ARIS SUMMARY SHEET

Off Confidential: 89.03.21 District Geologist, Kamloops ASSESSMENT REPORT 17501 MINING DIVISION: Vernon Kurtis **CPROPERTY:** 119 31 00 49 59 00 LONG LOCATION: LAT 319579 11 5539594 UTM 082E13E NTS CLAIM(S): Bluehawk 1 OPERATOR(S): Parkwood Res. AUTHOR(S): REPORT YEAR: Mark, D.G. 1988, 33 Pages COMMODITIES SEARCHED FOR: Gold, Silver GEOLOGICAL SUMMARY: Host rocks on the property are an intrusive melanocratic diorite, and Permian Cache Creek metasediments and volcanics. Gold assays of up to 4.5 ounces per ton are associated with pyrite in north and northwest striking shear hosted quartz veins. Structural geology is complex with several shear directions. Varying degrees of alteration are also present on the property. East-west shearing in southern portion may form part of a possible epithermal system. WORK Geophysical L DONE: 7.1 km IPOL Map(s) - 8; Scale(s) - 1:1000,1:4000 MINFILE: 082ENW002 1

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SUMMARY

IP and resistivity surveys were carried out in two phases during January and early February, 1988 over fourteen lines within the Kurtis property. It is located on the upper reaches of Jennie Creek, which drains eastward into Okanagan Lake, in south central British Columbia.

The main purpose of the IP survey was to locate sulphide mineralization which on this property may occur with gold and silver values. The main purpose of the resistivity survey was to locate epithermal gold veins suspected to occur in the southeastern portion of the property. An additional purpose was to map alteration, geological structure, and lithology.

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The host rocks to the mineralization on the property are a melanocratic diorite, and the Cache Creek metasediments and volcanics it has intruded. Structural geology is complex in the area, with several shear directions and varying degrees of alteration noticed on the property. Assays of gold have reached 4.5 opt on this property, associated with pyrite in northwest and northsouth striking shear-hosted veins. East-west shearing in the southern portion of the property may form part of a possible epithermal system. Gold production, only completed in 1935, was reported at five tons grading 10 opt gold and 3.6 opt silver.

The property is accessible by a two- or four-wheel drive truck with chains in the winter. The terrain varies from gentle on the western side to very steep on the property's eastern edge. Vegetation consists of very light underbrush within moderately populated coniferous trees and stands of aspen.

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The IP and resistivity surveys were conducted using a Huntec receiver operating in the time-domain mode. The array used was the double-dipole with 5-, 15- and 30-metre dipoles read to ten, six and four levels, respectively. A total of fourteen lines were covered with the results being plotted on fifteen pseudosections and contoured.

CONCLUSIONS

- (chargeability) survey revealed several 1. The $\mathbf{I}\mathbf{P}$ strong anomalous zones across the survey area. These zones are very likely reflecting sulphides since (a) some of the individual IP highs can be correlated with known sulphide mineralization, (b) the results are so strong that only sulphides are likely the causative source, (c) graphite could be a cause as well but none has been noted in the Since the gold mineralization on this property area. with sulphides, the IP highs become prime occurs exploration targets.
- 2. The resistivity lows correlating with the IP highs indicate fracturing and alteration occurring with the sulphides and resistivity highs correlating with the IP highs indicate silica and calcite flooding of the sulphide mineral zones.
- 3. The strongest, most prominent zone is that labelled A which has a minimum strike length of 1,040 m and subparallels Jennie Creek striking in an easterly-westerly direction. The zone has good depth extent having a good strength at all levels.

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Zone A is composed of several IP highs that appear to dip northerly for the most part. On a few lines, a southerly dip is indicated. The individual highs each probably reflect a separate causative source such as sulphide zones hopefully containing gold values.

- 4. Several northerly-striking resistivity lows occur within the northern part of the eastern grid and have been labelled B through to H, respectively. The causative sources are probably shear zones as some can be correlated directly with the resistivity lows. Also IP highs correlate with some parts of the resistivity lows indicating structurally controlled sulphide zones that may contain gold. (quartz-pyrite vein within Old Trench 5 correlates with IP high, for example)
- Gold and mercury anomalies correlate directly with zones B,
 C and D making these prime exploration targets.
- 6. The mineralized veins striking nearly northerly, parallel to zones B to H, and showing good gold content could be stringers (known as riedels) striking normal to direction of the main zone.
- 7. Another very prominent feature is the resistivity high/IP low within the northeast corner of the survey area. Geological correlation indicates the causative source to be a diorite or quartz diorite intrusive. Several of the resistivity lows mentioned in (4) strike through this feature.

RECOMMENDATIONS

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The IP and resistivity surveys over a portion of the Kurtis property have encountered very encouraging results that definitely warrant further work. The bulk of this work should be diamond drilling as the geological work and trenching as well as the IP and resistivity surveys have revealed numerous targets. From the geophysics, the suggested targets are:

- the eastern part of anomalous zone A. The individual IP highs dip largely to the north, and therefore the drill hole collars should be to the north of the anomalies;
- 2. the western part of anomalous zone A, especially on line 8+20W. The individual highs dip largely to the north as well, though some dip to the south. The collars should therefore be placed accordingly. One high of special interest is the northern IP high on line 7+10W; and
- 3. the northerly-striking resistivity lows, especially B, C, and D. Correlating and adjacent IP highs are also of interest.

The location of the collars as well as the dip and length of the holes should be determined by both the geologist and geophysicist. As information from the drilling becomes available, these are likely to change.

Trenching would be useful over the western survey area, but it is thought the overburden is too deep. One or two seismic lines would adequately determine the depth of overburden and thus whether trenching could be done.

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Soil sampling is also recommended over the western survey area as none has been previously carried out over this part of the property.

If the drilling proves to be successful, then further IPresistivity work would definitely be warranted. Suggested coverage would probably be:

- to fill in the space between 0+40W and 4+75W with northsouth lines;
- 2. extend anomaly A to the east as well as to the west; and
- carry out further detailing in anomalous areas with 5-meter dipoles.

GEOPHYSICAL REPORT

ON

IP AND RESISTIVITY SURVEYS

OVER A PORTION OF THE

KURTIS PROPERTY

JENNIE CREEK, KELOWNA AREA

VERNON M.D., BRITISH COLUMBIA

INTRODUCTION AND GENERAL REMARKS

This report discusses the instrumentation, theory, field procedure and results of IP and resistivity surveys carried out over a portion of the Kurtis and Bluehawk claims. The property is located over 10 km north of the city of Kelowna, on the west side of Okanagan Lake.

The field work was completed in two phases from January 6th to the 15th and January 27th to February 2nd, 1988 under the supervision of David Mark, geophysicist and under the field supervision of Pat Cruickshank, geophysicist, who also formed part of the field crew. A geophysical technician as well as 1 helper completed the crew of three.

In 1935, there was a recorded production of five tons of 10 opt gold and 3.6 opt silver from discontinuous quartz veins. The gold and silver mineralization is known to occur with sulphides.

The purpose of the IP survey therefore was to locate sulphide mineralization. The purpose of the resistivity survey was to map the mineralized zones either by a resistivity low which would indicate fracturing and/or alteration, or by a resistivity high which would indicate silica and calcite flooding. A secondary purpose was to map geological structure and lithology.

The main purpose of the resistivity surveying south of the main showings was to locate epithermal gold veins by responding to the associated alteration as resistivity lows. Propylitic alteration was noted in this area and thus suggested it could be the halo to an epithermal system.

PROPERTY AND OWNERSHIP

The property consists of two contiguous claims totalling 24 units as shown on Map 2 and as described below:

<u>Name of Claim</u>	<u>No of Units</u>	<u>Record Number</u>	Expiry Date
Kurtis	4	2249	Mar. 20, 1991
Bluehawk #1	20	2389	Nov. 18, 1991

Because the Bluehawk claim overlies 16 units of the Kurtis claim, only four of the Kurtis units will be kept in good standing (the Kurtis claim currently consists of 20 units).

The expiry dates shown takes into account the work described within this report as being accepted for assessment credits.

The claims are wholly owned by Parkwood Resources Ltd. of Vancouver, though the recorded owner is Richard S. Simpson.

LOCATION AND ACCESS

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The Kurtis property is located about 10.5 km north of Kelowna's floating bridge, and on the west side of Okanagan Lake. The property occurs on and around Jennie Lake and Jennie Creek.

The geographical coordinates for the center of the property are 50° 45' north latitude and 119° 31' west longitude.

Access to the property is gained by travelling on Westside road from Kelowna, and then, for seven km, along Bear Lake logging road. An old road is then followed directly to the property. (chains recommended for winter travel).

PHYSIOGRAPHY

The property occurs within the southern part of the Thompson Plateau, a physiographic division of the Interior Plateau System. The terrain is gentle to moderate over the west side of the property but drops off towards the Okanagan valley to the east, producing some very steep slopes. The elevations vary from 550 m within the northeast corner of the property to 1,250 m at the northwestern corner to give an elevation difference of 700 m.

The southern part of the property is mainly drained by the easterly-flowing Jennie Creek, which drains into Okanagan Lake. An easterly-flowing unnamed creek drains the northern part of the property. At the time of the survey, Jennie Lake was dry.

The vegetation consists mainly of lightly- to moderately-dense stands of aspen and pine with light underbrush.

HISTORY

The history of this property is taken from a draft geological report by Taylor.

"The property covers old trenches and underground workings of the Blue Hawk Mine, reported in the B.C. Minister of Mines Report for 1933, 1934, 1935 and 1938. Several quartz veins ranging from narrow fracture fillings to veins four feet thick were explored by the Blue Hawk Syndicate in 1933.

"The only production from the property (1935) was reported at five tons grading 10 opt gold and 3.6 opt silver. The latter apparenty was obtained from the Blue Hawk adit, which consists of about 300 feet of underground workings.

"Since 1965, the mine and surroundings have been held by two separate groups. The first was Dawood Mines, 1965-1980, and the second was fronted by N.C. Leonard, P.Eng., in the period 1980-1986.

"Work done by Dawood Mines consisted of trenching, linecutting and grid preparations; and a magnetometer survey, geological mapping and geochemical soil sampling in 1969, 1972 and 1974. Minor scaling of the main adit walls and roof was also undertaken."

"Leonard's work consisted of further geochemical and geophysical work at various 'sites' and further stripping of veins, as well as some reconnaissance mapping."

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GEOLOGY

The following is quoted from Taylor's draft report:

1. Regional

"The property is on the western border of the Shuswap metamorphic Terrane, a broad region of old sedimentary belts and granitic plutons.

"Near Okanagan Lake, the sediments probably belong to the Cache Creek Group (Permian), and the plutons to large batholiths formed during the Jurassic Cretaceous.

"Gold prospects in quartz veins occur on the west side of Okanagan Lake from Vernon, sparsely south to the Kurtis claim area. Mineralization usually consists of minor amounts of base metals, bismuth-tellurides, pyrite and some free milling gold.

2. Property

"The Kurtis-Blue Hawk property has its main area of economic interest centered within a melanocratic diorite - a diorite plug that has intruded the Cache Creek metasediments and volcanics. The diorite is strongly chloritized in many of the showings and foliation and fracturing is well developed in more than one direction. These factors, along with the multi-directional and most likely phase shearing, and silicification, make distinction between the diorite and the cherts and quartzites of the sediments, often difficult.

"Detailed lithological mapping was not undertaken. A concordant sill-like nature, as previously thought, is likely, though there may be many sills involved. "To the east of the main showings, more obvious sediments and volcanoclastic material outcrop. South of Jennie Creek, a distinctive hornblende biotite granodiorite outcrops on cliffs facing Okanagan Lake. This is probably part of the Jurassic age batholith, which on a regional scale outcrops mainly on the north of the property."

3. Mineralization

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"Quartz veining appears in most trenched areas and is characteristically asociated with rusty shearing; and sinuously pinches and swells parallel and oblique to crosscutting shear planes. Many areas are gossanous, limonitic and manganese stained, giving good colour anomalies.

"Assay and geochemical results show the northwest and north-south striking veins to be the ones carrying the higher gold values. The southwest and east-west shears and zones of silica enrichment have not yielded significant values.

"The 4.529 opt sample from Trench 1 reflects an association with pyrite seen in many of the anomalous samples. The 1.501 opt sample from 'Old Trenches' seems more related to a shear parallel to the veining. Generally speaking however, pyrite mineralization within the quartz veins, in many cases, is associated with auriferous anomalies.

"Old Trench 5 has a relatively high galena content and samples from this trench have yielded anomalous values in gold and silver, with some extreme concentrations of silver, relative to gold."

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Only minor amounts of gold and silver were found in the southeast area, with some copper anomalies.

A strongly calcareous and chloritic alteration pattern in the southeast area containing pyrrhotite and pyrite is apparently a halo region around a massive sulphide zone. This zone in turn envelopes a siliceous pyrite zone of gold- and silver-bearing veins further north, suggesting hydrothermal fluids from a degassing regime were injected into a pre-existing fracture system.

INSTRUMENTATION

The transmitter used for the induced polarization-resistivity surveys was a Model IPT-1, manufactured by Phoenix Geophysics Ltd. of Markham, Ontario. It was powered by a 2.5 kw motorgenerator, Model MG-2, also manufactured by Phoenix.

The receiver used was a model Mark IV manufactured by Huntec ('70) Limited of Scarborough, Ontario. This is state-of-the-art equipment, with software-controlled functions, programmable through the front panel.

The Mark IV system is capable of time domain, frequency domain, and complex resistivity measurements.

THEORY

When a voltage is applied to the ground, electrical current flows, mainly in the electrolyte-filled capillaries within the rock. If the capillaries also contain certain mineral particles that transport current by electrons (most sulphides, some oxides

and graphite), then the ionic charges build up at the particle-electrolyte interface, positive ones where the current enters the particle and negative ones where it leaves. This accumulation of charge creates a voltage that tends to oppose the current flow across the interface. When the current is switched off, the created voltage slowly decreases as the accumulated ions diffuse back into the electrolyte. This type of induced polarization phenomenon is known as electrode polarization.

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A similar effect occurs if clay particles are present in the conducting medium. Charged clay particles attract oppositelycharged ions from the surrounding electrolyte; when the current stops, the ions slowly diffuse back to their equilibrium state. This process is known as membrane polarization and gives rise to induced polarization effects even in the absence of metallic-type conductors.

Most IP surveys are carried out by taking measurements in the "time-domain" or the "frequency-domain".



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Time-domain measurements involve sampling the waveform at intervals after the current is switched off, to derive a dimensionless paramater, the chargeability, "M" which is a measure of the strength of the induced polarization effect. Measurements in the frequency-domain are based on the fact that the resistance produced at the electrolyte-charged particle interface decreases with increasing frequency. The difference between apparent resistivity readings at a high and low frequency is expressed as the percentage frequency effect, "PFE".

The quantity apparent resistivity, ρ_{α} , computed from electrical survey results is only the true earth resistivity in a homogeneous sub-surface. When vertical (and lateral) variations in electrical properties occur, as they always will in the real world, the apparent resistivity will be influenced by the various layers, depending on their depth relative to the electrode spacing. A single reading cannot therefore be attributed to a particular depth.

The ability of the ground to transmit electricity, in the absence of metallic-type conductors, almost completely depends on the volume, nature and content of the pore space. Empirical relationships can be derived linking the formation resistivity to the pore water resistivity, as a function of porosity. Such a formula is Archie's Law, which states (assuming complete saturation) in clean formations:

$$\frac{RO}{RW} = 0^{-2}$$

Where: Ro is formation resistivity Rw is pore water resistivity 0 is porosity

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SURVEY PROCEDURE

The IP and resistivity measurements were taken in the time-domain mode using an 8-second square wave charge cycle (2-seconds positive charge, 2-seconds off, 2-seconds negative charge, 2-seconds off). The delay time used after the charge shuts off was 200 milliseconds and the integration time used was 1,500 milliseconds divided into 10 windows.

The array chosen was the dipole-dipole array shown as follows:

DIPOLE-DIPOLE ARRAY



The dipole length ('a') was chosen to be 15 m for most lines and 30 m for test lines 0+00N (extension) and 7+10W. The 15-m lines were read from one to six levels ('n') and the 30-m lines were read from one to four levels. One line at 0+75N was run with 5-m dipoles and read from one to ten levels to define a quartz vein containing high gold values.

The 15-m dipoles, read to n=6, give a separation of 105 m and a theoretical depth penetration of 50 to 75 m. The 30-m dipoles read to n=4, give a separation of 150 m and a theoretical depth

penetration of 80 to 100 m. The 5-m dipoles give a separation of 55 m, for n=10, and a depth penetration of 20 to 45 m.

The dipole-dipole array was chosen because of its symmetry resulting in a greater reliability in interpretation. Furthermore, narrow, vein-like targets which occur within the area, can be missed by non-symmetrical arrays such as the pole-dipole.

Stainless steel stakes were used for both current electrodes and the potential electrodes.

Readings were taken over fourteen different lines as shown on the survey plan (map 3) to give a total survey length of 7,060 m.

COMPILATION OF DATA

The IP (chargeability) values are read directly from the instrument and no data processing is therefore required prior to plotting. The resistivity values are derived from current and voltage readings taken in the field. These values are combined with the geometrical factor appropriate for the dipole-dipole array to compute the apparent resistivities.

The IP and resistivity surveys were conducted with lines striking in two directions: 70° and 160°, which were drafted in plan form on map #3, at a scale of 1:2,000. To produce each pseudosection, each value is plotted at a point formed from the intersection of a line drawn at 45° from the mid-point of each of the two dipoles. The IP pseudosections have been plotted in a stacked manner for the lines striking 70°, on map #6, and the resistivity pseudosections on map #7. The IP pseudosections for the lines striking 160° have been plotted in a stacked manner on map #8 and the resistivity pseudosections on map #9. The pseudosections for line 0+00N extension, both IP and resistivity, have been plotted on map #10. The pseudosections for line 0+75N, both IP and resistivity have been plotted on map #11.

All pseudosections but line 0+75N were plotted at a scale of 1:1,000. Line 0+75N was plotted at a scale of 1:500 because of its short dipole length. This larger scale makes interpretation easier and more accurate.

The resistivity results were contoured at a linear interval of 100 ohm-metres. The IP (chargeability) results were contoured every 10 msec, with some sections contoured every 5 msec.

In addition to the pseudosection form, IP and resistivity survey results have been plotted and contoured for n=2 on maps 4 and 5, respectively, at a scale of 1:2,000. The plan view of the contoured data was chosen to show at a glance the general trends of the anomalies discussed below. The level n=2 was chosen because some anomalies are not apparent at n=1, and because lower levels would distort the picture too much due to electrode effect. It must be noted, however, that level n=2 is subject to some electrode effect and so the plan view of the anomaly is often offset from the true position of the causative source. It is wider than ideal, and for a narrow, shallow causative source the plan view could show it as a double anomaly. Some anomalies can be seen on the pseudosections to be deeper than n=2, and thus would not be shown on the n=2 contour maps.

DISCUSSION OF RESULTS

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The IP and resistivity surveys were carried out in two phases, with phase one conducted with lines bearing 70°, and phase two

with lines bearing 160°. This grid was designed to delineate possible mineralization in any of the four strike directions noticed in the previous trenching. Because of the many fracture and shear directions recorded on this property, the IP pseudosections have not clearly defined all structures. Intersecting mineralized zones and zones oblique to the survey lines will produce less than ideal contour sections.

IP and resistivity anomalies of exploration interest have been labelled by the capital letters A to H, respectively.

Anomalous zone A is a very prominent feature as shown on map #5. It srikes east-west approximately 1,040 m and is open to the east and west. It is the only feature of significance seen on the north-south pseudosections. The character of the pseudosections suggest that zone A could be caused by several mineralized zones or veins. This zone is primarily an IP anomaly along much of its length. Chargeability highs commonly 70-80 ms reach highs of 92 ms correlating with both resistivity highs and lows. The causative source for these high values is most likely sulphides (graphite has not been seen on this property). Therefore, since gold is sometimes associated with sulphides, these IP highs are prime exploration targets. Such high IP values suggest that this system is most likely not a normal epithermal system, but possibly a low-acid epithermal, or a higher temperature mesothermal system.

A good topographic correlation is the manner in which zone A subparallels, and is proximally north of, Jennie Creek, suggesting a structural control. This attitude agrees strongly with the noted attitude of the shear planes measured in trenches 10 and 11, as well as the Eastern Trench nearby. The chloritic clay alteration noticed in the Eastern Trench could represent a halo of this system. The north-south pseudosections on the eastern part of the grid mapped a general northern dip, while further west the dips are slightly more ambiguous on both the IP and resistivity pseudosections. The apparent dip directions have been sketched in over the anomalies as straight lines (it must be noted that the great line separation in most cases made line-to-line anomaly correlations difficult). The resistivity lows represent either fracturing or alteration asociated with the mineralization. The resistivity highs associated with IP highs most likely represent calcite and/or silica flooding of fractures. Such a probability exists on line 8+20W, where two IP highs correlate directly with resistivity highs, and a third IP high on the top part, north side, correlates with a resistivity high.

Further east, line 7+10W was tested using 30-metre dipoles, which sacrifice definition for depth and speed of operation over 15metre dipoles. This survey line has produced an IP anomalous zone (map #9) which suggests two systems dipping southward. The resistivity anomalous zone, however, suggests a northerly dip, and is more likely the correct interpretation. Across the rest of the western portion of the grid, there is no correlation standard between IP and resistivity anomalies, although the apparent dip is northward. A resistivity high on this side strikes clearly in a westerly direction towards Jennie Lake, and coincides with a local IP low. This is a similar characteristic to the IP results over trench 1, where high gold values were found. This could indicate a lightly altered or unaltered diorite striking alongside a shear zone hosting sulphides, with perhaps some quartz-bearing veins.

Along its length, IP anomalous zone A widens and narrows, with line 0+40W showing a wide zone with several anomalies apparently dipping southward. This characteristic could be due to one or more structures striking in a northerly direction, such as that

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producing anomaly C. The IP/resistiviy correlation here is not as clear as most of the other lines on the property. A fluctuating resistivity high anomaly below 0+40N could be the pantleg effect of either a pinching and swelling, quartz/calcite-flooded vein or a narrow diorite intrusion. The dip here is ambiguous, as the IP suggests a southward dip and the resistivity suggests a northward dip.

By lines 1+40E and 2+20E, the entire IP anomalous zone correlates strongly with the resistivity low zone. IP and resistivity anomalies show close, but no direct, correlation with a strongly suggested northward dip. The northern portions of these lines show good correlation between IP lows and iregular resistivity highs, indicating less-altered, highly fractured diorites. Minor resistivity and IP anomalies in the northern portion suggest the presence of minor sulphides. From the information of the eastwest lines, this zone could be striking nearly northward, and obliquely to line 1+40E and 2+20E.

The lack of any lines between 0+40W and 4+75W leave only speculation on the location of anomaly A between them, though the apparent association with Jennie Creek is a guide. Although Jennie Creek was easily identified at 0+40W, the westernmost lines were surveyed across much more gentle snow-covered terrain, hindering absolute location of the creek.

The IP response for anomaly A is strong at all levels on the surveys, indicating very good depth extent across the entire grid.

Looking at the contoured grid map at the n=2 level for both the IP and resistivity surveys (maps 4 and 5, respectively), one of the most prominent features is the resistivity high/IP low occurring within the northeast corner of the survey grid area. From

geological mapping completed in the area, this feature is caused by diorite or quartz diorite. The geophysics would suggest that the southern extent of the intrusive is 0+50S at the eastern edge, and approximately 0+80W along the northern corner, being open to both the north and east. Around the edge of this intrusive there exist several resistivity highs which could indicate 'satellites' of the main body.

North of anomaly A and striking northerly through and west of the intrusive are at least seven resistivity lows. Since some of these have been mapped in the field as shear zones, therefore it would appear likely that the rest are also caused by shear zones. These have all been labelled by the upper case letters B to H, respectively.

According to discussion with Peter Dasler, the geologist in charge of exploration on the property, gold and mercury anomalies correlate with anomalies B, C and D. This would indicate these are prime exploration targets for gold mineralization. Within the diorite intrusive, an IP high of low amplitude correlates directly with resistivity anomaly D.

Care must be exercised in comparing the plan contour maps with the pseudosections. The pseudosections within the diorite body have indicated many narrow structures, but the plan map contours have merged some of these narrow structures. This effect is largely due to the northerly bias of the grid, which is a function of the dipole spacings versus line separations. The plan contours do, however, show the general trends of the shear zones. Shear zones striking approximately westerly are suspected of shifting the mineralized shear zones westward as they strike northerly. This effect could contribute to both the apparent strike directions of the main zones, and the complex pseudosection contours.

<u>Anomalous zone B</u> is a wide IP high/resistivity low zone striking at least 200 metres on the west side of lines 1+50N to 0+50S, as it is open to the north and south. The resistivity lows apparently dip westerly and no general rule of association can be seen between the IP and resistivity, as the resistivity lows correlate in places with IP highs and lows. Favourable correlation may be seen between the IP highs of zone B and the quartz-pyrite vein exposed within Old Trench 5. It is possible that pyritization occurs in a wide zone about Old Trench 5, and this pyritization could be the part of the halo around the diorite.

Anomaly C is a mainly resistivity anomaly, which is strongly indicated to dip westerly. This anomaly clearly strikes from 0+50S to 0+50N and appears to have shifted westward on line 1+00N. For the most part, there is little direct correlation between the resistivity lows and IP highs; some IP highs do, however, occur adjacent to anomaly C. Anomaly C appears further east on line 0+50S as a result of shearing or changing strike direction. The wide resistivity low and complex IP section of 1+00S indicate that there could be an intersection nearby of two or more fracture systems, and at oblique angles. Another plausible explanation is that 1+00S runs proximally and obliquely to a structure trending approximately east-west, which is most likely anomaly A. The character of anomaly C and anomalous zone B suggest that anomaly C could in fact be a part of zone B, occurring on zone B's eastern fringe.

<u>Anomaly D</u> appears to dip easterly from line 1+50N to 0+50N with moderate IP highs and resistivity lows. As this anomaly strikes southward, it appears to break up and weaken, perhaps due to cross-cut shearing or fracturing. The causative source of this anomaly is most likely sulphides, and could be related to the steeply easterly-dipping systems exposed in the trenches dug in February, 1980, at lines 0+75N and approximately 1+00N.

Anomalies E, F and G are all resistivity lows and have the same orientation as anomaly D. They show consistent separation from one pseudosection to the next. These anomalies show little correlation with IP highs, but rather with some moderate lows, indicating the causative sources to be mainly geological structure or unmineralized alteration zones. Southward from line 1+50N, the system of anomalies D to G seem to strike southeast, until all but anomaly D has totally disappeared by line 0+50S.

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<u>Anomaly H</u> is a westerly-dipping resistivity low, most likely caused by a shear which cuts across anomalies D and E at 0+00 and 0+50N. This anomaly correlates with an IP high only on line 0+50N, where it crosses E indicating cross-structure which therefore may be mineralized with sulphides, (as represented by the IP high).

The resistivity and IP contoured grid maps have indicated anomalies B to H as linear trends striking nearly southeast and thus these could represent structural zones striking off a main zone at right angles. Anomaly A could be this main zone, as the evidence compiled so far suggests.

Line 0+00N was extended to the west with 30-m dipoles to beyond Jennie Lake, to test for northerly-trending sulphide zones west of the main mineralized zone. The results of this IP/resistivity survey showed wide IP and resistivity anomalies, indicating that line 0+00N was sub-parallelling a sulphide zone as it swelled and bent in a roughly westerly direction. Northerly-striking lines were therefore placed across this line and determined that line 0+00N was indeed sub-parallelling an anomalous zone that was labelled A within this report as discussed above.

The high-grade sample from trench 1, showing association with pyrite within a quartz vein, warranted further investigation, and so one IP/resistivity survey line was run across the trench. This test line of 5-m dipoles was run at 0+75N between 0+00 and 1+25E and produced clear resistivity results. These results are compared with the trench data obtained by Brian Callaghan, who was the geologist mapping the property.

The resistivity section exposed three parallel resistivity lows indicating the vein trend to dip westerly. Dips measured at the target vein in trench 1 at 0+66E and at a second vein at 0+43E showed an approximate 70° westerly dip, agreeing with the dip direction for the resistivity lows. The middle resistivity anomaly correlates with the vein of trench 1 and could represent the presence of sulphide and/or chloritization within the diorite. The width of this low zone could be due to the quartzcarbonate vein at 0+58E cross-cutting the trench 1 vein and attracting sulphides. A local moderate IP high coincides with this zone, supporting this possibility, and a small IP high zone at depth indicates the presence of sulphides within this system. Very good correlations may be drawn between the sequence of high resistivity versus low resistivity at 50E - 55E and, respectively, the sequence of lightly altered diorite with calcite versus friable diorite with clay. The alternating sequence of low resistivity/high resistivity, westerly dipping anomalies probably low resistivity sulphide zones overlying the represents the quartz veins. A contradiction to this on the resistivity pseudosection is the existence of two quartz carbonate vein expressions at 52E and 58E. These two veins could be Riedels which are offshoots of, and crosscut, the main vein systems.

The wide resistivity anomaly dipping westward at the eastern end of this line could represent a wide shear zone. This conclusion is supported by the surface expression of a topographic low.

In general, IP pseudosection 0+75N shows unclear correlation with the resistivity anomalies, and in fact indicates a possible easterly dip with increasing sulphides at depth. This characteristic could be due to the multiple crosscutting shear zones mapped across the property.

Respectfully submitted, GEOTRONICS SURVEYS LTD.

Dayi¢ G. Mark,

Geophysicist

February 29, 1988

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Patrick Crúickshank, Geophysicist

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GEOPHYSICIST'S CERTIFICATE

I, M.A. PATRICK CRUICKSHANK, of the City of Vancouver, in the Province of British Columbia, do hereby certify:

That I am a consulting geophysicist of Geotronics Surveys Ltd., with offices located at 530-800 West Pender Street, Vancouver, British Columbia.

I further certify:

- I am a graduate of the University of British Columbia (1986) and hold a B.A.Sc. degree in Geophysics Engineering.
- I have been practising my profession for over one year.
- 3. I am registered with the British Columbia Association of Professional Engineers as an Engineer-in-Training, in geophysics.
- 4. This report is compiled from data obtained from induced polarization and resistivity surveys carried out by a crew of Geotronics Surveys Ltd., under my field supervision and under the supervision of David G. Mark, geophysicist, from January 6th to 15th and January 27th to February 2nd, 1988.
- 5. I hold five thousand (5,000) flow-through shares in Parkwood Resources, but I will not receive any interest as a result of writing this report.

Patrick Cruickshank Geophysicist

February 29, 1988 43/G414

GEOPHYSICIST'S CERTIFICATE

I, DAVID G. MARK, of the City of Vancouver, in the Province of British Columbia, do hereby certify:

That I am a Consulting Geophysicist of Geotronics Surveys Ltd., with offices located at #530-800 West Pender Street, Vancouver, British Columbia.

I further certify:

- 1. That I am a graduate of the University of British Columbia (1968) and hold a B.Sc. degree in Geophysics.
- 2. I have been practising my profession for the past 20 years and have been active in the mining industry for the past 23 years.
- 3. This report is compiled from data obtained from induced polarization and resistivity surveys carried out by a crew of Geotronics Surveys Ltd., under the supervision of myself and under the field supervision of Pat Cruickshank, geophysicist, from January 6th to 15th and January 27th to February 2nd, 1988.
- 4. I hold thirty-two thousand (32,000) flow-through shares in Parkwood Resources, but I will not receive any interest as a result of writing this report.

David G. Mark Géophysicist

February 29, 1988 43/G414 23

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AFFIDAVIT OF EXPENSES

IP and resistivity surveys were carried out over A portion of the Kurtis and Bluehawk claims from January 6th to 15th and January 27th to February 2nd, 1988 in the Kelowna area, Vernon Mining Division, British Columbia to the value of the following

FIELD:

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Mob-demob, at cost	\$ 1,129
3-man crew, 16.5 days @ \$1,300/day	21,450
Senior geophysicist, 1 day @ \$400/day	400
Senior geophysicist, travel expenses	311
	\$23,290

OFFICE:

Junior geophysicist, 100 hours @ \$30/hour	\$ 3,000
Senior geophysicist, 15 hours @ \$45/hour	675
Geophysical technician, 33 hours @ \$25/hour	825
Drafting and printing	2,800
Typing, photocopying and compilation	300

GRAND TOTAL

\$30,890

\$ 7,600

Respectfully submitted, GEOTRONICS SURVEYS LTD.

David G. Mark, Geophysicist Manager

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SURVEY PARAMETERS

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<u>SURVEY PARAMETERS</u>

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To accompany geophysical report by David G. Mark and Pat Cruickshank , Geophysicists, dated Feb. ,1988
GEOTRONICS SURVEYS LTD.
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KURTIS PROJECT JENNIE CREEK, KELOWNA AREA
VERNON MINING DIVISION, B.C.
APPARENT RESISTIVITY
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DATA AND CONTOURS DRAWN BY DATE T C & PC Feb., 1988 B7-34 1.4000 B2E / 13E 5













