BRITISH COLUMBIA The Best Place on Earth Ministry of Energy, Mines & Petroleum Resources Mining & Minerals Division BC Geological Survey	RECEIVED DEC 217 2015	Assessment Report Title Page and Summary
TYPE OF REPORT [type of survey(s)]: Geological and Geophysical	Уэвоонузт, 80 тотан	. <b>соs</b> т: \$25,260
AUTHOR(S): William LeBarge	SIGNATURE(S):	······································
NOTICE OF WORK PERMIT NUMBER(S)/DATE(S): 100112625		YEAR OF WORK: 2014
STATEMENT OF WORK - CASH PAYMENTS EVENT NUMBER(S)/DATE(	S):	
5528383, 5530546, 5530547, 5530548, 5530549, 5530550, 5	530551	
PROPERTY NAME: Snowy Creek		
CLAIM NAME(S) (on which the work was done):		
337368, 370971, 370973, 403595, 1023421, 1023433, 10178	54, 1023438, 1023412, 1023419, 10	023415, 1023429, 1023437
	·····	······································
COMMODITIES SOUGHT: Placer gold		
MINERAL INVENTORY MINFILE NUMBER(S), IF KNOWN: Snowy Cree	k (Minfile #104P089)	·
MINING DIVISION:   jard	NTS/BCGS: 104D	· · · · · · · · · · · · · · · · · · ·
LATITUDE: 59 ° 18 '00 " LONGITUDE: 120	<sup>0</sup> 26 '00 "	· · · · · · · · · · · · · · · · · · ·
OWNER(S):	<u>30</u> (at centre	of work)
1) Canada Rockies International Investment Group Ltd.	2)	
		· · · · · · · · · · · · · · · · · · ·
MAILING ADDRESS:		
7575 Camarvon Street, Vancouver, BC, V6N 1K6		
OPERATOR/S) (who naid for the work):		
1) as above	2)	
MAILING ADDRESS:		
	Nua	
PROPERTY GEOLOGY KEYWORDS (lithology, age, stratigraphy, structur Geology, resistivity, placer gold, paleochannels, depth to bedro	e, alteration, mineralization, size and attitu Ck	ıde):
REFERENCES TO PREVIOUS ASSESSMENT WORK AND ASSESSMENT F		

TYPE OF WORK IN EXTENT OF WORK THIS REPORT (IN METRIC UNITS)		ON WHICH CLAIMS	PROJECT COSTS APPORTIONED (incl. support)		
GEOLOGICAL (scale, area)					
Ground, mapping 0.8 square	km	all claims	11560		
Photo interpretation					
GEOPHYSICAL (line-kilometres)					
Ground					
Induced Polarization	······································				
Rediometric	<u></u>				
Rejemie	· · · · · · · · · · · · · · · · · · ·				
Other Ponictivity 1.07	line km		13700		
Airborne					
GEOCHEMICAL			<u></u>		
(number of samples analysed for) Soil					
Silt					
Rock	······································				
Other					
DRILLING (total metres; number of holes, size)	<u>,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</u>				
Core					
Non-core	1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.		<u>.,,,</u>		
RELATED TECHNICAL					
Sampling/assaying	·····				
Petrographic					
Mineralographic					
Metallurgic	······································		<u></u>		
PROSPECTING (scale, area)					
PREPARATORY / PHYSICAL					
Line/grid (kllometres)					
Topographic/Photogrammetric (scale, area)					
Legal surveys (scale, area)			·····		
Road, local access (kilometres)	/trail	[			
Trench (metres)					
Underground dev. (metres)					
Other					
		TOTAL COST:	\$25,260		

## Technical Report on Prospecting, Geophysics, and Surficial Geology On the Cassiar Claim Group

Statement of Work Event Numbers: 5528383, 5530546, 5530547, 5530548, 5530549, 5530550, 5530551

**Tenure Numbers** 

337368, 370971, 370973, 403595, 1023421, 1023433, 1017864, 1023438, 1023412, 1023419, 1023415, 1023429, 1023437

Location:

**Dease Lake, Liard Mining Division** 

BC Geological Survey Assessment Report 35334

NTS 104P

Latitude: 129.6° W Longitude: 59.3° N UTM Zone 9 464646E, 6575695N NAD 83

**Project Period:** 

September 22-September 29, 2014

**Owner and Operator:** 

Canada Rockies International Investment Group Ltd. 7575 Carnarvon Street, Vancouver, BC, V6N 1K6

Author:

William LeBarge, M.Sc., P. Geo

Submitted:

February 24, 2015

## **Table of Contents**

INTRODUCTION	1
Property Location, Ownership and Description	1
Access, Climate, Local Resources and Physiography	1
HISTORICAL PLACER EXPLORATION AND PLACER MINING	5
REGIONAL BEDROCK GEOLOGY	5
MINFILE OCCURRENCES	6
SURFICIAL AND PLACER GEOLOGY	9
2014 EXPLORATION PROGRAM	12
Resistivity Geophysics	12
RESISTIVITY PROFILES AND MAPS BY GROUPED TENURES	14
Group 1 - 337368, 370971, 370973, 403595: Lines SC14-A01 and CA-L	14
Discussion of Results	14
Group 2 - 1023421, 1023419, 1023415: Line CA-B	
Discussion of Results	16
Group 3 - 1023412: Lines CA-F, CA-M	
Discussion of Results	18
Group 4 - 1017864, 1023438: Lines CA-C, CA-D, CA-E	21
Discussion of Results	21
Group 5 - 1023429: Lines CA-G, CA-H	25
Discussion of Results	25
Group 6 - 1023433: Lines CA-I, CA-K	
Discussion of Results	28
Group 7 - 1023437: Line CA-J	
Discussion of Results	31
CONCLUSIONS AND RECOMMENDATIONS	33
Statement of Costs, 2014 Placer Exploration Program, Cassiar District	34
Statement of Qualifications – William LeBarge, Geoplacer Exploration Ltd.	35
Statement of Qualifications – James Coates, Kryotek Arctic Innovation Inc	
REFERENCES	37
APPENDIX A – LOCATION AND GEOLOGY MAPS	
APPENDIX B – STATEMENTS OF WORK	49

## List of Figures

Figure 1 - General Location of Cassiar, B.C. claims of Canada Rockies International Investment Group2
Figure 2 – Location of Cassiar Placer Claims of Canada Rockies International Investment Group. Original scale map
included in Appendix A4
Figure 3 - Bedrock Geology, Cassiar Area, B.C. in vicinity of Placer Tenures of Canada Rockies International
Investment Group. Original scale map included in Appendix A10
Figure 4 - Surficial Geology of a portion of the Cassiar area, B.C. in the vicinity of the placer tenures of Canada
Rockies International Investment Group. Original scale map included in Appendix A
Figure 5 - Map view of the Snowy Creek mine showing 2014 resistivity profiles SC14-A01 and CA-L. Original scale
map is included in Appendix A14
Figure 6 – Interpreted profile of Kryotek Line SC14-A01, plotted in map view on Figure 5. View looking west15
Figure 7 – Interpreted profile of Kryotek Line CA-L, plotted in map view on Figure 5. View looking north15
Figure 8 - Map view showing the location of 2014 resistivity profile CA-B. Original scale map is included in
Appendix A16
Figure 9 - Resistivity and IP profiles for Line CA-B, plotted in map view on Figure 8. View looking upstream to the
south-east17
Figure 10 Map view showing the location of 2014 resistivity profiles CA-F and CA-M. Original scale map is included
in Appendix A
Figure 11 - Resistivity profile for Line CA-F, plotted in map view on Figure 10. View looking downstream to the
east. This profile is downstream across the same drainage as profile CA-M
Figure 12 - Resistivity profile for Line CA-M, plotted in map view on Figure 10. View looking upstream to the south.
This profile is upstream across the same drainage as profile CA-F
Figure 13 - Map view showing the location of 2014 resistivity profiles CA-C, CA-D and CA-E. Original scale map is
included in Appendix A21
Figure 14 - Resistivity profile and IP response for Line CA-C, plotted in map view on Figure 13. View looking
obliquely downstream across the valley
Figure 15 - Resistivity profile and IP response for Line CA-D, plotted in map view on Figure 13. View looking
upstream to the northeast
Figure 16 - Resistivity profile for Line CA-E, plotted in map view on Figure 13. View is looking upstream to the
northeast. The profile clearly shows a channel on the left limit of Quartz Creek, at stations 12 to 19. This is in the
vicinity of the tributary creek on the map (Figure 13)24
Figure 17 - Map view showing the location of 2014 resistivity profiles CA-G and CA-H. Original scale map is
included in Appendix A25
Figure 18 - Resistivity profile for line CA-G, plotted in map view on Figure 17. View is looking to the northeast26
Figure 19 - Resistivity profile for line CA-H, plotted in map view on Figure 17. View is looking to the northeast27
Figure 20 - Map view showing the location of 2014 resistivity profiles CA-I and CA-K. Original scale map is included
in Appendix A28
Figure 21 - Resistivity profile for line CA-I, plotted in map view on Figure 20. View is looking west
Figure 22 - Resistivity profile for line CA-K, plotted in map view on Figure 20. View is looking west
Figure 23 - Map view showing the location of 2014 resistivity profile CA-J. Original scale map is included in
Appendix A
Figure 24 - Resistivity profile and IP response for line CA-J, plotted in map view on Figure 23. View is looking east.

#### List of Tables

Table 1 - Claim Status, Cassiar Placer Claims, Canada Rockies International Investment Group	3
Table 2- BC Minfile Occurrences, Cassiar region, in the vicinity of the Canada Rockies International Investment	
Group placer claims	7
Table 3 - Geographic Coordinates and Lengths of 2014 Resistivity Geophysical Surveys, Cassiar claims	13
Table 4 - Statement of Costs, 2014 Placer Exploration Program, Cassiar District.	34

## **INTRODUCTION**

The work documented herein was conducted on the property between September 22 and September 27, 2014. The project manager was William LeBarge of Geoplacer Exploration Ltd. The geophysics contractors were James Coates and Astrid Grawehr of Kryotek Arctic Innovation Inc. The purpose of the program was to assess on a reconnaissance scale the potential for placer gold and placer jade on the Cassiar placer claims of Canada Rockies International Investment Group.

## **Property Location, Ownership and Description**

The Cassiar area claims lie 100km NNE of the community of Dease Lake (Figure 1), in a broad area directly north of the community of Jade City located along British Columbia Highway 37. The claim group consists of 13 placer claims totaling 1213.708 hectares.

Table 1 shows the claim status and ownership of the placer tenures. Most of the claims are 100% held by Canada Rockies International Investment Group, however tenures 337368, 370971, 370973, and 403595 (location of the Snowy Creek placer mine) are 70% owned by Canada Rockies International Investment Group and 30% owned by Tian Sun.

The tenures lie in the Liard Mining Division on NTS map sheets 104P05 and 104P06 and are centered on 29.6 degrees Latitude and 59.3 degrees Longitude (Figure 2). The UTM coordinates of the centre of the claims are 464646 E and 6575695 N, in Zone 9N.

## Access, Climate, Local Resources and Physiography

The claims form a U shape, with the lower claims running E-W along Highway 37. The claim centre is 5 km north of the village of Jade City. Access to most claims is along 4 wheel drive roads built during historic previous exploration programs. The claims generally follow the steep walled, glaciated valleys of Quartz Rock and Snowy creeks in the western group of claims, and the French River and Hot Creek in the eastern group. The average elevation in these valleys is 1150m, while portions of the western claims extend into the surrounding rugged peaks up to 1900m. Timberline is at 1400 metres; lowland forests range from open jack pine stands in well drained areas, to tangles of black spruce on north-facing slopes and on swampy substrates. Above timberline, outcrop exposure is extensive.

The area has been subjected to both regional and valley glaciation (Gabrielse, 1963). The claims occur within the Cassiar Mountains physiographic region (Holland, 1976). The geomorphology of the Cassiar Mountains is characterized by typical alpine glacial landforms such as well-developed cirques, U-shaped valleys, horns, cols and arêtes. Depositional landforms include both glacial and glaciofluvial features such as ground moraines, eskers, kames and kettled outwash terraces. Glaciolacustrine sediments that were deposited in glacial lakes during ice retreat are also locally present.



Figure 1 - General Location of Cassiar, B.C. claims of Canada Rockies International Investment Group.

Old Tenure	New Tenure	Tag Number	Event Number	Amount Applied	Claim Name	Owner (s)	Map Number	Issue Date	Good to Date	Area (Hectares)
Number	Number									
337368	Same	P85292	5528383	\$999.09	DELHOWZIE 1	252653 (70%), 211270 (30%)	104P022	1995/Jul/01	2015/Oct/31	36.87516
370971	Same	P92727	5528383	\$999.34	SHELL	252653 (70%), 211270 (30%)	104P022	1999/Aug/04	2015/Oct/31	50.00037
370973	Same	P95545	5528383	\$999.44	SHELL III	252653 (70%), 211270 (30%)	104P022	1999/Aug/17	2015/Oct/31	36.73939
403595	Same	P92551	5528383	\$999.18	ICE 2	252653 (70%), 211270 (30%)	104P022	2003/Jul/14	2015/Oct/31	49.55038
623003	1023421		5530548	\$661.08		252653 (100%)	104P	2009/Aug/22	2015/Nov/23	33.086929
1014385	1023433		5530550	\$3635.35		252653 (100%)	104P	2012/Nov/09	2015/Nov/23	181.802413
1017864	Same		5530546	\$4282.02	QUARTZROCK1	252653 (100%)	104P	2013/Mar/17	2015/Nov/23	214.34055
1017865	1023438		5530546	\$3626.66	QUARTZROCK2	252653 (100%)	104P	2013/Mar/17	2015/Nov/23	181.58902
927503	1023412		5530547	\$3307.01		252653 (100%)	104P	2011/Nov/01	2015/Nov/23	165.45858
928469	1023419		5530548	\$992.11		252653 (100%)	104P	2011/Nov/08	2015/Nov/23	49.6814.92
928463	1023415		5530548	\$1653.08		252653 (100%)	104P	2011/Nov/08	2015/Nov/23	82.871707
927501	1023429		5530549	\$1984.65		252653 (100%)	104P	2011/Nov/01	2015/Nov/23	99.094792
1020049	1023437		5530551	\$659.47	SPRINGLAKE	252653 (100%)	104P	2013/Jun/03	2015/Nov/23	32.616956

## Table 1 - Claim Status, Cassiar Placer Claims, Canada Rockies International Investment Group



Figure 2 – Location of Cassiar Placer Claims of Canada Rockies International Investment Group. Original scale map included in Appendix A.

## HISTORICAL PLACER EXPLORATION AND PLACER MINING

The discovery in 1873 of rich gold-bearing gravel on Thibert Creek led to the finding of placer gold on Dease Creek in the same year and on McDame Creek in 1874. After a long period of inactivity and small gold production, placer gold was found on Goldpan Creek in 1924. In 1934, gold-bearing quartz veins were found on Quartz Creek at the head of McDame Creek. Interest in the district was renewed by the discovery in 1937 of a 52 ounce 15 dwt. troy (1641 grams) gold nugget on Alice Shea Creek, a tributary of Wheaton Creek, and the discovery in 1930 of rich, shallow pay gravel on the Peacock lease (Wo. 3451, on lower Wheaton Creek). McDame Creek was heavily worked from 1874 to 1949; by 1945, 1994 kilograms (64,117 troy ounces) of gold were recovered (BC Minfile, 2003). Somers Creek (also known as the "First North Fork" of McDame Creek) was worked from 1876 to 1880, yielding 14.24 kilograms (458 troy ounces) of gold.

At the Snowy Creek placer mine, workings from 1874 to 1890 and from 1906 to 1910 produced in total 131.3 kilograms (4222 troy ounces) of gold. Snowy Creek was reported to be the richest placer deposit in the Cassiar district (BC Minfile 2003, Occurrence #104P089).

Throughout the Cassiar region, some of the early boulder piles are still visible, left from hand placer workings by Chinese immigrants after 1885. Much of the bottoms of the valleys have been excavated and sluiced several times since. In recent years, four intermittent placer mining operations have been located in the immediate vicinity of First and Second North Fork Creeks, three in the Snowy Creek drainage and at least two in the Quartzrock (Quartz) Creek drainage. More recent placer gold production records are not available, and no other details are publicly available about these recent mining operations.

## **REGIONAL BEDROCK GEOLOGY**

Figure 3 shows the bedrock geology of the Cassiar area, which was mapped by Gabrielse (1963). Significant revisions or updates were done by Panteleyev and Diakow (1982); Sketchley and Godwin (1986); Harms (1986); and Nelson and Bradford (1993). The Cassiar Placer Claims lie within the NTS map sheet 104P, stretching from the eastern portion of 104P/05, into the western portion of 104P/06. The majority of the claims are within the Sylvester allochthon (Harms, 1984), a large klippe belonging to the Slide Mountain terrane. The easternmost claim group spans the terrane boundary between Slide Mountain in the West and the Cassiar terrane, a miogeoclinal sequence of rocks representing a sliver of displaced continental margin, to the East. The units form complex NW trending, thrust panels throughout the claims. The claims containing rocks of the Slide Mountain terrane overly thrust slivers of the ophiolitic rocks of the Blue Dome Fault Complex, including eclogite and ultramafics of the moderately West dipping Blue Dome Fault Complex, and Division II marine sediments and basaltic volcanics. The portion east of the boundary crosses into the Cassiar terrane and include late Proterozoic to Devonian strata, including limestone (Kechika and Mcdame Group), arenite (Ramhorn and Atan Groups), and fine clastic sediments of the Earn Group.

## **MINFILE OCCURRENCES**

Table 2 lists the local mineral occurrences in the Cassiar area, from the BC Minfile Database. These are also plotted on Figure 3. There are many showings, prospects, developed prospects, producers and past producers in the area. The most common type of mineral occurrences are quartz-gold-sulphide veins, hosted in sheared quartz-carbonate alteration zones within Sylvester Allochthon metabasalt (Panteleyev and Diakow, 1982).

Hardrock mineral occurrences of particular note are the Erickson (Minfile #104P029), Cusac/Table Mountain (Minfile #104P070), Snowy Creek (Minfile #104P014), Wing's Canyon (Minfile #104P015), Taurus (Minfile #104P012), and Nora (Minfile#104P018).

The Erickson underground gold mine began production in late 1978 and was processing 300 tons per day at the end of 1985. Between 1978 and 1988, Erickson Gold Mining Corporation produced 489,780 tonnes of ore grading 15.6 grams per tonne gold and 11.31 grams per tonne silver (includes the Vollaug (Minfile #104P019), Wildcat (Minfile #104P057), and Table Mountain (Minfile #104P070) occurrences.

Producing and past producing placers including McDame Creek (Minfile #104P030), Dennis Creek (#104P031), Poorman's Creek (Minfile #104P087), Quartz Creek (Minfile #104P088), Snowy Creek (Minfile #104P089), and Somer's Creek (Minfile#104P090).

Table 2- BC Minfile Occurrences, Cassiar region	on, in the vicinity of the Canada	a Rockies International Investment	Group placer claims.
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MINFILE NUMBER	MAIN NAME	ALTERNATE NAME	STATUS	LATITUDE N	LONGITUDE W	ELEVATION	COMMODITY 1	COMMODITY 2	DETAILED DESCRIPTION	TERRANE	PRODUCTION	RESOURCES
104P 008	LANG CREEK	VINES	Prospect	59.23306	129.76833	1060	Copper	Zinc	Cyprus massive sulphide Cu (Zn)	Slide Mountain	N	N
104P 009	REO	GEORGE	Prospect	59.2525	129.71833	1040	Gold	Silver		Slide Mountain	Ν	Ν
104P 010	HOPEFULL		Showing	59.26361	129.70583	1050	Gold	Silver		Slide Mountain	Ν	Ν
104P 011	MACK	GLEN HOPE	Prospect	59.27194	129.70583	1060	Gold	Silver	Au-quartz veins	Slide Mountain	Ν	Y
104P 012	TAURUS	CASSIAR	Past Producer	59.27444	129.68944	1150	Gold	Silver	Au-quartz veins	Slide Mountain	Y	Y
104P 013	KLONDIKE FR	TAURUS	Showing	59.26694	129.66917	1130	Gold	Silver		Slide Mountain	Ν	N
104P 014	SNOWY CREEK	LEGGS	Showing	59.2675	129.65417	1130	Gold			Slide Mountain	Ν	Ν
104P 015	WING'S CANYON	RED ROCK	Showing	59.26361	129.69056	1040	Gold	Silver		Slide Mountain	N	N
104P 016	ROCKY RIDGE	VAN	Showing	59.24833	129.66833	975	Gold	Silver		Slide Mountain	Ν	Ν
104P 017	GOLD HILL	САМР	Showing	59.23861	129.6725	975	Gold	Silver		Slide Mountain	N	N
104P 018	NORA	DAVIS	Past Producer	59.24139	129.65722	945	Gold	Silver		Slide Mountain	Y	Ν
104P 020	HASKINS MOUNTAIN	SNOW	Prospect	59.34139	129.49333	1730	Silver	Zinc		Cassiar	Ν	N
104P 021	JOE REED	IRON CAP	Developed	59.29417	129.42667	1370	Silver	Zinc	Polymetallic veins	Cassiar	Ν	Y
104P 029	ERICKSON	JENNIE	Past Producer	59.21694	129.67194	1450	Gold	Silver	Au-quartz veins	Slide Mountain	Y	Y
104P 030	MCDAME CREEK PLACER		Past Producer	59.27472	129.435	780	Gold			Cassiar	Ν	Ν
104P 031	DENNIS CREEK PLACERS		Past Producer	59.34972	129.41833	1050	Gold			Cassiar	Ν	N
104P 038	HASKIN MOUNTAIN SE	JOEM	Developed Prospect	59.33028	129.46833	1500	Zinc	Lead	Pb-Zn skarn	Cassiar	Ν	Y
104P 039	LUNA		Showing	59.32194	129.45167	0	Lead	Zinc		Cassiar	Ν	N
104P 041	LUCKY SHOT	AL	Showing	59.30528	129.56528	1370	Gold	Copper		Slide Mountain	Ν	Ν
104P 042	RAM	APPLEJACK	Prospect	59.24556	129.41417	1390	Copper	Silver		Slide Mountain	Ν	N
104P 043	MOUNT REED	DOME	Prospect	59.3025	129.44333	1400	Molybdenum	Tungsten		Cassiar	Ν	Ν
104P 056	PI	JOAN	Showing	59.30389	129.50722	1200	Molybdenum	Tungsten		Cassiar	Ν	N
104P 058	TIBOR	COBRA	Prospect	59.3275	129.48917	1550	Zinc	Silver		Cassiar	Ν	Ν
104P 059	JOEM	HASKIN MOUNTAIN	Developed Prospect	59.34694	129.51417	1200	Molybdenum	Zinc	Porphyry Mo (Low F-	Cassiar	Ν	Y
104P 063	FOX		Showing	59.23306	129.44333	1340	Copper	Silver	())()	Slide Mountain	Ν	Ν
104P 065	SECOND NORTH FORK		Showing	59.28722	129.45722	0	Silver	Zinc		Cassiar	Ν	N
104P 067	SNOWY CREEK RHODONITE	CASSIAR RHODONITE	Prospect	59.29667	129.6525	1880	Rhodonite	Gemstones	Rhodonite	Slide Mountain	Ν	Ν
104P 070	TABLE MOUNTAIN	CUSAC	Past Producer	59.19556	129.685	1386	Gold	Silver	Au-quartz veins	Slide Mountain	Y	Y
104P 075	ELAN		Showing	59.28028	129.74056	1200	Silver	Gold		Slide Mountain	Ν	Ν
104P 076	BOZO	BERUBE	Showing	59.2775	129.66	0	Gold	Silver		Slide Mountain	N	N

**7 |** Page

MINFILE NUMBER	MAIN NAME	ALTERNATE NAME	STATUS	LATITUDE N	LONGITUDE W	ELEVATION	COMMODITY 1	COMMODITY 2	DETAILED DESCRIPTION	TERRANE	PRODUCTION	RESOURCES
104P 077	PORCUPINE		Showing	59.24417	129.66	950	Gold	Silver		Slide Mountain	Ν	Ν
104P 087	POORMANS CREEK PLACER		Past Producer	59.37472	129.435	1050	Gold			Cassiar	Ν	N
104P 088	QUARTZ CREEK PLACER	QUARTZROCK CREEK	Past Producer	59.27472	129.70167	1050	Gold			Slide Mountain	Ν	Ν
104P 089	SNOWY CREEK PLACER		Past Producer	59.26639	129.64333	990	Gold			Slide Mountain	Ν	N
104P 090	SOMERS CREEK PLACER		Past Producer	59.28306	129.41833	990	Gold			Cassiar	Ν	Ν
104P 096	GOLDBREAK - 27		Showing	59.36639	129.55167	1060	Copper	Silver		Cassiar	Ν	N
104P 110	DOROTHY	GO	Showing	59.24833	129.62306	914	Gold	Silver		Slide Mountain	Ν	Ν
104P 112	BOOMERANG	LYLA	Prospect	59.29056	129.77833	1780	Silver	Gold		Slide Mountain	Ν	N
104P 120	DALZIEL		Showing	59.24444	129.50306	0	Zinc			Cassiar	Ν	Ν

## SURFICIAL AND PLACER GEOLOGY

The Cassiar placer district is dominated by McDame Creek, which lies in a broad, glaciofluvial drift-filled valley which parallels the northeast margin of the Early Cretaceous Cassiar granitic batholith. The underlying rocks are quartzite, argillite and limestone of the Sylvester Allochthon (Mississippian-Permian) which strike east-southeast and dip steeply north. The bedrock source of the placer gold in the region is most likely gold quartz veins (up to 2.5 metres wide) which are found in abundance within the Sylvester Allochthon rocks between Pooley and Quartzrock (Quartz) Creeks.

The boulders in McDame Creek are mainly composed of quartzite, limestone, volcanic breccia and granite. Placer gold was noted to be most abundant in the bottom 1.2 metres of gravel, which occurs as 6 metre thick lenses on top of sand. The total depth of material exceeds 30 metres. While most of the historical placer gold was recovered from the lower bench on the north side of McDame Creek, some of the richest placer ground was reported to be related to a series of northern tributary creeks which cover a stretch of ground from Quartzrock (Quartz) Creek to the old town of Centreville, some 20 km downstream. These tributaries include Snowy Creek, Hot Creek, and First and Second North Fork creeks.

An "old high channel" of McDame Creek has been theorized to be the mechanism for deposition of the placer gold on the high gravel benches north of and parallel to the current course of McDame Creek (Bain, 2012). This would include the upper bench on the Snowy Creek mine owned by Canada Rockies International Investment Corp. Given the surficial geology of the area, this "old high channel" would most likely be a glaciofluvial outwash or ice-marginal meltwater channel.

Carpenter et al. (2013) conducted surficial mapping in the area as part of a previous exploration program for Canada Rockies International Investment Group (Figure 4). This mapping showed that the Cassiar area is dominated by steep mountain topography, and although steep rocky cliffs occur in the highest elevation areas, most valley walls have at least a thin colluvial or glacial sediment cover. Areas above tree line are mainly shallow bedrock with colluvial veneers. Thicker colluvial blankets occur as talus debris below steep rocky slopes. Thin glacial sediments cover most of the lower slopes whereas thick glacial sequences blanket the bottoms of wide valleys not occupied by large streams, as well as the lower slopes of main valleys such as the McDame Creek valley. Glaciofluvial sediments in the area include kame and outwash terraces and eskers. Thick outwash sequences occur in the McDame Lake valley and the lower Troutline Creek valley. A large, elevated glaciofluvial delta occurs in the valley of Troutline Creek. Modern fluvial sediments consist of relatively narrow flood plains and low terraces along the modern streams in the area, and alluvial fans that are present at the confluence of tributary streams and their trunk valleys.





10 | Page



Figure 4 - Surficial Geology of a portion of the Cassiar area, B.C. in the vicinity of the placer tenures of Canada Rockies International Investment Group. Original scale map included in Appendix A.

## **2014 EXPLORATION PROGRAM**

The 2014 exploration program on in the Cassiar claim groups consisted of resistivity geophysics, prospecting, basic surficial mapping and test panning.

## **Resistivity Geophysics**

#### Methodology and Background

The geophysical contractor for 2014 was Kryotek Arctic Innovation Inc. Resistivity was selected as the electrical properties of silt, gravel and schist bedrock are distinct and usually easily definable. A Lippmann 4-point Resistivity System was used, which allowed up to 40 m (130ft.) of depth penetration. The start and end points of each survey line were measured in the field using a Garmin 60CSx GPS. Data was collected and inverted using AGI Earth Imager 2D software. Noisy data points and electrodes with poor contact resistance were removed and data was filtered for spikes or depressions in resistivity. The software produced two-dimensional tomograms using a smoothed, least squares damped and robust inversion parameters. The images were interpreted by James Coates.

#### 2014 Geophysical Program

In September of 2014, thirteen lines of geophysics were conducted in the Cassiar District. The geographic coordinates of the mid-points of each profile are given in Table 3, as well as their respective lengths. The total length of all geophysical surveys conducted in 2014 is 1068.9 m (3507 ft.).

The locations of the profiles are shown on the various maps under each section, as are the resistivity profiles themselves (Figures 5 to 24). Original scale maps are contained in Appendix A.

Line Name	Tenure(s)	Latitude DMS (midpoint)	Longitude DMS (midpoint)	Elevation (m)	Length of Survey (m)
Line CA-B	1023421, 1023419, 1023415	59° 16' 56.862" N	129° 42' 0.096" W	1170	97.87
Line CA-C	1017864, 1023438	59° 19' 3.903" N	129° 42' 27.923" W	1196	97.18
Line CA-D	1017864, 1023438	59° 19' 6.374" N	129° 42' 21.442" W	1225	89.14
Line CA-E	1017864, 1023438	59° 18' 53.470" N	129° 42' 38.446" W	1188	72.53
Line CA-F	1023412	59° 17' 10.722" N	129° 42' 51.553" W	1127	78.22
Line CA-G	1023429	59° 16' 18.068" N	129° 35' 33.845" W	1038	22.35
Line CA-H	1023429	59° 16' 18.508" N	129° 35' 31.263" W	1045	13.94
Line CA-I	1023433	59° 18' 36.561" N	129° 30' 54.654" W	1071	97.16
Line CA-J	1023437	59° 20' 39.409" N	129° 31' 19.232" W	1142	65.01
Line CA-K	1023433	59° 18' 6.881" N	129° 30' 42.692" W	1045	90.54
	337368, 370971, 370973,				
Line CA-L	403595	59° 15' 59.878" N	129° 39' 17.744" W	1121	194.7
Line CA-M	1023412	59° 16' 52.362" N	129° 43' 16.163" W	1221	49.66
Line SC14-A01	337368, 370971, 370973, 403595	59° 15' 59.850" N	129° 39' 15.487" W	1089	100.6

## Table 3 - Geographic Coordinates and Lengths of 2014 Resistivity Geophysical Surveys, Cassiar claims

## **RESISTIVITY PROFILES AND MAPS BY GROUPED TENURES**

## Group 1 - 337368, 370971, 370973, 403595: Lines SC14-A01 and CA-L



Figure 5 - Map view of the Snowy Creek mine showing 2014 resistivity profiles SC14-A01 and CA-L. Original scale map is included in Appendix A.

#### **Discussion of Results**

Figures 6 and 7 show interpreted resistivity profiles for lines SC14-A01 and CA-L, which were conducted on the Snowy Creek mine site (Group 1 tenures 337368, 370971, 370973 and 403595), shown in map view on Figure 5. Both profiles appear to show a distinction between tailings, intact gravel and bedrock. In particular, profile SC14-A01 (Figure 6) shows unmined gravel beneath disturbed ground between stations 1-13; and profile CA-L (Figure 7) appears to show a deep channel on the eastern extent near stations 26 to 28. Bedrock depth varies from outcropping on surface to over 18 metres below.



#### Figure 6 – Interpreted profile of Kryotek Line SC14-A01, plotted in map view on Figure 5. View looking west.



#### Figure 7 – Interpreted profile of Kryotek Line CA-L, plotted in map view on Figure 5. View looking north.



## Group 2 - 1023421, 1023419, 1023415: Line CA-B



#### **Discussion of Results**

Figure 9 shows interpreted resistivity profiles for line CA-B, which was conducted on Group 2 tenures 1023421, 1023419 and 1023415, shown on Figure 8. The profile shows a quartz vein, which was evident on surface in a trench, with the bedrock contact dipping to the south-west. Fluvial sand and gravel layers fill the area adjacent to the current creek course. The IP picks up the quartz vein beneath the gravel and where it outcrops in the trench. This vein is shown by Panteleyev and Diakow (1982) to be an extension of the Zone 4 Elan vein system (Minfile#104P075), which is described as a number of large quartz lenses up to 8 metres wide occupying a shear zone that trends east-westerly over a strike length of 3 kilometres. The presence of this vein gives significant placer gold potential to the downstream gravels draining the quartz vein bedrock.



Figure 9 - Resistivity and IP profiles for Line CA-B, plotted in map view on Figure 8. View looking upstream to the south-east.

#### Group 3 - 1023412: Lines CA-F, CA-M



Figure 10 Map view showing the location of 2014 resistivity profiles CA-F and CA-M. Original scale map is included in Appendix A.

#### **Discussion of Results**

Figures 11 and 12 show interpreted resistivity profiles for lines CA-F and CA-M, which were conducted on Group 3 tenure 1023412, shown on Figure 10. Profile CA-M (Figure 12) shows a quartz vein, which was evident on surface in a trench, and the bedrock contact is seen dipping to the west. Fluvial sand and gravel layers fill the area adjacent to the current creek course, and scattered glacial erratic boulders of a till veneer lie along the adjacent slopes. An IP high picks up the mineralized quartz vein where it outcrops in the trench. This vein is shown by Panteleyev and Diakow (1982) to be an extension of the Zone 4 Elan vein system (Minfile#104P075), which is described as a number of large quartz lenses up to 8 metres wide occupying a shear zone that trends east-westerly over a strike length of 3 kilometres. This vein also appears across the valley at the location of line CA-B. The presence of this vein gives significant placer gold potential to the downstream gravels draining the bedrock, which are evident on the profile for line CA-F (Figure 11). The sediments near profile CA-F include an alluvial\colluvial fan.



Figure 11 - Resistivity profile for Line CA-F, plotted in map view on Figure 10. View looking downstream to the east. This profile is downstream across the same drainage as profile CA-M.



Figure 12 - Resistivity profile for Line CA-M, plotted in map view on Figure 10. View looking upstream to the south. This profile is upstream across the same drainage as profile CA-F.



## Group 4 - 1017864, 1023438: Lines CA-C, CA-D, CA-E

Figure 13 - Map view showing the location of 2014 resistivity profiles CA-C, CA-D and CA-E. Original scale map is included in Appendix A.

#### **Discussion of Results**

Figures 14, 15 and 16 show interpreted resistivity profiles for lines CA-C, CA-D and CA-E, which were conducted on Group 4 tenures 1017864 and 1023438, shown on Figure 13. Profile CA-C appears to show two distinct fluvial channels subparallel to the current stream course with bedrock at depth of around 8 metres, while profile CA-D shows a transition from valley fluvial gravels to colluvium on the slope above the creek left limit. Profile CA-E shows a left limit channel filled with fluvial sand and gravel and bedrock at about 9 metres.



Figure 14 - Resistivity profile and IP response for Line CA-C, plotted in map view on Figure 13. View looking obliquely downstream across the valley.



Figure 15 - Resistivity profile and IP response for Line CA-D, plotted in map view on Figure 13. View looking upstream to the northeast.



Figure 16 - Resistivity profile for Line CA-E, plotted in map view on Figure 13. View is looking upstream to the northeast. The profile clearly shows a channel on the left limit of Quartz Creek, at stations 12 to 19. This is in the vicinity of the tributary creek on the map (Figure 13).



## Group 5 - 1023429: Lines CA-G, CA-H



#### **Discussion of Results**

Figures 18 and 19 show interpreted resistivity profiles for lines CA-G and CA-H, which were conducted on Group 5 tenure 1023429, shown on Figure 17. The area of the surveys is dominated by a veneer of till and scattered boulders; bedrock is exposed nearby and marked by glacial striations which trend northeast-southwest subparallel to the shoreline of the lake. Old hand workings in the form of sorted and piled cobbles are present. Profile CA-G appears to show a channel of sand and gravel dipping inward toward the hill to the south; this is a prospective placer target. This channel also appears on profile CA-H, which also shows placer tailings overlying intact gravels along the lake shoreline. Bedrock is shallow, varying from 1 to 3 metres. There are no BC Minfile occurrences mapped in the immediate area; the nearest are the Snowy Creek (#104P014 vein, #104P089 placer) occurrences a few kilometres to the west.



Figure 18 - Resistivity profile for line CA-G, plotted in map view on Figure 17. View is looking to the northeast.



Figure 19 - Resistivity profile for line CA-H, plotted in map view on Figure 17. View is looking to the northeast.

## Group 6 - 1023433: Lines CA-I, CA-K





#### **Discussion of Results**

Figures 21 and 22 show interpreted resistivity profiles for lines CA-I and CA-K, which were conducted on Group 6 tenure 1023433, shown on Figure 20. BC Minfile #104P056 (PI), a tungsten molybdenum skarn, occurs in the bedrock above both of these lines. Several other base-metal mineral occurrences are in the vicinity hosted in local metasedimentary rocks. The local surficial geology consists of a till veneer cut by more modern alluvial channel and fan material. Profile CA-I shows unconsolidated fluvial material overlying weathered bedrock; a potential channel lies on the right limit of the creek at station 16. Bedrock is approximately 9 metres in depth. Profile CA-K shows fluvial material over an undulating bedrock surface. Bedrock is about 10 metres in depth. Near line CA-K, a pan of the surface unconsolidated material near the road yielded a small gold grain.



Figure 21 - Resistivity profile for line CA-I, plotted in map view on Figure 20. View is looking west.



## **Inverted Resistivity Section**

Figure 22 - Resistivity profile for line CA-K, plotted in map view on Figure 20. View is looking west.

## Group 7 - 1023437: Line CA-J





#### **Discussion of Results**

Figure 24 shows the interpreted resistivity profile and IP response for line CA-J, which was conducted on Group 7 tenure 1023437, shown on Figure 23. The local surficial geology consists of a till veneer or till blanket cut by more recent alluvium.

Profile CA-J shows a transition from dry, unconsolidated material (alluvium and till) to saturated unconsolidated material, over a gently dipping bedrock surface. Bedrock varies from 4 to 7 metres in depth. No distinctive channels or paleochannels were seen on the profile.



Figure 24 - Resistivity profile and IP response for line CA-J, plotted in map view on Figure 23. View is looking east.

## **CONCLUSIONS AND RECOMMENDATIONS**

Placer claims in the region which were originally staked for their placer jade and placer gold potential have low to moderate placer jade potential, and moderate to high placer gold potential.

Overall, the placer jade potential is low because the bedrock geology on the claims does not resemble the bedrock geology at the only jade occurrence in the area, the Cassiar asbestos/jade mine. However, Tenure Group 1 (337368, 370971, 370973 and 403595), Group 2 (1023421, 1023419, 1023415) and Group 3 (1023412) have low to moderate placer jade potential, as they are situated down-ice and downstream from the Cassiar asbestos/jade occurrence, which lies in the headwaters between a right-limit tributary to Quartzrock (Quartz) creek and a left limit tributary to North Troutline Creek. However, no jade boulders were observed on any of the claims during the surveys conducted during this study.

Several areas were identified with moderate to high placer gold prospectivity. The most significant of these is the Snowy Creek claims (Tenure Group 1 - 337368, 370971, 370973 and 403595). This is demonstrated by the previous placer mining history of the property, and the likely presence of unmined placer paleochannels beneath placer tailings, which were confirmed by the resistivity geophysics.

The following recommendations for further work are suggested:

Airphotos of 1:20,000 scale or larger should be acquired for the entire claim area including Quartzrock (Quartz) Creek, Hot Creek and McDame Creek. These airphotos should be interpreted for surficial landforms and a surficial map should be produced of the same scale and quality as the area covered in previous surficial mapping by Carpenter et.al. (2013).

On the Snowy Creek property (Tenure Group 1), a detailed resistivity geophysical survey program should be conducted to identify and delineate potential buried placer paleochannels and unmined gravels on the bedrock contact. This should be followed up by a drilling and bulk sampling program which targets representative gravel units and provides a working estimate of the placer gold grades of the deposit.

On Tenure Groups 2 (1023421, 1023419, 1023415) and 3 (1023412); a follow-up program should include detailed prospecting to target potential occurrences of placer jade boulders, panning any existing gravel exposures for placer gold, and geological mapping. In addition, Tenure Group 2 should be trenched and sampled for placer gold just downstream of line CA-B, while Tenure Group 3 should be trenched and sampled for placer gold just downstream of line CA-M. Potential jade boulders discovered should be sampled with a small portable drill or rock saw and the samples sent for analyses.

On Tenure Groups 4 (1017864, 1023438), and 5 (1023429), follow-up prospecting should be conducted along with a program of drilling and/or bulk testing of paleochannel targets which were identified during the current program. A high priority should be given to the paleochannel identified between lines CA-G and CA-H on Tenure Group 5. On Tenure Group 6 (1023433), follow-up prospecting and resistivity geophysics should be conducted, with particular attention given to the part of the claims overlapping the main valley of Hot Creek. Any paleochannels identified in the main valley should be subsequently drill-tested and/or trenched for placer gold.

Group 7 tenures (1023437) have low placer jade and placer gold potential and therefore no further work is recommended on these claims.

## Statement of Costs, 2014 Placer Exploration Program, Cassiar District

 Table 4 - Statement of Costs, 2014 Placer Exploration Program, Cassiar District.

Exploration Work type	Comment	Days			Totals
Personnel (Name)* / Position	Field Days (list actual days)	Days	Rate	Subtotal*	
William LeBarge / placer consultant	Sept 22 to 26, 2014	5	\$840.00	\$4,200.00	
Jim Coates / geophysical consultant	Sept 22 to 26, 2014	5	\$1050.0	\$5,250.00	
Astrid Grawehr / geophysical consultant	Sept 22 to 26, 2014	5	\$1050.0	\$5,250.00	
				\$14,700.00	\$14,700.00
Office Studies Lis	st Personnel (note - Office only, o	do not	include fie	ld days	
Literature search			\$0.00	\$0.00	
Database compliation Peprocessing of data			\$0.00	\$0.00	
General research			\$0.00 \$0.00	\$0.00	
Report preparation	William LeBarge	4.0	00.00	\$3,360,00	
Report preparation	lim Coates	1.0	\$1050 0	\$1,050,00	
Other (specify)	Sim coutes	1.0	ψ1000.0	\$0.00	
				\$4,410.00	\$4,410.00
Geochemical Surveying	Number of Samples		Rate S	Subtotal	
Drill (cuttings, core, etc.)			\$0.00	\$0.00	
Stream sediment			\$0.00	\$0.00	
Soil	note: This is for assays or		\$0.00	\$0.00	
RUCK	labol atol y costs		\$0.00	\$0.00	
Riogoochomistry			00.0¢	\$0.00	
Whole rock			\$0.00	\$0.00	
Petrology			\$0.00	\$0.00	
Other (specify)			\$0.00	\$0.00	
				\$0.00	\$0.00
Transportation			Rate S	Subtotal	
Airtare			\$0.00	\$0.00	
l axi Truck roptal	2 trucks for E days@\$200aa par da		00.00	00.0¢	
	2 trucks for 5 days@\$500ea per da	у	\$300.00 ¢0.00	\$3000.00	
ATVS Heliconter (bours)			\$0.00 \$0.00	\$0.00 \$0.00	
Helicopter (hours)			\$0.00	\$0.00	
Fuel (litres/hour)			\$0.00	\$0.00	
Fuel (litres/hour)			\$0.00	\$0.00	
Other					
				\$3,000.00	\$3,000.00
Accommodation & Food	Rates per day		<b>*0 00</b>	<b>*•</b> • • • •	
Hotel	2 manuals for Endering Coording Inde		\$0.00	\$0.00	
Camp	3 people for 5 days Cassiar Jade		\$210.00	\$3,150.00	
	Meals Included		\$0.00	\$0.00	\$3.150.00
EquipmentRentals				\$5,150.00	40,200.00
Field Gear (Specify)			\$0.00	\$0.00	
				\$0.00	\$0.00
				Tatal, 621	

Total: \$25,260.00

# Statement of Qualifications – William LeBarge, Geoplacer Exploration Ltd.

I, William LeBarge, of 13 Tigereye Crescent, Whitehorse, Yukon, Canada, DO HEREBY CERTIFY THAT:

- 1. I am a Consulting Geologist with current address at 13 Tigereye Crescent, Whitehorse, Yukon, Canada, Y1A 6G6.
- 2. I am a graduate of the University of Alberta (B.Sc., 1985, Geology) and the University of Calgary (M.Sc., 1993, Geology Sedimentology)
- 3. I am a Practicing Member in Good Standing (#37932) of the Association of Professional Engineers and Geoscientists of British Columbia (APEGBC).
- 4. I have practiced my Profession as a Geologist continuously since 1985.
- 5. The enclosed report is based on my personal observations and interpretation and compilation of other data including that of James Coates, Kryotek Arctic Innovation Inc.

Dated this 24<sup>th</sup> day of February, 2015

William LeBarge, P. Geo.

William Leb Barge

# Statement of Qualifications – James Coates, Kryotek Arctic Innovation

## Inc.

Education

- BSc. Physical Geography. University of Calgary
- MSc. Physical Geography. University of Ottawa
- PhD (incomplete) Civil Engineering. Universite Laval

Geology, Prospecting and Exploration Experience

Yukon Geological Survey

- Bedrock mapping assistant to Project Geologist Maurice Colpron, Livingston area
- Geological assistant to Placer Geologist William LeBarge
- Bostock Core Library technician

Kryotek Arctic Innovation Inc. - President

- 10,000 meter shallow geochemical drilling program conducted in White Gold Area Boulevard Property
- 2,000 meter shallow geochemical drilling program conducted in Stewart Area Henderson Property
- Developed drilling and geophysics techniques and technologies

Dark Side Drilling – Owner/Operator

- Rio Tinto Minerals Exploration/Drilling Contractor, Diavik Mine, Lac deGras NWT
- Geoplacer Exploration Ltd. Exploration/Drilling, Patton Creek, Candace Creek, Nines Creek
- Golden Predator Minerals Exploration/Drilling Contractor, Livingston, Yukon
- K-1 Mining Exploration/Drilling Contractor, 60 Mile River, Yukon
- Western Copper Corporation Drilling Contractor, Casino Minesite
- Casino Mining Corporation Drilling Contractor, Casino Minesite
- XStrata Minerals Drilling Contractor, Hackett River, Nunavut
- DeBeers Diamond Corporation Exploration/Drilling Contractor, Churchill Manitoba
- Sector Resources Canada Geophysics Contractor, Atlin, BC

## Independent Prospecting Experience

Pelly River Placer Properties

- 2008 YMIP grant recipient
- Claims staked and prospected along Pelly River

McQuesten River Placer Properties

Whitehorse Copper Tailings Ponds Gold Property

• 2013 YMIP grant recipient

Atlin Placer Prospecting, Spruce Creek

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**APPENDIX A – LOCATION AND GEOLOGY MAPS** 









129°30'0"W

**475000**<sup>°°</sup>















