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GEOPHYSICAL AND TREN	CHING R	EPORT ON THE
NOVA, LAKE AN	D RAV C	LATMS

HEDLEY AREA, B.C.

OSOYOOS MINING DIVISION

NTS 82E/5W

Latitude: 49<sup>0</sup> 25' N Longitude: 119<sup>0</sup> 55' W

For

CANOVA RESOURCES LTD. 1560 - 701 West Georgia Street Vancouver, B.C. V7Y 1C6

Ву

Les Demczuk, M.Sc., F.G.A.C. J. Campbell Graham, M.Eng., P.Eng. Hi-Tec Resource Management Ltd. 1500 - 609 Granville Street Vancouver, B.C. V7Y 1G5

March 15, 1989



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#### 1.0 SUMMARY

From December 17, 1988 to January 29, 1989, Hi-Tec Resource Management Ltd. conducted an exploration program on the subject property consisting of induced polarization (IP) surveying followed by trenching. The program was conducted on behalf of Canova Resources Ltd.

The property is located in the Hedley area of south central British Columbia, 6 km northeast of the Nickel Plate Mine. The property is accessible by two-wheel drive vehicle along an excellent gravel road from either Penticton or Hedley.

The Hedley area has a history of gold production dating back to the late 1800's, and had the largest gold producer in Canada - the Nickel Plate Mine - in the 1910's. The Nickel Plate reopened in 1987, triggering intensive exploration for similar deposits in the area. The Nickel Plate Mine is developed on large skarn deposits.

Previous exploration work on the subject property has returned encouraging results, including a drill intersection of 3 m of massive skarn mineralization yielding 0.06 oz Au/ton and 0.49 oz Ag/ton. The present exploration program was designed to map the extent of the skarn mineralization and expose it by trenching to allow sampling.

The program was successful in outlining a large IP anomaly in the eastern part of the subject property, roughly 300 m north-south by 800 m east-west. The anomaly is open for extension to both east and west.

i

The drilling referred to above was conducted at the western end of the IP anomaly.

Because of the encouraging drill results and since it was most easily accessible, the western end of the anomaly was selected for trenching. Strongly sulfide mineralized and silicified pelitic-sedimentary rocks were exposed, but sampling returned low precious and base metal values.

Although geochemical results were low, it is felt that further exploration of the subject property is warranted for the following reasons:

1) the IP anomaly remains largely untested, is open for extension, and encouraging precious metal values were obtained from previous drilling at the west end of the anomaly;

2) near-surface precious metal values in the drilling were low: the best intersection was from 71 m to 74 m depth;

3) the mineralization exposed by trenching is similar and possibly related to that of the nearby Nickel Plate Mine;

4) much of the subject property remains unexplored.

A \$125,000 exploration program consisting of a VLF-EM and magnetometer survey followed by trenching and drilling is recommended.



#### 2.0 INTRODUCTION

Pursuant to a request by the directors of Canova Resources Ltd., Hi-Tec Resource Management Ltd. conducted an exploration program consisting of induced polarization (IP) surveying and trenching on the subject property. The purpose of the program was to evaluate the base and precious metal potential of the property. The survey was conducted from December 17, 1988 to January 29, 1989.

This report is based on the results of the present program and on the available literature pertaining to the area.

#### 2.1 Location and Access

The Canova property is situated in the Hedley area of south central British Columbia, some 30 kilometers west of Penticton (Fig. 1). The claims are centered at north latitude 49° 25' and west longitude 119° 55', and are covered by NTS mapsheet 82E/5W.

The property is accessible by highway and gravel road from the city of Penticton or by gravel road from Hedley.



The property consists of sixteen contiguous mineral claims covering about 3.5  $\text{km}^2$  (Fig. 2). The claims are owned by Canova Resources Ltd.

The pertinent claim data is as follows:

<u>Claim Name</u>	Record No.	<u>Units</u>	<u>Expiry Date</u> dd/mm/yr	64
Nova 5	2067	1	01/08/91	V
Nova 6	2068	1	01/08/91	
Nova 7	2069	1	01/08/91	
Nova 8	2070	1	01/08/91	
Nova 9	2071	1	01/08/91	
Nova 10	2072	1	01/08/91	
Nova 11	2073	1	01/08/91	
Nova 12	2074	1	01/08/91	
Roy 1	2065	1	01/08/91	
Roy 2	2066	1	01/08/91	
Lake 1	797	1	30/07/91	
Lake 2	798	1	30/07/91	
Lake 3	799	1	30/07/91	
Lake 4	800	1	30/07/91	
Rick Fr.	2299	1	04/09/90	
Blake Fr.	2298	1	04/09/90	

This report will be filed for assessment credit for the Nova 5-12, Roy 1-2, Lake 1-4, Rick Fr. and Blake Fr. mineral claims. The field work was conducted on the Roy 1 and 2 and the Lake 3 and 4 claims.

## 2.3 History and Previous Work

The Canova property is located in the Hedley district in southern British Columbia. The area has a long history of gold mining.



The majority (95%) of the gold production was from the Nickel Plate and Hedley Mascot mines, which are located approximately 6 km southwest of the subject property. As well, a number of smaller deposits were mined in the area including the French, Goodhope and Canty auriferous skarn deposits (Fig. 3).

Detailed geological studies of the area were conducted by Ray, Dawson, and Simpson (1986, 1987) and summarize the history of the main ore body as follows: "The Nickel Plate and Hedley Mascot mines were largely developed on a single, very large, westerly dipping skarn-related gold deposit. It was discovered in 1898 and mined in several underground operations until 1955; it produced approximately 48 million grams of gold from 3.6 million tonnes of ore. Open-pit production resumed in April 1987 at a rate of 2450 tonnes of ore per day; on November 18, 1987 Mascot Gold Mines Limited reported calculated mineable reserves of 8.9 million tonnes grading 4.56 grams gold per tonne."

The recent reopening of the Nickel Plate mine by Mascot Gold Mines has generated considerable activity in the area, especially in light of the fact that similar geological environments occur throughout the Hedley area.



### LEGEND

#### TERTIARY

	 _
12	В

Basaltic flows

## **EROSIONAL UNCONFORMITY**

## EARLY CRETACEOUS



VERDE CREEK INTRUSION - granite and microgranite



RHYOLITE INTRUSION - quartz porphyry

9

SPENCES BRIDGE GROUP – andesitic to dacitic pyroclastics and flows with minor sediments

## **CONTACT UNCERTAIN**

## EARLY JURASSIC



BROMLEY BATHOLITH AND CAHILL CREEK PLUTON – granodiorite to quartz monzodiorite



HEDLEY INTRUSION – quartz diorite, diorite, and gabbro

## INTRUSIVE CONTACT

## **NICOLA GROUP**

## LATE TRIASSIC



WHISTLE CREEK FORMATION - bedded to massive ash and lapilli tuff, minor tuffaceous siltstone

6a	
 5	

Copperfield Conglomerate – limestone boulder conglomerate

STEMWINDER MOUNTAIN FORMATION (WESTERN FACIES) – thinly bedded argillite and limestone

	4	
-	-	

HEDLEY FORMATION (CENTRAL FACIES) - thinly bedded siltstone, thick limestone beds and minor tuffs



FRENCH MINE FORMATION (EASTERN FACIES) – limestone, limestone breccia and pebble conglomerate



PEACHLAND CREEK FORMATION - basaltic ash tuffs and flows with minor limestone and chert-pebble conglomerate



# PALEOZOIC



APEX MOUNTAIN COMPLEX – ophiolite sequence of cherts, greenstones, siltstones, argillites and minor limestones



The Canova property was originally located by W. MacRae in 1979 to cover copper and iron mineralization exposed in a road cut. The property consisted of the Lake 1 to 4 claims and was owned by Good Hope Resources Ltd., which carried out a small percussion drill program in 1980 to explore the road cut mineralization (Fig. 4). All four holes intersected zones of anomalous gold - up to 410 ppb (0.012 oz/ton) over 3 m.

Canova Resources Ltd. acquired the property in 1983 and optioned it to Placer Development Ltd. Placer conducted a ground geophysical survey in 1985 to locate and delineate an airborne magnetic anomaly as well as a known graphitic VLF anomaly (Cannon, 1985). The survey consisted of 25 km of magnetometer and VLF-EM. The VLF survey detected several strong conductors, one of which corresponded with a known graphitic shear zone. The magnetometer survey revealed two zones of high magnetic relief and also outlined a known skarn zone near the road (Fig. 4).

In 1986, Placer carried out a four hole diamond drill program (535.5 m) to test the geophysical anomalies outlined the previous year (Tennant, 1986). Two of the holes (86-17 and 86-19) tested the skarn mineralization exposed in the road cut.



LEGEND
CONTACT UNCERTAIN
LATE JURASSIC
<b>12</b> OSPREY LAKE BATHOLITH: 12a, pink, equigranular to feldspar porphyritic, quartz monzonite to granite; 12b, marginal phase granodiorite to diorite to mafic gabbro
EARLY JURASSIC
<b>10</b> BROMLEY BATHOLITH: 10a, granodiorite to quartz monzodiorite; 10b, diorite to quartz diorite
<b>9</b> CAHILL CREEK PLUTON: 9a, granodiorite to quartz monzodiorite; 9b, diorite to quartz diorite; 9c, aplite
INTRUSIVE CONTACT
NICOLA GROUP
LATE TRIASSIC
WHISTLE CREEK FORMATION: 7a, andesite ash tuff; 7b, tuffaceous siltstone; 7c, andesite lapilli tuff; 7d, andesite tuff-breccia; 7e, basaltic ash tuff; 7f, thin limestone beds; 7g, argillite; 7h, limestone boulder conglomerate (Copperfield conglomerate)
UNCERTAIN AGE
2a, andesite tuff (possible Whistle Creek Formation); 2b, basaltic tuff (possible Peachland Creek Formation); 2c, limestone, marble and minor chert pebble conglomerate; 2d, limestone conglomerate; 2e, chert pebble conglomerate; 2f, massive garnetite skarn,* (2c, 2d, 2e, and 2f possible French Mine Formation)
CONTACT OCCUPIED BY THE CAHILL CREEK PLUTON
PALEOZOIC AND TRIASSIC
<b>1</b> APEX MOUNTAIN COMPLEX: 1a, siltstone; 1b, argillite, 1c, greenstone; 1d, andesite ash tuff; 1e, limestone and/or marble; 1f, chert; 1g, gabbro; 1h, conglomerate
Mt magnetite
Py pyrite
Po pyrrhotite
Cp chalcopyrite



Skarn development was encountered in holes 86-14 and 86-17. A 3 m section of massive skarn was intersected in hole 86-17 (from 71 to 74 m). Values of 0.06 oz gold/ton and 0.49 oz silver/ton were obtained in the 20% sulphides to were and zones of up zone. Pyrite was the most abundant sulphide encountered. pyrrhotite and trace patchy observed. with chalcopyrite.

Anomalous gold values were also encountered in two other holes: up to 0.15 g/t in hole 86-18 and up to 0.12 g/t in hole 86-14.

#### 3.0 GEOLOGY

## 3.1 Regional Geology and Mineral Deposits

The subject property lies within the Intermontane Belt of the Canadian Cordillera. The major rock units in the area are members of the Late Triassic Nicola Group. Early Jurassic intrusions are fairly common, and are represented in the area by the Bromley Batholith and Cahill Creek Pluton (Fig. 3).

An excellent description of Mascot's gold-skarn deposit is found in Ray et al. (1987) and is excerpted below:

"The gold deposit is hosted within the upper part of the Hedley formation where a zone of garnet-pyroxene skarn alteration, up to 300 meters thick and over 6 square kilometers in area, is developed peripherally to the Toronto stock and swarms of Hedley intrusion dykes and sills. The alteration zone is subcircular in

outcrop shape and westerly dipping, subparallel to, but locally crosscutting the gently dipping host rocks which comprise calcareous and thin-bedded siltstone with some impure limestone. Swarms of Hedley diorite porphyry sills 1 to 15 meters in thickness locally make up to 40 per cent of the skarn interval. In addition, several diorite porphyry dykes have followed west to the fault zones and northwesterly trending mineralization and alteration tends to follow these dykes, forming deep keels of skarn that extend below Skarn development is the main alteration envelope. mostly confined to the Hedley formation, but alteration does extend upwards into the overlying Copperfield conglomerate.

The main episode of skarn development occurred during a period of northerly striking fold deformation shortly after the emplacement of the diorite sills. Most of the sills and dykes within the skarn envelope are bleached The exoskarn is dark green to brown and altered. coloured and typically consists of alternating layers of garnet-rich and clinopyroxene-rich material which reflect the original sedimentary bedding. The concentric mineralogical zoning observed in other small skarn envelopes in the district is not clearly defined at the Nickel Plate mine, probably due to large-scale complex overprinting of the skarn and multiple Garnet-rich skarn is usually found in the alteration. cores of the alteration envelopes but metasomatic overprinting has eliminated most of the initial biotite hornfelsing, resulting in a generally sharp transition from pyroxene skarn to unaltered sediment. This transition represents the economically important line' described by Billingsley and Hume **'**marble (1941) . . . .

The gold-bearing sulphide zones normally form semiconformable, tabular bodies situated less than 100 meters from the outer and lower skarn margin. They are both lithologically and structurally controlled along north-westerly plunging minor folds, fractures and sill-dyke intersections..."

Recent regional mapping by the B.C. Department of Mines, (Ray et al., 1986, 1987) indicates that a large zone of skarn mineralization occurs adjacent to the eastern edge of the subject property on Mt. Riordan (Figs. 3, 4). Although mineralization associated with this skarn is primarily copper and tungsten, Ray considers it to be genetically and spatially related to the gold-bearing Nickel Plate deposits.

### 3.2 Property Geology

The subject property has been mapped at a regional scale by Ray et al. (1987 - Fig. 4), but has not been mapped in detail. Overburden cover on the property is quite extensive, but there are minor exposures of bedrock along road cuts.

According to Ray, the eastern part of the property is underlain by Nicola Group rocks of uncertain age including chert pebble conglomerate and massive garnetite skarn. These units may belong to the French Mine Formation.

Trenching conducted during the present program on the north central part of the property uncovered strongly silicified and highly mineralized (pyrite, pyrrhotite, magnetite) dark grey sedimentary rocks. There are occasional intrusions of narrow quartz diorite and granodiorite dykes.

The western half of the claims is possibly underlain by Whistle Creek Formation rocks.

Minor skarn layers were encountered in drill hole 86-14, indicating that skarn formation has occurred on both halves of the property.

### 4.0 INDUCED POLARIZATION SURVEY

A total of 8.6 km was surveyed by the induced polarization method using a pole-dipole array with a 25 m dipole spacing. The pole was to the north and the dipole to the south. Readings were generally made for four separations, although in a few instances only three separations were possible. The graphitic zone in the north caused erratic readings, and therefore the lines were not surveyed completely in the north.

Instrumentation used was a BRGM IP-2 time domain receiver and a Phoenix IPT-1 transmitter. A 2 second pulse window was used.

The survey grid covers a little less than half the subject property (Fig. 5). The baseline is at 235<sup>0</sup>, with nine crosslines (L0 to L8W) established at 100 m spacing. Stations are every 25 m.





The survey results are presented in pseudosection form in Figures 6-10, and in plan view for n=1 separation in Figures 11 (chargeability) and 12 (resistivity). Anomalies are marked both on the pseudosections and on the plan views.

#### 4.1 Discussion of Results

The IP survey revealed a large anomaly in the eastern part of the subject property, roughly 300 m north-south by 800 m east-west (Figs. 11, 12). The extent of the anomaly almost certainly indicates the extent of sulfide mineralization. The anomaly is open for extension to both east and west. The anomaly was observed on each of the nine grid lines.

Within the anomaly there is a zone of low resistivity, indicating a zone of more massive mineralization or perhaps a fault. In either case, it may indicate a feeder zone, possibly significant with respect to precious metal deposition. The low resistivity zone is also marked by a decrease in chargeability.



Chargeability is high for all four separations, indicating the mineralization extends to a depth of at least 50 m. The earlier drilling intersected sulfides to depths of 100 m.

#### 5.0 TRENCHING

Three trenches were excavated at the west end of the IP anomaly using a Cat 225-type excavator. The trenches were excavated across the width of the anomaly along the western three lines of the grid. The anomaly, as mentioned above, was observed on nine lines spaced 100 m apart.

Trench positions and samples taken are given below:

<u>Trench #</u>	Line	Excavated from	Samples taken
1	800W	340S to 542S	31 (#14651-14681)
2	700W	251S to 400S	19 (#14682-14700)
3	600W	254S to 450S	20 (#14601-14620)

The samples taken were grab and "semi-channel". Sample descriptions are presented in Appendix II.

All samples were analyzed for silver (Ag), arsenic (As), copper (Cu), lead (Pb), zinc (Zn) and tungsten

(W) by I.C.P. and fire assayed for gold (Au). The samples were analyzed by Min-En Laboratories Ltd., 705 West 15th Street, North Vancouver, B.C.

Complete geochemical results are presented in Appendix III. Trench and sample locations are shown on Figs. 13, 14, and 15.

#### 5.1 Discussion of Results

The trenches exposed abundant sulfide mineralization. Samples were generally taken from strongly mineralized and silicified sediment, quartz or shear zones. The metal values obtained were generally low.

The gold values range from 1 ppb to 20 ppb with an average of 4.5 ppb. Silver values range from 0.6 ppm to 1.5 ppm and are generally low. Fourteen samples yielded arsenic values in excess of 25 ppm. The highest value was 133 ppm arsenic (#14666). Two samples yielded weakly anomalous copper values (303 and 335 ppm). The values for lead, zinc and tungsten were found to be consistently low.



- 800 V	Sample Au <u>No. (ppb)</u>	Ag (ppm)	As (mqq)	Cu (ppm)	9b (mqq)	Zn (ppm)	W (mqq)
340 S	14651 4 14652 3 14653 4	.8 1.0 .9	1 15 12	130 188 69	18 17 20	28 28 29	1 3 3
14651 - 350 S	$ \begin{array}{rrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrr$	.8 .9 1.2 .8	13 29 1 21 20	65 20 248 33 77	10 24 18 16 15	29 41 37 35	3 1 2 2
14654 - 14655 - 14656 m	14659 6 14660 8 14661 4	.9 1.1 1.0	20 31 24 7 42	63 68 64 303	11 19 13 15	42 46 34 51	1 2 1
14657	14663 2 14664 12 14665 4 14666 2	.7 1.5 1.4 1.2	16 21 28 133	20 140 151 157	12 28 29 24	17 40 35 34	3 2 3 3
14659	14667 5 14668 4 14669 15 14670 2	.6 .8 .9 1.2	16 3 1 133	44 163 268 157	15 21 11 24	24 38 32 34	2 3 3 3
14660 - 400 S	14671 1 14672 4 14673 6 14674 2	1.0 1.0 .8 .6	15 16 18 4	93 188 166 54 64	22 11 23 16 26	25 42 41 26 35	2 2 2 3
14661 - 14662 -	$ \begin{array}{rrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrr$	.8 1.1 .7 .7 1.1	11 15 8 20	176 211 77 184	23 15 18 18	36 41 25 61	2 4 2 2
14663 - 425 S	14680 1 14681 1	1.2 1.2	12 14	120 214	17 24	<b>41</b> 62	3 1
						1.	
14665					Ø	2	
14666							
14667 - 475 S							
				/			
14670 -		0 1	0 20	30	40	50 metr	es
14671 -							
14672 - 500 S							
14673 -							
14674 - 14675 -		С	ANOV	A RE	SOUR	CES L	TD
14676 - 525 S		NO	/A. LA	KE a	nd RA	Y CL	AIMS
14677-14679						_	
14680-			T	RENC	CH #	1	
- 550 S		ROC	KSA	AMPL	E LC	CAT	ION
		ALC: A	<b>MI-TEC</b> Resource Mai	NAGEMENT LTD.	SCALE: 1:1000 DWN. SV: H.V. CHKD. SV: L. Demczu	N.T.S.( 82E/5 DATE: March/1 PROJECT k 88BC 0	W FIGURE No: 989 No: FILE No: 55

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6.0 CONCLUSIONS AND RECOMMENDATIONS

The subject property is located in the vicinity of the NIckel Plate Mine, which was developed on a very large skarn-related gold deposit. In 1987, the Nickel Plate Mine was successfully reopened as an open pit mining operation.

Previous exploration work on the subject property has returned encouraging results, including a drill intersection of 3 m of massive skarn mineralization yielding 0.06 oz Au/ton and 0.49 oz Ag/ton. The present exploration program was designed to map the extent of the skarn mineralization and expose it by trenching to allow sampling.

The IP survey was successful in outlining a large anomaly in the eastern part of the subject property, roughly 300 m north-south by 800 m east-west. The anomaly is open for extension to both east and west.

Strongly sulfide mineralized and silicified peliticsedimentary rocks were exposed by trenching, but sampling returned low precious and base metal values. However, it is felt that further exploration of the property is warranted for the following reasons:

1) the IP anomaly remains largely untested, is open for extension, and encouraging precious metal values were obtained from previous drilling at the west end of the anomaly;

2) near-surface precious metal values in the drilling were low: the best intersection was from 71 m to 74 m depth;

3) the mineralization exposed by trenching is similar and possibly related to that of the nearby Nickel Plate Mine;

4) much of the subject property remains unexplored.

In order to fully test the mineral potential of the Canova property additional exploration work should be conducted.

The mineralization contains enough pyrrhotite to present a good magnetic response, and enough resistivity contrast to present a good EM response. Therefore, a VLF-EM and magnetometer survey should be conducted over the IP survey grid to determine the



geophysical signature of the mineralization and then the remainder of the property (except where previously covered) should be surveyed.

Targets defined by the VLF-EM and magnetometer survey should be trenched and drilled. As well, the mineralized zone defined by the recent IP survey should be tested by drilling.

The estimated cost of the recommended program is \$125,000. A cost breakdown is given as Appendix I.

Respectfully submitted J. C. GRAHAM

J. C. Graham, M.Eng., P.Eng.Les Demczuk, M.Sc., F.G.A.C.Geophysical EngineerGeologist



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APPENDIX I

ESTIMATED COST OF PROPOSED PROGRAM

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# APPENDIX I

# ESTIMATED COST OF PROPOSED PROGRAM

Project Preparation	\$3,000
Permitting	500
Mob/Demob Geologist and assistant Excavator and operator Drill and crew	2,500 2,000 3,000
Magnetometer and VLF-EM survey, say 20 km @ \$400/km	8,000
Geologist, say 10 days @ \$400/day	4,000
Assistant, say 10 days @ \$250/day	2,500
Domicile, say 20 days @ \$70/day	1,400
Truck rental, say 10 days @ \$120/day	1,200
Trenching, say 100 hrs @ \$70/hr	7,000
Drilling, 2,000' @ \$25/ft	50,000
Analyses say 300 samples @ \$15.75/sample	4,725
Accounting, communication, freight	2,500
Report	7,000
Contingencies, approx. 10%	10,000
Project Management Fee, 15% (not on salaries)	15,424
Estimated_Total_Say	\$124,748 ======== <b>\$125,000</b>

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APPENDIX II

ROCK SAMPLE DESCRIPTIONS

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# APPENDIX II

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# ROCK SAMPLE DESCRIPTIONS

Sample No.	Sample Description
14601	Strongly silicified, fine dark grey to black metasediment with up to 25% sulphide (pyrite, pyrrhotite).
14602	Strongly altered, soft light green tuffaceous rock no visible mineral- ization.
14603	Very dark, black metasediment occa- sionally silicified with up to 15% sulphide.
14604	Light green strongly silicified volcanic tuff with 20-30% pyrite and pyrrhotite.
14605	light grey strongly silicified meta- sediment with 10% sulphide.
14606	Strongly altered decomposed rock greenish-white soft possible intrusive 5-10% sulphide.
14607	Medium to fine grained mafic rich gran- odiorite with 5-7% sulphide.
14608	Dark fine strongly silicified sediment with massive sulphide up to 50%.
14609	Dark grey siliceous sediment, some veinlets epidote, chlorite stringers, trace of magnetite.
14610	Massive sulphide (50-60%) sediment fragments healed with silica.
14611	Oxidized on surface (brown) light grey inside strongly silicified sediment with quartz veinlets up to 30% sulphide.
14612	Dark sediment oxidized patches of sulphide up to 30%.
14613	Black fine sediment, 5% disseminated magnetite, quartz veinlets, strongly silicified.

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14614	Dark siliceous sediment, quartz veinlets, sulphide mineralization up to 20%.
14615	Black fine sediment some "sugary" quartz veins and trace of sulphide.
14616	Black chert, patches and narrow sulphide veins trace of arsenopyrite.
14617	Dark grey sediment occasionally strongly silicified and sulphide mineralization.
14618	Strongly silicified, micro fractured dark sediment up to 20% sulphide.
14619	Light grey sediment, pervasive chlorite occasionally strongly silicified, massive sulphide up to 40%, some arsenopyrite.
14620	Dark fine grained siliceous sediment strongly silicified, up to 20% sulphide.
14651	Dark grey medium grained strongly silicified partly oxidized sediment, 5- 10% pyrite, pyrrhotite mineralization.
14652	Strongly silicified partly oxidized sediment on contact with fine grained intrusive up to 10% sulphide.
14653	Fine grained strongly silicified, quartz-diorite 5-10% pyrite pyrrhotite mineralization.
14654	Dark grey to black very fine grained and strongly silicified argillite, up to 25% sulphide mineralization.
14655	Strongly silicified with chlorite veining intrusive 1-3% sulphide.
14656	Light grey-green strongly silicified sediment pervassive chlorite up to 30% sulphide.
14657	Blackish very fine grained sediment 2-3% sulphide mineralization.
14658	Dark grey to black siliceous sediment some chlorite veining, 1-3% pyrite.

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14659	Dark grey to black siliceous sediment some chlorite veining, 1-3% pyrite.
14660	Dark grey to black, fine grained silicified sediment 2-3% sulphide, occasionally sulphide pockets with up to 30% massive sulphide.
14651	Dark grey silicified sediment up to 30% sulphide.
14662	Dark grey silicified sediment up to 30% sulphide.
14663	Sugary quartz vein - massive no visible mineralization.
14664	Strongly altered and oxidized partly decomposed intrusive.
14665	Strongly altered decomposed (soft) intrusive, no visible mineralization.
14666	Dark grey silicified altered sediment 2- 10% sulphide.
14667	Massive "glassy" quartz up to 3% sulphide.
14668	Strongly altered (soft) metasediment, some quartz veins with 5% sulphide.
14669	Dark grey medium grained siliceous sediment, some chlorite clots, patches of massive sulphide up to 25%.
14670	Rusty on surface, grey inside, silicified sediment with up to 20% sulphide.
14671	Strongly silicified very fine tuff - massive with 10-15% pyrite.
14672	Strongly silicified very fine tuff - massive with 10-15% pyrite.
14673	Mainly dark medium grained strongly silicified sediment, up to 20% sulphides.
14674	Dark siliceous sediment some quartz veins 1-3% sulphide.

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14675	Rusty very altered felsic intrusive (granite) with quartz veins trace of sulphide.
14676	Banded dark sediment, occasionally quartz veining and chlorite patches up to 10% sulphide.
14677	Fine carbonaceous dark siliceous sediment 10-15% sulphide mineralization.
14678	Quartz vein system trace of sulphide.
14679	Shear zone some quartz veining trace of pyrite.
14680	Dark grey fine grained sediment with quartz veining and 2-5% sulphide.
14681	Breccia mostly dark sediment healed by silica, trace of sulphide.
14682	Dark grey-black strongly silicified sediment, some garnet, 10-15% sulphide.
14683	Shear zone, mostly rusty sediment some quartz veins.
14684	Light grey sediment, some chlorite sections partly strongly silicified disseminated sulphide (pyrite, pyrrho- tite and magnetite).
14685	Strongly silicified light green very fine sediment on volcanic tuff some veinlets pyrite and chlorite.
14686	Massive greenish-glassy silica, trace of pyrite.
14687	Shear zone strongly oxidized, fault gouge, no visible mineralization.
14688	Light grey strongly silicified sediment up to 30% sulphide.
14689	Dark brown, slightly greenish siliceous sediment "chlorite eyes", minor carbonate veining up to 20% massive sulphide.
14690	Dark brown, slightly greenish siliceous sediment"chlorite eyes", minor CO <sub>3</sub> veining up to 20% massive sulphide.

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14691	Brown on surface, light grey sheared sediment up to 5% sulphide.
14692	Dark brown siliceous sediment some massive quartz veins disseminated magnetite.
14693	Massive quartz vein on contact with black sediment 25% sulphide, trace of chalcopyrite.
14694	Mostly massive quartz, fragments of dark sediment trace of sulphide.
14695	Strongly silicified very fine sediment, some skarn development, up to 15% sulphide.
14696	Fine grained strongly silicified felsic intrusive, trace of sulphide.
14697	Greenish-grey limy sediment trace of sulphide.
14698	Rusty on surface, strongly silicified mafic intrusive, 3% sulphide.
14699	Strongly silicified tuff some quartz veining 10-15% sulphide.
14700	Generally dark siliceous sediment, some spotty chlorite, 5% pyrite.

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# APPENDIX III

# GEOCHEMICAL RESULTS

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COMPANY: HI-TEC PROJECT NO: 88 B	RESOURCE MAN C 055 C7UV	AGEMENT	705 WEST	MIN-EN LA 15TH ST., NOR (604)880-5814	BS ICP REI	VRI VER, B.C. V7	(ALT:FS17 PAGE ) UF M 1T2 FILE ND: 9/V/0052/R/J/0 • TYPE PORY ECONUM • DATE:01-31-19
IUNINED IN DOM				0047700-3014	TN 10047		+ ITE RULK DEULAEN + DHIETVI-31-17
ALAI	<u></u>		LU 154	15	45	HU-FFD	
14001	1.2	22	134	15	9J L.1	1 1	
14002	, C	27	13 54	17	77	1 1	
14604	1.0	25	196	27	57 29	1 20	
14405	8	23	75	27 R	27 75	7 5	
14606	 8		50		79	1 10	
14407	.0	4 9	55	16	57 77	1 1	
14608	.6	14	65	12	28	1 3	
14609	.8	18	40	9	27	2 5	
14610	.9	7	89	15	37	2 7	
14611	.8	18	152	16	73	1 20	
14612	1.1	21	104	10 5	52	1 20	
14613	1.0	2	71	13	30	1 6	
14614	1.0	1	82	16	54	1 4	
14615	.8	36	35	20	17	1 3	
14616	1.0	. 30	110	12	26	1 2	
14617	.8	5	65	8	31	2 5	
1461B	.8	5	88	13	22	2 10	
14619	1.5	22	335	13	31	28	
14620	.9	16	138	16	29	2 2	
14651	.8	1	130	18	28	1 4	t
14652	1.0	15	188	17	28	3 3	
14653	.9	12	69	20	29	3 4	
14654	.8	13	65	10	34	1 2	
14655	.9	29	20	24	29	3 3	
14656	1.2	1	248	18	41	1 2	
14657	.8	21	33	16	37	2 5	
14658	1.0	20	77	15	35	2 1	
14659	.9	31	63	11	42	1 6	
14660	<u> </u>	24	68		46	2 8	
14661	1.0	/	64 707	13	34 F1	1 4	
14662	1.0	42	303	15	31 47		
14663	./	15	20	12	1/	3 <u>1</u> 3	
14664	1.5	21	140	28	4V 76		
14665	1.4	28	151		33 77		
14666	1.2	133	157	24	39 74	5 Z	
1466/	.6	16	44	13	29 70		
14668	.8	<u>د</u>	163	21	มช 77	J 4 7 15	
14669	.9	1	268	11	3Z 41	2 13	
146/0	8	1/1	243	10	71 		
146/1	1.0	15	400	11	23 47		
146/2	1.0	10	199	11	92 A:	2 1	
146/3	.8	18	100	14	41 76	ζ 0 τ 2	
140/4	•0	10	J7 / 1	10	20 75	J 2 5 7	
140/0			174	20	33 7L		
140/0	1.1	11	1/0	23 15	30 41		
140//	./	17	77	10	71 75	7 L 7 Z	
140/0	• /	0 20	108	19	2J 41	2 3	
140/7	1.1	17	120	17	A1	Z 1	
14000	1 7		214		11 12 12		
11001 11107	1.1	0 17	217 75	10	45	· · · · · · · · · · · · · · · · · · ·	
14002	1.0	17	/ J ØA	7	R1	1 1	
14000	1.0	17	07 151	19	28	· · ·	
14695	0 1.V	1/ 70	1JI 58	13	74	3 1	
14605	1 0		197	15	40		
14687	1.7	41	121 Kh	18	59	1 10	
	4+4	41 K	74A	20	40	2 5	
IAANN			£70		· •		
14688	R	28	59	21	47	1 4	

ROJECT NO: 88 BC C	55		705 WEST	15TH ST.,	NORTH	VANCOUVER,	B.C. V7N	112			FILE NU:	4/4/	0052/8	1110
TJENTION: L.DEMCZL	IK			(604)980-	5814 OR	(604)988-	4524		<b>I</b> TYPE	ROCK	6EOCHEN 1	DAT	E:01-3	1-19
(VALUES IN PPM )	A6	AS	CU	PB	ZN	N	AU-PPB						~	
14691	1.0	15	32	17	37	2	3							
14692	1.2	1	52	9	42	1	2							
14693	.9	10	34	16	53	2	4							
14694	1.2	19	60	13	41	4	5							
14695	.7	17	118	24	46	2	1							
14676	.7	6	38	17	36	3	4							
14697	.8	14	54	18	36	1	1							
14698	.7	7	34	17	41	1	5							
14699	.8	20	64	19	26	2	3						•	
14700	1.1	5	76	19	57	2	1							

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# APPENDIX IV

# STATEMENT OF COSTS

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## STATEMENT OF COSTS

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## CANOVA RESOURCES LTD. LAKE, NOVA CLAIMS, HEDLEY AREA, B.C. PROJECT 89BC055

SALARIES		
Cam Graham, Geophysicist 1 Day @ \$400/day	\$ 400.00	\$
10 Days @ \$400/day	4,000.00	4,400.00
PROJECT EXPENSES		
Project Preparation Mobilization/Demobilization Linecutting (13 days @ \$600/day) IP Survey (10 days @ \$1,500/day) Truck Rental and Fuel (35 days @ \$100/day) Domicile (78 days @ \$80/day) Mobilization/Demobilization (Backhoe) Trenching (63 hours @ \$105/hour) Supervisor Geochemistry 70 RC Camples - Sample preparation	\$ 262.50	2,183.91 3,620.00 7,800.00 15,000.00 3,500.00 6,240.00 828.00 6,615.00 1,200.00
70 Rock Samples 6 Element Trace ICP 70 Rock Samples Geochem - AU Fire	350.00 507.50	1,120.00
Field Supplies Accounting, communication and freight Report Compilation and drafting 15% Project Management Fee		925.00 891.45 6,000.00 7,392.32
Total Cost to date		\$ 67,715.68 =======



# <u>APPENDIX V</u>

# STATEMENTS OF QUALIFICATIONS

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#### STATEMENT OF QUALIFICATIONS

I, Les Demczuk of the City of Vancouver, Province of British Columbia hereby certify that:

1. I am a Mining Geologist/Engineer residing at 1835E-13th Avenue, Vancouver, B.C.

2. I graduated from the University of Mining and Metallurgy, Krakow, Poland in 1977 with a Master of Science degree in Geology.

3. I have worked in mineral and coal exploration since 1977 and have practiced my profession since 1977.

4. I am presently employed with Hi-Tec Resource Management Ltd. of Vancouver, B.C.

5. This report is based on work personally conducted in January, 1989 and on an examination of publicly and privately held literature.

6. That I have no interest in the property described herein, nor in securities of any company associated with the property, nor do I expect to receive any such interest.

7. I consent to the use of this report in or in connection with, a prospectus, or Statement of Material Facts relating to the raising of funds for this project.

SIGNED:

Les Demczuk, M.Sc., F.G.A.C.

Dated at Vancouver, British Columbia, this 1st day of March, 1989.



#### STATEMENT OF QUALIFICATIONS

I, JAMES CAMPBELL GRAHAM of the City of Vancouver, in the Province of British Columbia, hereby certify:

- I am a Geophysical Engineer employed by Hi-Tec Resource Management Ltd. My office is at 1500 - 609 Granville Street, Vancouver, British Columbia, Canada, V7Y 1G5.
- 2. I am a registered Professional Engineer in the Province of British Columbia.
- 3. I graduated in 1982 with a B.Sc. degree and in 1985 with a M.Eng. degree, both in Geophysical Engineering from the Colorado School of Mines in Golden, Colorado.
- 4. I have been involved in numerous mineral exploration programs since 1975.
- 5. This report is based upon field work carried out by myself and a Hi-Tec Resource Management Ltd. crew during January 1989 and a review of published and privately held literature pertaining to the claim area.
- 6. I hold no direct or indirect interest in the property described herein, or in any securities of Canova Resources Ltd. or in any associated companies, nor do I expect to receive any.
- 6. This report may be utilized by Canova Resources Ltd. for inclusion in a Prospectus or Statement of Material Facts.

Signed in Vancouver, BC,

C. GRAHAM NET

J. Campbell Graham, M.Eng., P.Eng. March 15, 1989







LINE 8W			
CHARGEABILITY (Mt msec)			
650S 600S 550S 500S 450S 400S 350S	300S 250S 200S 150S	100S 50S C	N 5
N = 1       14       20       34       36       45       43       33       29       41       37       38         N = 2       17 $\sqrt{9}$ 81 $\sqrt{36}$ 35       41       36       24       33       38       36 $\sqrt{9}$ N = 3       12       2       18       24       26       31       28       38       27       29       28         N = 4       4       10       4       7       14       28       16       29       39       38       24       23       28	$\begin{array}{cccccccccccccccccccccccccccccccccccc$		$ \begin{array}{cccccccccccccccccccccccccccccccccccc$
APPARENT RESISTIVITY (RHO KOhm-m)			
650S 600S 550S 500S 450S 400S 350S	300S 250S 200S 150S	100S 50S 0	IN 51
N = 1       0.2       0.2       0.3       0.4       0.5       0.6       0.4       0.3       0.5       0.7       0.8         N = 2       0.2       0.2       0.3       0.3       0.5       0.7       0.6       0.4       0.6       0.4       0.6       1.0       0.6         N = 3       0.1       0.13       0.3       0.4       0.4       0.6       0.8       0.9       0.6       0.4       0.7       0.5         N = 4       0.1       0.2       0.2       0.3       0.4       0.5       0.7       1.0       1.0       0.7       0.6       0.4       1	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{rrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrr$	0.5 0.5 3 0.5 0.6 0.8 0.7 3 1.0 0.6
			A L B
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LINE 6W
CHARGEABILITY (Mt msec)
1050S 1000S 950S 900S 850S 800S 750S 700S 650S 600S 550S 500S 450S 400
N = 1 $24$ 14       16       17 $24$ 20       15       12       11       11       11       8       6       6       5       6       7       10 $29$ 45       34       31       28       44       33       33         N = 2       12       16       15       11       12       9       9       6       8       6       8       13       92       45       34       31       28       44       33       33         N = 3.       11       21       16       15       11       12       9       9       6       8       6       8       13       92       45       34       31       28       44       33       33         N = 3.       11       21       15       9       19       19       17       14       11       28       9       8       9       8       9       8       9       8       9       8       11       15       14       33       43       32       29       35       28       31       31       33       43       32       -       -       33       43       32
APPARENT RESISTIVITY (RHO KOhm-m)
1050S 1000S 950S 900S 850S 800S 750S 700S 650S 600S 550S 500S 450S 400
N = 1       0.4 0.3 0.3 0.4 0.5 0.5 0.5 0.4 0.4 0.3 0.4 0.3 0.3 0.3 0.2 0.2 0.2 0.2 0.2 0.2 0.2 0.3 0.4 0.2 0.4 0.4 0.4 0.4 0.4 0.4 0.4 0.4 0.4 0.4
LINE 7W
CHARGEABILITY (Mt msec)
950S 900S 850S 800S 750S 700S 650S 600S 550S 500S 450S 400S
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APPARENT RESISTIVITY (RHO KOhm-m)
950S 900S 850S 800S 750S 700S 650S 600S 550S 500S 450S 400S
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LINE 4W
CHARGEABILITY (Mt msec)
1150S 1100S 1050S 1000S 950S 900S 850S 800S 750S 700S 650S 600S 550S 500S
N = 1       27 30 32 31 30 24 15 14 15 22 26 27 28 29 26 19 16 23 26 19 14 8 19 34 59 63         N = 2       30 29 28 90 27 34 21 17 22 23 24 27 25 28 30 17 24 27 19 19 15 21 25 20 66 58         N = 3       26 25 25 27 27 18 15 20 22 23 21 24 22 26 23 21 24 22 26 23 21 20 58 14 22 27 19 19 20 16 23 50 14 22 27 19 19 20 16 23 50 16 16 16 16 16 16 16 16 16 16 16 16 16
APPARENT RESISTIVITY (RHO KOhm-m)
1150S 1100S 1050S 1000S 950S 900S 850S 800S 750S 700S 650S 600S 550S 500S
N = 1       0.4       0.4       0.2       0.3       0.3       0.3       0.4       0.4       0.3       0.5       0.5       0.6       0.7       0.4       0.5       0.3       0.4       0.2       0.3       0.3       0.3       0.3       0.3       0.3       0.4       0.4       0.3       0.5       0.6       0.7       0.4       0.5       0.3       0.4       0.3       0.4       0.3       0.5       0.3       0.5       0.3       0.4       0.3       0.4       0.3       0.5       0.4       0.5       0.7       0.6 <t< td=""></t<>
LINE 5W
CHARGEABILITY (Mt msec)
1150S 1100S 1050S 1000S 950S 900S 850S 800S 750S 700S 650S 600S 550S 500S
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APPARENT RESISTIVITY (RHO KOhm-m)
1150S 1100S 1050S 1000S 950S 900S 850S 800S 750S 700S 650S 600S 550S 500S
N = 1       0.8       0.5       0.5       0.5       0.4       0.4       0.3       0.2       0.2       0.3       0.4 <t< td=""></t<>







