Sibson, 2004). Very high lateral permeability in the unit would be expected from the presence of such a fracture system. In contrast, the immediately overlying and underlying stratigraphy are not fractured and veined because of the associated lack of porosity and very low pore fluid pressures; alternatively they acted as seals and aquicludes. Such a stratified flow system may have acted as part of the underlying feeder network to discordant fault-controlled veins in the region.

# **B.4.4.1.7/B.4.4.2.4 Conclusions and recommendations**

Sediment-hosted disseminated gold values were established within the Sugar Member of the Keno Hill Quartzite unit, covering claims YC 39527-39542. The map-pattern of the Sugar member is now well established from surface exposures within the claim groups.

The highest gold concentration (480 ppb) was measured from a sample incorporating a goethite crust along a vein margin, indicating near-surface secondary re-mobilization of gold. However, surface samples largely indicate gold in sub-economic concentrations within Sugar member exposures.

Future surface sampling needs to focus on limonite/goerthite bearing vein material in order to establish zones of higher gold concentration. However, it is apparent that samples need to be taken from below the area of secondary leaching and re-mobilization in order to establish primary gold values within the Sugar member. This can only be achieved through drilling to depths below the water table and vadose surface regime. The pervasively altered and mineralized Sugar member offers a moderately-dipping unit that can be readily targeted and evaluated from a shallow drilling program.

It is also important to establish what minerals are responsible for the high Cr concentrations. It is suspected that Cr resides in muscovite, as fuschite, which is a well know alteration mineral associated with gold mineralization. However, other candidates such as detrital chromite may be responsible for the high Cr, and microprobe analysis is recommended to sort out this problem. If chromite is present it is speculated that the Sugar member might be Jurassic-Cretaceous in age rather than Mississippian, and that a paleoplacer designation, overprinted by hydrothermal alteration, may be a better classification of this occurrence.

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G. Lynch

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# TABLE 1. Sample locations and descriptions

sample	UTMX	UTMY	claim	rock type	colour	sand size	porosity	induration	graphite	silicification	sericitization	clay	pyrite	rust stain	quartz veinlet	quartz vein >1cm	Au ppb	comments
GL-01	508523	7075753	Sugar	quartzite	W	m	m	m		m	h	-	t	-	У	-	15	vuggy 1 cm qtz vein in sample
GL-02	508530	7075745	Sugar	qtz vein	W	-	m	-	-	-	-	-	-	-	-	у	480	10 cm q-vn & botreoidal goethite
GL-03	508365	7075575	Sugar	quartzite	w	m	h	1	1	h	h	-	-		-	: <b>4</b> 1	5	vuggy laminae
GL-04	508582	7075716	Sugar	quartzite	w	m	h	1	1	h	h	-	-	-	-	-	<5	crumbly & porous
GL-05	508515	7075765	Sugar	quartzite	b	m	h	1	-	h	h	-	t	у	-	-	14	crumbly & porous & rusty
GL-06	508679	7075578	Sugar	quartzite	b	m	h	1	-	h	h	-		У	-	у	<5	2 cm q-vn and rusty
<b>GL-07A</b>	507057	7076896	Honey	quartzite	w	m	h	1	-	1	h	-	t	У	У	-	<5	vuggy 1 cm qtz vein in sample
GL-07B	507057	7076896	Honey	quartzite	b	m	1	h	-	h	h	-	t	У	У	-	10	stwk & silicified
GL-08A	507033	7076957	Honey	quartzite	b	m	1	h	1	h	h	-	t	У	У	-	10	strongly silicified sample
GL-08B	507033	7076957	Honey	quartzite	b	m	h	1	-		h		t	У	-	-	<5	crumbly & porous & rusty
GL-09	506965	7077240	Honey	quartzite	w	m	m	1	1	m	h	-	-	-	У	-	<5	q-vn stwk, graphitic stylolite
GL-10	506737	7077730	Honey	quartzite	w	m	m	m	-	m	h	-	t	У	У	-	<5	sericitized & silicified
GL-11	506525	7077909	Honey	quartzite	gr	f	m	m	1	-	1		t	-	-	-	<5	hard flinty sample
GL-14	506902	7077682	Sugar	quartzite	gr	f	m	m	-	1	h	-	t	-	-	-	<5	much sericite, satin reflection
GL-17	509040	7074991	Sugar	quartzite	b	m	h	1	-	1	h	-	-	У	-	-	<5	black tourm ? specs
<b>GL-18A</b>	509012	7075070	Sugar	quartzite	w	m	h	1	-	-	h	-	-	У	-	-	5	much sericite, satin reflection
GL-18B	509012	7075070	Sugar	quartzite	b	m	h	1		1	1	1	t	У	-	у	15	2 cm q-vn at edge of sample
GL-19	508920	7075196	Sugar	quartzite	W	m	h	1			h	-	-	-	У	-	5	strongly bleached & leached
GL-21A	506644	7078167	Honey	quartzite	w	f	1	h	-	1	1	-	-	-	-	-	<5	hard flinty sample
GL-21B	506644	7078167	Honey	qtz vein	w	-	-	-	-	-	-	-	-	-	-	у	<5	vuggy 5 cm wide q-vn
GL-22	507007	7077625	Honey	quartzite	b	f	1	h	-	1	1	-	t	У	У	-	<5	dark brown rusty & silicified
GL-23	507315	7077669	Honey	quartzite	gr	f	m	m	-E	1	1	-	t	У	-	у	50	minor graphite
GL-25	506936	7077857	Honey	quartzite	gr	f	m	m	T.	1	1	-	-	-	У	-	<5	grey, lightly graphitic
GL-26	506870	7077650	Honey	conglom	b	С	m	m	-	m	m	-	t	У	-	-	<5	rusty ss-pebble conglomerate
GL-30	508180	7076343	Sugar	quartzite	w	m	m	m	-	m	m	-	t	У	У		<5	q-vn stwk, silicified & sericitized
GL-31	508229	7076912	Sugar	quartzite	b	m	h	1		1	1	-	-	у	-	у	15	rusty & porous with 1-2 cm q-vn
GL-32	507136	7076718	Honey	quartzite	w	m	h	1	-	m	m	-	-	-	-	- 1	35	bleached & leached
GL-33	507053	7076732	Honey	quartzite	or	m	m	m	-	1	1	-	-	у	у	-	<5	bright orange rusty & silicified
GL-34	507008	7076687	Honey	quartzite	gr	m	1	h	1	m	m	-	t	-	у	-	<5	dark mineral: tourm., graph., biot. ?

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# TABLE 1 (cont.). Sample locations and descriptions

sample	UTMX	UTMY	claim	rock type	colour	sand size	porosity	induration	graphite	silicification	sericitization	clay	pyrite	rust stain	quartz veinlet	quartz vein >1cm	Au ppb	comments
GL-35	506988	7076721	Honey	quartzite	gr	f	Τ	h	-	T	1	-	-	-	-	-	<5	cherty grey silicified
GL-36	507490	7076827	Honey	quartzite	b	m	m	m	-	1	1	-	t	У	У	-	<5	hard flinty sample
GL-37	508410	7075985	Sugar	quartzite	w	m	h	1	-	1	h	-	-	-	У	-	5	bleached & leached
GL-38	508517	7075682	Sugar	quartzite	w	m	h	1	-	1	h	-	t	-	-	-	<5	alteration along laminae
GL-39	508672	7075560	Sugar	quartzite	b	f	h	1	-	1	h	-	t	У	-		<5	alteration along laminae
GL-40	508690	7075546	Sugar	quartzite	w	m	h	1	-	1	h	-		-	-	-	<5	very crumbly and sericitized
GL-41	508690	7075546	Sugar	quartzite	w	m	h	1	-	1	h	-	t	-	-	-	<5	bleached & leached
GL-42	508690	7075546	Sugar	quartzite	b	m	m	m	-	m	h	÷-	t	У	-	-	25	rusty & silicified
GL-43	508690	7075546	Sugar	quartzite	w	m	h	1	-	1	h	-	-	-	-	-	<5	bleached & leached
GL-44A	508690	7075546	Sugar	quartzite	b	m	h	1	-	m	h	-	t	У	У	-	<5	rusty & silicified
GL-44B	508690	7075546	Sugar	qtz vein	w	-	-	-	-	-	-	-	-	-	-	У	<5	2 cm vuggy q-vn
GL-45	508800	7075350	Sugar	quartzite	w	m	h	1	-	1	h	-	t	-	У	-	<5	q-vn stwk, sericitized
<b>GL-50Q</b>	517540	7077579	Roop	granite	pi	m	1	h	-	m	m	-	-	У	У	-	15	q-muscovite vein, granite
GL-50T	517540	7077579	Roop	granite	pi	m	1	h	-	1	1	-	-	-	У	-	<5	tourmaline-feldspar vein, granite
<b>GL-H02</b>	506980	7077280	Honey	quartzite	w	m	1	h	-	h	h	-	t	У	-	У	<5	sericitized & silicified
GL-H05	506980	7077280	Honey	quartzite	b	m	1	h	-	h	m	-	t	У	у	-	<5	sericitized & silicified
GL-H08	506980	7077280	Honey	quartzite	w	m	m	m	-	m	h	•	t	-	У	-	<5	moderate silicification
GL-H11	506980	7077280	Honey	quartzite	w	m	m	m	-	m	m	-	t	У	у	-	<5	rusty and moderate silicification
GL-H15	506980	7077280	Honey	quartzite	b	m	m	m	1	m	m	-	t	у	у	-	<5	remnant graphitic laminae

colours: w-white, b-brown, gr-grey, or-orange, pi-pink, contents: h-high, m-medium, l-low, t-trace, y-yes



TO: GREG LYNCH

# Loring Laboratories Ltd.

629 Beave → Road N.E., Calgary Alberta T2K 4W7 Tel: 274-2777 Fax: 275-0541



FILE:47805

DATE: Aug. 8, 2005

# **30 ELEMENT ICP ANALYSIS**

Sample	Ag	AI	As	Au	В	Ва	Bi	Ca	Cd	Со	Cr	Cu	Fe	K	La	Mg	Mn	Мо	Na	Ni P	Pb	Sb	Sr	Sn	Th	Ti	U	V	W	Zn
No.	ppm	%	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	%_	ppm	%	ppm	ppm	%	ppm %	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
GL-1	<0.5	0.07	1	15	30	25	3	0.02	<1	3	135	4	0.17	0.02	6	0.03	27	7	0.01	5 < 0.01	3	2	<1	<1	5 <	< 0.01	<1	2	<1	3
GL-2	<0.5	0.16	13	480	22	90	3	0.04	<1	6	180	2 (	0.29	0.02	7	0.05	54	10	0.02	5 0.01	3	2	5	<1	7 •	<0.01	<1	5	<1	6
GL-3	<0.5	0.07	<1	5	29	28	2	0.03	<1	4	225	3 (	0.20	0.02	5	0.02	25	2	0.01	7 0.01	2	2	1	<1	2 <	<0.01	<1	2	<1	2
GL-4	<0.5	0.10	<1	<5	28	23	<1	0.01	<1	5	229	4 (	0.28	0.01	5	0.04	28	2	0.01	6 <0.01	2	2	2	<1	9 -	<0.01	<1	3	<1	3
GL-5	<0.5	0.08	<1	14	28	21	4	0.01	<1	5	208	6	0.30	0.01	4	0.03	22	<1	0.01	4 0.01	10	2	2	1	5 <	<0.01	<1	3	<1	8
GL-6	<0.5	0.05	<1	<5	27	14	3	0.01	<1	5	280	3	0.27	0.01	4	0.01	35	1	0.01	7 <0.01	2	2	2	<1	<1 •	<0.01	<1	3	<1	2
GL-7A	<0.5	0.04	5	<5	31	50	3	<0.01	<1	7	215	15 (	0.44	0.02	2 <	<0.01	21	<1	0.01	5 0.01	1	2	2	1	<1 <	<0.01	<1	3	<1	3
GL-7B	<0.5	0.06	25	10	30	16	3	0.01	<1	7	227	10	0.42 ·	<0.01	4	0.01	26	3 -	<0.01	4 0.01	3	3	2	1	2 <	<0.01	<1	3	<1	2
GL-8A	<0.5	0.05	37	10	28	33	3	<0.01	<1	4	235	4	0.22	0.02	4 <	<0.01	21	1	0.01	5 0.01	2	3	1	<1	9 <	<0.01	<1	2	<1	<1
GL-8B	<0.5	0.14	2	<5	28	16	5	<0.01	<1	7	171	3 (	0.39	0.01	7	0.03	20	<1	<0.01	2 0.01	2	2	<1	1	7 <	<0.01	<1	3	<1	2
GL-9	<0.5	0.06	1	<5	29	24	4	<0.01	<1	3	188	2 (	0.16	0.02	4 <	0.01	22	1	0.01	5 0.02	2	2	1	1	<1 <	<0.01	<1	2	<1	<1
GL-10	<0.5	0.12	<1	<5	31	99	2	0.01	<1	4	181	6 (	0.20	0.03	5	0.02	22	<1	0.01	3 0.01	2	1	2	2	<1 <	<0.01	<1	3	<1	1
GL-11	<0.5	0.10	1	<5	31	11	1	0.05	<1	4	176	2 (	0.20	0.02	5	0.05	29	<1	0.01	4 0.02	3	1	1	<1	9 <	:0.01	<1	3	<1	5
GL-14	<0.5	0.18	2	<5	30	20	<1	0.05	<1	6	183	2 (	0.33	0.03	7	0.06	63	<1	0.01	3 0.03	4	2	3	<1	12 <	:0.01	<1	5	<1	5
GL-17	<0.5	0.20	<1	<5	33	110	1	0.02	<1	12	172	28	0.66	0.04	2	0.07	44	1	0.01	3 0.01	3	2	6	<1	7	0.03	<1	13	<1	6
GL-18A	<0.5	0.09	<1	5	38	29	3	0.01	<1	5	238	3 (	0.25	0.01	7	0.03	35	<1	0.01	5 <0.01	3	2	3	<1	7 <	0.01	<1	3	<1	5
GL-18B	<0.5	0.07	1	15	37	14	1	0.01	<1	5	208	2 (	0.25	0.01	5	0.02	27	<1	0.01	6 0.01	2	2	3	1	<1 <	:0.01	<1	2	<1	5
GL-19	<0.5	0.10	<1	5	35	24	3	0.02	<1	4	217	2 (	0.22	0.01	2	0.04	36	<1	0.01	5 0.01	2	2	1.	<1	2 <	:0.01	<1	3	<1	3
GL-21A	<0.5	0.06	<1	<5	34	33	3	0.05	<1	3	200	5 (	0.18	0.02	5	0.01	26	<1	0.01	4 0.02	5	2	3	<1	2 <	:0.01	<1	2	<1	<1
GL-21B	<0.5	0.01	<1	<5	32	3	3	<0.01	<1	4	241	6	0.22 ·	<0.01	<1 <	<0.01	33	2 ·	<0.01	5 <0.01	2	2	1	1	<1 <	0.01	<1	2	<1	<1
GL-22	<0.5	0.13	<1	<5	43	26	6	0.01	1	21	314	16	1.30	0.04	7	0.04	39	<1	0.01	6 0.03	3	4	2	2	14 <	0.01	<1	5	<1	7
GL-23	<0.5	0.14	3	50	36	3	4	0.01	<1	8	291	2 (	0.45 <	<0.01	4	0.07	38	1	0.01	6 0.01	2	3	2	<1	<1 <	0.01	<1	5	<1	9
GL-25	<0.5	0.15	<1	<5	41	7	4	0.05	<1	5	271	2 (	0.28	0.01	6	0.02	29	1	0.01	7 0.01	3	3	5	. 1	5 <	0.01	<1	3	<1	3
GL-26	<0.5	0.12	6	<5	37	3	4	0.14	<1	12	167	2 (	0.63 •	<0.01	6	0.16	136	<1	0.01	14 0.02	4	2	2	<1	<1	0.01	<1	5	<1	27
GL-30	<0.5	0.16	<1	<5	37	4	2	0.01	<1	7	272	3 (	0.38 •	<0.01	1	0.12	93	<1	0.01	9 <0.01	2	3	1	<1	<1 <	0.01	<1	5	<1	7

Gold analyzed by Fireassay/A.A.

0.500 Gram sample is digested with Aqua Regia at 95 C for one hour and bulked to 10 ml with distilled water. Partial dissolution for AI, B, Ba, Ca, Cr, Fe, K, La, Mg, Mn, Na, P, Sr, Ti, and W.

Certified by:



TO: GREG LYNCH

# Loring Laboratories Ltd.

629 Beave A Road N.E., Calgary Alberta T2K 4W7 Tel: 274-2777 Fax: 275-0541



FILE:47805

DATE: Aug. 8, 2005

# **30 ELEMENT ICP ANALYSIS**

Sample	Ag	Al	As	Au	В	Ba	Bi	Ca	Cd	Со	Сг	Cu	Fe	K	La	Mg	Mn	Мо	Na	Ni P	Pb	Sb	Sr	Sn	Th	Ti	U	V	W	Zn
No.	ppm	%	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	%	ppm	%	ppm	ppm	%	ppm %	ppm	ppm	opm	ppm	ppm	%	ppm	ppm	ppm	ppm
GL-1	<0.5	0.07	1	15	30	25	3	0.02	<1	3	135	4	0.17	0.02	6	0.03	27	7	0.01	5 <0.01	3	2	<1	<1	5 <	0.01	<1	2	<1	3
GL-2	<0.5	0.16	13	480	22	90	3	0.04	<1	6	180	2	0.29	0.02	7	0.05	54	10	0.02	5 0.01	3	2	5	<1	7 <	0.01	<1	5	<1	6
GL-3	<0.5	0.07	<1	5	29	28	2	0.03	<1	4	225	3	0.20	0.02	5	0.02	25	2	0.01	7 0.01	2	2	1	<1	2 <	0.01	<1	2	<1	2
GL-4	<0.5	0.10	<1	<5	28	23	<1	0.01	<1	5	229	4	0.28	0.01	5	0.04	28	2	0.01	6 <0.01	2	2	2	<1	9 <	0.01	<1	3	<1	3
GL-5	<0.5	0.08	<1	14	28	21	4	0.01	<1	5	208	6	0.30	0.01	4	0.03	22	<1	0.01	4 0.01	10	2	2	1	5 <	0.01	<1	3	<1	8
GI -6	<0.5	0.05	<1	<5	27	14	3	0.01	<1	5	280	3	0 27	0.01	4	0.01	35	1	0.01	7 <0 01	2	2	2	< 1	<u> </u>	0.01	~1	3	~1	2
	<0.0	0.00	5	<5	31	50	3	<0.01	<1	7	215	15	0.27	0.07	2.	<0.01	21	<1	0.01	5 0.01	1	2	2	1	~1 ~	0.01	~1	2	~1	2
	<0.5	0.04	25	10	30	16	्र	0.01	<1	7	227	10	0.44	<0.02	4	0.01	26	3	<0.01	4 0 01	3	2	2	1	2 ~	0.01	~1	3	~1	ວ ວ
	<0.5	0.00	37	10	28	33	3	<0.01	<1	4	235	4	0.22	0.02	4	<0.01	21	1	0.01	5 0.01	2	્ર	1	< 1	<u>a</u> <	0.01	~1	2	21	2 21
GL-8B	<0.5	0.00	2	<5	28	16	5	<0.01	<1	7	171	3	0.39	0.01	7	0.03	20	<1	<0.01	2 0 01	2	2	<1	1	7 <	0.01	<1	2	<1	2
02 02	0.0	0	-				Ū	0.01	•	•	••••	Ū	0.00	0.01		0.00		•	0.01	2 0.01	-	-		•	, ,	0.01		0	~ 1	2
GL-9	<0.5	0.06	1	<5	29	24	4	<0.01	<1	3	188	2	0.16	0.02	4 •	<0.01	22	1	0.01	5 0.02	2	2	1	1	<1 <	0.01	<1	2	<1	<1
GL-10	<0.5	0.12	<1	<5	31	99	2	0.01	<1	4	181	6	0.20	0.03	5	0.02	22	<1	0.01	3 0.01	2	1	2	2	<1 <	0.01	<1	3	<1	1
GL-11	<0.5	0.10	1	<5	31	11	1	0.05	<1	4	176	2	0.20	0.02	5	0.05	29	<1	0.01	4 0.02	3	1	1	<1	9 <	0.01	<1	3	<1	5
GL-14	<0.5	0.18	2	<5	30	20	<1	0.05	<1	6	183	2	0.33	0.03	7	0.06	63	<1	0.01	3 0.03	4	2	3	<1	12 <	0.01	<1	5	<1	5
GL-17	<0.5	0.20	<1	<5	33	110	1	0.02	<1	12	172	28	0.66	0.04	2	0.07	44	1	0.01	3 0.01	3	2	6	<1	7 (	0.03	<1	13	<1	6
01 404	-0 E	0.00	-1	-	20	20	2	0.01	-1	F	220	2	0.05	0.04	7	0.02	25	- 1	0.01	E -0 01	•	~	0	. 4	-			•		-
GL-10A	<0.5	0.09	< 1 4	0 4 E	20	29	3 1	0.01	~1	5 E	200	ა ი	0.25	0.01	/ E	0.03	35	~1	0.01		ა ი	2	ు	<   	/ <	0.01	<1	3	<1	5
GL-10D		0.07	-1	10	25	24	ו ס	0.01	~1	5 A	200	2	0.20	0.01	ີ ວ	0.02	21	~1	0.01	5 0.01	2	2	ა ⊿	1			<	2	<1	5
GL-13 CL 24A		0.10	~1	-5	24	24	2	0.02	~1	- 4	217	5	0.22	0.01	2	0.04	20	~1	0.01		2	2	ו כ	~1	2 <		< 1 . 4	ა ი	<   	3
CL 24P		0.00	~1	 <5	34 22	33	2	0.05 ~0.01	~1	J A	200	6	0.10	0.0Z	-1-	0.01 -0.01	20	> I 2	0.01 ~0.01	4 U.UZ	່ ວ	2	 _1	1	2 1		< I - 1	2	<1	- 51
GL-21D	×0.5	0.01	~1	10	52	3	3	<b>\U.U</b>	~1	4	241	0	0.22	<b>\U.U</b>	~ 1 *	-0.01	55	2	<b>~</b> 0.01	5 \0.01	2	2	I	I	<   <	0.01	<1	2	<1	<1
GL-22	<0.5	0.13	<1	<5	43	26	6	0.01	1	21	314	16	1.30	0.04	7	0.04	39	<1	0.01	6 0.03	3	4	2	2	14 <	0.01	<1	5	<1	7
GL-23	<0.5	0.14	3	50	36	3	4	0.01	<1	8	291	2	0.45	<0.01	4	0.07	38	1	0.01	6 0.01	2	3	2	<1	<1 <	0.01	<1	5	<1	9
GL-25	<0.5	0.15	<1	<5	41	7	4	0.05	<1	5	271	2	0.28	0.01	6	0.02	29	1	0.01	7 0.01	3	3	5	্1	5 <	0.01	<1	3	<1	3
GL-26	<0.5	0.12	6	<5	37	3	4	0.14	<1	12	167	2	0.63	<0.01	6	0.16	136	<1	0.01	14 0.02	4	2	2	<1	<1 (	0.01	<1	5	<1	27
GL-30	<0.5	0.16	<1	<5	37	4	2	0.01	<1	7	272	3	0.38	<0.01	1	0.12	93	<1	0.01	9 < 0.01	2	3	1	<1	<1 <	0.01	<1	5	<1	7

Gold analyzed by Fireassay/A.A.

0.500 Gram sample is digested with Aqua Regia at 95 C for one hour and bulked to 10 ml with distilled water. Partial dissolution for Al, B, Ba, Ca, Cr, Fe, K, La, Mg, Mn, Na, P, Sr, Ti, and W.

Certified by:

629 Beaverdam Road N.E., Calgary Alberta T2K 4W7 Tel: 274-2777 Fax: 275-0541

TO: GREG LYNCH

FILE:47805

DATE: Aug. 8, 2005

# **30 ELEMENT ICP ANALYSIS**

Sample	Ag	AI	As	Au	В	Ba	Bi	Ca	Cd	Co	Cr	Cu	Fe	к	La	Mg	Mn	Мо	Na	Ni	Ρ	Pb	Sb	Sr	Sn	Th	Ti	U	V	W	Zn
No.	ppm	%	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	%	ppm	%	ppm	ppm	%	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
GL-1	<0.5	0.07	1	15	30	25	3	0.02	<1	3	135	4	0.17	0.02	6	0.03	27	7	0.01	5	<0.01	3	2	<1	<1	5	<0.01	<1	2	<1	3
GL-2	<0.5	0.16	13	480	22	90	3	0.04	<1	6	180	2	0.29	0.02	7	0.05	54	10	0.02	5	0.01	3	2	5	<1	7	<0.01	<1	5	<1	6
GL-3	<0.5	0.07	<1	5	29	28	2	0.03	<1	4	225	3	0.20	0.02	5	0.02	25	2	0.01	7	0.01	2	2	1	<1	2	<0.01	<1	2	<1	2
GL-4	<0.5	0.10	<1	<5	28	23	<1	0.01	<1	5	229	4	0.28	0.01	5	0.04	28	2	0.01	6	<0.01	2	2	2	<1	9	<0.01	<1	3	<1	3
GL-5	<0.5	0.08	<1	14	28	21	4	0.01	<1	5	208	6	0.30	0.01	4	0.03	22	<1	0.01	4	0.01	10	2	2	1	5	<0.01	<1	3	<1	8
GL-6	<0.5	0.05	<1	<5	27	14	3	0.01	<1	5	280	3	0.27	0.01	4	0.01	35	1	0.01	7	<0.01	2	2	2	<1	<1	<0.01	<1	3	<1	2
GL-7A	<0.5	0.04	5	<5	31	50	3	<0.01	<1	7	215	15	0.44	0.02	2	<0.01	21	<1	0.01	5	0.01	1	2	2	1	<1	<0.01	<1	3	<1	3
GL-7B	<0.5	0.06	25	10	30	16	3	0.01	<1	7	227	10	0.42	<0.01	4	0.01	26	3	<0.01	4	0.01	3	3	2	1	2	<0.01	<1	3	<1	2
GL-8A	<0.5	0.05	37	10	28	33	3	<0.01	<1	4	235	4	0.22	0.02	4	<0.01	21	1	0.01	5	0.01	2	3	1	<1	9	<0.01	<1	2	<1	<1
GL-8B	<0.5	0.14	2	<5	28	16	5	<0.01	<1	7	171	3	0.39	0.01	7	0.03	20	<1	<0.01	2	0.01	2	2	<1	1	7	<0.01	<1	3	<1	2
GL-9	<0.5	0.06	1	<5	29	24	4	<0.01	<1	3	188	2	0.16	0.02	4	<0.01	22	1	0.01	5	0.02	2	2	1	1	<1	<0.01	<1	2	<1	<1
GL-10	<0.5	0.12	<1	<5	31	99	2	0.01	<1	4	181	6	0.20	0.03	5	0.02	22	<1	0.01	3	0.01	2	1	2	2	<1	<0.01	<1	3	<1	1
GL-11	<0.5	0.10	1	<5	31	11	1	0.05	<1	4	176	2	0.20	0.02	5	0.05	29	<1	0.01	4	0.02	3	1	1	<1	9	<0.01	<1	3	<1	5
GL-14	<0.5	0.18	2	<5	30	20	<1	0.05	<1	6	183	2	0.33	0.03	7	0.06	63	<1	0.01	3	0.03	4	2	3	<1	12	<0.01	<1	5	<1	5
GL-17	<0.5	0.20	<1	<5	33	110	1	0.02	<1	12	172	28	0.66	0.04	2	0.07	44	1	0.01	3	0.01	3	2	6	<1	7	0.03	<1	13	<1	6
GL-18A	<0.5	0.09	<1	5	38	29	3	0.01	<1	5	238	3	0.25	0.01	7	0.03	35	<1	0.01	5	<0.01	3	2	3	<1	7	<0.01	<1	3	<1	5
GL-18B	<0.5	0.07	1	15	37	14	1	0.01	<1	5	208	2	0.25	0.01	5	0.02	27	<1	0.01	6	0.01	2	2	3	1	<1	<0.01	<1	2	<1	5
GL-19	<0.5	0.10	<1	5	35	24	3	0.02	<1	4	217	2	0.22	0.01	2	0.04	36	<1	0.01	5	0.01	2	2	1	<1	2	<0.01	<1	3	<1	3
GL-21A	<0.5	0,06	<1	<5	34	33	3	0.05	<1	3	200	5	0.18	0.02	5	0.01	26	<1	0.01	4	0.02	5	2	3	<1	2	<0.01	<1	2	<1	<1
GL-21B	<0.5	0.01	<1	<5	32	3	3	<0.01	<1	4	241	6	0.22	<0.01	<1	<0.01	33	2	<0.01	5	<0.01	2	2	1	1	<1	<0.01	<1	2	<1	<1
GL-22	<0.5	0.13	<1	<5	43	26	6	0.01	1	21	314	16	1.30	0.04	7	0.04	39	<1	0.01	6	0.03	3	4	2	2	14	<0.01	<1	5	<1	7
GL-23	<0.5	0.14	3	50	36	3	4	0.01	<1	8	291	2	0.45	<0.01	4	0.07	38	1	0.01	6	0.01	2	3	2	<1	<1	<0.01	<1	5	<1	9
GL-25	<0.5	0.15	<1	<5	41	7	4	0.05	<1	5	271	2	0.28	0.01	6	0.02	29	1	0.01	7	0.01	3	3	5	1	5	<0.01	<1	3	<1	3
GL-26	<0.5	0.12	6	<5	37	3	4	0.14	<1	12	167	2	0.63	<0.01	6	0.16	136	<1	0.01	14	0.02	4	2	2	<1	<1	0.01	<1	5	<1	27
GL-30	<0.5	0.16	<1	<5	37	4	2	0.01	<1	7	272	3	0.38	<0.01	1	0.12	93	<1	0.01	9	<0.01	2	3	1	<1	<1	<0.01	<1	5	<1	7

Gold analyzed by Fireassay/A.A.

0.500 Gram sample is digested with Aqua Regia at 95 C for one hour and bulked to 10 ml with distilled water.

Partial dissolution for Al, B, Ba, Ca, Cr, Fe, K, La, Mg, Mn, Na, P, Sr, Ti, and W.

629 Beaverdam Road N.E., Calgary Alberta T2K 4W7 Tel: 274-2777 Fax: 275-0541

TO: GREG LYNCH

FILE:47805

DATE: Aug. 8, 2005

# **30 ELEMENT ICP ANALYSIS**

Sample	Ag	AI	As	Au	B	Ba	Bi	Са	Cd	Co	Cr	Cu	Fe	Κ	La	Mg	Mn	Мо	Na	Ni	P	Pb	Sb	Sr	Sn	Th	Ti	U	V	W	Zn
No.	ppm	%	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	%	ppm	%	ppm	ppm	%	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm
GL-31	<0.5	0.08	<1	15	39	24	4	0.01	<1	5	249	7	0.29	0.02	4 (	0.02	38	2	0.01	5	<0.01	3	3	1	<1	<1	<0.01	<1	3	<1	4
GL-32	<0.5	0.08	<1	35	42	3	4	0.01	<1	4	195	2	0.22	0.01	7 (	0.01	24	<1	0.01	4	<0.01	1	2	1	<1	2	<0.01	<1	2	<1	1
GL-33	<0.5	0.03	4	<5	44	9	5	<0.01	<1	7	1 <b>87</b>	6	0.44	<0.01	3 (	0.01	35	<1	0.01	3	0.01	2	2	1	1	<1	<0.01	<1	2	<1	4
GL-34	<0.5	0.07	<1	<5	38	46	3	0.01	<1	3	157	2	0.17	0.02	4 (	0.01	19	2	0.01	4	0.01	2	2	2	1	<1	<0.01	<1	2	<1	2
GL-35	<0.5	0.01	<1	<5	42	4	3	<0.01	<1	4	264	6	0.24	0.01	2 <	0.01	33	2	0.01	6	<0.01	2	3	1	<1	9	<0.01	<1	2	<1	<1
GL-36	<0.5	0.10	<1	<5	38	21	4	<0.01	<1	7	220	9	0.41	0.01	4 (	0.01	36	1	0.01	5	0.01	2	2	2	<1	2	<0.01	<1	3	<1	4
GL-37	<0.5	0.10	1	5	40	22	1	0.01	<1	6	239	3	0.32	0.01	4 (	0.05	67	<1	0.01	7	0.01	2	3	1	<1	7	<0.01	<1	3	<1	3
GL-38	<0.5	0.12	<1	<5	41	23	3	0.02	<1	5	215	3	0.28	0.02	6 (	0.04	41	2	0.01	8	0.01	3	3	2	<1	5	<0.01	<1	3	<1	3
GL-39	<0.5	0.11	<1	<5	42	193	5	0.05	<1	8	241	22	0.45	0.03	4 (	0.02	49	<1	0.01	7	0.01	2	3	5	<1	14	0.04	1	4	<1	7
GL-40	<0.5	0.08	<1	<5	34	18	3	0.02	<1	5	260	3	0.25	0.01	5 (	0.03	33	<1	0.01	7	0.01	3	3	1	<1	9	<0.01	<1	3	<1	2
GL-41	<0.5	0.07	<1	<5	34	24	3	0.02	<1	4	255	2	0.24	0.02	6 0	0.03	30	<1	0.01	7	0.01	2	2	1	<1	14	<0.01	<1	3	<1	2
GL-42	<0.5	0.05	<1	25	40	19	3	0.01	<1	4	206	3	0.24	0.01	4 (	J.01	18	<1	0.01	5	<0.01	1	2	2	<1	9	<0.01	<1	2	<1	2
GL-43	<0.5	0.06	<1	<5	45	25	3	0.01	<1	4	250	4	0.22	0.02	4 (	0.02	25	<1	0.01	7	<0.01	1	3	2	1	9	<0.01	<1	3	<1	1
GL-44A	<0.5	0.06	<1	<5	43	21	4	0.01	<1	4	286	4	0.25	0.02	6 (	0.02	27	<1	0.01	8	<0.01	2	3	2	1	5	<0.01	<1	3	<1	1
GL-44B	<0.5	0.01	<1	<5	47	14	1	0.01	<1	5	335	3	0.27	<0.01	1 <	0.01	35	<1	0.01	8	<0.01	1	4	2	<1	<1	<0.01	<1	2	<1	2
GL-45	<0.5	0.11	<1	<5	47	51	4	0.02	<1	5	225	3	0.25	0.02	5 (	0.05	35	<1	0.01	9	0.01	2	2	2	1	<1	<0.01	<1	4	<1	4
GL-H-2	<0.5	0.05	32	<5	39	14	2	0.01	<1	5	259	5	0.27	0.01	3 (	<b>J.O</b> 1	29	1	0.01	7	0.01	1	З	2	<1	2	<0.01	<1	3	<1	<1
GL-H-5	<0.5	0.06	3	<5	44	14	3	<0.01	<1	4	194	3	0.23	0.01	2 (	0.01	24	<1	0.01	4	<0.01	1	2	2	1	2	<0.01	<1	3	<1	2
GL-H-8	<0.5	0.05	12	<5	42	102	5	<0.01	<1	3	175	4	0.17	0.02	3 <	0.01	19	<1	0.01	3	<0.01	2	2	3	1	2	<0.01	<1	2	<1	<1
GL-H-11	<0.5	0.05	9	<5	39	24	1	0.01	<1	6	255	11	0.33	0.01	6 0	<b>).0</b> 1	32	<1	0.01	5	0.01	2	3	3	<1	7	<0.01	<1	2	<1	1
GL-H-16	<0.5	0.04	6	<5	30	35	3	<0.01	<1	4	175	4	0.25	0.01	4 <	0.01	17	<1	0.01	4	0.01	2	2	3	1	<1	<0.01	<1	2	<1	<1
GL-50-Q	<0.5	0.33	2	15	44	49	4	0.04	<1	6	127	9	0.31	0.09	2 0	J.01	46	<1	0.09	5	<0.01	11	1	8	<1	14	<0.01	<1	<1	<1	5
GL-50-T	<0.5	0.54	2	<5	39	28	11	0.08	<1	8	134	32	0.41	0.30	11 0	0.14	117	<1	0.07	6	0.02	11	<1	8	1	19	0.03	<1	6	<1	12

#### Gold analyzed by Fireassay/A.A.

0.500 Gram sample is digested with Aqua Regia at 95 C for one hour and bulked to 10 ml with distilled water. Partial dissolution for Al, B, Ba, Ca, Cr, Fe, K, La, Mg, Mn, Na, P, Sr, Ti, and W.

Certified by:



**Figure 1.** Regional geology and location map of claim blocks which are represented in the detailed maps of figures 2 & 3. Rock units are Proterozoic to Cambrian Hyland Group (PCH), Devonian-Mississippian Earn Group units 1 & 3 (DM1, DM3), Mississippian Keno Hill Quartzite Unit (MK), and Cretaceous granitic Roop Lakes Pluton (see Roots, 1997). Dashed line represents extent of metamorphic halo along western margin of Pluton.



Figure 2. Detailed geological map of Sugar claim group

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Figure 3. Detailed geological map of Honey claim group

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**Figure 4.** Plot of gold assay results sampled along Sugar member. Note coordinates are in UTM NAD83 and are contained within data of Tables 1 & 2.

#### TAIP 05-001

#### Day 1

Left Fort Nelson B.C. and drove to Watson Lake in the morning. Continued on to Whitehorse in the afternoon. Began final preparations assembling groceries and hardware in Whitehorse. Stayed at Bonanza Inn that evening.

#### Day 2

#### 20 June, 2005

19 June, 2005

Finished grocery shopping and collecting field/survey equipment in the morning. Left Whitehorse for Mayo at 10:00 am. Arrived in Mayo mid-afetrnoon and visited Mining Recorder to investigate latest claim maps and receive instructions about claim staking. Flew out of Mayo in late afternoon on Trans North helicopter to prospecting area on high ridge northeast of Mayo Lake. Set-up camp next to pond, organized equipment, and planned outing for the following day.

#### Day 3

#### 21 June, 2005

Began 2-man prospecting of ridge and upper slope above northeast end of Mayo Lake. Came across 20-30 m thick unit of porous bleached Keno Hill Quartzite unit that looked pervasively altered. Quartz stockwork was noted with minor disseminated pyrite and rust staining. Sericite occurs as a secondary alteration product. Distinct crumbly aspect to rock. Apparent stratabound control on alteration so began mapping distribution of unit along its strike. Unit dips moderately to the east-northeast, and is easily distinguished from hard black unaltered Keno Hill Quartzite and dark competent greenstone rocks.

#### Day 4

#### 22 June, 2005

Prospected lower slope above northeast end of Mayo Lake in an attempt to further delineated extent of altered Keno Hill Quartzite member. Followed altered band of weakly pyritic, sericitic bleached-white, porous and crumbly quartzite unit for approximately 800 m along strike. Thin quartz veinlets are widespread. Alteration was noted to be largely continuous and generally strongly developed along entire extent. Assessment in the field characterized feature as having potential of being "Disseminated Sediment-Hosted" gold occurrence. It became apparent that samples would be needed for further evaluation and so it was decided to set-up posts and stake "Sugar" #1 and #2 claims. "Sugar" is descriptive of the white granular and crumbly nature of the altered quartzite, and is herein used informally as the name for this member or subdivision of the Keno Hill Quartzite.

#### Day 5

#### 23 June, 2005

Heavy rain in the morning initially slowed start, but we managed to get going reasonably early. Prospected area immediately west of camp on flat ground of upper ridge, along strike from but approximately 2 km N-NW from "Sugar" member of previous day. Managed to locate northern continuation of strongly altered, sericitized, porous, and crumbly bleached quartzite or "Sugar" member. Altered unit here remains 20-30 m thick and also has abundant quartz veins with minor disseminated pyrite and light brown rust staining. Local intense secondary silicification was noted. Prospecting/mapping of unit continued and structural measurements of quartz veins and bedding were made. Quartz veins were followed within large outcrop and determined to be stratabound to formation. Series of outcrops here defines a second zone of interest.

#### Day 6

#### 24 June, 2005

25 June, 2005

26 June, 2005

Returned to lower slopes of ridge above Mayo Lake in order to stake claims "Sugar" #3 to #8 in order to cover approximately 1.5 km long strike length of altered unit in this area, along strike from initial discovery. Day was spent cutting and flagging baseline, shaping and erecting claim posts, as well as prospecting along and in proximity of baseline.

#### Day 7

# Spent day prospecting and investigating N-NW extension of altered "Sugar" member or equivalent formation. Found signs of alteration and rust staining along series of outcrops for ~1 km parallel to N-NW strike of bedding, in area heading down into valley of Granite Creek. Scattered quartz vein stockwork throughout and white sericite. Distinct characteristics correlate to alteration seen in previous days above Mayo Lake. Features still include porous/crumbly nature of quartzite, sericite, faint rust, rock largely bleached of graphite which contrasts with surrounding units. Porosity of rock is apparently a secondary feature and may have resulted from decalcification which can be diagnostic of disseminated sediment-hosted gold deposits – area may also warrant claim staking for sampling and geochemical analysis.

#### Day 8

# Made decision to stake and claim second group of claims to cover furthest N-NW extent of alteration established to date. Blazed and marked baseline along 1600 m length for new set of "Honey" claims. Prospected along baseline with only scattered outcrops. Baseline established east of mineralized outcrops in order to capture downdip or subsurface extent of east-dipping beds, as well as outcrop exposures.

#### Day 9

Cut and squared posts for Honey #1-8 claims, sixteen posts in all. Erected and marked posts, and cleaned baseline. Setting-up the claims took the full day for both partners. Posts were dug into the ground, or wired to a rooted standing tree made into a post, and further secured with mounds of rock and dirt.

#### Day 10

#### 28 June, 2005

27 June, 2005

Returned to Mayo in morning via helicopter (split ride costs with Forestry Department), and registered Sugar (#1-8) and Honey (#1-8) claims with Mining Recorder (16 claims in all). Shopped for groceries. On return trip helicopter landed on ridge east of Roop Lakes and shut-down. Prospected along contact of large granite body and Hyland Group metasediemntary rocks farther up on the ridge from where previous mapping had indicated tungsten mineralization. Observed biotite-muscovite-epidote-garnet schist and calc-silicate rocks (skarn-like) in Hyland Group. Coarse concordant and boudinaged barren quartz veins are abundant within the schist. Medium-grained granitic dykes, 2-3 m wide, crosscut the schist and contain stockworks of quartz-muscovite as well as quartztourmaline-feldspar veins. Strong alteration haloes surround tourmaline veins. Minor pyrite occurs. Other metallic minerals were not recognized, including W, however alteration is well developed and site may be prospective for gold in light of association to Tombstone plutonic suite. Helicopter drop-off to camp across Roop Lakes.

#### Day 11

# 29 June, 2005

Commenced assessment work on claims. Mapped geology (1:10 000 scale), prospected, and sampled altered rocks in Sugar #1-4 claim blocks at south end of project area. Sampling was conducted in order to obtain both quartz vein and host rock materials, separately. This was done in order to see if bulk disseminated gold might be present, or if mineralization is restricted to veins only. Altered Sugar member is sandwiched between greenstone units at south end of claims and is approximately 20 m thick. Rocks are well exposed on steep slopes leading down to Mayo Lake.

#### Day 12

#### 30 June, 2005

Mapped geology (1:10 000 scale), prospected, and sampled altered rocks in Honey #5-8 claim blocks at North end of project area. Less exposure here on moderate slopes heading down toward Granite Creek. However altered and veined Sugar member is nonetheless exposed, showing that the full extent of the altered zone can be traced along strike for up to 4 km across both claim groups. Altered samples are somewhat harder, with a higher degree of secondary silicification associated with sericite and quartz veinlet stockworks. Rock still demonstrates distinct bleached white appearance. As in south, quartz vein orientations are very regular dipping steeply and striking NE-SW along prominent joint sets. Veins are laregely stratabound to the altered unit. Surrounding rocks feature higher abundance of grey graphitic quartzite and graphitic schist, without greenstone units which are common in south. Metamorphic andalusite was also noted at one local indicating proximity to the underlying Roop lakes Pluton.

#### Day 13

Mapped geology (1:10 000 scale), prospected, and sampled altered rocks in Honey #1-4 claim blocks in central portion of project area. Criss-crossed claim blocks searching for outcrops. Located large outcrop of altered Sugar member, exposed continuously for nearly 200 m along strike. Regular set of NW-SE striking steeply-dipping quartz-pyrite veins throughout entire length of outcrop. Host rocks pervasively sericitized and decalcified (porous and crumbly), with secondary silicification. Samples were gathered from both veins and altered host.

#### Day 14

Mapped geology (1:10 000 scale), prospected, and sampled altered rocks in Sugar #5-8 claim blocks in central portion of project area. Looked at units peripheral to claim blocks and completed reconnaissance prospecting loop heading east toward Roop Lakes, and then back to camp. Outcrops east of claims consist entirely of massive or foliated diorite as well as chlorite-actinolite schist or greenstone – did not encounter any mineralization or significant alteration.

#### Day 15

#### 3 July, 2005

Finished sampling on Honey Group of claims, obtaining quartz vein and sericitized wallrock material from claims #1-4. Visited outcrops flanking claim group to fill-in map. Then completed reconnaissance prospecting loop heading west toward Mt Albert, and

#### 1 July, 2005

#### 2 July, 2005

back to camp. Outcrops west of claims mostly black graphitic quartzite, with lesser greenstone. Minor quartz veining seen within largely unaltered host rocks.

Daily Diary

#### Day 16

Completed sampling within Sugar claims #1-4, obtaining quartz vein and sericitized wallrock material. A five sample profile of 20 m thick unit was done at one locality. Further structural measurements were made on quartz veins and bedding as well as on minor SE plunging fold axes to assess controls on quartz veining. Attemps were made to follow veins in NE-SW direction but they were found to be stratabound and limited to the 20 m thick altered unit.

#### Day 17

#### 5 July, 2005

4 July, 2005

Packed up camp, sorted and organized samples, read over field notes and checked maps while waiting for helicopter. Flew back to Mayo, then drove to Dawson to spend the night as well as gather information on placer operations.

#### Day 18

#### 6 July, 2005

Drove from Dawson to Watson Lake which took most of the day, leaving Yukon by truck, and then we continued on to Fort Nelson B.C..

In total 16 days were spent in the field by our two man crew, for 32 man-day equivalent of work. Two days were spent traveling in the Yukon to and from our entry point into the territory at Watson Lake.

