

## Franklin Project

*Greenwood Mining Division  
NTS 082E/08 and /09*

*Project Area Location:  
UTM NAD 83: Zone 11, 403000 East, 5489500 North*

Registered Owner: Doug Warkentin  
Operator: Crucible Resources Ltd.

## Union Tails and Franklin South Areas – Metallurgical Testing Report

*Project Tenure Numbers: 935862, 936714, 939642, 942308, 942313, 943212, 987035,  
990683, 1010913, 1010937, 1010965, 1010972, 1010973, 1011003, 1011005, 1011007,  
1011017, 1011821, 1013315, 1013856, 1015696, 1016556, 1019846, 1019983, 1024505,  
1028442.*

*SOW Event Numbers: 5492469, 5498801, 5499967, 5505548, 5507810, 5510125,  
5513352 and 5513355.*

**Jul. 30, 2014**

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## **Introduction**

### **Location and Access**

The Franklin project lies along the Burrell Creek valley in the Christina Range of the Monashee Mountains of Southeast BC, approximately 65 km north of Grand Forks, BC. It covers part of the historic Franklin Camp, including the abandoned town sites of Franklin and Gloucester City. The general project location is shown in Figure 1.

The property consists mainly of a contiguous grouping of MTO claim blocks covering much of Mt. McKinley and Mt. Franklin, extending across Burrell Creek to the east and along Franklin Creek to the northwest. The project area also includes a separate claim block, the Franklin South project, located approximately five kilometres to the south, which is made up of three contiguous claims straddling Burrell Creek. Both project areas are crossed by the Burrell Creek Forest Service Road (FSR) which is a well-maintained all-season two wheel drive accessible road which runs along the east side of the Burrell Creek Valley in the project area. Near the northeast boundary of the property a forestry spur road crosses Burrell Creek and splits into three branches, providing access to much of the western and north-western parts of the main project area. These are recently active logging roads that mostly remain in good condition. The branch accessing the upper part of Franklin Creek has been decommissioned, but remains passable by high clearance two-wheel drive vehicles. The southern claim block is also accessed by a secondary forestry road following the west side of Burrell Creek from the south. The road is active and well maintained to a point about two kilometres south of the claims, and an unmaintained road that remains in fair condition crosses the claim block near the creek.

The entire area was part of an active exploration and mining camp in the early part of the last century, and there are therefore also many overgrown and unmaintained roads and trails accessing old workings.

The area is mountainous, with deep valleys to the west of the broader Burrell Creek Valley. The east-facing slopes tend to be steep, while west-facing slopes are gentler. The climate is generally dry in the summer and the terrain is generally tree-covered, but with relatively little underbrush.

### **Tenure Information**

The main Franklin Project currently consists of 23 Mineral Titles Online claims with a total area of 1907 hectares. The southern block consists of three MTO claims with a total area of 441 hectares. The main project claims form a single contiguous block in the area of the confluence of Franklin, Gloucester and Burrell Creeks, and covering much of Mt. McKinley and Mt. Franklin. It also extends to the northwest along Franklin Creek, including the Twin Creek area. The south project area forms a separate block about 5 km to the south along Burrell Creek and incorporating areas on both sides of the creek. Much of the main project area covers parts of the historically active Franklin mining camp, with a long history of past exploration and previous tenures. The southern block is mainly in an area historically known as Morrell's Camp, which was also the scene of active exploration in the past. The areas include many reverted crown granted mineral claims that no longer hold title along with a small number of crown grants that remain in good standing. The active crown grants principally cover the past producing Union and McKinley Mines, along with parts of the Homestake mine area. Together these claims exclude title to approximately 80 hectares of the total project area.

The claims are all owned by the author, and Crucible Resources Ltd. has an option to acquire 100% ownership of these claims. Claim details are shown in Table 1. Expiry dates shown in this table reflect the application of work described in this report.

Figure 2 outlines the tenures of the Franklin Project.



**Figure 1 – Franklin Project Location Map**

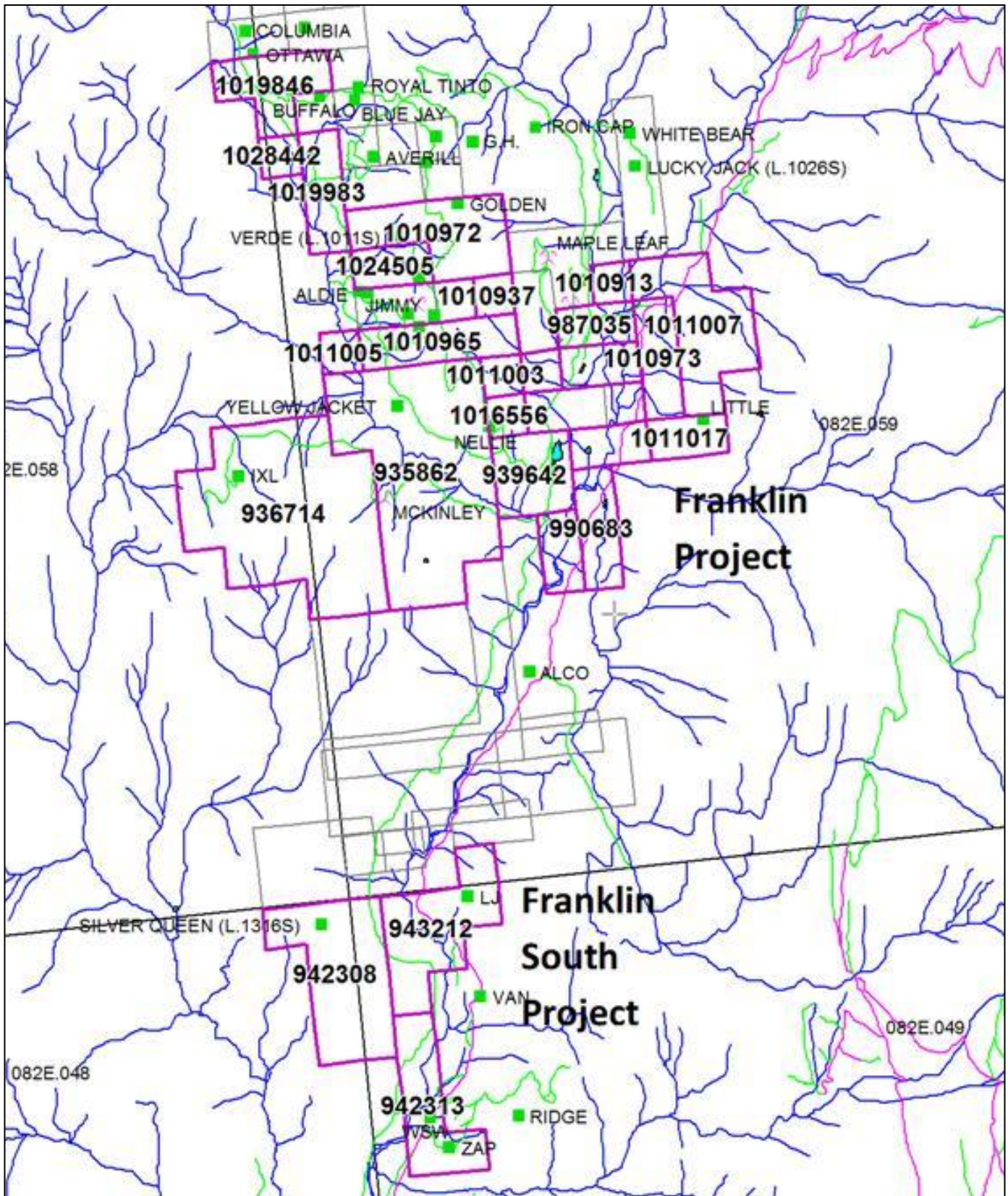


Figure 2 – Project Tenure Outline

**Table 1: Franklin Project Mineral tenures**

Tenure Number	Claim Name	Owner	Map Number	Issue Date	Good To Date	Area (ha)
935862	FRANKLIN-YELLOWJACKET	145582 (100%)	082E	2011/dec/02	2014/jul/19	398.27
936714	FRANKLIN-IXL	145582 (100%)	082E	2011/dec/08	2014/jul/19	398.29
939642	FRANKLIN SE1	145582 (100%)	082E	2012/jan/03	2014/jul/19	83.85
942308	SILVER QUEEN	145582 (100%)	082E	2012/jan/24	2014/aug/15	188.85
942313	MORREL'S CAMP	145582 (100%)	082E	2012/jan/24	2014/aug/15	104.94
943212	LJ	145582 (100%)	082E	2012/jan/27	2014/aug/15	146.87
987035	UNION FR	145582 (100%)	082E	2012/may/17	2014/jul/19	41.91
990683	FRANKLIN-NICHOL	145582 (100%)	082E	2012/may/28	2014/jul/19	62.89
1010913	PAPER UNION	145582 (100%)	082E	2012/jul/09	2014/jul/19	20.95
1010937	IDAHO UNION	145582 (100%)	082E	2012/jul/10	2014/jul/19	20.95
1010965	BULLION	145582 (100%)	082E	2012/jul/10	2014/jul/19	83.82
1010972		145582 (100%)	082E	2012/jul/10	2014/jul/19	125.71
1010973	DANE	145582 (100%)	082E	2012/jul/10	2014/jul/19	62.87
1011003	BULLION 2	145582 (100%)	082E	2012/jul/10	2014/jul/19	20.96
1011005	BULLION 3	145582 (100%)	082E	2012/jul/10	2014/jul/19	20.96
1011007	FRANKLIN DANISH	145582 (100%)	082E	2012/jul/10	2014/jul/19	146.70
1011017	LITTLE DANISH	145582 (100%)	082E	2012/jul/10	2014/jul/19	41.92
1011821	BULLION 3	145582 (100%)	082E	2012/aug/05	2014/jul/19	20.96
1013315	UNION	145582 (100%)	082E	2012/sep/29	2014/jul/19	41.92
1013856	FRANKLIN-NICHOL W	145582 (100%)	082E	2012/oct/19	2014/jul/19	41.93
1015696	UNION TAILS	145582 (100%)	082E	2013/jan/04	2014/jul/19	41.92
1016556	NELLIE	145582 (100%)	082E	2013/feb/02	2014/jul/19	20.96
1019846	AVERRILL NW	145582 (100%)	082E	2013/may/28	2014/jul/19	83.77
1019983	AVERILL SW	145582 (100%)	082E	2013/jun/01	2014/jul/19	62.85
1024505	TWIN CREEK	145582 (100%)	082E	2013/dec/19	2014/dec/31	41.90
1028442	AV W PT	145582 (100%)	082E	2014/may/22	2015/may/24	20.95
<b>Total</b>						<b>2347.9</b>

## Regional Geology

The Franklin Project covers much of the historic Franklin mining camp. The area is defined by major north-south regional faults that form a graben structure. The Granby fault, which runs to the east of the property, can be traced for more than 100 km to the south, where it forms the eastern boundary of the Republic graben in Washington State. In the Franklin camp area, this fault separates older metamorphic rocks to the east from younger intrusive rocks that surround and partly underlie the Franklin property.

While plutonic rocks are dominant regionally, the geology of the Franklin camp is more complex (Figure 3). The oldest rocks are a sequence of sediments, volcanics and related intrusives known locally as the Franklin Group. These are mapped as part of the Carboniferous Harper Ranch Group, and show strong similarities to the Brooklyn formation in the Greenwood-Grand Forks area (Caron 2004). This group includes argillite, conglomerate, chert, tuffaceous



siltstone, limestone and greenstone, often showing significant alteration. The Franklin rocks are intruded by several distinct bodies of plutonic rock, including diorite/granodiorite from the Jurassic aged Nelson batholith and related bodies, as well as Jurassic aged porphyry dikes, the Jurassic Averill complex and the Eocene Coryell suite, including syenite stocks and lamprophyre dikes. Overlying the Franklin rocks and much of the intrusive rock are Eocene clastic sediments of the Kettle River formation. In addition to sandstones and conglomerates, these rocks include tuffs and some areas of rhyolite. These are in turn overlain by andesites and trachytes of the Eocene Marron formation, which mainly occur at higher elevations.

The Franklin rocks were the main focus of early exploration in the Mt McKinley and Mt Franklin areas, particularly for precious metal-bearing quartz veins and for silicified zones and skarn deposits with high base metal values along limestone contacts. Another type of mineralization identified in the early days of exploration was the so-called 'Black Lead' zones of shear hosted massive chalcopyrite with some PGM values. These tend to form small erratic pods along contact zones of the pyroxenite phase of the Averill plutonic complex. The Averill complex was originally correlated to the Eocene Coryell intrusives, but recent dating suggests a Jurassic age. The complex covers much of the north end of the Franklin camp and is a concentrically zoned differentiated intrusion with pyroxenite at its centre, grading outward through monzogabbro to monzonite, with trachytic syenite intruding the pyroxenite and monzogabbro along the axis of the pluton. The black lead mineralization generally occurs along the syenite-pyroxenite contacts.

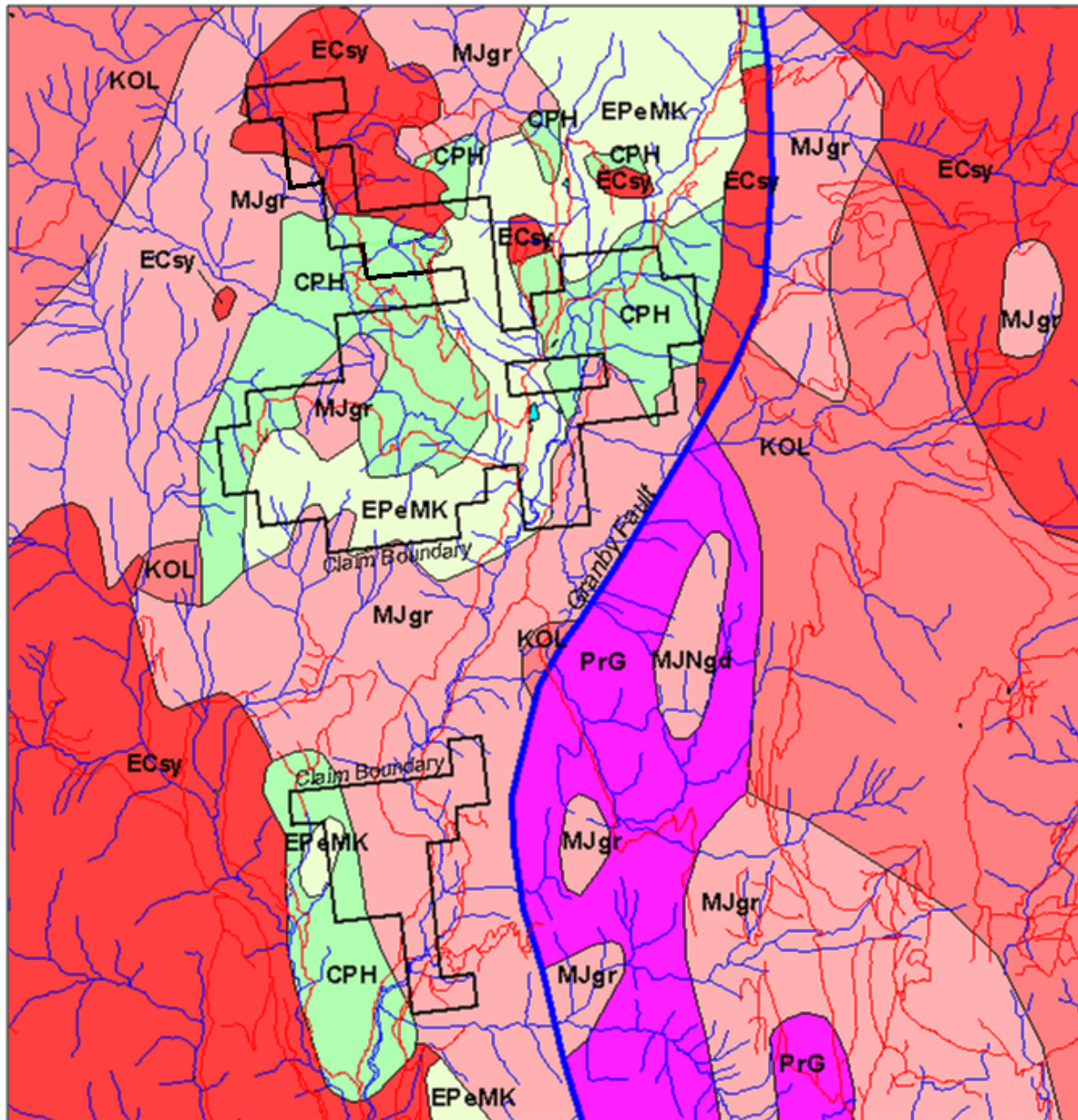
Other possible styles of mineralization have been identified in more recent exploration programs, including epithermal gold and volcanogenic massive sulphide (VMS). Several areas of epithermal-style alteration and veining have been identified associated with intrusive contact zones but no significant economic mineralization has yet been identified in these areas. There are also apparent intrusive contact zones associated with low-grade base metal mineralization that have seen very limited exploration. The potential for VMS mineralization is suggested by the correlation of the Franklin rocks with similar formations along the Granby fault to the south, where economic VMS deposits have been discovered in the Belcher district in Washington State.

## **Local Geology**

The Franklin Property is primarily underlain by Franklin group rocks and the overlying Eocene sediments and volcanic rocks of the Kettle River and Marron formations. The property also includes significant intrusive contact zones in and around the Franklin rocks. To the northwest the project area includes part of the Averill complex, including at least one known occurrence of the 'Black Lead' mineralization and significant exposures of pyroxenite. The southern claim block includes part of the southern extension of the Franklin group, especially in the area known as Morrell's camp, as well as a substantial area of granitic rocks to the east which includes several minor mineral occurrences that may be associated with small bodies of Franklin rocks, in addition to wider areas showing hydrothermal alteration.

The project area partly overlaps the main historic producers in the camp, the Union and McKinley, and the other two historic producers, the Maple Leaf and the Homestake, lie close to the property boundary. While the actual mines are held by active crown granted claims, these are small and do not necessarily cover potential extensions or parallel zones. By far the most important ore zones discovered to date were at the Union Mine (see Table 3, below). The ore was a relatively low sulphide replacement-style vein with some adjacent zones of higher base metal sulphide content. The mineralization consisted of a zone of almost complete replacement of a limestone horizon in Franklin sediments which was later fractured into small irregular

sections by multiple faults. Precious metal grades were highest at the intersections of these faults, indicating that the faulting also played a role in later mineralization.



**CPH** – Carboniferous to Permian Harper Ranch Group – volcanoclastic rocks

**ECsy** – Eocene Coryell Plutonic Suite – syenitic to monzonitic intrusive rocks

**EPeMK** – Eocene Pentiction Group: Marron, Kettle River, Springbrook, Marama and Skaha Formations – undivided volcanic rocks

**KOL** – Cretaceous Okanogan Batholith: Ladybird and Valhalla Intrusions – undivided intrusive rocks

**MJgr** – Middle Jurassic – granite, alkali feldspar granite intrusive rocks

**MJNqd** – Middle Jurassic Nelson Batholith – granodioritic intrusive rocks

**PrG** – Proterozoic Grand Forks Gneiss/Monashee Complex – paragneiss metamorphic rocks

**Figure 3 – Regional Geology, Franklin and Morrell Camp Areas**



Ore grades diminished with depth and to the east, and the vein was truncated by a larger fault to the west. More recent exploration has identified small ore remnants and unmined zones within the old workings, but no significant extensions of the mineralization have been found since active mining ceased in the 1940's. Recent drilling to the west of the western fault boundary identified a silicified zone carrying anomalous precious metal values, but it is not clear whether this is an extension of the Union zone. Mill tailings are deposited within the Franklin property boundaries, to the south of the mine, and parts of these have been reprocessed on two separate occasions.

A significant band of limestone runs through the Franklin Creek valley with a north-south orientation and is associated with the high grade skarn mineralization found at the McKinley mine. Other more poorly defined occurrences have also been identified along this trend and may indicate additional skarn mineralization. At the IXL showing to the west of the McKinley Mine, shallow zones of skarn-type mineralization have also been identified. This area has seen considerable modern exploration; including trenching and drilling that has identified significant zones of copper gold surface mineralization in Franklin group rocks and altered porphyry intrusives in contact with small bodies of Franklin limestone. Drilling has shown that some of the best exposures of surface mineralization are cut off at shallow depths by intrusive rocks, however the mineralized rocks are covered by Eocene sediments to the east and possible thickening in this direction has not yet been tested. In addition, at least one hole has shown more significant depths of lower grade copper-gold mineralization in both Franklin volcanics and porphyry intrusives.

In the Mt Franklin area numerous small quartz veins have been identified in Franklin rocks, some carrying significant gold and/or base metals. The best known occurrences in this area, the Homestake and the Banner, lie just outside the claim area, but several are also known within the project area. These include the Bullion and Verde showings as well as unnamed occurrences in the Twin Creek area. On the southeast flank of Mt Franklin pyrite, chalcopyrite and copper carbonate mineralization occurs in Franklin rocks near the contact with Eocene volcanics at the Nellie showing. This area reportedly shows evidence of hydrothermal alteration associated with nearby intrusives.

In the northwest part of the property the Franklin rocks are intruded by the Averill complex, and at least two occurrences of copper mineralization with platinum values were historically reported within the project boundaries. The first is a shear zone along the pyroxenite contact at the Golden showing, which is typical of the Black Lead type of mineralization, while the second is the Ottawa showing, which is a larger zone of pyroxenite carrying disseminated copper mineralization. The mineralization in the Averill complex has been primarily found in narrow and discontinuous shear zones along contact zones between pyroxenite and syenite, where copper, platinum and sometimes other precious metals appear to be concentrated by secondary hydrothermal enrichment. It has been suggested that the source of these values is enriched heavy mineral differentiated zones within the intrusive, likely within the pyroxenite phase.

To the east of Burrell Creek few mineral showings are reported, but recent work has identified at least one previously explored mineralized shear zone in Franklin volcanics not far from a contact with granodiorite intrusive rocks. The Dane showing includes significant gold values in addition to copper and silver values. High copper and silver values with minor to significant gold values is a more common pattern of mineralization to the south, normally occurring in east-west striking veins or shear zones. The highest value veins in the Mt. Franklin area are more typically associated with lead and zinc mineralization, also often with high silver values. To the south, in addition to the small east-west striking copper-bearing vein structures, there are showings of high grade contact mineralization, intrusive related copper-zinc and copper-

molybdenum mineralization as well as epithermal-style vein systems in granodiorite which are locally reported to carry gold values.

A summary of all known showings occurring within the Franklin project claim area is included in Table 2.

**Table 2: Franklin Project - Documented Mineral Occurrences**

Name	Minfile #	Location	Minerals	Reported Grades	Width (m)	Year
<b>Minfile showings</b>						
Ottawa	082ENE061	Franklin Crk	Pt, Cu	2.06 g/t Pt	grab	1918
Verde	082ENE020	Mt Franklin	Au, Ag, Cu, Pb, Zn	5.5 g/t Au	grab	1915
Alpha	082ENE052	Mt Franklin	Au, Ag, Cu	0.68 g/t Au, 3.42 g/t Ag, 0.8% Cu	1.5 m	1965
Golden	082ENE053	Mt Franklin	Pt, Cu	2.06 g/t Pt	grab	1918
Bullion	082ENE013	Mt Franklin	Ag, Au, Cu, Pb, Zn	1.1 g/t Au, 100 g/t Ag, 2.5% Pb	grab	2003
Yellow Jacket	082ENE021	Mt Franklin	Cu, Pb, Zn			
Franklin Limestone	082ENE062	Mt Franklin	Limestone			
Nellie	082ENE059	Mt Franklin	Cu			
Little	082ENE004	Dinsmore Crk	Pb, Zn	1.82 g/t Au, 1.9 g/t Ag	0.07	2006
IXL	082ENE033	Mt McKinley	Cu, Au, Pb, Zn	3.85 g/t Au, 0.8% Cu	5.5	2003
Silver Queen	082ESE108	Morell's Camp	Ag, Cu, Pb, Au	48 g/t Ag, 1.0% Cu, 0.5% Pb	grab	1915
LJ	082ESE178	Burrell Crk W	Au, Ag, Cu, Pb, Mo	2.81 g/t Au, 5.8 g/t Ag, 0.37% Pb	1.5	1991
WSW	082ESE177	St. Anne's Crk	Au, Ag, Cu, Pb, Zn	0.54 g/t Au, 23 g/t Ag, 0.5% Pb, 0.7% Zn	0.6	1991
Zap	082ESE271	St. Anne's Crk	Cu, Pb, Zn, Au, Ag	5.35 g/t Au, 219 g/t Ag, 0.8% Pb, 0.6% Zn	0.4	1991
<b>Non-minfile occurrences</b>						
Dane		Dane Crk	Au, Ag, Cu	2.16 g/t Au, 162 g/t Ag, 5.7% Cu	grab	2006
Golden Zone		Gloucester Crk	Au			
CPR		Morell's Camp	Ag, Cu, Pb, Au	0.07 g/t Au, 67 g/t Ag, 0.16% Cu, 0.13% Pb	grab	2012
Tripoli		Morell's Camp	Ag, Cu, Pb, Au			
Black Bear		Morell's Camp	Ag, Cu, Pb, Au			
Last Chance		Mt McKinley	Au, Ag	1.9 g/t Au, 13.5 g/t Ag, 0.1% Zn	grab	2005
Jack		Mt McKinley	Zn, Ag, Cu	17.5 g/t Ag, 2.9% Pb, 6.5% Zn	grab	2005
Mary Ann		Gloucester Crk	Au			

## Property History

The property has a long history of exploration, and some minor development. None of the past producing mines in the camp are directly covered by the property, although the principal ones are located on small active crown-granted mineral claims that are partly or fully overlain by MTO claims that are part of the property. The main property covers much of the historical Franklin camp, which was actively explored beginning in the 1890's, and was the source of minor base metal and significant precious metal production (Table 2) in the first half of the last century. The southern claim block covers much of the smaller Morell's camp, which was primarily explored in the early part of the 20<sup>th</sup> century. There is no record of production from the showings in the Morell's camp area.

### Franklin Camp

Exploration in the Franklin camp area began around 1896, when the first claims were staked. The camp was very active in the early 1900's when most of the principal showings were discovered and developed with small shafts and adits. As early as 1901 the Banner vein had seen considerable development and test shipments had been made. During this same period considerable development occurred on the McKinley property and ore shipments may have been made during that period, although there is no record of the production.

**Table 3. Historical Production from the Franklin Camp**

Mine	Years of Operation	Production (tonnes)	Gold Production (ounces)	Historical Grades
Union	1913-89	122,555	55,525	14.1 g/t Au, 353 g/t Ag, 0.2% Zn, 0.1% Pb, 0.01% Cu
Maple Leaf	1915-16	36	2	1.7 g/t Au, 172 g/t Ag, 7.6% Cu
Homestake	1940-41	453	223	15.3 g/t Au, 30.0 g/t Ag, 0.12% Zn, 0.06% Pb
McKinley	1949	132	2	0.47 g/t Au, 215 g/t Ag, 17.1% Zn, 11.2% Pb

The Union vein was discovered in 1913 when a silicified zone near earlier workings on a quartz vein carrying lead and zinc was found to be rich in gold and silver. Shipments of high grade ore began almost immediately from a large open cut, with adits later developed to access more of the ore. Development and small shipments continued from the Union vein until 1920, when operations were shut down due to the high cost of transporting ore to the smelter.

In 1918 the federal government's munitions department evaluated the camp for its platinum potential after the metal was identified in ore shipped from the Maple Leaf claim. Numerous showings of copper from the 'Black Lead' zones were sampled, with grades ranging from 2 g/t to 13 g/t Pt, with the highest grades coming from the Maple Leaf workings. A sample from the Golden showing assayed 2.06 g/t Pt and another from the Ottawa had the same grade. While there is limited information about the samples collected, the Ottawa showing has been described as open cuts exposing pyroxenite mineralized with disseminated copper. It is not known if the 1918 platinum sample came from a small concentration or from the broader disseminated mineralization.

In 1927 Hecla Mining Company bonded the Union and Maple Leaf properties and began to develop milling ore on the Union vein. By 1929 a 145 ton per day concentrator had been constructed and milling operations began in 1930. Full mine production lasted until 1932, when most of the known ore had been mined out, and the mine closed in 1933. In that same year a cyanidation plant was constructed to retreat the tailings, which operated from 1934-36. Lease operators produced a small amount of additional ore between 1937 and 1942. During this same period a small amount of ore was also produced from the nearby Homestake mine.

In 1964 Franklin Mines Ltd acquired most of the Franklin camp and carried out geological and geophysical surveys along with limited sampling of old workings. This included sampling of the Alpha tunnel, within the current project area, which averaged 0.12% Cu and 1 g/t Ag over its entire 18 meter length, with the 3 meters before the face assaying 0.41% Cu, 5.1 g/t Ag and 0.69 g/t Au.

In 1968 Newmont Exploration acquired part of the camp and carried out a work program which included airborne and ground geophysics, trenching and drilling of three holes at the IXL showing in 1969. Limited information is available regarding this work program, but in general, good mineralization was encountered in trenches but this same mineralization was not found in the drill core. One of the holes reportedly encountered ultramafic rocks with disseminated chalcopyrite, but this zone was not assayed.

In 1979 Pearl Resource acquired part of the camp, including the Union mine and surrounding area. Their work focused on the Union mine and included re-opening the lowest adit and a program of underground drilling in 1984.

In 1986 Longreach Resources Ltd acquired a large part of the Franklin camp and carried out an exploration program that included geochemical sampling, geophysical surveys and drilling of several targets, primarily aimed at platinum. The following year the property was renamed the Platinum Blonde property and optioned to Placer Development Limited who carried out additional drilling, prospecting and geochemical sampling over the entire property. This project was also focused mainly on PGM mineralization and the property primarily covered the northern part of the camp, overlapping much of the northern and north-western portions of the current Franklin project claims. This work identified several precious and base metal soil anomalies, some of which do not appear to have been fully investigated, including a strong and fairly extensive copper anomaly in the northwest, in an area likely underlain by a pyroxenite zone in the Averill complex rocks, and roughly corresponding to the areas of the historical Ottawa and Evening Star claims. Prospecting also resulted in several gold-bearing samples being collected in the Twin Creek area, including one assaying 16.8 g/t Au. No follow-up in this area is recorded.

From 1987 to 89 Sumac Ventures ran a heap leach operation on the Union mine tailings, reportedly recovering 13,300 grams of gold and about 400,000 grams of silver from 42,500 tonnes of tailings and waste rock. The operation appears to have been terminated due to operational difficulties rather than depletion of the available values.

In 1991 Canamax conducted an airborne geophysical survey over the IXL area along with rock and soil sampling. A new zone of low-grade copper mineralization in diorite was identified about 1.5 km south of the main IXL showing.

In 1993 and 94 Sway Resources drilled up to 29 short diamond drill holes and 14 percussion holes in the Banner-Homestake area and carried out rock and silt sampling, and diamond drilled 900 meters in 8 holes at the IXL showing, but available results of this work are very limited and poorly documented. Some high grade drill intercepts were reported to the west of the Homestake workings at the North Banner showing, as well as high grade surface samples from at least two separate locations on the Deadwood Crown Grant..

In 2001 Tuxedo Resources Ltd. acquired much of the south and west portions of the Franklin camp and an airborne geophysical survey was flown that year. In 2003 rock sampling, soil geochemistry, trenching and a small drill program were carried out in the IXL and Banner-Homestake areas. Good mineralization was encountered, but the extent was limited. In addition, there were at least one strong gold and base metal soil anomaly identified in the North Deadwood area that has not been fully explored. A single drill hole showed significant widths of low grade gold mineralization below the IXL trenches.

In 2004 Solitaire Minerals carried out trenching and a limited drill program in the Union and Maple Leaf areas. Drilling failed to clearly identify a western extension of the Union vein, but a promising silicified zone carrying anomalous precious metal values was intersected under a cap of overlying volcanic rocks. Work on the Maple Leaf crush zone, to the north of the old Maple Leaf workings,

identified low grade gold mineralization with intermittent bands of high grade base metal mineralization that also carried higher gold grades.

Also in 2004, New Cantech Ventures conducted an 11 hole, 1741 meter drill program at the IXL showing, indicating that encouraging surface mineralization encountered in trenches was generally cut off at shallow depths by feldspar porphyry and syenite intrusions. Follow-up work in 2005 by Nanika Resources Inc. found evidence of new mineralized zones to the east, near the McKinley mine, mainly based on samples showing good zinc grades, but also occasional samples with good copper, silver and gold grades at the Jack and Last Chance showings. No follow-up work was reported.

In 2006 and 2007 Yankee Hat Minerals conducted limited rock sampling and prospecting in the Dane and Little area and conducted an airborne geophysical survey covering much of the Franklin camp, including some less-explored areas to the east of Burrell Creek. Few strong targets were identified with the exception of a relatively strong conductivity target to the south of the Dane showing. A small subcrop sample of gold in quartz was also found somewhat further to the south, a few hundred meters northwest of the probable location of the Little showing.

Sampling by Crucible Resources in 2012 and 2013 confirmed the presence of high grade copper-gold-silver mineralization at the Dane showing, and soil sampling showed some anomalous base metal values in the same area. Copper-gold mineralization was identified at the Nellie showing, and the Union tailings were sampled to estimate remaining values. Small quantities of higher grade waste rock or ore were also found to be stockpiled near the tailings site.

### Morell's Camp

The Morell Camp includes two groups of former crown granted mineral claims that date back to the early part of the 1900's. Numerous poorly documented workings were developed during the early active periods of the Franklin camp, but in later years there appears to have been much less activity, and no reference to significant work in this area has been found later than the 1930's. The only documented Minfile showing from the camp is the Silver Queen. The dump from a shaft was sampled in 1914, returning 48 g/t silver and 1.0 % copper and only a 'trace' of gold. The shaft was flooded at that time and presumably dated from even earlier.

To the east of Burrell Creek the first discovery of mineralization was in 1973 when this area was opened by a logging road. The Van, LJ and WSW showings were discovered at that time. The area was restaked in 1987 and small surface programs of geochemistry and geophysics were performed between then and 1993, resulting in some additional discoveries, including the Zap sulphide zone and the epithermal-style Ridge zone of quartz stringers with minor precious metal values.

Sampling of the Silver Queen dump in 2012 confirmed the 1914 numbers, giving 44 g/t silver, 0.53% copper and 65 ppb gold. A sample from the dump of a small shaft encountered on the former C.P.R. claim showed similar gold values with slightly higher silver and lead values and lower copper values.

### **Summary of Work**

A small program of metallurgical testing of higher grade rock samples was undertaken to add to the project knowledge base in two areas. The first purpose was to add to the confidence level in



reported metal values, particularly for gold. This was especially relevant with higher grade material potentially containing free gold. The second purpose was to provide a first-pass look at metal recovery potential for both base and precious metals. These results also allow some interpretation of sample mineralogy as the techniques were most suited to certain common mineral forms such as sulphides and free gold. The initial focus of work was a sample of waste rock or ore from near the Union tailings which returned surprisingly high assay values. Two float tests were carried out on two separate subsamples of this material. Each test was preceded by a gravity separation test to check for possible coarser free gold. In addition, two float tests were conducted on samples from workings in Morell's camp, one of which is reported here.

Besides the reported testing, initial planning has been carried out for testing of the remaining gold and silver recovery from the Union tailings. A composite sample was prepared and initial analyses completed.

## **Work Program**

### **Testing and Data Collection**

Testwork was carried out using assay pulps and crushed reject samples from previous site exploration work. Samples used included both the assay pulp and the crushed reject for a rock dump sample from the Union tailings site (CR130704-T5) and assay pulps from two samples of dump rock from historical exploration shafts in Morell's camp on the Franklin South claim block. Relevant original sample locations are identified on the maps in Appendix 1. Original assay results for rock and tailings samples, along with the back-calculated head grades from metallurgical testing and a composite assay for tailings samples, are summarized in Table 4. Complete test reports for each metallurgical test are included in Appendix 2. Each report details test conditions, and includes a complete mass balance for targeted metals. Complete assay reports are included in Appendix 2. All test samples were filtered, dried and weighed before being submitted for analysis. All samples were digested in aqua regia using a 0.5 gram sample and analyzed with a 36 element scan by ICP-MS. Any samples showing over-limit precious metal values were re-assayed for gold and silver by lead collection fire assay with an AAS finish using a 30 gram sample. Over-limit base metal values were re-analyzed by ICP ES to obtain accurate values. All solid sample analyses were carried out by Acme Analytical Laboratories Ltd. in Vancouver.

For the two tests carried out using sample CR130704-T5 small gravity concentrates were produced, which were subjected to cyanide extraction to reduce the possible nugget effect in assaying high grade gold. Cyanide residues were combined with flotation concentrates for analysis while leach solutions were analyzed by ICP-ES to determine gold and silver values. Solution analyses were carried out by Kemetco Research Inc. in Richmond. B.C.

The tests carried out are described below.

**Table 4 - Summary of Samples Tested and Analytical Results**

Sample #	Date	Description	Width (m)	Au g/t	Ag g/t	Cu %	Pb %	Zn %
<b>Union Area - Rock and Tailings</b>								
CR130704-T5	04/07/2013	Ore/waste rock dump		27.24	58.8	0.040	0.03	0.12
FR01	11/03/2014	Gravity/Float on -T5 assay pulp		20.91	40.1	0.040	0.03	0.13
FR02	29/05/2014	Gravity/Float on -T5 ground reject		38.81	64.9	0.040	0.04	0.07
FRT Comp	02/05/2014	Union Tailings Composite		1.20	57.8	0.008	0.02	0.06
<b>Morell Camp Area - Rock</b>								
CR20528-1	28/05/2012	Qtz and alt volc with sulph in shaft dump		0.066	66.8	0.163	0.13	0.01
FRS 01	23/06/2014	Float on CR20528-1 assay pulp		1.180	61.0	0.159	0.14	0.01

#### Union Tailings Area Sample Testing

A sample from a small rock dump collected in 2013 at the Union tailings site returned very high, but also variable results, especially for gold. A follow-up sample from the same dump later in the year returned much lower, but still significant gold values. Due to the potential for using high grade material for early cash-flow from a possible future tailings reprocessing project, gravity and flotation testing were carried out to establish improved grade estimates for potentially high gold samples and to provide an initial look at the effectiveness of standard recovery techniques. A very small high grade concentrate was produced from each sample by hand-panning, prior to subjecting the gravity tailings to standard sulphide flotation techniques. Gravity concentrates were leached for 48 hours in a strong sodium cyanide solution in a laboratory bottle roll apparatus. All leach solution was collected and assayed for gold and silver while the washed residue was added to the flotation concentrate.

The initial test using the assay pulp material showed good recovery of gold to the gravity concentrate, but the flotation concentrate samples proved to be too small for effective fire assays so that the final values were reported as assay over-limits and were therefore underestimated in the test balance. A larger test was therefore carried out using the crushed sample reject material, which was first ground in a laboratory rod mill to a relatively coarse grind of 55% passing 200 mesh. This test gave fair precious metal recovery and the test balance produced head grades higher than the original assay, especially for gold which had a calculated head grade of 38.8 g/t.

#### Morell's Camp Sample Testing

Two well mineralized samples were previously collected from prospects in the Morell's camp area. These were from the Silver Queen and CPR claims. Flotation testing was conducted on these samples to provide a preliminary assessment of their amenability to simple processing methods, and as a method of assessing assay variability, especially for precious metals such as gold. The initial flotation tests were conducted using pulverized assay pulps. The first test, on the CPR shaft dump sample (CR120528-1), is reported here. The second, on the Silver Queen shaft dump sample (CR120528-3) did not have assay results available for this report.

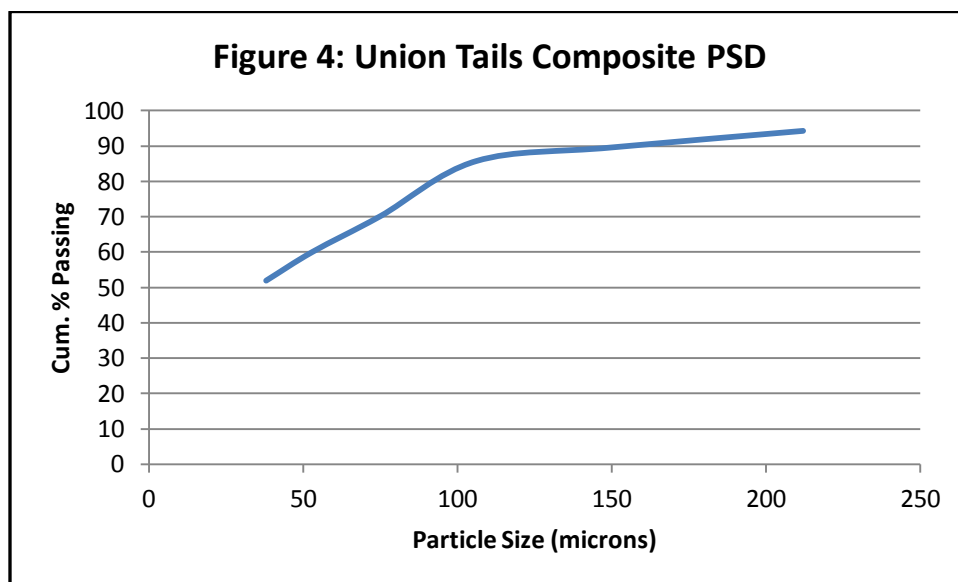
The CPR sample (test FRS 01) gave some surprising results. Base metal recoveries were relatively low, likely reflecting a significant amount of sulphide mineral weathering, but calculated head grades corresponded very well with assayed grades. Silver recovery was somewhat higher, although still quite low at 54%, and the calculated head grade was about 10% lower than the assay value (61 vs 67 g/t). Gold, however showed a much higher grade than the original assay, which

was only 66 ppb. Flotation results showed strong gold recovery to a rougher flotation concentrate and a calculated head grade of 1.18 g/t or nearly 18 times the assayed grade. If this is not a spurious result, it represents a significant increase in the potential value of this mineral occurrence. While laboratory contamination or other source of error cannot be ruled out, the high flotation recovery would be consistent with larger discrete particles of free gold, which could be lost in small assay digestion samples due to nugget effect.

### Union Tails Composite

A larger metallurgical test program is planned for the Union tailings, which appear to still contain significant values. To facilitate this work, a composite sample was prepared from five samples collected and analysed in 2013. At that time small assay samples were split from larger 1-2 kg samples, and returned gold grades ranging from 0.24 to 2.10 g/t, with all but one being greater than 1.0 g/t. They also ranged from 16 to 88 g/t silver (all but one being 60 g/t or higher), but base metal values were generally low.

The samples were collected from widely spaced locations on the tailings piles, and there were not sufficiently clear zones or differences in sample areas to provide any weighting criteria for the individual samples. All five samples were therefore combined with their full remaining weights to produce an initial testing composite sample. This material was blended and then split with a riffle splitter to produce smaller individual test lots as well as a composite head sample. A portion of the head sample was split for assaying (Table 4 – FRT Comp) and the remainder was used to complete a particle size distribution (PSD) (Figure 4).



Assays shows a grade of 1.2 g/t Au and 57.8 g/t Ag and the PSD indicated a  $P_{80}$  size of approximately 95 microns. Of particular note was that more than 50% of the composite material was finer than 400 mesh (38 microns), while a significant fraction remained in much coarser fractions. This suggests two distinct phases that may have different metallurgical responses and require separate approaches to extraction.

## Interpretation of Results

This was a very limited preliminary testing program that had several objectives, mainly aimed at getting better data for gold and silver grades and to generate recovery data relevant to sample mineralogy. Application of this technique to mineralized samples collected on the Franklin South property was speculative, as assay grades obtained to date have not been strong. Initial results, however, revealed possible new gold potential for the CPR showing many times higher than the original ICP analysis. This result is worth sufficient follow-up to ensure that it is not simply sampling error or laboratory contamination, and if confirmed, this showing would be worthy of further attention. Pending results from the Silver Queen showing will be of interest to see if a similar pattern is seen in the gold assays.

Work at the Union tailings area has a further objective of preparing preliminary groundwork for a possible future economic evaluation of the remaining potential in tailings and waste rock deposited at the site. Previous reprocessing using cyanide heap leaching technology was successful in recovering significant amounts of gold and silver. There were, however, important environmental concerns due to the use of cyanide. Alternative recovery methods would likely be required.

In addition to the tailings, there are small amounts of waste rock and possibly higher grade ore deposited on the site. Part of this initial work was to test the recoverable grade of material which had previously returned a high gold value in an initial assay and even higher values in repeat assays. This work confirmed the presence of some very high grade material at the site, but the extent would need to be evaluated by future work. This could include additional testing on later follow-up samples as well as more detailed inventories of the different rock piles present.

Preliminary analysis of the tailings composite prepared indicates that handling of the fine fraction will be an important consideration, and that silver is a substantial part of the remaining value and will likely be a greater challenge to recover than gold.

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## **Author's Qualifications**

I, Douglas Warkentin, P.Eng., a professional engineer with a business address at 745 East 30<sup>th</sup> Ave., Vancouver, B.C., certify that:

I have been a Registered Member of the Association of Professional Engineers and Geoscientists of the Province of British Columbia since 1992.

I am a graduate of the University of British Columbia, Vancouver, B.C. and hold a degree of Bachelor of Applied Science in Mining and Mineral Process Engineering.

I have practiced my profession as a Metallurgist and Mineral Process Engineer for 26 years.

I am currently employed as a Metallurgical Engineer by Kemetco Research Inc., Vancouver B.C., and have previously been employed as a Mineral Process Engineer by Vista Mines Inc., Coastech Research Inc., NTBC Research Corp., Biomet Mining Ltd., Blue Sky Mines Ltd., and Vizon Scitec Inc. I have also served as a Director of Duncastle Gold Corp., a TSX-Venture listed company.

Since 2001 I have acted as an independent engineering consultant for a number of mining clients.

I am a qualified person for the purposes of National Instrument 43-101 in relation to metallurgical testing and evaluation programs.

I directly conducted or supervised all sampling, sample handling and preparation related to the Franklin Project that is described in this report.

I am the sole author of this report.

I am not aware of any material fact or material change with respect to the subject matter of this technical report that is not reflected in this report, the omission to disclose which would make this report misleading.

Dated at Vancouver, B.C., this 30<sup>th</sup> day of July 2014.

Doug Warkentin, PEng.  
Metallurgical Engineer

### Statement of Costs

#### Metallurgical testing

Sample Preparation, Test Design and Analysis (18 hours @ \$55/hr)	\$990.00
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Metallurgical Testwork (40 hours @\$55/hr)	\$2200.00
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#### Sample Analysis

Sample Preparation (10 samples @ \$11.14/sample)	\$111.43
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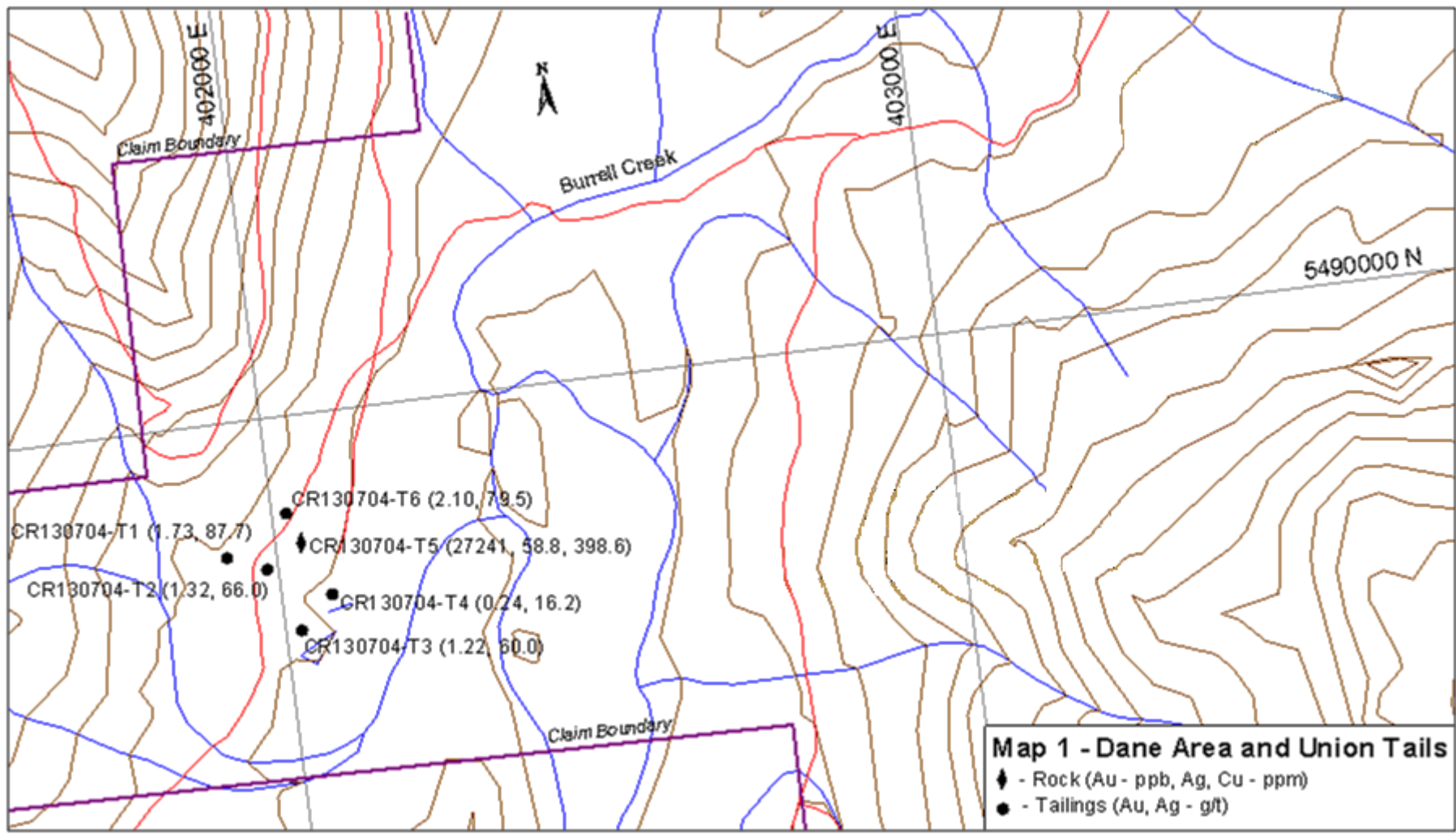
Sample Assaying (6 samples @ \$16.64/sample)		
(2 samples @ \$50/sample)		
(4 samples @ \$13.70/sample)		\$310.16

<b>Data Compilation and Report Preparation</b>	<b>\$825.00</b>
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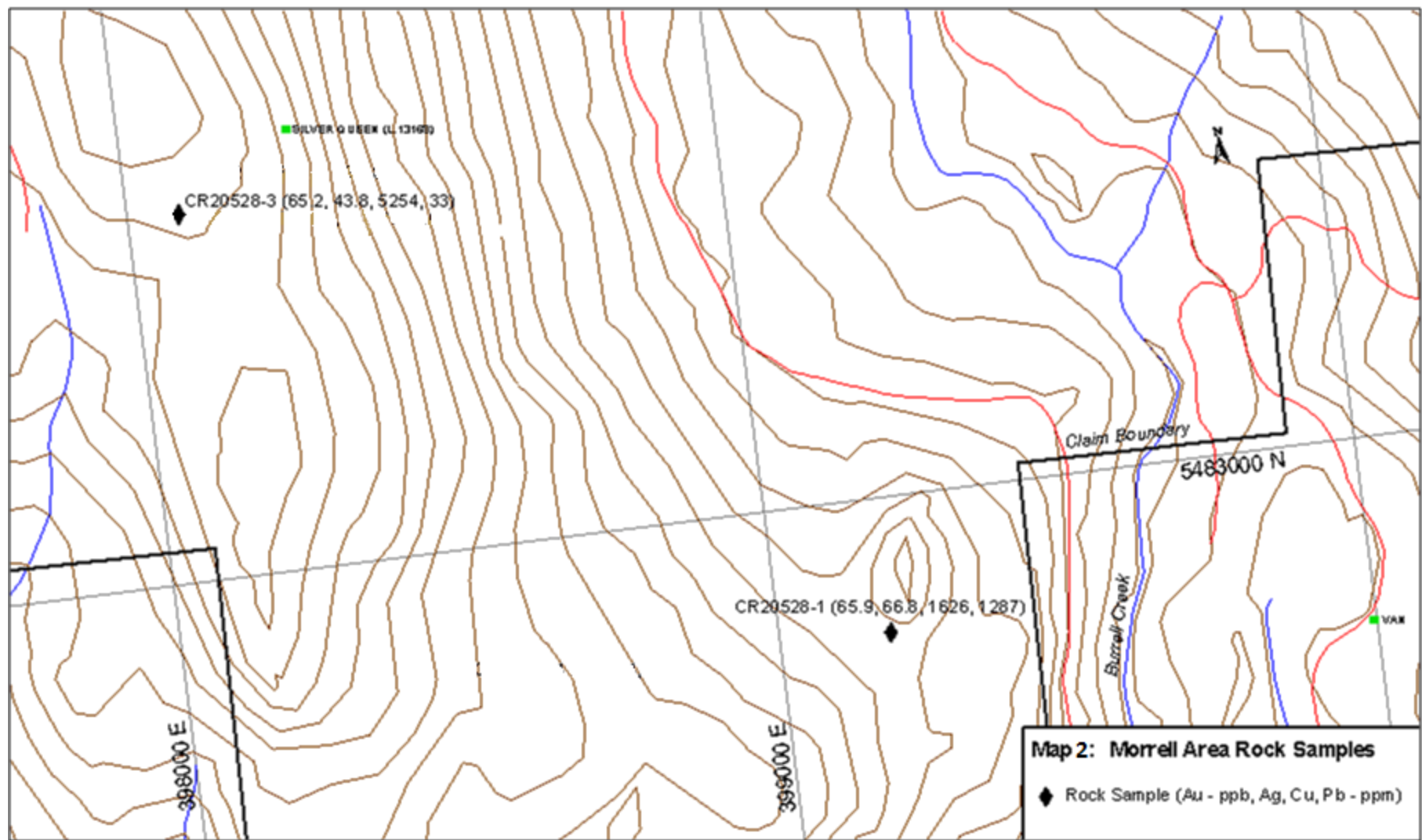
<b>Total Cost</b>	<b>\$4,436.59</b>
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Note: Portion allocated to non-contiguous Franklin South Project (tenures 942308, 942313 and 943212): **\$996.25**

## **Appendix 1 – Sample Location Maps**



Scale 1:9,000



Scale 1:10,000



## **Appendix 2 – Metallurgical Test Reports**

### Flotation Test Report

**Test:** FR 01

**Date:** 11 Mar-14

**Feed:** CR130704-T5 Pulp

**Grind:** Pulverized Assay Pulp

**Conditions:**

Stage	Reagents added, grams per tonne							Time, minutes			pH
	Na <sub>2</sub> CO <sub>3</sub>	A208	PAX	Mx900			MIBC	Grind	Cond.	Froth	
Gravity Separation											
Condition	480	24	40	30					3		8.03
Rougher							168			4	8.76
<i>Total</i>	<i>480</i>	<i>24</i>	<i>40</i>	<i>30</i>	<i>0</i>	<i>0</i>	<i>168</i>	<i>0</i>	<i>3</i>	<i>4</i>	

**Metallurgical Balance**

Product	Weight		Assays						% Distribution					
	g	%	Au (g/t)	Ag (g/t)	Cu (%)	Fe (%)	Pb (%)	Zn (%)	Au	Ag	Cu	Fe	Pb	Zn
Gravity Concentrate	0.5	0.18	7483	2638					66.2	12.2	0.0	0.0	0.0	0.0
Rougher Concentrate	11.0	4.50	100	300	0.35	8.21	0.33	1.73	21.5	33.7	38.7	15.7	48.9	61.2
Flotation Tails	231.9	95.31	2.69	22.8	0.03	2.09	0.02	0.05	12.3	54.2	61.3	84.3	51.1	38.8
Head ( calc. )	243.3	100.0	20.91	40.1	0.04	2.36	0.03	0.13	100.0	100.0	100.0	100.0	100.0	100.0
Head (assay)			27.24	58.8	0.04	2.38	0.03	0.12						

### Flotation Test Report

**Test:** FR 02

**Date:** 29 May-14

**Feed:** CR130704-T5

**Grind:** 5 min (54.5% -200#)

54.47

**Conditions:**

Stage	Reagents added, grams per tonne							Time, minutes			pH
	Na <sub>2</sub> CO <sub>3</sub>	A208	PAX	Mx900	CuSO <sub>4</sub>		DF250	Grind	Cond.	Froth	
Grind								5			
Gravity Separation											
Condition	1212	30	30	57					3		7.64
Rougher							11			5	9.03
Condition			45		45				5		8.28
Scavenger							11			2	8.29
Comb. Clnr Cond.				11					2		7.42
Comb. Clnr							11			5	
<i>Total</i>	<i>1212</i>	<i>30</i>	<i>76</i>	<i>68</i>	<i>45.455</i>	<i>0</i>	<i>33</i>	<i>5</i>	<i>10</i>	<i>12</i>	

**Metallurgical Balance**

Product	Weight		Assays						% Distribution					
	g	%	Au (g/t)	Ag (g/t)	Cu (%)	Fe (%)	Pb (%)	Zn (%)	Au	Ag	Cu	Fe	Pb	Zn
Gravity Concentrate	0.7	0.11	10247	3131					29.2	5.3	0.0	0.0	0.0	0.0
Cleaned Concentrate	34.3	5.13	403	873	0.55	12.27	0.50	1.00	53.3	69.0	68.4	23.3	67.5	70.2
Cleaner Tails	15.4	2.31	41	105	0.09	4.29	0.06	0.15	2.4	3.7	5.0	3.7	3.7	4.6
Flotation Tails	617.6	92.45	6.28	15.4	0.01	2.14	0.01	0.02	15.0	21.9	26.7	73.1	28.8	25.2
Head ( calc. )	668.0	100.0	38.81	64.9	0.04	2.71	0.04	0.07	100.0	100.0	100.0	100.0	100.0	100.0
Head (assay)			27.24	58.8	0.04	2.38	0.03	0.12						

### Flotation Test Report

**Test:** FRS 01

**Date:** 23 Jun-14

**Feed:** CR120528-1 Pulp

**Grind:** Pulverized Assay Pulp

**Conditions:**

Stage	Reagents added, grams per tonne							Time, minutes			pH
	Na <sub>2</sub> CO <sub>3</sub>	A208	PAX	Mx900	A407		MIBC	Grind	Cond.	Froth	
Condition	3900	49	98	73	20				3		5.21
Rougher							68			4	8.40
<i>Total</i>	<i>3900</i>	<i>49</i>	<i>98</i>	<i>73</i>	<i>20</i>	<i>0</i>	<i>68</i>	<i>0</i>	<i>3</i>	<i>4</i>	

**Metallurgical Balance**

Product	Weight		Assays						% Distribution					
	g	%	Au (g/t)	Ag (g/t)	Cu (%)	Fe (%)	Pb (%)	Zn (%)	Au	Ag	Cu	Fe	Pb	Zn
RougherConcentrate	20.4	10.04	11.1	326	0.58	13.43	0.59	0.05	94.4	53.7	36.8	21.7	43.6	35.9
Flotation Tails	182.8	89.96	0.07	31.4	0.11	5.41	0.08	0.01	5.6	46.3	63.2	78.3	56.4	64.1
Head ( calc. )	203.2	100.0	1.18	61.0	0.16	6.22	0.14	0.01	100.0	100.0	100.0	100.0	100.0	100.0
Head (assay)			0.07	66.8	0.16	6.56	0.13	0.01						

## **Appendix 3 – Assay Reports**





www.acmelab.com

Acme Analytical Laboratories (Vancouver) Ltd.  
 9050 Shaughnessy St Vancouver BC V6P 6E5 CANADA  
 PHONE (604) 253-3158

**Client:** **Crucible Resources Ltd.**  
 745 East 30th Ave  
 Vancouver BC V5V 2V8 CANADA

Submitted By: Doug Warkentin  
 Receiving Lab: Canada-Vancouver  
 Received: May 07, 2014  
 Report Date: May 22, 2014  
 Page: 1 of 2

## CERTIFICATE OF ANALYSIS

VAN14001467.1

### CLIENT JOB INFORMATION

Project: Clubine-Nevada  
 Shipment ID:  
 P.O. Number  
 Number of Samples: 22

### SAMPLE DISPOSAL

PICKUP-PLP Client to Pickup Pulps

### SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
SLBHP	22	Sort, label and box pulps			VAN
PUL85	4	Pulverize to 85% passing 200 mesh			VAN
AQ200	22	1:1:1 Aqua Regia digestion ICP-MS analysis	0.5	Completed	VAN
DRPLP	22	Warehouse handling / disposition of pulps			VAN
AQ370	8	1:1:1 Aqua Regia digestion ICP-ES analysis	0.4	Completed	VAN
G6	1	Lead collection fire assay fusion - AAS finish	30	Completed	VAN
FA530-Au	0	Lead collection fire assay fusion - Grav finish	30	Completed	VAN

### ADDITIONAL COMMENTS

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

Invoice To: Crucible Resources Ltd.  
 745 East 30th Ave  
 Vancouver BC V5V 2V8  
 CANADA

CC:



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. Acme assumes the liabilities for actual cost of analysis only. Results apply to samples as submitted. ""\*"" asterisk indicates that an analytical result could not be provided due to unusually high levels of interference from other elements.



www.acmelab.com

Acme Analytical Laboratories (Vancouver) Ltd.  
 9050 Shaughnessy St Vancouver BC V6P 6E5 CANADA  
 PHONE (604) 253-3158

Client: **Crucible Resources Ltd.**  
 745 East 30th Ave  
 Vancouver BC V5V 2V8 CANADA

Project: Clubine-Nevada  
 Report Date: May 22, 2014

Page: 2 of 2

Part: 1 of 3

CERTIFICATE OF ANALYSIS

VAN14001467.1

Method	Analyte	Unit	MDL	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200		
				Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La
				ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm
				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	1
CN106-1	Rock Pulp			9.5	228.2	>10000	>10000	>100	4.8	12.0	890	4.83	21.8	4135.0	11.0	21	310.3	64.1	1.0	18	0.40	0.104	16
CN106-2	Rock Pulp			4.0	207.8	6021.2	1967	63.5	5.8	7.4	834	3.54	12.9	496.1	11.4	19	113.4	33.4	1.0	19	0.43	0.107	18
CN106-3	Rock Pulp			1.2	66.1	1504.4	344	11.9	1.4	2.9	597	1.93	4.9	60.9	8.4	10	23.8	12.4	0.3	15	0.31	0.075	15
CN107-1	Rock Pulp			8.9	289.5	6263.0	>10000	32.8	5.2	12.0	1359	5.09	25.9	962.0	9.9	17	539.8	13.2	3.9	13	0.48	0.066	11
CN107-2	Rock Pulp			2.5	358.4	2020.7	>10000	21.7	6.2	14.3	2191	6.00	41.9	5039.1	7.1	18	1907.9	7.3	1.2	11	0.46	0.063	9
CN107-3	Rock Pulp			0.6	38.1	505.5	1511	1.5	1.2	2.2	636	1.64	6.9	13.1	4.9	10	32.5	1.4	0.4	8	0.33	0.049	8
CN108-1	Rock Pulp			6.2	177.1	8691.9	>10000	>100	5.9	18.5	925	10.08	48.1	10002.2	3.0	14	1956.0	24.3	55.8	8	0.13	0.031	5
CN108-2	Rock Pulp			5.0	473.2	6877.4	>10000	>100	3.7	16.3	1377	8.80	38.3	1046.9	3.3	11	>2000	22.3	48.1	8	0.14	0.035	6
CN108-3	Rock Pulp			1.8	58.4	1507.9	1196	10.4	1.0	1.6	171	1.96	8.6	83.1	1.7	5	65.1	6.2	11.7	4	0.09	0.016	3
FR 01-1	Rock Pulp			11.3	3273.4	3080.4	>10000	>100	67.2	71.9	1911	8.21	497.7	>100000	0.5	447	112.9	88.1	4.2	66	8.35	0.051	4
FR 01-2	Rock Pulp			5.3	262.8	163.3	518	22.8	10.0	8.2	1005	2.09	75.9	2694.4	0.5	83	3.7	4.9	0.4	57	5.72	0.059	4
ETI DF 03-S1	Rock Pulp			9.3	2806.3	1480.2	4865	29.0	120.5	25.9	1012	2.50	15.6	783.6	1.9	619	24.7	75.0	6.7	28	18.10	0.535	29
ETI DF 03-S2	Rock Pulp			11.6	2790.7	1529.9	5312	9.3	148.9	31.4	1170	3.41	17.0	358.7	2.3	704	28.0	72.5	7.3	32	18.22	0.574	32
ETI DF 03-S3	Rock Pulp			10.4	3015.9	1658.4	5072	41.7	122.0	27.6	1193	2.31	20.9	557.0	2.0	647	26.6	85.1	8.4	30	17.76	0.576	33
ETI DF 03-S4	Rock Pulp			10.6	2879.2	1630.5	5405	11.5	139.9	27.4	1100	2.97	17.7	65.3	2.3	743	26.5	77.2	7.3	32	19.05	0.604	34
ETI DF 03-C1	Rock Pulp			23.1	>10000	1717.2	7057	>100	502.4	110.8	6635	5.40	37.9	5755.4	1.9	353	25.7	132.4	15.0	30	10.98	0.532	27
ETI DF 03-C2	Rock Pulp			20.4	5372.5	1317.0	6167	21.1	281.5	45.0	4102	4.93	20.5	116.9	2.5	491	24.8	62.8	7.1	34	13.78	0.775	24
ETI DF 03-C3	Rock Pulp			21.2	6132.4	1343.5	6195	23.5	335.6	108.0	4423	5.23	22.7	67.7	2.0	430	27.9	78.1	8.7	31	13.50	0.745	27
ETI DF 03-C4	Rock Pulp			22.2	4926.1	1410.5	6105	12.1	288.7	56.8	3007	5.76	19.6	63.0	2.6	492	27.4	61.2	8.5	35	14.38	0.866	23
ETI DF 03-R1	Rock Pulp			11.8	2523.4	1494.8	5466	8.1	173.5	34.2	1353	4.23	16.7	34.0	2.5	652	26.5	63.1	7.0	34	16.36	0.607	29
ETI DF 03-T1	Rock Pulp			23.0	2672.5	790.6	4558	5.0	353.0	59.9	1595	11.64	11.6	28.2	2.2	289	25.7	37.6	3.9	30	8.53	0.594	21
ETI DF 03-C5	Sand			127.5	7234.4	>10000	4583	>100	3547.8	121.4	7305	17.36	92.4	12912.0	2.5	201	13.5	420.7	161.5	53	4.32	0.286	47

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 PHONE (604) 253-3158

Client: **Crucible Resources Ltd.**  
 745 East 30th Ave  
 Vancouver BC V5V 2V8 CANADA

Project: Clubine-Nevada  
 Report Date: May 22, 2014

Page: 2 of 2

Part: 2 of 3

CERTIFICATE OF ANALYSIS

VAN14001467.1

Method	Analyte	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ374	AQ374	AQ374	AQ374	
		Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Ti	S	Ga	Se	Te	Cu	Pb	Zn	Ag
Unit		ppm	%	ppm	%	ppm	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	%	%	%	gm/t	
MDL		1	0.01	1	0.001	20	0.01	0.001	0.01	0.1	0.01	0.1	0.05	1	0.5	0.2	0.001	0.01	0.01	2	
CN106-1	Rock Pulp	6	0.39	42	0.054	<20	1.24	0.018	0.28	0.4	0.96	2.0	0.2	3.26	5	2.2	0.3	0.026	1.05	1.08	174
CN106-2	Rock Pulp	7	0.41	43	0.059	<20	1.36	0.019	0.30	0.3	0.13	2.2	0.2	1.31	5	1.1	<0.2				
CN106-3	Rock Pulp	5	0.35	25	0.042	<20	0.93	0.013	0.19	0.2	0.02	1.5	<0.1	0.19	4	<0.5	<0.2				
CN107-1	Rock Pulp	11	0.34	29	0.052	<20	0.91	0.010	0.22	2.1	0.25	1.5	0.2	4.37	4	7.3	0.9	0.028	0.66	2.25	33
CN107-2	Rock Pulp	14	0.28	30	0.049	<20	0.82	0.009	0.20	2.3	0.75	1.4	0.6	6.22	4	8.9	0.5	0.037	0.22	8.60	22
CN107-3	Rock Pulp	10	0.20	14	0.034	<20	0.54	0.006	0.13	1.0	0.01	0.9	<0.1	0.37	2	0.7	<0.2				
CN108-1	Rock Pulp	9	0.09	23	0.030	<20	0.37	0.004	0.10	11.3	0.45	0.8	0.2	9.41	4	22.9	8.2	0.018	0.90	7.41	156
CN108-2	Rock Pulp	12	0.11	15	0.033	<20	0.40	0.005	0.10	11.0	0.37	0.9	0.2	9.08	4	22.3	4.6	0.051	0.56	9.21	100
CN108-3	Rock Pulp	8	0.06	6	0.014	<20	0.22	0.002	0.05	4.5	0.03	0.6	<0.1	0.30	2	2.3	0.6				
FR 01-1	Rock Pulp	21	0.94	48	0.023	<20	1.25	0.017	0.11	0.4	1.63	6.0	0.3	7.01	6	>100	4.6	0.351	0.33	1.73	>300
FR 01-2	Rock Pulp	18	0.78	31	0.025	<20	0.99	0.016	0.09	0.2	0.04	4.9	<0.1	0.32	4	5.8	0.4				
ETI DF 03-S1	Rock Pulp	137	0.75	60	0.119	151	6.30	0.356	0.61	7.1	0.72	1.9	<0.1	2.12	8	1.4	<0.2				
ETI DF 03-S2	Rock Pulp	153	0.87	88	0.140	137	6.35	0.363	0.70	7.6	0.49	2.2	<0.1	1.48	9	1.0	<0.2				
ETI DF 03-S3	Rock Pulp	155	0.76	68	0.117	144	6.31	0.256	0.52	7.0	1.55	2.0	0.2	1.64	8	1.2	0.2				
ETI DF 03-S4	Rock Pulp	157	0.85	69	0.132	151	6.70	0.303	0.64	7.1	0.58	2.2	<0.1	1.67	8	1.5	<0.2				
ETI DF 03-C1	Rock Pulp	175	0.62	638	0.097	59	2.92	0.220	0.24	7.7	1.59	1.9	0.2	0.46	7	1.7	0.4	3.271	0.17	0.67	282
ETI DF 03-C2	Rock Pulp	231	1.00	254	0.139	114	4.94	0.376	0.40	6.8	0.48	2.4	<0.1	0.56	8	1.1	<0.2				
ETI DF 03-C3	Rock Pulp	213	0.77	848	0.111	64	4.16	0.242	0.29	8.1	0.57	2.0	<0.1	0.37	8	1.2	<0.2				
ETI DF 03-C4	Rock Pulp	268	1.04	870	0.144	92	5.24	0.355	0.39	7.6	0.37	2.4	<0.1	0.34	9	1.1	<0.2				
ETI DF 03-R1	Rock Pulp	153	0.94	271	0.140	113	6.46	0.313	0.28	7.2	0.37	2.0	<0.1	0.65	9	0.9	<0.2				
ETI DF 03-T1	Rock Pulp	267	0.81	895	0.156	101	3.10	0.544	0.29	6.3	0.07	2.0	<0.1	0.22	7	<0.5	<0.2				
ETI DF 03-C5	Sand	5450	0.41	2137	0.167	55	1.86	0.314	0.11	17.5	0.23	1.3	0.1	0.10	8	0.9	0.7	0.785	7.11	0.46	134

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**Project:** Clubine-Nevada  
**Report Date:** May 22, 2014

**Page:** 2 of 2

**Part:** 3 of 3

# CERTIFICATE OF ANALYSIS

VAN14001467.1

Method		FA430	FA530	FA530
Analyte		Au	Ag	Au
Unit		ppm	gm/t	gm/t
MDL		0.005	50	0.9
CN106-1	Rock Pulp			
CN106-2	Rock Pulp			
CN106-3	Rock Pulp			
CN107-1	Rock Pulp			
CN107-2	Rock Pulp			
CN107-3	Rock Pulp			
CN108-1	Rock Pulp			
CN108-2	Rock Pulp			
CN108-3	Rock Pulp			
FR 01-1	Rock Pulp	>10	I.S.	I.S.
FR 01-2	Rock Pulp			
ETI DF 03-S1	Rock Pulp			
ETI DF 03-S2	Rock Pulp			
ETI DF 03-S3	Rock Pulp			
ETI DF 03-S4	Rock Pulp			
ETI DF 03-C1	Rock Pulp			
ETI DF 03-C2	Rock Pulp			
ETI DF 03-C3	Rock Pulp			
ETI DF 03-C4	Rock Pulp			
ETI DF 03-R1	Rock Pulp			
ETI DF 03-T1	Rock Pulp			
ETI DF 03-C5	Sand			



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**Client:** **Crucible Resources Ltd.**  
 745 East 30th Ave  
 Vancouver BC V5V 2V8 CANADA

Submitted By: Doug Warkentin  
 Receiving Lab: Canada-Vancouver  
 Received: June 24, 2014  
 Report Date: July 23, 2014  
 Page: 1 of 2

## CERTIFICATE OF ANALYSIS

VAN14002011.3

### CLIENT JOB INFORMATION

Project: Franklin/Talc Creek  
 Shipment ID:  
 P.O. Number  
 Number of Samples: 18

### SAMPLE DISPOSAL

PICKUP-PLP Client to Pickup Pulps  
 PICKUP-RJT Client to Pickup Rejects

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

### SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
SLBHP	8	Sort, label and box pulps			VAN
PUL85	9	Pulverize to 85% passing 200 mesh			VAN
PRP70-250	1	Crush, split and pulverize 250 g rock to 200 mesh			VAN
AQ250	2	1:1:1 Aqua Regia digestion Ultratrace ICP-MS analysis	0.5	Completed	VAN
AQ200	16	1:1:1 Aqua Regia digestion ICP-MS analysis	0.5	Completed	VAN
FA530	2	Lead collection fire assay fusion - gravimetric finish	30	Completed	VAN
DRPLP	18	Warehouse handling / disposition of pulps			VAN
DRRJT	1	Warehouse handling / Disposition of reject			VAN
AQ374-X	3	1:1:1 Aqua Regia digestion ICP-ES analysis	0.4	Completed	VAN

### ADDITIONAL COMMENTS

Version 3: AQ370-Ag included for CRL FR02-C2 and CRL FRS01-1.

Invoice To: Crucible Resources Ltd.  
 745 East 30th Ave  
 Vancouver BC V5V 2V8  
 CANADA

CC:



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Client: **Crucible Resources Ltd.**  
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 Vancouver BC V5V 2V8 CANADA

Project: Franklin/Talc Creek  
 Report Date: July 23, 2014

Page: 2 of 2

Part: 3 of 4

CERTIFICATE OF ANALYSIS

VAN14002011.3

Method	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	
Analyte	Zn	Ag	Ni	Co	Mn	Fe	As	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La	Cr	Mg	Ba	
Unit	ppm	ppm	ppm	ppm	ppm	%	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	ppm	%	ppm	
MDL	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	1	1	0.01	1	
ETI M3-C02	Sand																				
ETI M3-T01	Sand																				
CRL FRT COMP HEAD	Rock Pulp	555	57.8	6.2	3.6	1341	2.64	22.3	1195.8	0.4	93	4.7	6.5	0.1	62	4.30	0.048	4	14	1.17	27
CRL FR02-C1	Rock Pulp	>10000	>100	136.1	117.9	1665	12.27	1003.0	>100000	0.5	154	161.3	141.5	7.9	56	14.54	0.170	6	78	0.75	34
CRL FR02-C2	Rock Pulp	1468	>100	189.1	18.6	1749	4.29	85.5	41200.3	0.8	130	14.3	15.4	1.3	116	11.29	0.119	7	282	1.54	53
CRL FR02-T1	Rock Pulp	199	15.4	244.2	9.6	949	2.14	18.0	6282.3	0.5	72	1.2	3.3	0.2	62	5.69	0.047	4	363	0.79	25
CRL FRS01-1	Rock Pulp	471	>100	20.1	35.1	399	13.43	26.0	18244.4	4.1	44	52.1	0.9	745.5	65	0.46	0.061	2	25	0.74	45
CRL FRS01-2	Rock Pulp	94	31.4	6.5	13.0	274	5.41	4.0	73.5	2.7	30	2.7	0.2	120.7	44	0.30	0.034	2	17	0.54	23
CR140527-1	Rock	25	0.8	8.4	18.1	356	2.99	<0.5	<0.5	0.3	8	<0.1	<0.1	<0.1	106	1.47	0.088	<1	7	0.75	11
CR140527-S1	Sand	37	0.9	75.7	13.8	420	2.59	1.9	2.0	0.9	16	<0.1	0.1	<0.1	69	0.71	0.030	3	83	1.29	95
CR140527-S2	Sand	48	0.8	59.4	15.5	368	2.53	1.0	9.1	0.9	13	<0.1	0.3	<0.1	69	0.68	0.047	4	63	1.22	152
CR140527-S3	Sand	34	0.8	168.9	21.9	397	2.63	7.1	3.7	0.7	15	<0.1	0.2	<0.1	64	0.60	0.030	3	171	1.58	75
CR140527-S4	Sand	58	0.8	64.4	16.6	452	3.29	2.1	3.4	0.9	16	0.1	0.2	<0.1	83	0.76	0.063	4	85	1.29	237
CR140527-S5	Sand	70	0.7	60.8	18.6	530	3.74	1.9	4.4	1.1	15	0.1	0.2	<0.1	89	0.74	0.071	5	87	1.34	299
CR140527-S6	Sand	43	0.8	46.2	13.3	371	2.75	3.8	2.8	0.7	14	<0.1	0.2	<0.1	68	0.69	0.035	3	57	0.89	99
CR140527-S7	Sand	29	0.6	275.9	22.2	351	2.34	8.1	2.6	0.8	15	<0.1	0.2	<0.1	51	0.50	0.041	3	114	2.91	44
CR140527-G1	Rock Pulp	40	0.6	347.0	24.8	369	2.49	10.1	5.0	0.8	9	<0.1	0.2	<0.1	55	0.28	0.051	3	109	2.18	87
CR140527-G2	Rock Pulp	46	0.8	412.3	33.8	469	2.84	11.9	14.6	1.0	13	<0.1	0.2	<0.1	63	0.46	0.060	3	132	2.72	104

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 745 East 30th Ave  
 Vancouver BC V5V 2V8 CANADA

Project: Franklin/Talc Creek  
 Report Date: July 23, 2014

Page: 2 of 2

Part: 4 of 4

CERTIFICATE OF ANALYSIS

VAN14002011.3

Method	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	FA530	FA530	AQ374	AQ374	
Analyte	Ti	B	Al	Na	K	W	Hg	Sc	Ti	S	Ga	Se	Te	Ag	Au	Zn	Ag	
Unit	%	ppm	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	gm/t	gm/t	%	gm/t	
MDL	0.001	20	0.01	0.001	0.01	0.1	0.01	0.1	0.1	0.05	1	0.5	0.2	50	0.9	0.01	2	
ETI M3-C02	Sand															1.45	36	
ETI M3-T01	Sand																	
CRL FRT COMP HEAD	Rock Pulp	0.023	<20	1.32	0.009	0.08	0.9	0.13	3.9	<0.1	<0.05	5	2.3	<0.2				
CRL FR02-C1	Rock Pulp	0.015	<20	0.93	0.010	0.05	1.9	1.02	4.0	0.5	>10	4	>100	8.9	874	392.0		
CRL FR02-C2	Rock Pulp	0.034	<20	1.97	0.025	0.11	0.6	0.21	7.7	0.1	0.68	8	16.2	1.3		0.15	105	
CRL FR02-T1	Rock Pulp	0.026	<20	0.99	0.018	0.08	0.4	0.07	3.9	<0.1	0.06	4	1.9	0.2				
CRL FRS01-1	Rock Pulp	0.110	<20	1.41	0.047	0.17	3.9	0.08	3.1	0.4	6.47	7	4.7	59.1	326	11.1	0.05	>300
CRL FRS01-2	Rock Pulp	0.074	<20	0.92	0.031	0.10	3.1	<0.01	2.0	<0.1	0.28	5	0.9	9.7				
CR140527-1	Rock	0.164	<20	1.37	0.142	0.05	0.2	0.01	7.1	<0.1	0.30	5	<0.5	<0.2				
CR140527-S1	Sand	0.149	<20	1.42	0.082	0.13	0.2	0.02	6.9	<0.1	<0.05	4	<0.5	<0.2				
CR140527-S2	Sand	0.165	<20	1.45	0.064	0.25	0.2	0.03	6.4	<0.1	<0.05	4	<0.5	<0.2				
CR140527-S3	Sand	0.118	<20	1.31	0.054	0.07	0.3	0.02	5.6	<0.1	<0.05	4	<0.5	<0.2				
CR140527-S4	Sand	0.240	<20	1.83	0.069	0.35	0.3	0.01	7.5	0.1	<0.05	6	<0.5	<0.2				
CR140527-S5	Sand	0.248	<20	2.07	0.072	0.48	0.3	0.02	7.7	0.1	<0.05	6	<0.5	<0.2				
CR140527-S6	Sand	0.163	<20	1.43	0.059	0.14	0.3	0.02	5.7	<0.1	<0.05	4	<0.5	<0.2				
CR140527-S7	Sand	0.097	<20	0.99	0.048	0.07	0.3	<0.01	5.0	<0.1	<0.05	3	<0.5	<0.2				
CR140527-G1	Rock Pulp	0.085	<20	1.46	0.017	0.09	0.3	0.03	4.8	<0.1	<0.05	4	<0.5	<0.2				
CR140527-G2	Rock Pulp	0.103	<20	1.53	0.029	0.15	0.3	0.02	5.9	0.1	<0.05	4	<0.5	<0.2				

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Project: Franklin/Talc Creek  
 Report Date: July 23, 2014

Page: 1 of 2

Part: 4 of 4

## QUALITY CONTROL REPORT

VAN14002011.3

Method	AQ200																	FA530	FA530	AQ374	AQ374
	Ti	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se	Te	Ag	Au	Zn	Ag				
Analyte	%	ppm	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	gm/t	gm/t	%	gm/t				
Unit																					
MDL	0.001	20	0.01	0.001	0.01	0.1	0.01	0.1	0.1	0.05	1	0.5	0.2	50	0.9	0.01	2				
Pulp Duplicates																					
ETI M3-C02	Sand																1.45	36			
REP ETI M3-C02	QC																1.44	33			
ETI M3-T01	Sand																				
REP ETI M3-T01	QC																				
CRL FR02-C1	Rock Pulp	0.015	<20	0.93	0.010	0.05	1.9	1.02	4.0	0.5	>10	4	>100	8.9	874	392.0					
REP CRL FR02-C1	QC														871	414.5					
CRL FRS01-1	Rock Pulp	0.110	<20	1.41	0.047	0.17	3.9	0.08	3.1	0.4	6.47	7	4.7	59.1	326	11.1	0.05	>300			
REP CRL FRS01-1	QC																0.05	>300			
CR140527-G2	Rock Pulp	0.103	<20	1.53	0.029	0.15	0.3	0.02	5.9	0.1	<0.05	4	<0.5	<0.2							
REP CR140527-G2	QC	0.104	<20	1.46	0.029	0.14	0.3	0.02	5.7	<0.1	<0.05	4	<0.5	<0.2							
Reference Materials																					
STD AGPROOF	Standard														97	<0.9					
STD AGPROOF	Standard														92	<0.9					
STD DS10	Standard	0.081	<20	1.00	0.064	0.33	2.8	0.28	2.7	4.7	0.28	4	2.4	4.5							
STD DS10	Standard																				
STD GC-7	Standard																	21.36	>300		
STD GC-7	Standard																	22.74	>300		
STD OREAS133B	Standard																	10.46	104		
STD OREAS133B	Standard																	10.92	107		
STD OREAS45EA	Standard	0.108	<20	3.42	0.024	0.06	0.1	0.02	82.4	<0.1	<0.05	13	0.8	<0.2							
STD OREAS45EA	Standard																				
STD SP49	Standard														64	18.3					
STD SP49	Standard														62	18.4					
STD SP49	Standard														<50	18.4					
STD SP49	Standard														<50	18.2					
STD DS10 Expected		0.0817		1.0259	0.067	0.338	3.32	0.3	2.8	5.1	0.29	4.3	2.3	5.01							
STD OREAS45EA Expected		0.0875		3.13	0.02	0.053			78	0.072	0.036	11.7	0.6	0.07							
STD GC-7 Expected																		22.06	624		

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.