

**Assessment
Renewal Report for Work Filed:
September 2015
“Hunker” Group #HDO3380**

**Hester Hill and Paradise Hill ~ Geological Report
Work completed on claims:**

Init115(YE71398) – Waste16(YD90416) – Waste24(YD90424) –Waste12(YD90412) –
Waste11(YD90411) – Waste10(YD90410) – Waste9(YD90409) – Waste7(YD90407) –
Init44(YE77454)

Geological Work:

Geochemical assay analysis of bedrock exposed by test trenching.

Dawson City Mining District 115014 &116B03 Maps
UTM to Access Zone7 Nad83 - Hunker Creek Road: 0595350/7097050

Claims Owner: Sylvain Montreuil/Erini Petroutsas/RST Klondike Discoveries Ltd.

Report Written by: Erini Petroutsas with Boris Molak

"IN" Group #HDO3380 379 quartz claims
25% Sylvain Montreuil, /25% Erini Petroutsas, /50% RST Klondike Discoveries Ltd.

IN 1: YD92490 - 2015/10/27
IN 2 – 10: YD92492 - YD92500
IN 11 – 12: YD93401 - YD93402
IN 13 – 14: YD93403 - YD93404
IN 15 – 22: YD93405 - YD93412
IN 23 – 30: YD93413 - YD93420
IN 31 – 36: YD93421 - YD93426
IN 37 – 46: YD93487 - YD93496
IN 47 – 48: YD93499 - YD93500
IN 49: YD90471
IN 50: YD90472
IN 51 – 58: YD129024 - YD129031
IN 59 – 60: YE77640 - YE77641 Carmacks Fork
IN 61 – 66: YE77642 - YE77647
IN 67 – 74: YD129040 - YD129047
IN 75 – 83: YD93469 - YD93477
IN 84 – 98: YD93427 - YD93441
IN 99: YD93450
IN 100 – 105: YD93442 - YD93447
IN 106 – 107: YD93448 - YD93449
IN 108 – 125: YD93451 - YD93468
IN 126 – 132: YD93478 - YD93484
IN 133 - 134 YD93485 - YD93486
IN 135 - 143 YD90473 - YD90481
IN 144 – 156: YD92251 - YD92263
IN 157 – 166: YD129001 - YD129010
IN 167 – 173: YD129011 - YD129017 (174-175missing)
IN 176 – 179: YF04405 – YF04408
IN 182 – 185: YF04411 – YF04415
Indepen-F: YD93497
Dance-F YD93498

Waste 1 – 7: YD90401 - YD90407
Waste 8: YD90408
Waste 9 – 16: YD90409 - YD90416
Waste 17: YD90417
Waste 18: YD90418
Waste 19 – 20: YD90419 - YD90420
Waste 21 – 22: YD90421 - YD90422
Waste 23 – 24: YD90423 - YD90424
Waste 25 – 29: YD90425 - YD90429
Waste 30 – 33: YD90430 - YD90433
Waste 34: YD92489
Waste Surprise 35: YD102301
W 36: YE71377
Waste 37: YE71315
WF: YE71378
Waste LCF YE71380

Eight 0 – 9: YD90434 - YD90443
Eight 10 – 11: YE77997 – YE77998
Eight 12 – 13: YE77989 – YE77990
Eight 14 – 17: YE77991-YE77994
EIGHT 18 – 25: YE79873 - YE79880
EIGHT 27 – 28: YD72662 - YD72663
Eight 30 – 39: YF04469 – YF04478
Lind 3: YD129021
Lind 5: YD129022

Fuc1 – 2: YD11928 - YD11929
Fuc3 – 5: YD129018 - YD129020
Fuc 6: YD89575
Fuc 7: YD89573
Fuc 8: YD89576
Fuc 9: YD89574
Fuc 10: YD11950
Fuc 11: YD11948
Fuc 12: YD89589
Fuc 13: YD11949
Fuc 14: YD89595
Fuc15 – 16: YD89593 - YD89594
Fuc 17: YD89592
Fuc HENRY: YE71339
Fuc GULCH: YE71340

Fuc MIN: YE71342
Fuc OX: YE71341
Fuc F: YD89565
Fuc U: YD89566
Fuc C: YD89567
Fuc S: YD89572
Fuc H: YD89568
Fuc I: YD89569
Fuc T: YD89570
Fuc E: YD89571
Fuc O 1: YD89577
FucO 2 – 8: YD89578 - YD89584
FucO 11: YD11947
Fuc O 12: YD11946
Fuc O 13: YD89597
Fuc O 14: YD89596
FucO 15 – 16: YD89590 - YD89591

Wet 1-14: YF04415 – YF04428
Wet 15-18: YF04458 – YF04458
Wet 19 – 22: YF04601 – YF04604
Wet 23 – 34: YF04605 – YF04616
Wet 39 – 46: YE79825 – YE79832
RadF1 (YF04657)
Rad 2 – 10: (YF04658 – YF04666)
Rad 11 – 15: (YF04593 – YF04597)
RadF16 (YF04654)

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INTRODUCTION

The area of “Hunker Group” encompasses claims covering Hunker Creek from the mouth of Hunker to Colorado Creek where the property borders “Crown Jewel”. The left and right limit benches of Hunker Creek extending from Dago Hill, through Praedo Hill, Paradise Hill and Nugget Hills. Providing access to exposed bedrock both in the creeks and on the benches. Prospecting by claim holders to date has uncovered faults, shears and carbonate altered mafic and ultramafic rocks along with significant recent bedrock exposures that are largely unmapped and not sampled. Work so far has defined areas of apparent faulting and intense shearing in graphitic and carbonaceous shales and phyllites of the Nasina Assemblage that are interpreted as tectonic melanges.

These quartz claims cover some of the most important gold pay zones of the Klondike, at the base of the White Channel Gravels (or Paradise gravels of Bond, 2015) and over bedrock of poorly mapped folded and faulted rocks, including now apparent zones of well-developed listwanite alteration. Due to (previous) poor bedrock exposure, lack of mapping and very limited RC or core drilling in this part of the goldfields it is believed that progress should be made to identify quality hard-rock targets for additional work. P. Geo Boris Molak was employed summer 2015 to begin professional bedrock mapping with the prospectors on this vast area, and sample for assay structures from exposed lithology, for general rock type identification and gold potential.

“Hunker” hard-rock group – Description and Location

Claim group begins at the mouth of Hunker Creek, on the Klondike Hwy and extends 9 km’s down the Hunker Creek Road. The area includes all the upper benches on the left limit of Hunker (Dago to Nugget) that have produced historic placer gold amounts over the past century, and are still economically producing today. The claim block continues on the north side of Hunker road for 2 km over the “Unexpected” Occurrence (116B 006). Claims cover striped to bedrock zone(s) extending from Last Chance Creek to Independence Creek along mined out sections that continue to the mouth of Hunker, then 3 km along the Klondike River fault to Bear Creek on the west. Grouped block covers Praedo and Paradise Hills, all of Hester Creek, Nugget Hill to Colorado Creek on the east and continues south 11 km to Soda Creek Upper Bonanza, then west 9 km’s again to Carmacks Fork on the south where it borders the “Lone Star Occurrence”.

HISTORY

These claims in the center of renowned goldfields, have been worked by numerous owners as placer producers since 1896. The most useful hard-rock data comes from work completed by United Keno Hill Mines in late 1980 when they completed soil sampling, and RC drilling over selected areas of the Klondike (McFaul1988, 1989, 2005). KSL (Yukon) Exploration Limited, Kennecott Canada Exploration Ltd, and Barramundi have all worked only parts of the project area with most of their work occurring outside project area but results are of significance in some areas. Both United Keno Hill and Kennecott drilled holes that intersected anomalous geology and geochemistry. One RC hole HUN 132 (?) at the mouth of 70 Pup intersected a strong vein fault zone with listwanite alteration on the floor of Hunker creek at the base of Paradise Hill. Drilling completed by Kennecott in 1994 is also noted. Hole 94-80-01, some 400 m southwest of the UKHM RC hole cut 226 m of listwanite alteration in a strong quartz carbonate vein fault. Although the alteration and width of the zone were impressive, the best value was 0.86 g/t Au.

All operators held only parts of the ground or surrounding ground at various times. Barramundi worked parts of this area and adjacent and to the southwest and northeast (Adamson and Thompson 2002). KSL (Yukon) Exploration Limited worked in joint venture with Barramundi in 2001-2002 and provided additional soils and rock data showing anomalous areas at the headwaters of Last Chance creek. One drill hole (Hun 133) completed by United Keno Hill in 1988 at the mouth of Tinhorn Gulch, (70 Pup of McFaul) on Hunker creek, intersected a strong sheared and listwanite altered fault, (McFaul 2005). MacConnell’s 1906 map showing the location of pay streaks under the White Channel Gravel was reproduced by McFaul in 2005 (appendix: Figure 4). United Keno Hill Mining study in 1988 returned soil sample assay results of 234, 115 and 330ppb Au at the “BenLevi”-Tinhorn Creek hard-rock prospect (appendix: Figure 5).

GEOLOGICAL SETTING AND MINERALIZATION

This area of the Klondike is underlain primarily by Nassina Formation and Klondike Schist in complex faulted blocks associated with thrust slices of Permian oceanic crust (ophiolite) interpreted as both steep and shallowly thrust stacked slices and klippen. The ultramafic assemblage has been mapped, based on regional magnetics, but has yet to be mapped in detail. Alteration along margins of, and along fault zones near the ultramafics are commonly strongly sericite-talc-chlorite altered and listwanitized.

An un-discussed black shale ophiolite/weathered-listwanite “mélange” is exposed on the east edge of the Paradise Hill Plateau and continues up Hester Creek, as well as up Independence Creek to the east. A hydrothermally altered version is exposed at the “Ben Levi” seen continuing to “LiSulf - HydroBen” on Paradise Hill plateau. The “listwanite - black shale/sulfide mélange is clearly exposed again at the mouth of Last Chance Creek, and at the mouth of Hunker Creek itself, where it feeds into the Klondike River. (Sept.2012 Assay Assessment included in Appendix). Fuchsite and sericite, hydrothermal alteration associated with well-formed sulfide crystals is seen in outcrops from Bear Creek to the mouth of Hunker and continues down to the “Ben Levi Occurrence” (116B 157).

Black shale/ophiolite melange is recognized as similar to rocks hosting gold quartz veins in Atlin, Barkerville and other gold quartz vein districts. This same structure is now seen prominently on the “Hunker Group” and appears to be unique to this part of the Klondike and a relatively under explored potential host for hard rock gold.

Trenching on the Waste 7 claim has outlined a strongly boudinaged massive white quartz vein in a contorted and tectonically disrupted black shale melange. Samples of pyrite rich pockets in massive quartz “boudins” have returned gold analyses (ICP-MS – 200 mesh Job#WHI16000030.1) of 3,605 ppb, 1,538 ppb and 888 ppb Au values. These and other chip samples were collected by B. Molak, P. Geo working for RST Klondike Discoveries Ltd. with the prospectors during 2015, and are described in further detail with this report.

Previously, samples collected by Kinross geologists in 2012 returned high grade gold values from pyrite rich black graphitic schist in the same area. The samples were collected from the base of the quartz vein at its east end. Pyrite in black graphitic schist on the margin of the boudinaged quartz vein was sampled over a 2-foot interval. The one sample of fine-grained pyritic veining (klk5-2012) returned 8.2 and 9.3 grams/ton from two splits of the larger sample. Sample #17220 taken 10m east of the klk5-12 location: Square pyrite crystals in the black schist surrounding “Waste7 Vein” collected 2015 by P. Geo assayed 8ppm Ag, 1,656ppm As and 4.9ppm Te.

Sampling and assaying has been done mainly by the prospectors (Sylvain Montreuil & Erini Petroustas), since the discovery of the “main waste vein” and vein structures below it. Details of these studies have been recorded with assessment reports (2011-2014, EMR Yukon).

DEPOSIT TYPE

This part of the Klondike is a target for gold-quartz vein deposits, specifically gold in quartz-carbonate veins, associated with “listwanite-altered” slices of tectonically emplaced serpentinized peridotite. Few of the commonly used deposit models refer to “listwanite” or chrome mica, fuchsite, mariposite that are commonly associated with this variation of the deposit type.

The mineralization located on Paradise Hill East - “Waste” (Syl Vein)” consists of a thick, massive slip-striken boudin of white bull quartz with distinct patches and pockets of pyrite and arsenopyrite, floating through fault altered black siltstone dykes, that contain abundant sulfides, both well-formed and in veinlets. The “main vein rock” originally discovered in 2010 sits above at least three other “vein-like structures” that have been exposed below it in elevation. As well as a rhyolite mantle remnant directly below and south-east of the “main waste7 vein”. Slope overburden to the west of “main-rock” has limited study of the west dipping exposure, which may continue under Paradise Hill. On the east of the main rock where the edge of it abruptly drops off, and 5-8m below it in elevation, a “younger” series of sulfide rich “vein remnant”/boudin strike both perpendicular (and in strike) with the “main w7 vein” rock’s strike. See assay results in submitted reports for Waste7 Vein 2011-2014: ~ 1.39 to 34.1gm/ton gold assayed consistently, over the 9m east striking, 3 x 3 meter (wide by high) quartz “vein” nicknamed waste7 main rock – “Syl Vein”. From the amount of similar float studied continuing up hill to Paradise East Plateau (placer processed), it can be surmised this was part of a larger boudinage vein structure. The question will be how much of it lies remaining under Paradise Hill.

Sulfide cubes, pockets and veinlets in the “black schist” below waste7 “main” vein have also shown potential with assays of 8.2 and 9.23gm/ton Au over 2m: KLK5~ (35ppm Ag, 958ppm Cu, 994ppm As, 923ppm Ni, 10ppm Bi, 49ppm Co – Aqua Regia & ICP-AES Finish; ALS #WH12204560, 21 Sept. 2012. Independent and Unbiased Geological Analysis by Kinross representative Dave Emmons and assistant Geo.) Results indicate that the gold potential of the area is not limited only to quartz.

Exploration and prospecting in the Klondike specifically in this area has been limited. The region of the Finlayson district historically has been strongly associated with VMS deposits, with few reported gold-quartz vein occurrences. Correlative rocks in the Dawson district are known to host a number of listwanite associated gold quartz vein occurrences. The deposit model described here is a specific variation of the, Low-Sulfide Au-Quartz Veins (Model 36a of Cox and Singer 1986), or Au-quartz veins (Model I01 Yukon Deposit Profiles) now commonly referred to as Orogenic gold deposits.

Gold-Quartz veins and veinlets with minor sulfide minerals crosscut a wide variety of host rocks and are localized along major regional faults and related splays. The wall rock is typically altered to silica, pyrite and muscovite within a broader carbonate alteration halo. Gold-quartz veins are found within zones of intense and pervasive carbonate alteration including listwanite alteration along second order or later faults marginal to significant structural breaks. The favored orogenic regions are accreted oceanic terranes including mantle-derived ultramafic packages that have been subjected to tectonic forces. Occurrences are recognized along or near major fault zones that cut oceanic and island arc accretionary terranes. ‘Listwanite’ is a term which describes a mineralogical assemblage derived from the carbonatization of serpentinized ultramafic rocks. The resulting alteration suite that depending on alteration state can include talc, magnesite, chromium-rich micas (fuchsite and mariposite), quartz, dolomite and magnesite, is often associated with lode gold deposits (Ash and Arksey, 1990). Listwanitization is a carbonate/silicification and chromium (fuchsite) alteration (Boris Molak PhD Geo).

The model for emplacement of gold involves the movement of a hydrothermal fluid rich in CO₂ and containing Au(HS)₂ through the reducing environment of the ultramafic body and occasionally, graphitic country rocks.

The association with gold mineralization is very frequent among areas with this particular geological history, and most strongly associated with quartz-carbonate mineralization from late stage progression of the alteration from serpentine to listwanite. Generally, deposits of this type feature high-grade and low tonnage, if erratic, gold deposits (Ash and Arksey, 1990). Gold veins are more commonly economic where hosted by relatively large, competent units, such as intrusions or blocks of obducted oceanic crust. Individual deposits average 30,000 tons with grades of 16 grams/ton gold and 2.5 grams/ton silver. These types of deposit/occurrences are found in the Yukon in correlative rocks in the Dawson area and associated with other ultramafic rocks of found in Slide Mountain terrane (e.g. Clinton Creek) and within Cache Creek terrane (south of Whitehorse). Listwanite-lode gold deposits geographically near the project area include the Cassiar and Atlin districts in northern British Columbia (Dussell, 1986; Hansen, 2005).

Other notable deposits are located in the California Mother Lode District, and the Ural Mountains of Russia where listwanite obtained its name. Within carbonate alteration zones, gold is typically only in areas containing quartz, with or without sulphide minerals. Serpentinite bodies, if present, can be used to delineate favourable regional structures. Largest concentrations of free gold are commonly at, or near, the intersection of quartz veins with serpentinized and carbonate-altered ultramafic rocks. These deposits are a major source of the world’s gold production and account for approximately a quarter of Canada’s output. (Chris Ash and Dani Alldrick, Modified for Yukon by A. Fonseca 2005). Occurrences of listwanite are associated with alpine-type ultramafics. The listwanite-gold variant of this deposit type has a geochemical signature of Au, Ag, As, Sb and is some but not all deposits Cu, Pb, Zn, and even W, and Ba are present.

Tellurium a rare telluride often found in combination with au has also been identified in the “waste7 vein” like boulders that lie scattered in the graphitic black schist surrounding the main boudinage vein (which is still in structure continuing west into the hillside below Paradise Hill’s central eastern edge). Tellurium also assayed 2015 from black schist-pyrite in-situ below and east of the “main” w7 boudinage vein. (2015 assay #’s 17220, 17226, 17227, 17236 – *Sulfide Analysis*).

Assay testing of porcelaneous quartz veins (or vein fragments) surrounded by this schist returned 374ppb, 434ppb & 306ppb Au (WQV3-14) from Neutron Activation on full rock (90 grams of rock, split into 30gm samples), during 2014. Similar smaller quartz veins studied further east in the “Purple Schist” (vivid purple oxidizing black schist with peacock and iridescent stainings), assayed 150ppb, 86ppb, 75ppb & 89ppb Au (PURPQ-14). Acme-Maxxam Job# B533723, 2014.

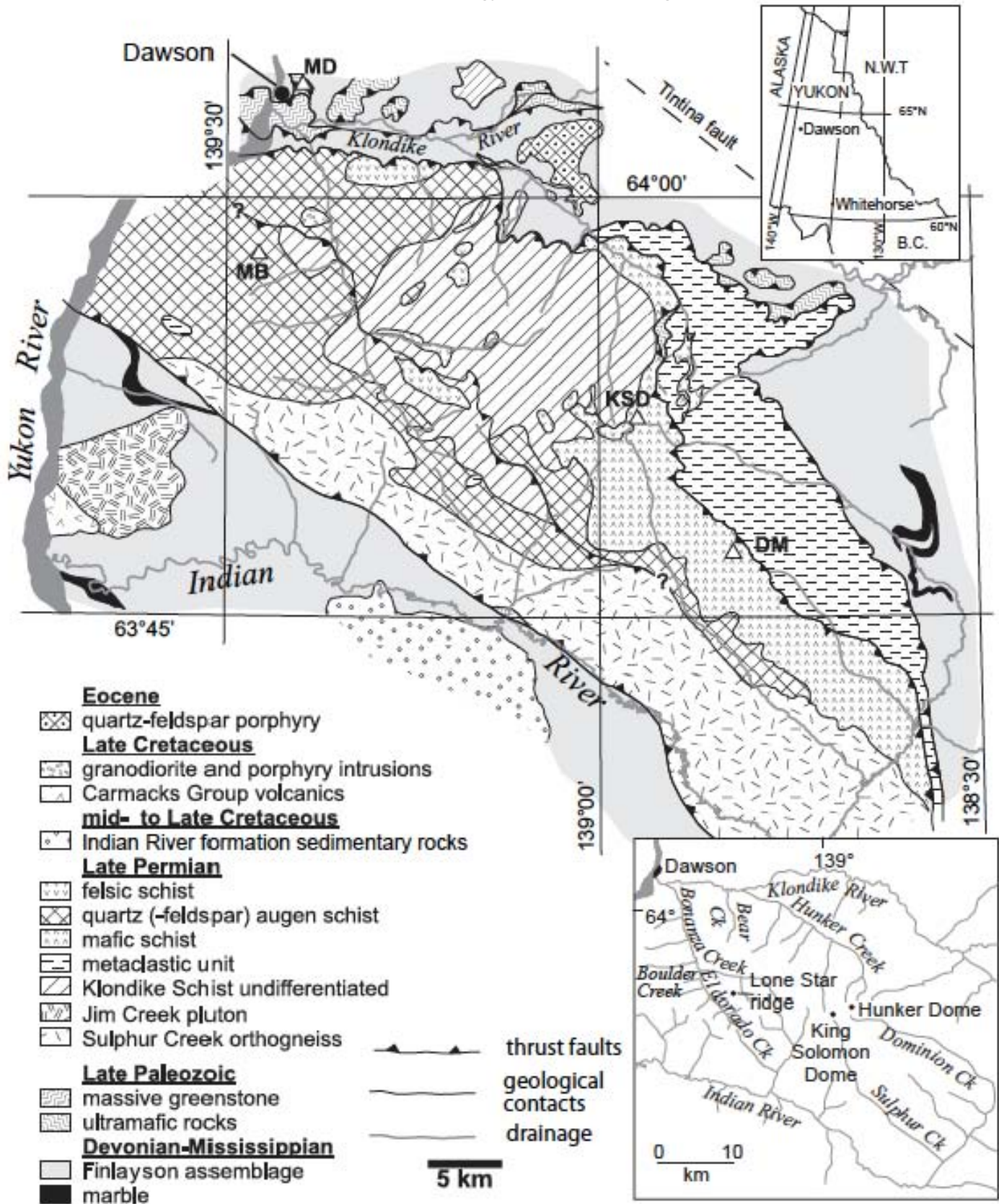
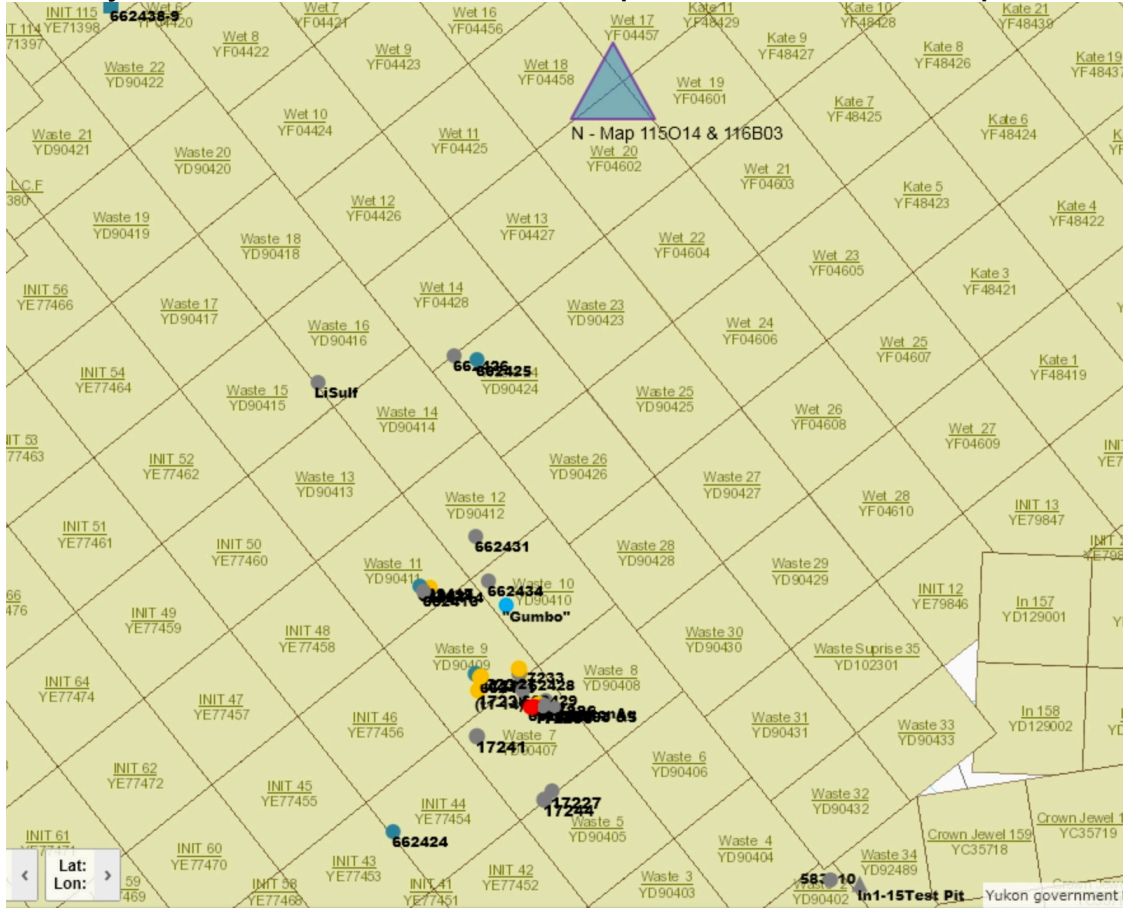
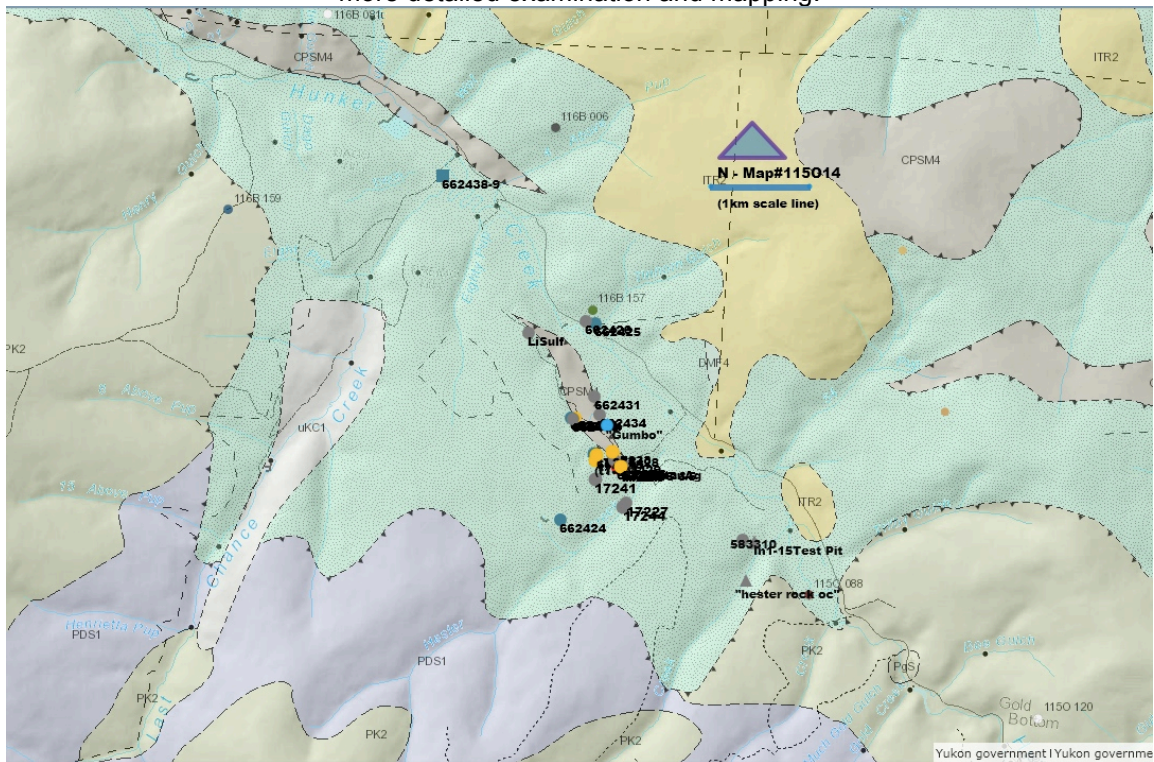


Figure 1. Geological map of the Klondike District, central western Yukon (after MacKenzie et al., in press). KSD – King Solomon Dome; MD – Midnight Dome; DM – Dominion Mountain; MB – Mount Bronson. Top right inset map outlines the study area within Yukon, while bottom right inset map depicts the major drainages and physiographic features in the study area.

Study Area 2015 – Last Chance Creek to Independence Creek Bedrock Exposures



CPSM4 fault margined ophiolite remnants. Listwanite and quartz veins observed “sliding” though Nassina Oceanic and Lake Sediment rock in various forms of morphology. The “Ben Levi Occurrence” (116B 157) was preliminarily examined by geo’s 2015. As was “LiSulf” a stripped to bedrock placer pit on Paradise Hill Plateau, also containing listwanite-black shale contacts. (Examined with permission from local placer operator Tony Beets). Tuff plugs ITR2 intrude north-east of the 2015 study area. “Last Chance Volcanics” UKC1 lie west of the study area and require also more detailed examination and mapping.



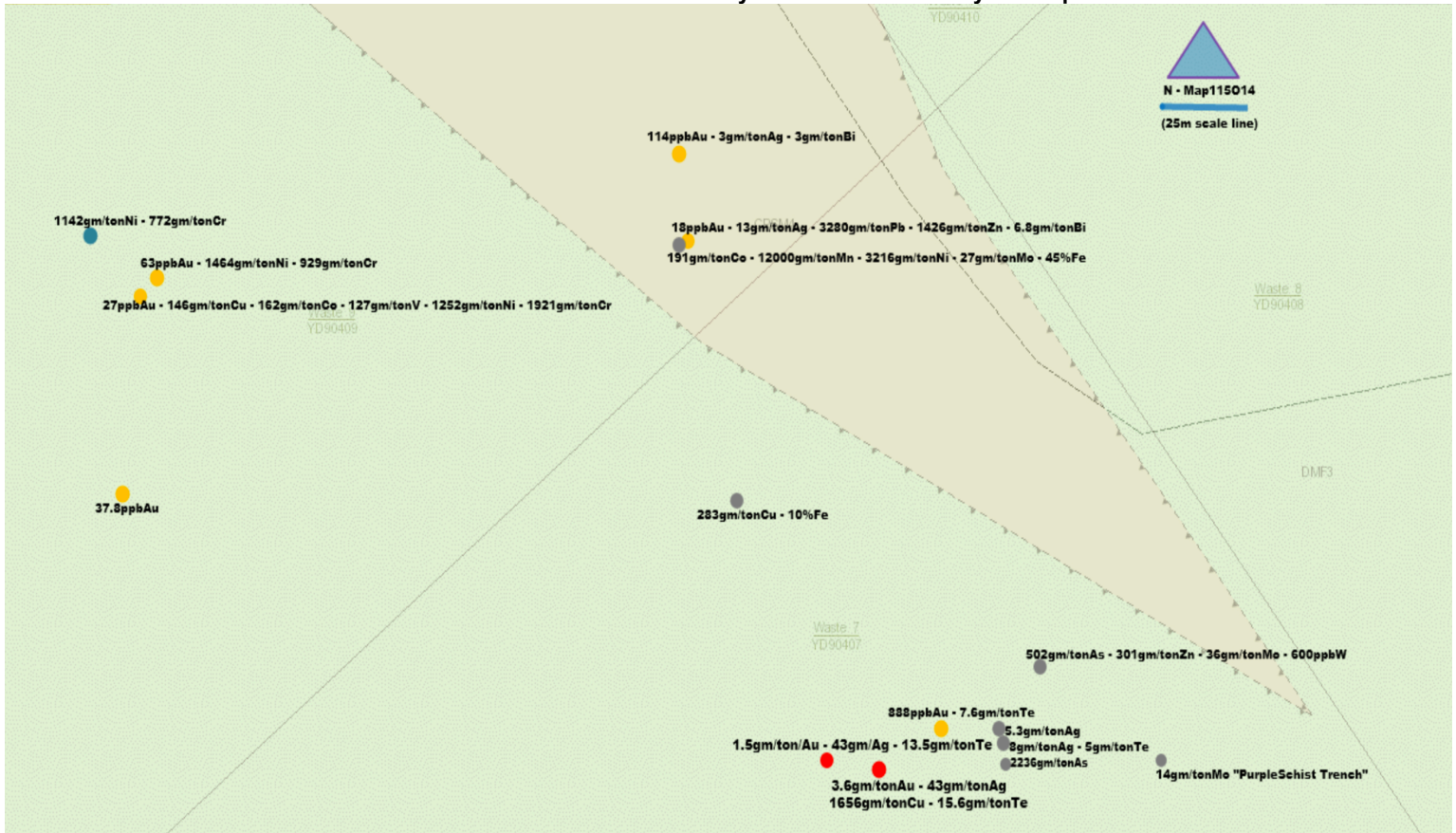
**Description of Data – Assay Results - Anomalies noted in color for 67 samples:
Aqua Regia digestion ICP-MS analysis, 250gm rock to 200 mesh ~ Bureau Veritas Laboratories WHI1600030.1**

Sample#	Zone7	Nad83	Prospecting Program 2015 IN Group July - Sept. 2015	Claim	Assay Notes	Prospector Location Notes
Sample#	UTM Location	Geologist's Notes				
17220	595344 7097040	pyrite crystals (<5 cm) selected from black schist	Waste 7		8.1gm/ton Ag - 1,656 gm/ton As - 4.9gm/ton Te	Chrys Trench
17221	595344 7097040	disintegrated black schist rich in carbon. matter (X-ray, isotopes)	Waste 7			Chrys - More Notes on Location
17222	595352 7097061	quartz lense wrapped in black schist, with chalcopyrite crystals	Waste 7			North East of Main Rock Prospecting
17223	595344 7097040	yellow-brown sedimentary (?) rock with thin (mm) qtz veinlets	Waste 7		1,393gm/ton Ba	Chrys Vein
17224	595344 7097040	duplicate of 17223 (for thin section)	Waste 7			Chrys Vein
17225	595344 7097040	chalcopyrite crystals (for microprobe)	Waste 7			Chrys Vein
17226	595352 7097061	black shale with oxidized chalcopyrite, remnant variegated colors	Waste 7		36.2 gm/ton Mo - 502.4gm/ton As - 301gm/ton Zn - 0.6ppm W	Directly north east of Main Vein(Waste Vein)
17227	595428 7096691	black shale with sulphidic bands, both crenulated together	Waste 7		67.2gm/ton Mo - 212gm/ton Cu - 270gm/ton Zn - 0.7ppm W	GZm0-2
17228	595428 7096691	local float - marble (?), qrtz/calcite veinlets, chlcrpt, prt crystals (<1cm)	Waste 7		15% Ca	GZm1Fold
17229	595424 7096690	qrtz lense in black (calicic) shale, some sulphides in b.s., not in qrtz	Waste 7			GZF2
17230	595416 7096663	black shale, quartz lenses + beige calcite, chlcrpt crystals (<1cm)	Waste 7		20.8gm/ton Mo	GZF2S
17231	595410 7096663	folded black shale with calcite veinlets, chlcrpt crystals (<1cm)	Waste 7			GZF2EE
17232	595325 7097041	sulphides, a nest in big quartz boulder?	Waste 7		888.1ppb Au - 19.8gm/ton Ag - 6.6gm/ton Bi - 7.6gm/ton Te	Main "Boudinage" Vein Structure at "surface".
17233	595226 7097177	quartz boulder, with black shale streaks, rare sulphides, Fe-oxides	Waste 9		114 ppb Au - 3gm/ton Ag - 2.9gm/ton Bi	Paradise Hill Road "Waste" Boulder
17234	595072 7097124	brown rock (unidentified) next to serpentinite (listwaenite?)	Waste 9		62.9 ppb Au - 1,464gm/ton Ni - 929gm/ton Cr	Tram Way Road - ChroDy - Decom Chromium
17235	595050 7097132	small outcrop of serpentinite (?)	Waste 9		1,142gm/ton Ni - 774gm/ton Cr	Tram Way Road - Chrody
17236	595344 7097040	pyrite, chalcopyrite crystals coated with colorfull patina	Waste 7		2,236gm/ton As - 27.59% Fe	Below Waste Vein to east- New Py
17237	595307 7097028	pyrite (highly selective) from large quartz boulder	Waste 7		3.6gm/ton Au - 43gm/ton Ag - 1,656gm/ton Cu - 15.6gm/ton Te - 0.28ppm Hg	Boulder on Hill SW of Main Rock - Similar
17238	595069 7097068	carbonate veins and nests in serpentinite fragments	Waste 9		37.8 ppb Au	T1-14 (Green Ultramafic)
17239	594966 7097041	outcrop-weathered disintegrated "rock" (listwaenite?) & black shale	Waste 9			Real/PH4-11
17240	594966 7097041	brown-orange decomposed "rock" (listwaenite?)	Waste 9			Real/PH4-11
17241	595089 7096878	decomposed brown "rock"- Quartz infused, iron altered listwaenite?	Waste 7		232.8gm/ton Cu - 246gm/ton V - 820gm/ton Zn	"Black Quartz" - BQm4 - BrownOx Layer
17242	595348 7097043	brown unidentified rock forming an outcrop (pyrite cubes in footwall)	Waste 7			"Rhyo"
17243	595348 7097043	duplicate of 17242	Waste 7			"Rhyo"
17244	595402 7096651	outcrop (Hester) - black shale, folded, qrtz lenses, pyrite crystals	Waste 7		18.9gm/ton Mo	GZ (July 29)
17248	595441 7097042	quartz and black shale, pyrite at contact, brown ox cubes	Waste 7			WVNESa-Test Trench-West contact Quartz
17249	595441 7097042	quartz and black shale, abundant Fe-oxidic specks (after pyrite?)	Waste 7			WVNESa-Test Trench-Olivine? Brown ox patches
17250	595345 7097035	quartz with sulphides below unidentified rock	Waste 7		588.2gm/ton As	Lens below Rhyo, ChrysTrench m6
52413	595068 7097119	Float, vuggy, strongly altered rock, quartz veinlets (opaline), rare sulph.	Waste 9		29.7 ppb Au - 864ppm Ni	Chrody area, chinese tailings. Local Float
52414	594810 7097462	Outcrop, listwaenite (?) in sericite-chlorite schist +/- Fe-oxides	Waste 11		27 ppb Au - 1,252 gm/ton Ni - 146.6gm/ton Cu - 162.4gm/ton Co - 127gm/ton V - 1,921gm/ton Cr	QB1 - Beginning of "Top Trench"
52415	594800 7097447	Outcrop, quartz lenses from sericite schist, vuggy, Fe-oxides	Waste 11		4.2ppb Au	MavQuartz west side, east wall
52416	594787 7097445	Outcrop, contact black shale - listwaenite (?), Fe-oxides	Waste 11		1,147gm/ton Zn - 2.8gm/ton Sb - 4,373gm/ton Mn	"Listwaenite-Black Shale Melange" JSC - East
52417	594768 7097461	Outcrop, brown schist +/- listwaenite (?), Fe-oxides	Waste 11		264gm/ton Zn	Top Part - "Vertically Altered" Schist Valtsh
52418	595101 7097599	Quartz boulder from ravine bottom, with sulphides	Waste 10			Historical Ravine Contact Area
52419	594768 7097461	Outcrop, brown schist +/- listwaenite (?), Fe-oxides	Waste 11		3gm/ton Gallium - 14.5gm/ton Sc	Re-sampled. More examination. Valtsh
52420	595067 7097577	Outcrop, black shale interfingering with listwaenite +/- Fe-oxides	Waste 10			Bottom of Historical Ravine Contact Area
52421	594768 7097461	Outcrop, disintegrated schist with Fe-oxides along a fault	Waste 10		7,980.3gm/ton Ni - 406.6gm/ton Co - 7.78% Fe - 5.8gm/ton Sb - 2,034gm/ton Cr	Bottom of Historical Ravine Contact Area
52423	595363 7097312	Trench, black shale with quartz lenses +/- dissem. sulphides	Waste 10			East of Gumbo Test Trench
52424	594796 7096437	"Ravine, brown schist (~ 12 m south from 17219)	Init		17gm/ton La	Ravine
52425	594879 7098424	Outcrop, UM rock composed of black porphyroblasts, olivine?	Waste 24		19gm/ton La	BL4 m14
52426	594782 7098430	Listwaenite (?) Behind audit; Stripped to bedrock zone approx 50m sq.	Waste 24		602.4gm/ton Ni - 614gm/ton Ba - 6.63% Ca - 206.7gm/ton As	BSLCON - BenLevi.
52427	595231 7097155	Aphanitic, brown-red, vuggy rock	Waste 9		45% Fe - 27gm/ton Mo - 378gm/ton Zn - 3,216gm/ton Ni - 191.7gm/ton Co - 12,000gm/ton Mn	Big Waste-like Boulder on Paradise Hill Road
52428	595231 7097155	Vein quartz with galena	Waste 9		18.6 ppb Au - 13gm/ton Ag - 3,280gm/ton Pb - 1,426gm/ton Zn - 6.8gm/ton Bi - 10.6% Ca - 0.98 ppm Hg	Big Waste-like Boulder on Paradise Hill Road
52429	595255 7097091	Altered rock made of quartz, calcite with disseminated sulphides	Waste 7		283.4gm/ton Cu - 10.3% Fe	W4 trench area. No floats.
52431	594974 7097700	Outcrop, altered serpentinite (?) with vugs and Fe-oxidic spots, infiltr.	Waste 12		1,102.5gm/ton Ni - 12.04% Ca	Fault contact of map
52432	594865 7097330	Outcrop, black shale rich in graphite (for X-ray?)	Waste 9			Paradise Hill
52433	595365 7097043	Outcrop, quartz from a lense rich in sulphides	Waste 7		35.7 ppb Au - 1.5ppm Ag - 1.3gm/ton Te	Lens(es) bordering Chrys Vein
52434	595050 7097524	Brown oxidizing patches in carbonate rock.	Waste 10		14.23gm/ton Mg	BROX S Paradise Hill
52435	595137 7097407	Outcrop, silicified band in Klondike schist(?) with dissem. sulphides	Waste 10			Prospecting sample for bedrock evaluation
52436	595136 7097434	Outcrop, serpentinite (?)	Waste 10			Gumbo -sericite
52437	595136 7097434	Outcrop, calcium-silicate, listwaenite (?) from contact with serpentinite	Waste 10			Gumbo - orange
52438	593169 7099677	Last Chance Pit - quartz/calcite +/- pyrite from black shale	Init 115		127gm/ton Cu - 4.4gm/ton Sb	Kari Knutsen
52439	593169 7099677	Pyrite cube (for polished section)	Init 115		100.7gm/ton Co - 3.1gm/ton Sb - 26.6% Fe - 6.3gm Bi - 3.1gm/ton Te	Kari Knutsen
60413	595068 7097119	Outcrop, green listwaenitized serpentinite (?)	Waste 9		1228.5gm/ton Ni - 1,315gm/ton Cr	Chrody Tram Way
60414	594241 7098252	Sub-crop - listwaenite (?) fragments, carbonate, + pyrite	Waste 16			LISULF. Bottom of Stripped mined out pit.
60415	595353 7097039	Outcrop - quartz vein/lense with pyrite	Waste 7			Yello Vein. 15 meters elevation below "Main Rock".

Paradise Hill East Plateau & Hester Hill

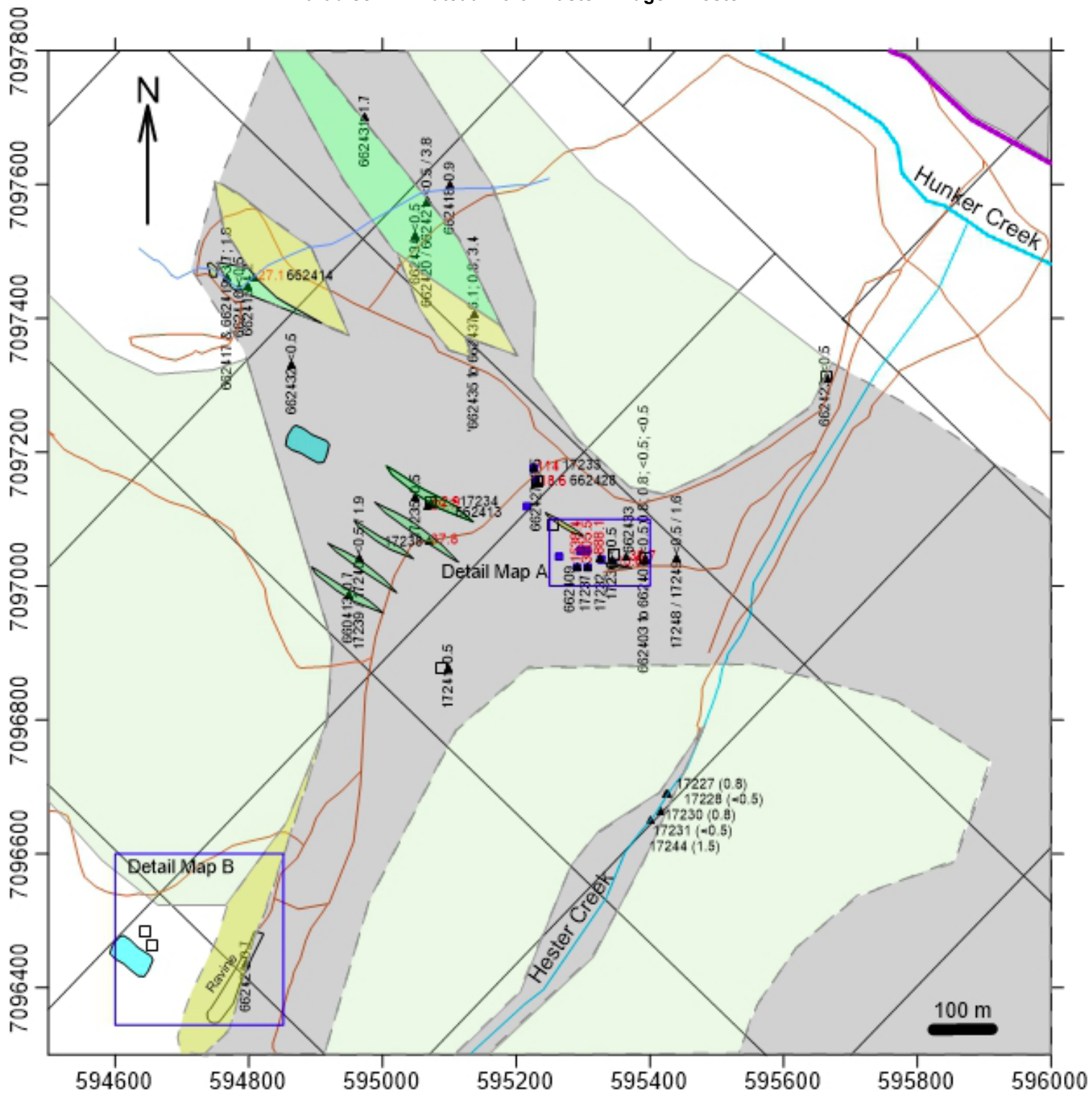


Detail of Paradise Hill East Plateau and Hester Hill - Assay Result 2015 Anomaly Descriptions and Locations

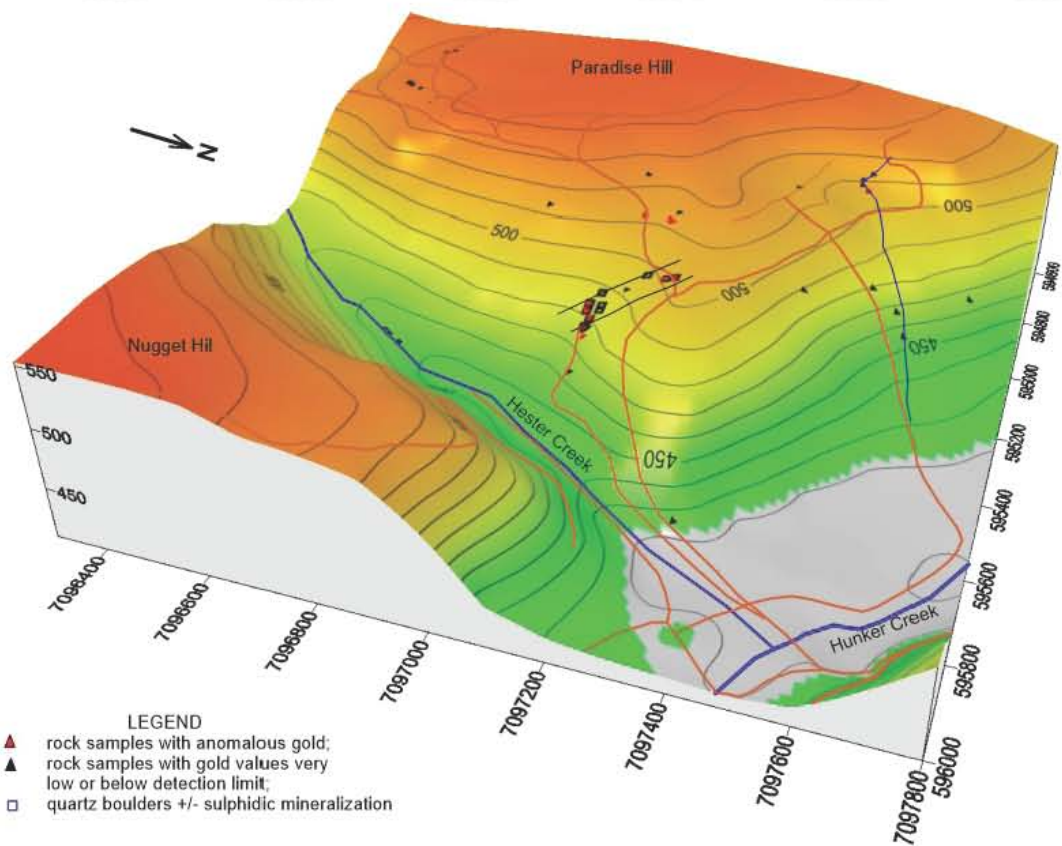
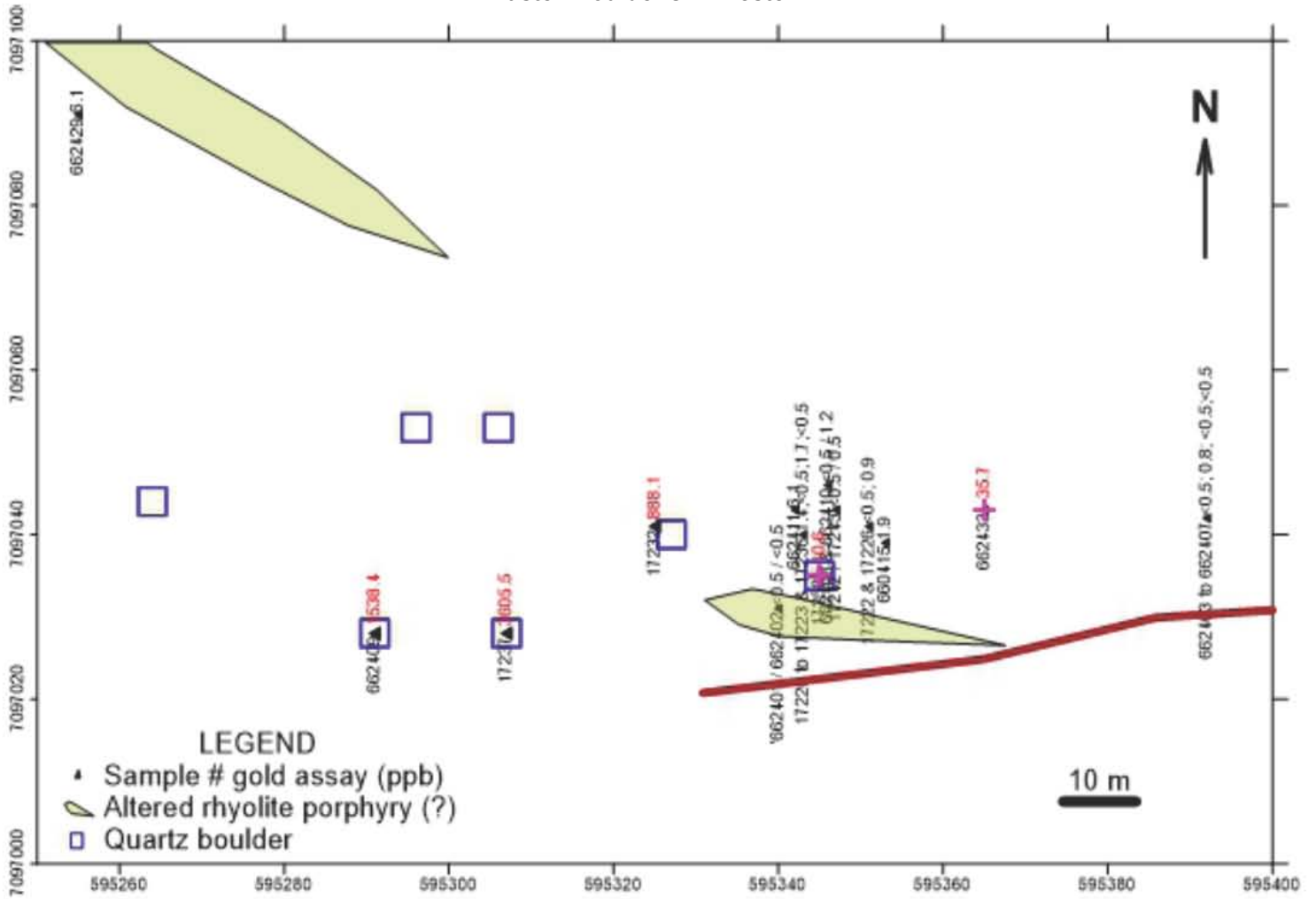


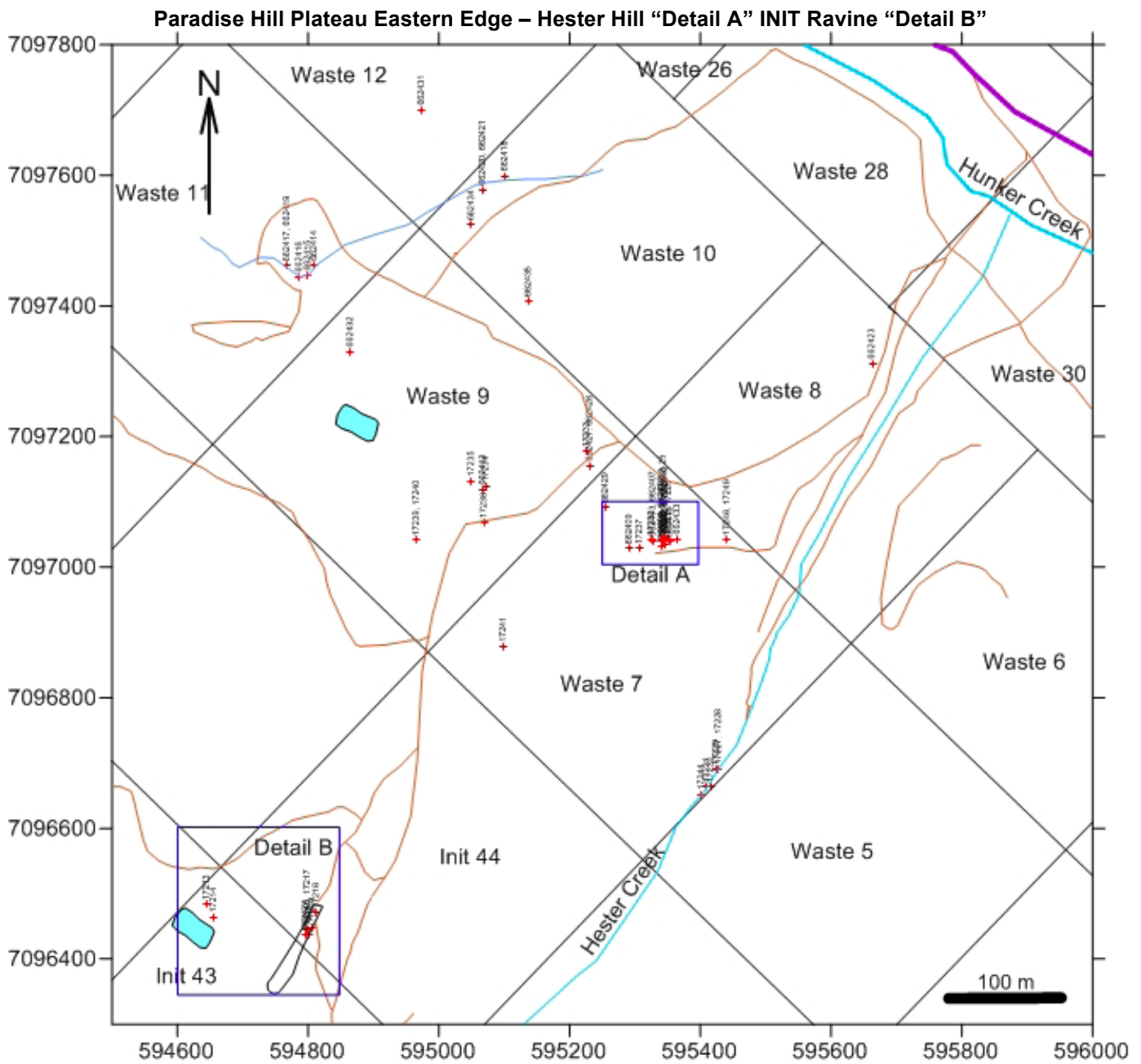
Bedrock Mapping 2015

Paradise Hill Plateau North Eastern Edge – Hester Hill



“Waste7 Boulder’s” ~ Hester Hill





Interpretation of Data and Conclusion

Confirmation was achieved concerning the gold bearing quality of the “W7V” type quartz (graphite sheathed white bull quartz containing high sulfide plus tourmaline/rutile, boudinaged through black schist). The sulfides within the black schist itself need further detailed assay study and analysis. A fire finish is recommended.

Arsenopyrite, silver, copper, telluride, moly and tungsten identified in anomalous amounts in the “pyrite cubes” and sulfide pockets of the “black schist” at Waste7 Vein area. Significant gold results were not replicated 2015, however this could possibly be due to the mesh size requested at prep. Specialized prep and assay should be performed on the specimen sulfide samples as seen being freed yearly from the decomposing black schist.

Fault altered black “siltstone” exposed on Hester Creek in remnant dykes, contains visible copper, arsenopyrite and molybdenum, anomalous zinc and tungsten as well as up to 15% calcite in folded material. Remnants of this supposed protolith rock are identified up Hester Hill as part of the black schist unit, and are seen to continue through the fault margins of the mapped ultramafic. The mapped mafic/ultramafic “CPSM4 Paradise Hill” consists of various altered forms of oceanic rock: talcy listwanite, high carbonate chromium listwanite, serpentinite, fuchsite. Sulphides have been observed in the various “listwanite types” and detailed sulphide analysis should be performed in the future. Splayed veinlets (crystalized, pocketed and or opaline quartz) have also been observed through some of the weathering orange “gumbo”, (which had been the term applied by M.W. Milner in 1983 while studying the then newly exposed bedrock of Hester Hill-Paradise Hill for the Sigma Group placer company). The listwanite/gumbo is further “fault and shear altered”, high in areas with nickel, chromium,

Dates - 2015	Detail
	Test Zones & Methods
	Test Trenching:
July 12 - 18	"Black Quartz" & Hester
July 20 - 29	WasteVein, re-worked to open
July 30 - 31	wider & deeper. "Waste Vein Area" study.
August 1 - 6	Paradise Hill Plateau
August 7 - 9	Ben Levi Occurrence
13-Aug	Yello Vein
	Bedrock Mapping & Geological Work
July 24 - July 31	P.Geo Boris Molak on IN Group
August 1 - 3 & 8 - 10	Examining Test Trench Zones and exposed zones of bedrock, (Nugget to Last Chance).
	Prospecting & Bulk Sampling - Recording Trenches.
July 24 - 31	
August 1 - 6	Sampling for Mill Testing (further prospecting).
August 8 - 9	Assay samples taken at the same time, for assay,
August 13th	by P.Geo, put into sealed, numbered, locked bags.
	Extra Prospecting:
Sept. 2 - 3	Nugget to Last Chance Evaluation. Consultancy with Al Doherty on Trenching & Bedrock Evaluation to date. Visiting sites of work to date. Prospecting highlighted results reported to date.
Sept. 2 - 3	Taking notes on verifiable open bedrock locations. Analyzing and conferring on rock types & structure for mapping purposes, of newly identified and uncovered bedrock horizons.
Sept. 2 - 3	Erini & Sylvain Prospecting Collecting bulk samples under observation of 2 geologists, from verifiable bedrock, test pit work and prospect targets.

Full Assay Certificate



Bureau Veritas Commodities Canada Ltd.
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PHONE (604) 253-3158

www.bureauveritas.com/um

Client: **RST Klondike Discoveries Ltd.**
#702 - 889 West Pender St.
Vancouver BC V6C 3B2 CANADA

Submitted By: Jim Boyce
Receiving Lab: Canada-Whitehorse
Received: February 12, 2016
Report Date: March 13, 2016
Page: 1 of 4

CERTIFICATE OF ANALYSIS WHI16000030.1

CLIENT JOB INFORMATION

Project: RST 02
Shipment ID: RST16-02
P.O. Number
Number of Samples: 80

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
PRP70-250	78	Crush, split and pulverize 250 g rock to 200 mesh			WHI
AQ202	78	1:1:1 Aqua Regia digestion ICP-MS analysis	30	Completed	VAN
SHP01	80	Per sample shipping charges for branch shipments			VAN

SAMPLE DISPOSAL

STOR-PLP Store After 90 days Invoice for Storage
PICKUP-RJT Client to Pickup Rejects

ADDITIONAL COMMENTS

Bureau Veritas does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

Invoice To: RST Klondike Discoveries Ltd.
#702 - 889 West Pender St.
Vancouver BC V6C 3B2
CANADA

CC: Al Doherty
Boris Molak



This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only. All results are considered the confidential property of the client. Bureau Veritas assumes the liabilities for actual cost of analysis only. Results apply to samples as submitted. ***astensik indicates that an analytical result could not be provided due to unusually high levels of interference from other elements.



CERTIFICATE OF ANALYSIS

WHI16000030.1

Method	WGHT	AQ202	AQ202	AQ202	AQ202	AQ202	AQ202	AQ202	AQ202	AQ202	AQ202	AQ202	AQ202	AQ202	AQ202	AQ202	AQ202	AQ202	AQ202	AQ202	AQ202	AQ202	AQ202	AQ202	AQ202	
Analyte	Wgt	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P						
Unit	kg	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%						
MDL	0.01	0.1	0.1	0.1	1	0.1	0.1	0.1	1	0.01	0.5	0.5	0.1	1	0.1	0.1	0.1	2	0.01	0.001						
17213	Rock	0.62	11.0	8.5	6.4	159	0.5	831.0	42.8	259	6.58	578.2	<0.5	<0.1	29	1.0	1.4	<0.1	60	0.17	0.088					
17214	Rock	1.21	1.4	53.5	2.8	23	0.5	38.8	4.1	97	1.71	10.3	1.8	10.8	10	<0.1	1.0	<0.1	10	0.07	0.031					
17215	Rock	0.82	0.4	11.4	6.5	16	0.2	14.3	2.7	112	0.84	1.6	<0.5	1.7	4	0.1	<0.1	0.1	4	0.05	0.023					
17216	Rock	1.33	2.4	204.4	17.2	416	0.1	125.4	34.7	1734	7.50	53.5	<0.5	2.7	7	5.6	<0.1	0.2	70	0.05	0.090					
17217	Rock	1.53	20.6	152.2	7.6	93	0.3	19.5	5.5	43	2.93	8.8	<0.5	6.4	10	0.9	0.6	0.1	18	0.05	0.118					
17218	Rock	0.98	1.6	43.8	8.3	53	0.1	23.8	8.1	198	2.94	10.3	<0.5	1.3	12	<0.1	<0.1	0.1	63	0.12	0.056					
17219	Rock	0.84	150.7	243.1	27.8	121	0.8	9.4	1.6	16	3.57	357.8	1.5	5.7	12	0.3	14.4	0.4	36	0.10	0.198					
17220	Rock	3.10	0.5	4.4	23.8	145	8.1	123.1	87.0	150	26.89	1656.0	1.4	4.8	13	0.3	0.2	1.1	2	0.30	0.014					
17221	Rock	1.54	3.1	59.4	6.7	106	1.4	46.3	16.3	422	3.55	23.0	<0.5	11.9	33	0.1	<0.1	<0.1	14	0.27	0.065					
17222	Rock	2.14	4.3	40.8	45.5	95	0.4	30.0	8.8	1891	2.97	55.2	<0.5	2.0	164	0.7	<0.1	0.4	19	8.40	0.215					
17223	Rock	0.81	0.6	14.0	12.5	64	<0.1	69.1	18.2	746	3.78	6.9	1.7	14.8	133	0.1	<0.1	0.1	53	3.02	0.107					
17224	Rock	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.
17225	Rock	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.
17226	Rock	1.15	36.2	53.0	14.8	301	0.3	63.4	16.1	250	6.23	502.4	0.9	3.4	23	1.0	0.4	0.2	21	0.17	0.089					
17227	Rock	1.32	67.2	212.1	27.2	270	0.4	71.9	24.2	423	4.83	23.4	<0.5	5.6	32	1.9	0.4	0.3	37	1.43	0.331					
17228	Rock	1.20	1.1	18.0	10.4	77	0.1	11.0	5.3	7975	3.88	23.5	0.8	1.2	374	1.2	<0.1	<0.1	6	15.09	0.030					
17229	Rock	1.40	12.1	34.8	5.2	55	0.1	19.0	4.8	374	1.23	40.4	1.2	1.1	16	0.7	<0.1	<0.1	11	0.68	0.051					
17230	Rock	2.72	20.8	50.3	12.3	139	0.8	35.5	14.2	783	2.66	113.5	<0.5	3.7	39	1.9	0.2	0.2	17	1.46	0.063					
17231	Rock	1.98	18.7	23.2	22.7	151	0.7	41.4	18.4	901	4.16	251.9	0.8	3.5	69	2.5	0.2	0.2	22	2.35	0.095					
17232	Rock	1.63	1.4	109.0	144.3	22	19.8	125.6	50.9	354	5.34	135.2	888.1	1.1	33	0.5	0.4	6.6	2	1.25	0.012					
17233	Rock	0.52	3.6	14.9	181.2	36	3.0	46.0	27.4	1012	3.21	140.0	114.0	0.8	50	0.5	1.1	2.9	8	2.07	0.020					
17234	Rock	0.85	0.2	5.2	1.8	20	0.1	1464.3	89.7	1128	4.15	14.1	62.9	0.5	9	0.3	0.7	<0.1	18	0.12	0.004					
17235	Rock	0.94	<0.1	9.2	1.5	30	<0.1	1142.9	71.5	111	1.99	27.4	0.5	0.4	1	0.3	0.2	<0.1	21	0.02	<0.001					
17236	Rock	0.89	0.3	3.7	21.7	100	2.4	88.8	99.8	77	27.59	2236.0	<0.5	3.6	7	0.3	0.4	0.9	<2	0.16	0.008					
17237	Rock	0.33	2.4	1656.3	125.3	82	43.2	1116.8	27.1	1029	30.10	981.4	3605.5	1.6	76	3.4	0.8	5.4	5	2.88	0.006					
17238	Rock	0.20	0.1	5.4	7.9	16	0.2	214.6	32.7	3017	4.15	267.2	37.8	0.3	704	0.5	0.3	<0.1	4	6.87	<0.001					
17239	Rock	1.32	7.3	37.7	18.2	22	1.2	16.3	1.2	70	1.44	57.6	<0.5	1.5	91	0.6	0.6	0.2	56	0.14	0.210					
17240	Rock	0.93	3.8	17.7	12.9	139	0.3	1038.7	34.3	203	3.56	66.2	1.9	4.3	20	1.8	9.6	<0.1	43	0.08	0.049					
17241	Rock	1.13	1.3	232.8	3.8	820	0.4	66.9	28.9	73	12.41	115.3	0.5	8.1	21	0.3	0.4	<0.1	246	0.14	0.301					
17242	Rock	1.52	0.3	17.6	29.3	65	<0.1	68.4	17.3	709	4.04	12.2	<0.5	16.0	135	<0.1	<0.1	0.1	56	2.69	0.105					

This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only.



CERTIFICATE OF ANALYSIS

WHI16000030.1

Table with columns: Method, Analyte, Unit, MDL, and various elements (La, Cr, Mg, Ba, Ti, B, Al, Na, K, W, Hg, Se, Ti, S, Ga, Se, Te) with their respective values and units.



CERTIFICATE OF ANALYSIS

WHI16000030.1

Table with columns: Method, Analyte, Unit, MDL, and various elements (Wght, Mo, Cu, Pb, Zn, Ag, Ni, Co, Mn, Fe, As, Au, Th, Sr, Cd, Sb, Bi, V, Ca, P) with their respective values and units.

Appendix: Additional Work History on Claims



Dredge at mouth of Last Chance Creek. Placer mining in this location 2014-15 has been documented on film for History Network series "Yukon Gold"



Listwanite-Black Shale-Oxidizing Quartz "Melange" at the Ben Levi Area Hunker Creek and Tinhorn Gulch



“Rhyolite Mantle” East View of Waste7 Vein test trenching 2015



“Yello Vein” (next to orange measuring tape), uncovered during 2015 test trenching. “QV1 (2013-14) or Chrys Vein” seen above it 1 meter in elevation and 3 meters west. “W7 Main Rock”’s tip seen further west 12 meters, past the “Rhyolite Mantle” (on south edge) and 12 meter long Black Schist with Sulfide Cubes up to 5cm square “PY Zone”.





Close up of freshly broken “sulfide square” from Waste7 Vein PY Area. Electromagnetic activity is *supposed* for the formation of such crystals within the black schist.



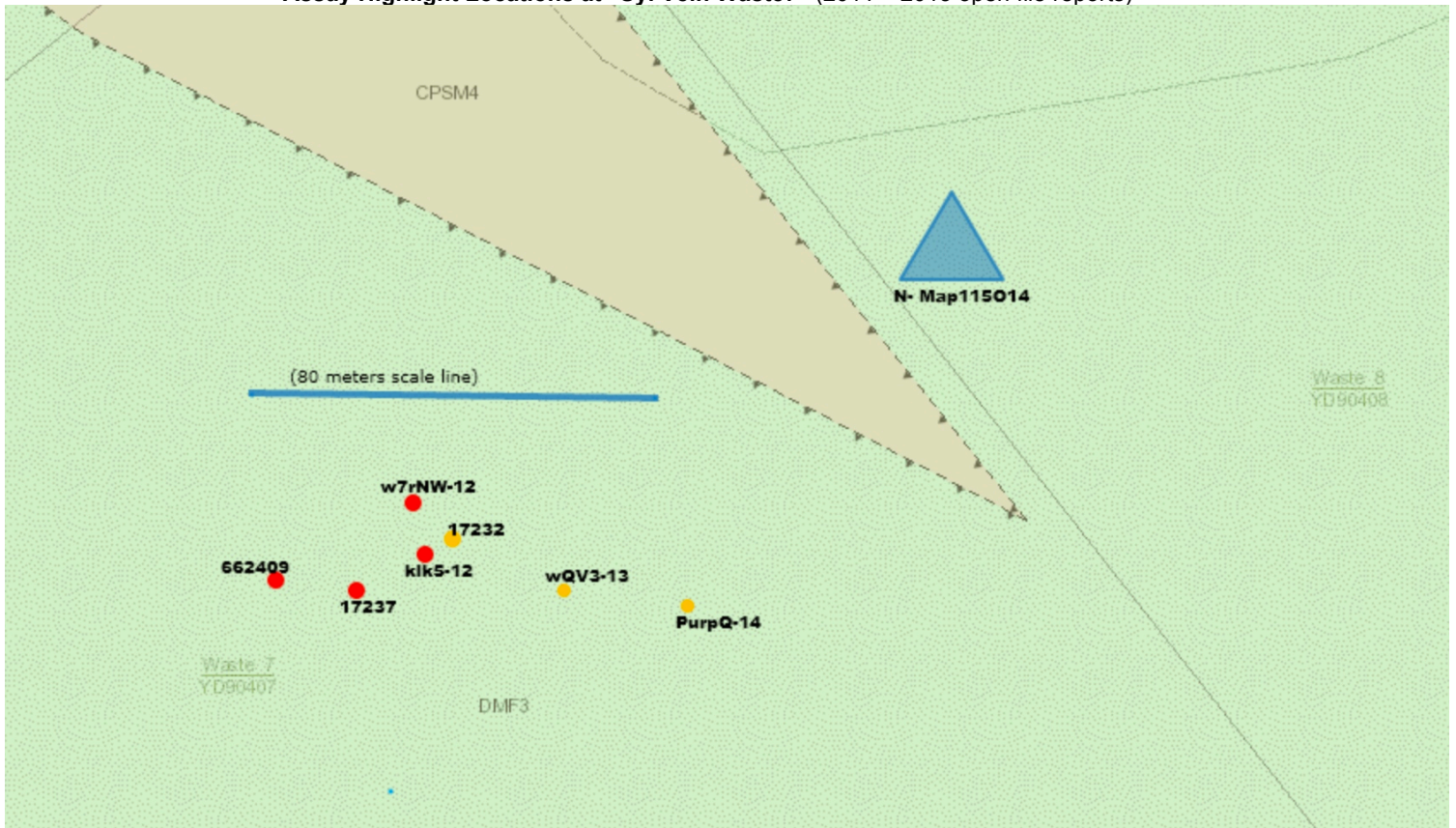
Same structure is observed approx. 3kms north-west at the Last Chance Dredge Pit. “Pyrite Cube” from 2015 examination of Last Chance placer pit bedrock exposure. Visited with permission from the placer operator, Karl Knutsen. The black shale – sulfide – quartz mélange seen at the bedrock base lies below the listwanite “slab” that the dredge (1st pic of appendix) sits on top of.

W7rNW 2012 – North West side of “Main Rock”. White quartz and flaky calcite/sulphur compound. Arsenopyrite cased in the hard black graphite “veinlets”. Well formed pyrite crystals along quartz border where white powder cements. Brass colored well-formed pyrite cubes up to 4x4mm in the quartz. Possibly altered by epithermal and hydrothermal activities.



w7rNw assayed 581gm/ton Arsenic, 461gm/ton Cobalt, 340gm/ton Nickel, 23gm/ton Silver & 5.71gm/tonAu

Assay Highlight Locations at “Syl Vein Waste7” (2011 – 2015 open file reports)



Gumbo Test Trench 2015 – Paradise Hill North Plateau



INIT Ravine 2015 test trenching – Paradise Hill South-East Plateau



“IN1” Test Trench fall 2015, claim Waste34 – Base of Nugget Hill on Independence Creek



“Fingers” system of vertically thrust and highly morphed chlorite-sericite schists exposed at the base of Nugget Hill.

“Hester Rock” as seen outcropping on Independence Creek claim Waste2, fall 2015 prospecting.



Waste4 "Fingers Pit" ~ 2012 to current target on Waste4 Claim. East Plateau of Nugget Hill. Opened to hard bed-rock in formation by local placer operator. **Nug1 and 2 samples assayed during 2014 (Acme-Maxxam Job# WHI5000003), resulted in **2.74 & 5.68gm/ton Au** over a 1 meter sample width of burgundy-black oxidizing highly altered chlorite "schist".**



Further study needs to be done on Nugget Hill and Independence Creek focusing on the alterations, faults and vertically bedded schist, as well as giant quartz veins of Nugget Plateau.

Mouth of Hunker 2012 prospecting

Permission granted by Mr. Morrister (placer operator), to examine bedrock base of this mined-out pit. FUC1 claim, bedrock study area 2012.





Quartz veins both strike 280° west through graphite altered black shale-schist containing abundant sulfide pockets and shapes. Sulfide deposition not differentiating over rock type (quartz, black schist and carbonate).

F1-3 (2012) - Hard-rock sample full rock INAA neutron activation result on 30 gram sample: **16.5gm/ton Au**, 156gm/ton As, 11gm/ton Ag, 23gm/ton Cr, 22gm/ton Co, 72,000ppm Ca.



Notes from 18th of August 2012 prospect on Fuc1 claim – Mouth of Hunker

Notes and samples taken by PhD Geo Boris Molak as a visiting geologist, to examine bedrock at the bottom of a stripped placer pit.

Entire pit is roughly 100m long by 80m wide and 25 meters deep. Directly west of the Hunker Creek Road. Bedrock is exposed along the full base of stripping. The same types of geology as focused on in the study area continues throughout the exposed area of visible bedrock.

Study area F1 ~ 07W 0589758/7101327

2 side by side quartz veins. A to the south and B to the north.

Both veins are 1-5 – 2 meters wide, 4m apart from each other. Both dip 5degrees E, Striking West 280.

South side - Vein A

There is a black graphite contact on the south of Quartz vein A which seems to be a faulted, foliated schist turned to black & shiny graphite. Graphite can be seen in formation to strike NW 320 Dipping SE 25 degrees. Red seepages of iron, Strike in the same direction, up to 6 cm wide.

This sulfide rich graphite continues SE for 5 meters before contacting into a possible shear zone and hanging footwall of heavily altered greenstone, similar to the altered greenstone on NW side of the 2nd Vein. Roughly 30% sulfides, well-formed pyrites and various other sulfide minerals run and “grow” indiscriminately throughout all rock types. This green stone is visible for 4 more meters before it is covered by gravel overburden.

Between the Veins

Highly “axilated” (spatial foliations with at least 4 directions meeting at all angles) show a lot of motion happened in the chlorite/chromium schist with quartz veinlets, that is between the 2 cross-cutting veins sampled. Sample descriptions and assay results next pages.

North side - Vein B

Foliated and spatial foliations continue north from veinB through the altered chlorite/chromium/quartz/feldspar schist that is stained rose/lilac in areas, green/turquoise in other areas. Veins of various sulfides as well as well formed pyrites and arsenopyrites. This type of rock continues for 4 meters North-West, until it turns to graphite as on South-West side. Graphite material also contains abundant well-formed sulfides and continues under overburden of refilled gravels.

F1-3 Sample from center of VeinB. Orange oxidizing clear and white bull quartz with sulfides.

Pre-Placer Mined “Mouth of Hunker Creek”



of their location. The extremely linear nature of the paystreaks becomes very important as it would appear to indicate the gold may be under some sort of structural control in bedrock-rather than being controlled by mere stream deposition.

The Dago-Preido Hill pay streak, in particular, shows a pay streak with absolutely straight and totally parallel edges over a distance in excess of one mile. This is not what one would expect from a stream deposit but it would be typical of a vein deposit plotted on surface.

The northwest end of the Paradise Hill pay streak shows a very odd termination on McConnell's map, as if it were cut off by a north-striking fault. Interestingly, such a fault exists across Hunker Creek in the Ben Levy adit, where a strong carbonate vein-fault projects along strike southward directly to this odd termination of the pay streak. This may only be a coincidence, but it would appear more likely that a vein-fault junction occurs on Paradise Hill at the head of 70 Pup; between the Ben Levy Vein and the possible listwanite altered fault zone under the Paradise Hill pay streak.

This suggests that the "pay streak" is being influenced by bedrock structural controls. It may even suggest the pay streak itself is not really a pay streak at all but is possibly the top of a bedrock lode, a vein-fault the placer miners have been mining into, on the mistaken assumption it was a stream deposited placer.

This assumption is further supported by the very high grades obtained in much of the White Channel bench deposits. The Klondike has been famous for its astonishingly high grades, which often ran hundreds or even thousands of times higher than a normal placer grade. No credible explanations were ever forthcoming as to how these grades formed. The explanation would be simple though, if the pay streak was actually the top of a high-grade bedrock lode gold deposit. These sorts of grades are not at all uncommon in high-grade lodes.

This thesis is further supported by the fact that the placer mines on the Hunker Creek benches are actually mined well into bedrock and gold is still being recovered there. The deepest open cuts in this area are at least 7-10m (25-30ft) below the gravel bedrock contact. Considerable tonnages of bedrock, with virtually no gravel, have been mined here and gold recovered. The placer miners have been able to mine this bedrock as it is weathered or altered to clay and is easily "ripped" out by heavy equipment and sluiced without drilling, blasting or milling.

The accepted wisdom states that this gold is placer gold that has worked its way down into fractures in the bedrock and is therefore not lode gold in situ. The only problem with that thesis is that the clay does not appear to be fractured and is, in fact, very homogenous in appearance. This material should be very nearly impervious to penetration by placer gold, yet the gold is there nonetheless.

This area is also noted for fine specimens of crystalline gold, wire gold and dendritic leaf gold. None of these samples look as if they have traveled any distance at all from their lode source.

Most interesting perhaps, in support of the theory that the placers are actually the top of bedrock lodes, is the recent discovery that the Hunker Creek White Channel bench placer pay streak is sitting on top of a very large and very strong quartz-carbonate, mariposite, listwanite alteration zone in its bedrock. This is a textbook example of the alteration envelope found around California Mother Lode type gold-quartz veins. This is pushing the realm of mere coincidence to its limits.

CALIFORNIA MOTHER LODE-LISTWANITE TARGET MODEL

This target model is based on Californian, Saudi Arabian, Moroccan, British Columbian and Russian gold deposits.

Listwanite is a Russian term defining a mineralogical alteration assemblage that results from the carbonatization of serpentinitized ultramafic rocks. It represents a distinct alteration suite that is commonly associated with quartz carbonate lode gold vein deposits hosted in ultramafic rocks.

A listwanite consists of an alteration suite with the individual units of the suite best described in terms of their mineralogy. In order of increasing intensity of alteration these units are; 1) talc altered serpentinite, 2) talc-carbonate, 3) quartz-talc-carbonate, 4) quartz-carbonate-mariposite, 5) quartz-carbonate-mariposite-sulphides + gold.

The listwanites form a light green-grey rock consisting mainly of Mg-Fe-Ca carbonates (ankerite-siderite-dolomite) with accessory quartz, talc, lizardite-serpentinite, chlorite, hematite, magnetite, pyrite and Cr-spinel (which is often replaced by Cr-muscovite known as fuchsite or mariposite).

The vein systems are tectonically and structurally controlled gold deposits. The gold-quartz veins are discontinuous, anastomosing and often en echelon. The vein zones are noted for their considerable persistence along strike, often running over 100-200km (60-120mi) and being up to 1-1.5km (0.6-1.0mi) wide and having been mined up to 1.8km (1.1mi) in depth.

These vein zones are typically found in immature oceanic volcanic arc and basin rocks formed during tectonic accretion. The resultant tectonic mélange is subsequently cut by brittle faults with strike displacement. These brittle faults are gold bearing, having acted as channel ways for the gold bearing fluids.

These vein zones are large and are derived from thoroughly CO₂ altered serpentinite host rocks, which are common in the tectonic mélange zones. These vein zones will also form in adjacent black, shale dominated turbidites and/or volcanoclastic submarine fan deposits, typically found in the suture zones between allochthonous terranes, as tectonic mélanges comprised of dismembered and jostled pieces of ocean floor, volcanic arcs and arc basins.

These large, regional scale suture zones are subsequently cut by multiple brittle, steeply dipping faults shortly after ductile deformation ceased. These high angle brittle faults repeatedly channeled and localized the ore fluids. Both the fault zone and the ore bodies are discordant and crosscut stratigraphy.

There are two basic types of ore bodies in this target model; high-grade gold ore in quartz veins and low-grade gold-sulphide in carbonate-sericite (mariposite)-pyrite bearing altered wall rock.

The gold-quartz veins range from being massive veins, on the scale of greater than 15 m (50ft) thick and more than 2km (1.2mi) long, to thinner, finely laminated ribboned veins. These are typically ribboned on a 1mm to 10cm (0.003"-4.0") scale. Most of the quartz is milky or cloudy, and microscopically shows intense strain and partial recrystallization. These veins have an average 55 degree to vertical dip. Wall rock alteration (listwanite) generally forms an envelope around the veins. Most of the veins have a tendency to branch out and fray into zones of thin stockwork quartz veinlets.

Zones of intense carbonate alteration (listwanite) contain stockworks of quartz veinlets adjacent to the main vein.

In all the major California Mother Lode deposits, low-grade ore extends beyond sub-vertical higher-grade shoots within quartz veins and/or altered host rocks. The ore shoots have a pipe-like shape and pitch steeply within or parallel to the plane of the vein. Gold occurs both free and within and on sulphide grains, especially pyrite, both within veins and in altered wall rock. Gold is distributed erratically within the ore shoots.

The veins are often cut by several episodes of post-ore thrust faulting. The earliest post-ore thrusts in California are high-angle, and the latest are low-angle. They are characterized by wide gouge zones that present mining problems.

Gold is randomly distributed within the listwanite lenses and reports gold content between 200-1000ppbAu. This is 10 to 100 times greater gold content than found in associated ultramafic host rocks that report 5-100ppbAu. Listwanites appear to be anomalously gold rich rocks.

The highest-grade gold values 1000-10000ppbAu- of economic grade- are related to pyrite rich zones and especially (in Moroccan and Saudi Arabian deposits) to cobalt-arsenide mineralization.

Late quartz veins (carrying 2000-10000ppbAu) also have accessory pyrite and arsenopyrite, yet are still described in the literature as "low sulphide" gold-quartz veins.

Analysis of mineral separates indicate that pyrite (10-50ppmAu) and Co-arsenides (10-100ppmAu) are the main gold-bearing minerals in listwanites (aside from free gold itself).

Small gold inclusions (10-50 microns) are observed in these minerals or around limonitized pyrite grains.

Whole rock trace element analysis shows a strong positive correlation between Au-As and Au-As-K. Trace elements include; Ba, Sb, B, Bi and Ag. Therefore, gold in listwanites is related to gold rich sulphides, sulfoarsenides or arsenides. These elements should be useful as indicators of ore zones.

Potassium enrichment has been detected in fuchsite/mariposite rich listwanites.

Listwanites are also different from other carbonate rocks by being strongly anomalous in Cr (>500ppm), Ni (>500ppm) and Co (>50ppm).

Calcite rich listwanites can be nickel poor (<50ppm) and depletion haloes of Co have been detected around the Moroccan listwanites.

Vein mineralogy includes native gold and varying amounts of pyrite and other minor sulphides, including; galena, sphalerite, chalcopyrite, arsenopyrite, pyrrhotite and molybdenite. Coarse-grained scheelite is present in some veins. Considerable amounts of "specimen" or high grade gold have been found. Milling ore grades average 0.25-0.50 ozAu/ton or less. Most free gold occurs as small grains. Some high-grade pockets yield gold as coarse grains or plates and wires.

The Ag/Au ratio in the ore is generally low and the purity of the gold can exceed 800 fine.

Ore shoots are commonly said to be located preferentially in areas of intense and late fracturing near vein intersections, and along certain types of lithological boundaries. Cross cutting faults intersecting the veins often control emplacement of ore shoots.

The most reliable mineralogical guide to ore is the actual presence of free gold.

It is estimated that 80% of the production in the California Mother Lode district has been derived from those portions of the veins where serpentinite either formed one wall or was less than 100 feet from the ore. Additionally, crushing and brecciation of the quartz and the presence of mariposite, galena and arsenopyrite are indicators of proximity to ore shoots.

Serpentinite was the dominant control of bends in the vein and therefore of high grade. Furthermore, serpentinization reactions form magnetite in the ultramafic rocks, which could have subsequently reacted with aqueous gold in the veins to precipitate the gold.

Linears defined by aeromag lows in serpentinite may delineate zones of carbonatization. Magnetite formed during the serpentinization of ultramafic rocks produces a strong high magnetic signature. Carbonatization results in the destruction of magnetite, creating zones of reduced magnetic susceptibility. The application of aeromag lows, as an exploration tool in delineating zones of carbonatization in ultramafics, has been discussed by Gresens et al (1982).

Other exploration criteria for listwanites include;

-the fundamental depositional control for this deposit type, which is the localization of hydrothermal alteration sites along major fault zones within, marginal to or containing ultramafics.

-the geochemical pathfinders associated with listwanite alteration systems and related gold mineralization, which are; As, Sb, Ba, K, B, and Li with a strong correlation with Au and also Ag, Cd, Pb, Cu, Zn, Na, Ba, Bi, (K,Sb,Bi) with a positive but sporadic correlation with Au.

-arsenic and antimony are the most correlative with Au.

-alkalis show a strong correlation with mineralization, potassium in particular often corresponds with the abundance of mariposite.

-lithium shows the widest and most regular dispersion halo within listwanite rocks-and also a tentative correlation with the highest lithium values to the highest gold values.

-both barium and potassium display a positive correlation with gold in carbonatized metabasaltic rocks.

-base metals, most commonly Cu, Pb, Zn are associated with listwanitic lode gold but tend to have an erratic distribution.

-systematic surface mapping that focuses on both the tectonic setting and the spatial distribution of the listwanitic alteration suite is extremely useful.

-the distinctive listwanitic alteration assemblage occurs in linear arrays reflecting the structural control on the mineralizing system.

-both alteration mineralogy and intensity vary systematically away from the controlling structure.

-the locus of significant mineralization is typically associated with silicified zones (veins or stockworks) at the core of the structural zone or its related splays.

strongly faulted, brecciated and re-cemented zone with evidence of open space deposition of vein material as chalcedonic banding, vugs, druses and framboidal/botryoidal and granular/saccharoidal textures that are common in the quartz found in this area. This is significant as this quartz appears similar to much of the type of quartz recovered from the placer mines with large quantities of gold attached. Similarities include the morphology and smokey blue/grey or pinkish colours. The listwanite zone carries mariposite throughout. The surrounding wall rock lithologies are cut by strong vein-faults carrying anomalous geochemical values of listwanite type over an area of several square kilometers.

Kennecott reported a sample (#VR00724A) of "a red, clay-rich seam with volcanic fragments" in a recent trench wall on the east end of Dago Hill. This was interpreted as a possible clay altered shear zone with volcanic fragments. This sample assayed 2460ppbAu, 5.4ppmAg, 112ppmPb, and 230ppmZn. This trench is located near the southeast end of the Dago Hill coarse gold pay streak and may represent a possible bedrock anomaly in the floor of the placer pay streak. This assay was not followed up as Kennecott dropped the property option.

WEATHERING OR BEDROCK ALTERATION

Geological mapping of bedrock in the Last Chance claim area where placer miners had stripped the gravels to bedrock, led government and industry geologists in the mid-1980s to theorize that the bedrock was intensely clay altered. They believed this alteration was a hydrothermal (epithermal) alteration event. However, subsequent diamond drilling would indicate that this clay is more likely a near surface, deep weathering phenomena and is probably related to the lack of glaciation in the Klondike, which has allowed very long-term surface weathering to occur.

Holes 87AOR TIB 1,2&3 show a uniform 25m (80ft) thick surface layer logged as "clay alteration". However, in cross-section this would appear to be more of a flat-lying surface weathering phenomena.

A similar, though thinner, zone appears in Holes 86SST1,2 &3.

Hole 94-80-01 shows approximately 20m (65ft) of surface weathering, with strong oxidation of iron (orange to brown rusty colouration) and the rock described as "gougy material- no primary textures preserved" and "incompetent-punky schist" and "friable phyllite".

This sort of deep intense weathering will have to be considered before surface geological mapping, soil geochemical sampling or trenching programs are considered for this area.

CONCLUSIONS

For 107 years the lode source of the Klondike placer goldfields has remained undiscovered. The search for the lode source has been hampered throughout this time by the lack of a workable geological target model that would guide exploration crews to the mineralized areas. The failure to discover a lode source for the Klondike gold has remained one of the greatest enigmas in the history of geological exploration-until now.

Now, float rock samples, outcrop, rotary percussion and reverse circulation cuttings and diamond drill core on the Last Chance claims and the surrounding area have exposed geological evidence, supported by rock geochemistry and ground and airborne geophysics, that a listwanite alteration zone exists along the southwest flank of Hunker Creek from Hester Creek to Henry Gulch. This listwanite alteration zone is related to strong, large fault zones possibly paralleling Hunker Creek. The alteration zone shows a potential width of at least 400m and a potential length of at least 4.5km.

The listwanite zone may actually extend outward to cover an area several times that in size, or perhaps additional zones are occurring in this area, following parallel fault zones.

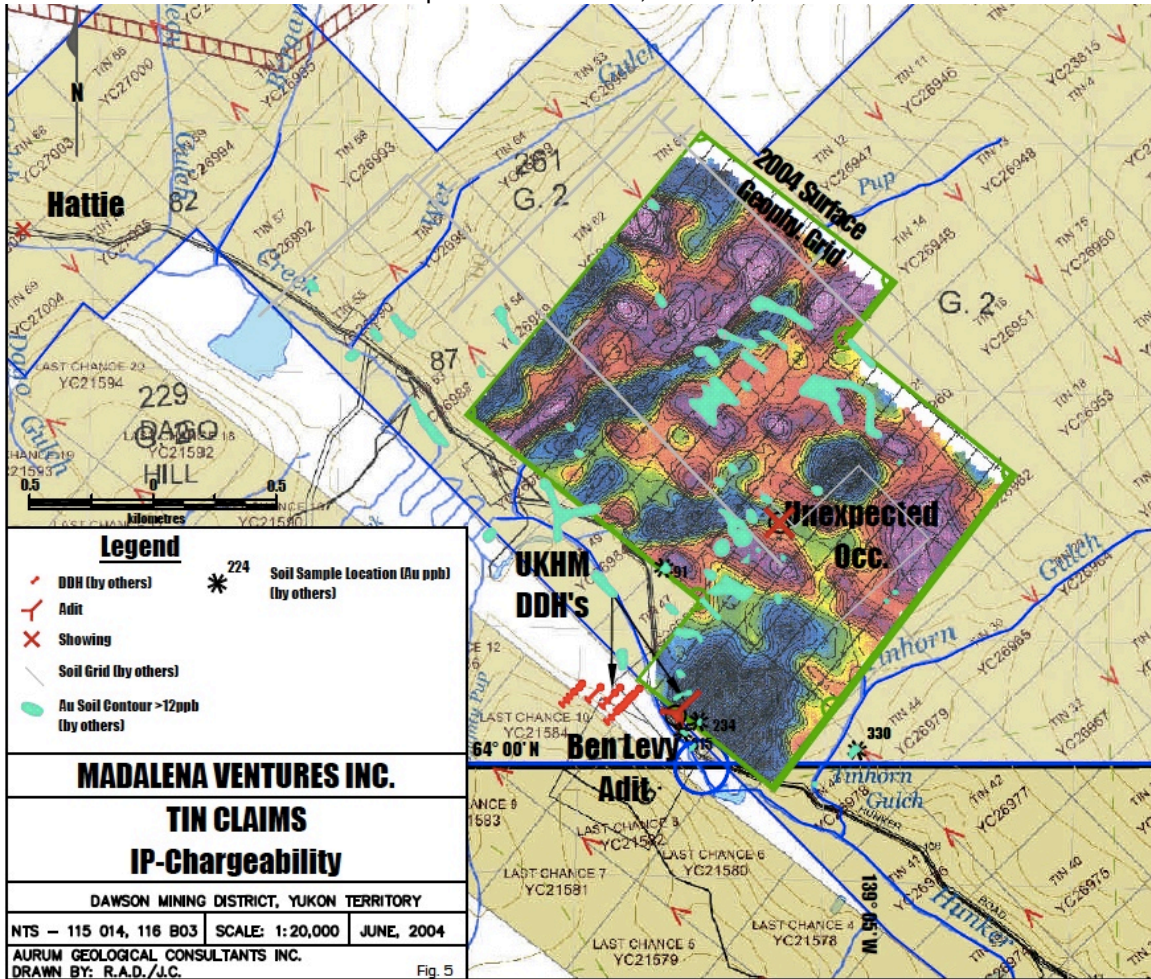
The listwanite alteration zone is forming the bedrock of one of the world's richest placer gold paystreaks. This is the White Channel bench coarse gold pay streak on Paradise and Savoy Hills. It appears likely that the alteration zone continues northwest across Preido and Dago Hills.

This pay streak is still being placer mined after 107 years of continuous placer mining and is still producing gold. It is interesting to observe that a large amount of the so-called "placer gravel" currently being mined in these operations is, in fact, not gravel at all-but well weathered clay bedrock from depths of 5 to 7 m (15 to 20ft) below the gravel-bedrock contact. It has been an accepted industry practice to placer mine some bedrock in order to capture any placer gold that has gone down into fractures in the bedrock. However, it appears to be stretching the possibilities when these fractures are pursued to depths of 7m. It is even more difficult to accept this theory, when direct observation of the bedrock being mined shows little or no evidence of fractures at all. The weathered clays are homogenous and would appear to be more impenetrable than permeable to placer gold. The bedrock is also mariposite bearing in many places.

This pay streak is also famous, with mineral specimen collectors, for its beautiful samples of crystalline gold, wire gold and dendritic leaf gold. These samples appear to have been mined in situ, as they do not appear to have traveled any distance at all from their source.

The primary target zone at the centre of the listwanite alteration envelope, where the postulated high-grade gold-quartz veins should be located, has never been drilled to date. Surface exposures of the primary target zone are not well exposed along the bench due to most of the stripped areas being subsequently covered with placer tailings and pushed overburden, or it is obscured by deep surface weathering.

If the Last Chance claims prove to possess a high grade gold-quartz vein system within the listwanite zone this will not just open up these claims as an exploration target. The confirmation of the presence of California Mother Lode type gold-quartz veins on the Last Chance claims will provide a geological target model for prospecting the entire Klondike goldfields. This has the potential for the discovery of multi-million ounce lode gold targets.



Yukon Geological Survey Map of "Hunker 15 target zone"

