Copy # 2

GEOCHEMICAL SURVEY OF
TREN #3 & #4 MINERAL
CLAIMS
La France Creek
Nelson Mining District

October 11, 1977

Copies: Mr. R.G. Trenaman
Dept. of Mines & Petroleum Resources (2)
File

TABLE OF CONTENTS

GEOCHEMICAL SURVEY OF TREN #3 and #4 MINERAL CLAIM
LA FRANCE CREEK, NELSON MINING DISTRICT

This report describes the geochemical sampling technique used and discusses the results obtained on two of the four claims, the Tren #3 and #4. The survey was recommended by the writer as a suitable technique to pinpoint suitable areas for more intensive exploration.

The report was requested by the claim owner, Mr. R.G. Trenaman of 4399 Eagle Nest Crescent, Prince George, B.C., to be used in partial fulfillment of assessment requirements on the Tren group of claims.

The field work and soil analysis were carried out between August 1 and September 1, 1977.

LOCATION AND TOPOGRAPHY

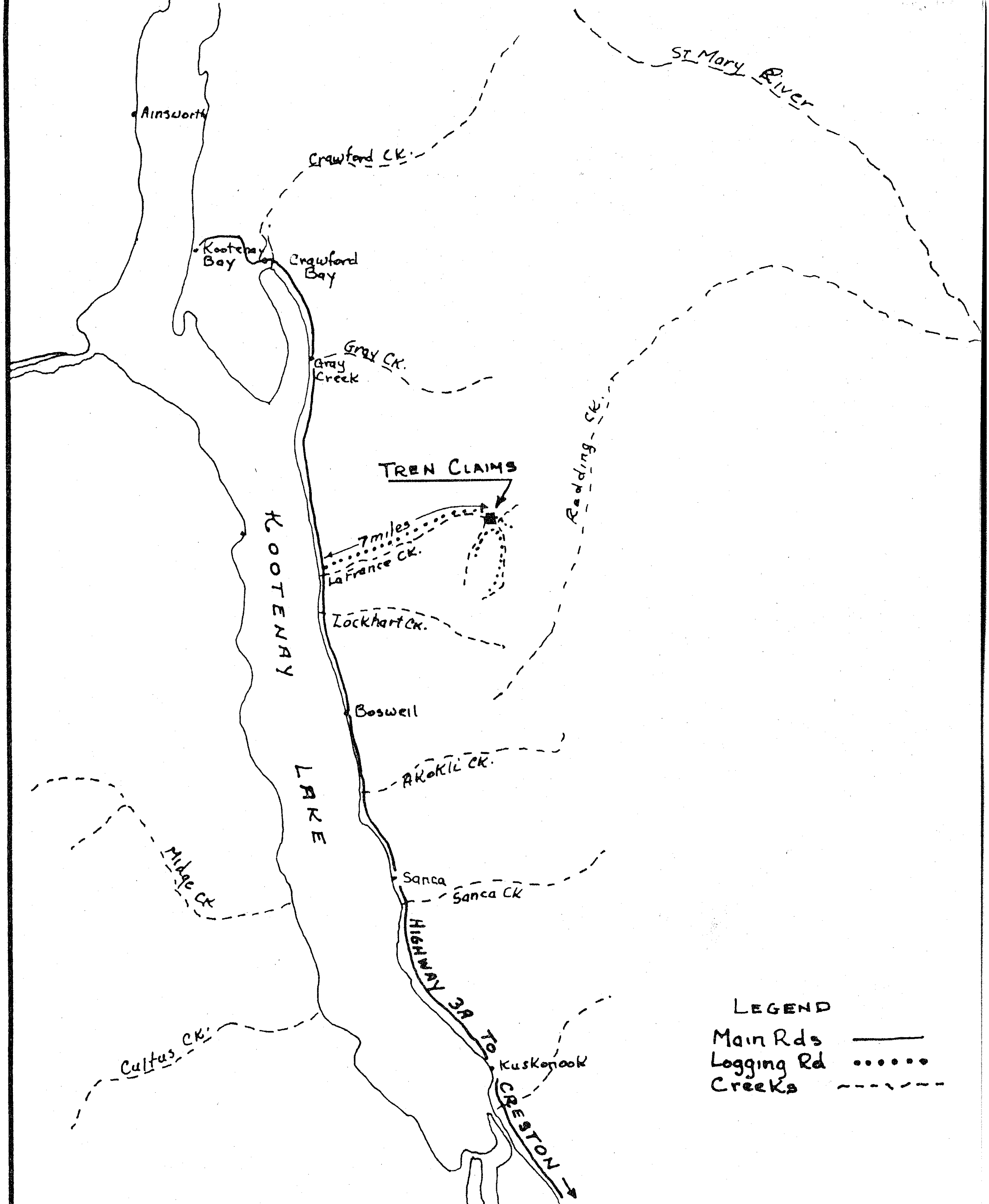
The Tren Group of four claims straddle La France Creek, extending up both the North and South slopes of the main valley at a distance approximately seven miles east of Kootenay Lake (see attached index map). Access to the claim group is by a reasonably well graded logging road which passes through the center of the claim area. Much of the land encompassed by the claim boundaries has been logged within the last seven years and logging main and skid roads provide easy access to all but the northern sections of the claims.

The claim area north of La France Creek slopes upward at approximately 35°. The plant cover on this part of the claims (except for the area logged) consists, to a large extent, of a dense cover of youthful hemlock, fir and western cedar. Less extensive is a dense mat of tag alders and buckbrush.

The claim area south of the creek rises more gently (approximately 20°) and prior to logging was forested by over mature cedar, hemlock and spruce. Much of this area has been logged but remnant patches of less economic wood still exists.

GENERAL GEOLOGY

Although most of the claim area for 800 feet north and south of La France Creek



Title: INDEX MAP FOR TREN CLAIMS, LA FRANCE CK			Block No. NELSON M.D.	Plate No.:
Drawn by:	Signed R.T. Trenaman	Date Oct./77	Scale: 1" = 4 miles ~~feet~~	Drawing No. S
Checked by:			Refer Drawing Nos.:	
Approved:				Section

1003

is covered by a heavy blanket of glacial till and slide debris a good idea of the stratigraphy and composition of the underlying rocks may be determined by extrapolating data obtained on the higher slopes to north and south. The rocks underlying the claim area are north trending, generally vertically dipping sediments of the Kitchener-Siyeh (Lower Purcell age) and Dutch Creek formations of upper Purcell age.

The upper beds of the Kitchener-Siyeh which underlay the east half of the Tren #2 and #4 claims, consist of light grey quartzites in beds up to 12 inches thick, alternating with thin laminated sandy argillites, and limy quartzites. Certain of these latter beds exhibit a striking color pattern of browns, buffs and creams. At least three interbedded grey green sills(tuffs?) up to 40 feet thick occur in the portion of the formation covered by the claims. This is the most westerly that these sills were observed. Based on the criteria developed by S.J. Schofield and followed by Walker, Rice and other investigators, this establishes the upper limits of the Kitchener-Siyeh and base of the Dutch Creek formation.

Overlying the above described sequence apparently conformably to the west is a series of limy quartzites, light colored shales, limestones and cream colored dolomites. Few beds exceed 6 inches in thickness, with the exception of an occasional bed of massive cream colored dolomite which might reach 2 feet. The maximum measured thickness of this series is 300 feet. It is suspected that intertongues to black shale reduce the thickness along strike. A distinctive breccia structure is characteristic of certain limy members of this series and is thought to reflect collapse features. These beds are assumed to be the basal strata of the Upper Purcell-Dutch Creek formation.

A massive series of blue-grey and black shales overlie the predominately limy strata described above. On the ridge north of La France Creek this series has a measured thickness of 1300 feet. Closer to La France Creek, it appears somewhat thinner, and contains interbedded limestones. Thin light colored lime partings characterize certain sections of the sequence and slatey cleavage has been well developed at other locations.

The basal memb ers of the Mount Nelson formation lie near the west edge of the claim area. Most rock exposures in the claim area reflect the effects of major stress. Tight chevron folds are well developed in the shaley beds supporting the suspicion that local thickening has taken place. Regional stresses have provided crenulated folds in most rocks exposed. The axis of these folds dips gently to the north. Most rocks have undergone medium grade metamorphism. Shales have been altered to phyllites, and clay components in limy rocks have been upgraded to mica.

The basal limy members of the Dutch Creek formation in the La France Creek area and for some distance N&S have been the subject of mineral exploration dating back to the 1890's. Minor disseminations of galena, sphalerite, tetrahedrite and pyrite have been observed and tested by test pits and other methods at various places for a distance of up to 8 miles along strike. Such mineralization is almost invariably hosted by or associated with limy members.

A number of old test pits and trenches were located within the claim area while conducting the geochemical survey.

THE GEOCHEMICAL SURVEY

General

The primary aim when considering a preliminary exploration technique for this group of claims was to choose a method which would point up exploration targets under conditions of medium overburden with a minimum of expense. Geological reconnaissance of the adjacent areas provided a reasonable idea of the location of favorable limy strata within the claim area. Either geochemical or geophysical techniques offered promise; a geochemical survey was chosen on the basis of cheaper cost.

Grid and Geochemical Method

Favorable limestone beds in the claim area strike generally north-south and dip approximately vertically. The minerals which occur in the area are galena, tetrahedrite and minor sphalerite. Weighing these factors it was decided to run the grid east-west at 200 ft. spacing. Samples would be taken at 100 foot intervals along grid lines in areas where limestone beds were anticipated; otherwise, at 200 ft. intervals. Follow up samples would be taken at 50 foot intervals to bracket anomolous areas. The claim location line of the claims, since it ran north-south, was chosen as base line.

A total metal cold extractable dithozone geochemical method of analysis was chosen. The sampling technique is described in Appendix A. The field analysis procedure for the cold extractable method is included as Appendix B.

SURVEY DATA

A parallel objective during the collection of soil samples was to collect information for the development of a suitable map of the claim area which could be used for displaying geochemical information, and possibly subsequent geological or geophysical information.

Information for the construction of a 200 ft. to the inch map using tape and Brunton data was collected during the running of the survey. This data formed the basis of the map on which geochemical results are shown. Contour and other tie-in data was transposed from the 1:50,000 Dept. of Energy, Mines and Resources Series, Crawford Bay Sheet 1974, supplemented by Aneroid altimeter readings taken at selected points.

TREATMENT OF GEOCHEMICAL RESULTS

Approximately 400 samples collected and analysed during the summer of 1975 in the claim area were treated in the following manner to point out truly anomalous values. As a starting point, the results were studied to establish the most common background value ("Median"), and an estimation of the standard deviation of other results from the median. Values greater than five times the median were omitted from the calculation of standard deviation, as these results are obviously unusually high in the context of the data and not typical of background. The actual calculation is shown in the following table:

	(a) ml Dithizone Total Heavy Metals	(b) No. of Samples	(c) Deviation from (Median)	(bxc)
*	3	149	0	0
	5	79	4	316
	10	32	49	1570
	15	31	149	4470
	20	10)(291)		
	25	11)		
	30	3)		
	36	12)		
	40	4)		
	45	4)		
	50	2) omitted from		
	55	3) calculation		
	60	9)		
	65	2)		
	70	2)		
	75	7)		
	80	2)		
	85	4)		
	90	0)		
	95	0)		
	100	11)		
+	100	8)		
		385		

Sum 6356 for 291 results

$(\text{Standard Deviation})^2 = \frac{\text{Sum}}{n-1}$

$= 6356/n-1 = 6356/290 = 22$

$\therefore$ 1 standard deviation =

$\sqrt{22} = 4.4$ or 5 to nearest 5 ml

Threshold estimated at median + 2 standard deviations = 3 + (2x5) = 13 ml

Anomalous values $\therefore$ 20 ml or more

* (1) Median clearly 3 ml

(2) Median x 5 = 15 therefore all results greater than 15 are omitted from calc.

(3) Standard deviation estimated to be 5 ml

(4) Threshold est. at median +(2 x standard dev.) = 3 + (2x5) = 13 ml

(5) Anomalous values = 2o ml+

This calculation provided the data that all results greater than 20 ml could be considered anomalous, a value which was considered valid for determining anomalous readings for the samples treated on the Tren #3 and #4 claims during 1977.

PRESENTATION OF GEOCHEMICAL DATA

Sample grid lines along with sample locations were plotted on the 200 scale (see pocket at back of report.) Total metal values (in millilitres of dithozone) based on cold extractable analysis technique were plotted to the right of sample location. Symbols, representing the nature of samples and location with respect to drainage, were plotted next to the values.

The following symbols were used to identify sample composition:

N - normal soil
S - sand
X - fine sand or silt
C - clay
G - gravel
H - organic
T - sample collected from active drainage area

A large, followed by a small letter denotes a sample composed mainly of the first letter named with subordinate quantities of the second name; e.g. N^G - normal soil with subordinate gravel.

On the basis of the plotting of the survey results, follow up samples were collected with the intention of bracketting anomalous values. The results of such subsequent samples were plotted and helped appreciably in defining the actual extent of anomalous areas. As a final step anomalous areas were contoured.

DISCUSSION OF SURVEY RESULTS - TREN #3 and #4 CLAIMS

1. Background Considerations

As discussed under the section on Geology, the basal limy members of the Dutch Creek formation may be seen in outcrop only on the higher slopes north and south of La France Creek.

Within the claim area the only exposures occur near the northern boundary of the Tren #2 claim. To the north of the claim these limy members may be mapped in a number of locations either in the walls, or bed of the south flowing creek identified on the map as No. 2 Fork North. In fact, because of their preferential susceptibility to erosion, No. 2 Fork follows closely the surface exposure of one or more of these limy members for a distance approaching 7000 ft. down the north wall of La France Creek valley. Based on these observations and limestone debris detected occasionally in the overburden, the approximate bedrock position of a number of the limy members within the claim area may be established with a reasonable degree of certainty. Knowing the location of the limy members within the claim area assists the interpretation of survey results significantly.

2. Another factor to be alert to when evaluating the survey results is the possibility of anomalous readings resulting from mineralized material transported from other locations. Certainly, #2 Fork in the past has been a slide channel of significant importance, as the sizable fan structure adjacent to La France Creek attests to. At the same time, mineral occurrences are known to occur on the northern slopes of La France Creek. Without doubt, some of this mineralization would, during erosion, find its way into the No. 2 Fork drainage channel and become part of the slide material.

3. It must be pointed out, when evaluating survey results that two aspects of the results are very important, namely (1) the magnitude of anomalous values, (2) the areal extent of the anomaly.

It is a fair statement to make that when overburden is not excessive, insignificant mineral occurrences may produce spectacular anomalies due to drainage restrictions and other factors, but certainly large mineral occurrences will not go undetected.

Comments on Specific Results

Now, turning to the survey results obtained on the Tren #3 and #4 claims, in the light of the comments made above, the following conclusions may be drawn. (Refer to drawing in pocket for lettered anomalies referred to below).

Dealing first with an overview of the results obtained on the Tren #3 and #4 claims, the following points may be drawn:

(a) The conclusions drawn from the results obtained on the Tren #2 claim; namely, that areas underlain by Kitchener-Siyeh, or upper Dutch Creek shales offer no promise for follow up exploration work, were further confirmed by the survey results on the Tren #3 and #4 claims.

(b) Based on this survey, the sampling method provides consistently reproducible results.

(c) The geochemical anomalies outlined, although larger than on the adjacent Tren #2 claim, are relatively small. They are not indicative of significant nearby base metal mineralization. Notwithstanding this statement, anomalies identified F & G extend the anomalous trend established over the Tren #2 claim to the south, and consequently, some follow up is warranted.

Within the area under consideration three anomalous areas are worthy of further study. These have been identified on the plan (back pocket) with the letters F, G and H.

Anomaly F, although perhaps the most spectacular, is confined mainly to a general north easterly trending drainage area. Overburden depth is unknown, but is suspected to range between 5 and 15 feet. Experience indicates that such drainage areas tend to concentrate metallic ions, perhaps in excess of three times. On the other hand, the anomaly is on the southerly extension of the trend established across the Tren #2 claim. Weighing these factors, a logical conclusion to draw is that we are seeing a halo from a metal source some distance up slope, outside the boundaries of the claim.

Anomaly G, although considerably smaller in dimensions than F, occurs in an area free from active drainage. Overburden cover is judged to be somewhat less extensive - perhaps 3 to 8 feet. Thus it could offer a search target at least as attractive as the Anomaly at F.

Anomaly H, occurs west of a relatively thick sequence of vertically dipping, north-south trending blue-grey shales, which may be viewed in the area of the Initial Posts of the Tren #3 and #4 claims. The anomaly is suspected to overlay a limy sequence. As with anomaly F, this anomaly is confined to a generally north trending active drainage area. Again the questions may be asked (1) how much of the anomaly may be attributed to the active drainage?, and (2) is the anomaly displaced from the bedrock metal occurrences? In this instance samples collected along Line D west would suggest that the main source of metal causing the anomaly lies north of this line. Keeping in mind the concentrating effect of the active drainage, we are probably looking at a metal source in the area of Line C west.

RECOMMENDATIONS

The survey results on the Tren #3 and #4 claims support those recommendations made with respect to the Tren #2 claim; namely that a limited program of trenching to expose bedrock is warranted. With respect to the Tren #3 and #4 claims, this trenching would

(a) Provide a clearer picture of the attitude and width of the underlying limy beds which are felt to hose the mineral occurrences, and

(b) Provide an opportunity to sample the metal values of the bedrock occurrences.

Specifically, trenching is recommended as follows:

1. Anomaly F - along Line C East between 350 ft. and 550 ft. - 200 ft. of trenching to bedrock.
2. Anomaly G - along Line B East between 100 ft. and 250 ft. - 150 ft. of trenching to bedrock.
3. Anomaly H - along Line C West between 250 ft. and 400 ft. - 150 ft. of trenching to bedrock.

The estimated cost of this work is $3,000.

APPENDIX A

Soil Sampling Procedure

Samples were collected at designated locations along grid lines by taking a scoop full of material from the B(2) or C horizons (where possible) and placing in 3 1/2 x 9 1/2 inch Kraft paper bags. The various soil horizons were first exposed by cutting an opening with a grub hoe. In actual practice, it was often impossible, due to the nature of the material (glacial till and slide debris) to collect samples from these more ideal horizons. Information on the location, nature of the sample (where it varied from ideal), moisture content, proximity to drainage areas and direction, as well as information on nearby geological features, were noted on the sample bag for later reference.

APPENDIX B

ANALYSIS PROCEDURE - TOTAL METAL COLD EXTRACTABLE METHOD

(Field Kit designed by Bondor-Clegg and Co. Ltd., Vancouver)

The following procedure was adhered to in analyzing samples collected in the Tren Group of claims:

1. Samples were dried for twelve hours at 200°F.
2. A suitable portion of sample was screened with 80 mesh stainless steel sieve. The oversize from screening was returned to the Kraft sample bag, the undersized was now ready for treatment to determine metal content adhering to procedures outlined below:

   (a) General Notes on Method

   This method of geochemical prospecting is based on the premise that some of the metal in a sample of soil or stream sediment is loosely attached to the surfaces of the mineral grains or organic materials. This absorbed or "loosely bonded" metal, which may amount to as much as 20% of the total metal in the sample, may be removed by leaching the sample with a dilute solution of ammonium citrate, or even water. The heavy metal thus removed is then determined by reacting it with dithizone to form a colored product. The color produced is a measure of the metal content of the sample.

   Because the method is designed for speed and ease of use in the field, samples are not weighed but are measured with a small scoop. A scoopful of the sample is placed in the analysis tube and the ammonium citrate buffer solution is added. The function of the buffer solution is to dissolve the "loosely bonded" metal referred to above, and to maintain the acidity of the sample solution at a pH of 8.5, the point at which the dithizone reacts most rapidly and completely with the greatest number of metals. The dithizone-benzine solution is then added to the tube, the tube is corked, and then shaken. The benzene layer is allowed to separate and is observed for a color change which may range from the original bright green to red, through the sequence, green, blue-green, blue, blue-purple, purple and finally red. Any color other than green is an indication of the presence of metal. Additional amounts of the dithizone-benzene solution are added with shaking until a standard color, or end point, usually a blue or grey-blue, is reached. The amount of dithizone required to reach this point is then a measure of the cold extractable heavy-metal content of the sample.

(b) Analytical Procedure

Preparation of Working Solutions

1. Dithizone Solution (0.001% M/V)
   Place one dithizone vial into the graduated squeeze bottle. Add benzene to the 100 ml mark, cap, and allow to soak for about 10 mins; then shake for at least one minute. When squeeze bottle is empty, the vial may be removed with a gentle, rolling action.

   Note: (1) BENZENE is FLAMMABLE. Benzene fumes are noxious; always carry out tests where there is abundant ventilation.

   (2) Avoid prolonged exposure of dithizone vials and solutions to heat or sunlight.
2. Buffer Solution - pH 8.5
   Ready for use. Transfer to second graduated squeeze bottle for use in the field.

Analysis

1. Fill large scoop (0.5 gm) with sample. Transfer to the 25 ml graduated test tube.
2. Add buffer solution up to the 5 ml mark.
3. Add 1 ml of 0.001% dithizone solution, stopper the tube and shake vigorously for 30 seconds. (If running the copper test with buffer specific for copper, pH 2.0 (see notes) shake for at least one minute, as the wine-brown copper color develops slowly).
4. Allow phases to separate by holding the tube at 45° and slowly revolving the tube until the color of the dithizone layer can be observed.
5. If color is the original green, record as 0. If blue-green or grey-blue, record as 1. Test is finished.
6. If dithizone layer is blue, purple, or red, add dithizone in successive increments of 2,4 and 8 mls, shaking for 10 seconds and observing the

color each time, until a blue-grey end point color is obtained. Record the total volume of dithizone added to reach the blue-grey end point as an index of the cold extractable heavy-metal content.

7. If after the addition of 15 mls of dithizone, the solution still remains red, purple or blue, repeat steps 1-5 using the small scoop (0.1 gm). Multifply the final volume of dithizone by 5 to obtain the comparable index value for cold extractable heavy-metals. If red, purple or blue persists after adding 10 mls of dithizone to the 0.1 gm sample, simply record as 50+.

PRECAUTIONS

1. Each day before attempting to analyze samples, run a blank determination (steps 2-6). Repeat until the dithizone layer is green. Failure to produce a green color with 1 ml of dithizone indicates contamination of the equipment or reagents. Always keep spare laboratory sealed reagents on hand.
2. Periodically through the day, carry out a blank determination as a check for possible contamination.
3. Always keep dithizone solutions away from direct sunlight and heat. Dithizone solutions must be prepared fresh daily.
4. Keep the cork used in the analysis tube from becoming contaminated. Never touch the lower part of the cork with the fingers and at no time should a finger be used to cover the tube in place of a cork.
5. At the end of each determination, when the grey-blue end point has been reached, the tube and cork are free of metal and require no further cleaning. The contents of the tube are shaken and emptied, and the next determination can be started. If however, the determination is terminated at the blue, purple or red color, the tube must be thoroughly rinsed with de-ionized water and a blank check carried out. This blank check must be repeated until a green color remains after shaking.

REMARKS

1. In the presence of high copper, the dithizone layer may give an orange-brown color, particularly after addition of the first increment (1 ml) of dithizone. This color makes the test specific for copper and "copper-brown" should be recorded. In some instances, organic samples will also give a brownish cast to the dithizone layer in the first increment. A true copper-brown will result in a high final result and more dithizone should

be added. The organic effect will normally be observed on samples with low cold extractable metal values (5).

2. In some samples, the amount of metal determined will depend on the length of time the tube is shaken. For this reason, it is important the amount of shaking be constant for all determinations, so that results will be comparable.
3. When working in areas where the metal values are consistently low, or where the contrast between background and anomalous values are low, it is advisable to use the smaller 10 ml graduated analysis tube and to add dithizone in constant increments of 1 ml.
4. A similar test which is specific for copper can be performed using the same equipment, procedure and reagents (except for the buffer) as are employed for the T-400 Total Heavy Metlas Kit. When running the copper test, with specific copper buffer (pH 2.0), a shaking time of one minute is required, as the copper reaction is slower than the THM reaction using the THM (pH 8.5) buffer.
5. When ordering chemical, specify exactly what you want, including pH of the Buffer. Chemicals may be ordered separately.

APPENDIX C

DETAILS OF INDIVIDUAL SAMPLES OBTAINED ON THE TREN #3 CLAIM

SAMPLE LOCATION				TOTAL METAL - COLD EXTRACTABLE
GRIDLINE	FOOTAGE	RELATED INFORMATION	SOIL DESIGNATION	ml DITHIZONE
A WEST	0	Loam with phyllitic gravel	N^G	7
	100	Reddish brown loam. Road 35' South	N	3
	150	Gravely in phyllite boulders. Road 50' SE	N^G	4
	200	Loam	N	3
	250	Yellow loam with quartzite pebbles	N^G	3
	300	Reddish brownloam	N	5
	350	Blue clay & humus - edge of drainage	C^HT	7
	400	Very moist humus & clay - in drainage	C^HT	45
	450	Gravely red loam. Moist-active drain @ 425W	N^G	3
	500	Gravel (phyllite & qtzite) in loam	G^N	15
	550	Humus with clay - Moist drainage at 525'W	H^CT	75
	600	Cat disturbed reddish brown loam	N	4
	700	Rust red loam	N	7
	900	Humus & "A" Horizon in shaley rocks	H^G	15
	1100	Loam in phyllite fill. Road 55'S	N^G	15
	1300	Very rocky loam. S.side of road	N^G	8
	1500	Yellow brown loam. Road 60'N	N^G	5
B WEST	0	Clay & loam over shale. Roadside	C	3
	50	Loam	N	7
	150	Sandy loam	N^S	5
	225	Humus - Roadside drainage	HT	45
	275	Humus in drainage 40' north of Road	HT	15
	325	Humus. 60' N of road	HT	100
	390	Humus & loam 80' N of road	N^HT	35
	440	Humus - side of stream	HT	105
	500	Humus & shale with contained pyrite	H^G	3
	550	Reddish loam with shale. 60'N of road	N^G	3

APPENDIX C

DETAILS OF INDIVIDUAL SAMPLES OBTAINED ON THE TREN #3 CLAIM

SAMPLE LOCATION GRIDLINE	FOOTAGE	RELATED INFORMATION	SOIL DESIGNATION	TOTAL METAL - COLD EXTRACTABLE ml DITHIZONE
A WEST	0	Loam with phyllitic gravel	N^{G}	7
	100	Reddish brown loam. Road 35' South	N	3
	150	Gravely in phyllite boulders. Road 50' SE	N^{G}	4
	200	Loam	N	3
	250	Yellow loam with quartzite pebbles	N^{G}	3
	300	Reddish brownloam	N	5
	350	Blue clay & humus - edge of drainage	$C^{H}T$	7
	400	Very moist humus & clay - in drainage	$C^{H}T$	45
	450	Gravely red loam. Moist-active drain @ 425W	N^{G}	3
	500	Gravel (phyllite & qtzite) in loam	G^{N}	15
	550	Humus with clay - Moist drainage at 525'W	$H^{C}T$	75
	600	Cat disturbed reddish brown loam	N	4
	700	Rust red loam	N	7
	900	Humus & "A" Horizon in shaley rocks	H^{G}	15
	1100	Loam in phyllite fill. Road 55'S	N^{G}	15
	1300	Very rocky loam. S.side of road	N^{G}	8
	1500	Yellow brown loam. Road 60'N	N^{G}	5
B WEST	0	Clay & loam over shale. Roadside	C	3
	50	Loam	N	7
	150	Sandy loam	N^{S}	5
	225	Humus - Roadside drainage	HT	45
	275	Humus in drainage 40' north of Road	HT	15
	325	Humus. 60' N of road	HT	100
	390	Humus & loam 80' N of road	$N^{H}T$	35
	440	Humus - side of stream	HT	105
	500	Humus & shale with contained pyrite	H^{G}	3
	550	Reddish loam with shale. 60'N of road	N^{G}	3

SAMPLE LOCATION GRIDLINE	FOOTAGE	RELATED INFORMATION	SOIL DESIGNATION	TOTAL METAL - COLD EXTRACTABLE ml DITHIZONE
B WEST				
(cont'd)	660	Gravel & shale	G	3
	760	Loam with shale 50' south of road	N^G	7
	880	Loam & gravel 80' south of road	N^G	3
	1000	Seritic shale & "A" Horizon	G	3
	1100	Loam with shale	N^G	3
	1220	Shaley loam with some qtzite. pebbles 60' S of road	N^G	3
	1340	Loam	N	7
	1450	Shaley loam	N^G	1
	1560	Shaley loam	N^G	3
	1690	Loam in phyllite shale	N^G	3
C WEST	0	Sandy loam	NS	3
	80	Moist humic loam	N^HT	7
	150	Humus - in drainage	HT	25
	190	Loam - some phyllite	N	15
	250	Loam with humus - good drainage	N^HT	15
	300	Loam	NT	80
	350	Clay & loam. Edge of drainage. Roadside	N^CT	35
	400	Loam with some humus. Edge of drainage	N^HT	7
	450	Loam - Qtz. pebbles	N^G	8
	500	Phyllitic loam	N^G	7
	550	Phyllitic loam	N^G	15
	600	Loam	N	15
	640	Loam	N	3
	690	Loam - shaley float	N^G	15
	800	Shaley loam	N^G	7
	900	Loam with phyllite & qtzitic gravel	N^G	1
	1000	Sericitic loam	N	3
	1100	Loam with phyllite & qtzitic gravel	N^G	3
	1200	"A" horizon	N	4
	1300	Phyllitic loam	N^G	7
	1400	Loam -phyllitic near o/c. Cat disturbed	N^G	1
	1500	Loam - very shaley (phyllitic)	N^G	3
	1590	Shaley Loam	N^G	1
	1690	Gravely loam	N^G	7

SAMPLE LOCATION GRIDLINE	FOOTAGE	RELATED INFORMATION	SOIL DESIGNATION	TOTAL METAL - COLD EXTRACTABLE ml DITHIZONE
D WEST	200	Red brown loam & reddish phyllite	N^G	8
	250	Loam with some humus...toe of hill	N^H	10
	300	Reddish brown loam - toe of hill	N	15
	350	(Clay and loam - cat disturbed. Some (gravel - qtzitic & phyllitite..toe of hill	C^N	7
	400	Loam with qtzitic gravel - on hillside	N^G	7
	450	Reddish loam on hillside	N	3
	500	Yellow brown loam and clay. Some phyllitic gravel	C^N	7
	550	Red gravely loam	N^G	7
	600	Loam and humus. Near u/g drainage	$N^H T$	3
	650	Loam with humus. Next to old trenches	N^H	10
	700	Rusty phyllitic loam. Area of trenches	G^N	10
	900	Red brown loam and qtzitic gravel - small bench	N^G	2
	1100	Mainly "A" horizon with gravel. Numerous old trenches between 900 and 1100 West	N^G	3
	1300		N^G	2
	1500	"A" Horizon and loam in shaley phyllite gravel	N^G	4
E WEST	1100	"A" Horizon and loam in qtzite and phyllite gravel	N^G	2
	1300	Loam and "A" Horizon from between phyllite talus	N	3
	1500	Brown loam in qtzite and phyllite gravel	N^G	2
F. WEST	1100	"A" Horizon and light brown loam in limy phyllite fill	N	3
	1300	Dark brown sandy loam in phyllite boulders	N^S	5
	1500	Sandy light brown loam in blue grey phyllite talus	N^S	5

SAMPLE LOCATION GRIDLINE	SAMPLE LOCATION FOOTAGE	RELATED INFORMATION	SOIL DESIGNATION	TOTAL METAL - COLD EXTRACTABLE ml DITHIZONE
G WEST	1050	Light brown loam and gravel in fill slope	N[G]	3
	1250	"A" Horizon from between shale boulders	N	5
	1450	Light brown loam in phyllite debres	N	4
H WEST	1050	Mainly "A" Horizon between boulders on rock face	N	6
	1250	"A" Horizon and loam in phyllite talus	N	4
	1450	"A" Horizon and light brown loam in shaley till	N	4

DETAILS OF INDIVIDUAL SAMPLES OBTAINED ON TREN #4 CLAIM

SAMPLE LOCATION GRIDLINE	SAMPLE LOCATION FOOTAGE	RELATED INFORMATION	SOIL DESIGNATION	TOTAL METAL - COLD EXTRACTABLE ml DITHIZONE
AA EAST	150	Dark red loam. Road centreline @ AA + 90'E	N	4
	200	Reddish grey shaley loam and phyllitic gravel	N^G	4
	250	Clay, gravel & loam. Top side of road	N^C	5
	300	Loam and "A" horizon. Lst. fragments 55' south of creek	N	10
	350	Chocolate brown loam from bank 50' south of La France Creek	N	7
	400	Sandy loam. Maybe La France overflow or drainage from N 25' north of creek	$N^S T$	5
	450	Gravel and sand. 50' north of La France Creek. Maybe drinage from north of creek overflow	$X^G T$	3
B EAST	50	Loam and Gravel - cat disturbed	N^G	3
	100	Clay and shaley gravel. Cat disturbed road 10' north	C^G	3
	175	Sandy silt. Gravely. Cat disturbed	X^G	75
	240	Loam - next to drainage	NT	15
	300	Loam - 10' north of road	N	7
	350	Moist clay - south side of road	CT	25
	420	Loam 20' North of road	N	7
	480	Loam - 50' south of La France creek	N	3
	540	Sandy gravel. 40' south of creek	S^G	15
	600	Sandy creek bottom. Some humus. 30' south of La France Creek	ST	35
	700	Sandy gravel. side of La France Creek. 50'W of bridge	$S^G T$	15
	820	Sand and humus 30'N of La France creek. 20' south of cabin	$H^S T$	3
	940	"A" Horizon and loam - with boulders	N^G	3

TREN #4 CLAIM

SAMPLE LOCATION GRIDLINE	FOOTAGE	RELATED INFORMATION	SOIL DESIGNATION	TOTAL METAL - COLD EXTRACTABLE ml DITHIZONE
B EAST (cont'd)	1050	Loam. Side of road at creek from north. Cat disturbed	NT	3
	1170	Loam 20' north of road	N	3
	1400	Loam	N	3
	1500	Loam over gravel till	N^G	1
	1610	Loam and gravel	N	3
	1720	Loam on road side. Road continues @ N 25°W	N	3
BA EAST	100	Clay and loam. Road centreline @ 90' east. Cat disturbed	NC	4
	150	Loam in phyllitic gravel	N^G	8
	200	Gravely loam. From tree roots. Limy shale nearby	N^G	7
	250	Chocolate brown loam	N	45
	300	Loam. Some gravel. Maybe cat dist.	N^G	10
	350	Chocolate br. loam. Moist. No noticable drainage	N	8
	400	Loam with moist humus. 40'S of road	N^HT	40
	450	Moist orange brown loam. 20' south of road	N	3
	500	Sandy loam. Bank - top side of road	N^S	1
	550	Cat disturbed gravely loam. 10' north of road centreline	N^GT	7
	600	Gravely loam. 20' north of road centreline. Cat disturbed	N^G	2
	650	Gravely sand. 25' north of road centre line. Cat disturbed	X^G	2
C EAST	100	Loam with gravel	N^G	15
	150	Loam with shale. Cat disturbed road 30'W	N^G	7
	200	Loam	N	3
	270	Loam with extraneous humus	N^H	15
	330	Moist humic loam	N^HT	35
	380	Humus and shale. Cat disturbed	H^G	75
	430	Clayey loam	N^C	100

SAMPLE LOCATION GRIDLINE	SAMPLE LOCATION FOOTAGE	RELATED INFORMATION	SOIL DESIGNATION	TOTAL METAL - COLD EXTRACTABLE ml DITHIZONE
C EAST (cont'd)	480	Sandy loam. On drainage	$N^{G}T$	100
	550	Normal loam. some humus	NT	35
	660	Sandy loam. Road is 100' north	N^{S}	3
	780	Loam	N	3
	900	Loam with some humus. #3 Fork La France 20'E. Main LaFrance Creek 60' north	$N^{H}T$	15
	1000	Loam and humus. 20' south of creek.	$N^{H}T$	1
	1120	Loamy gravel. Side of Creek. Cat disturbed	$G^{N}T$	3
	1240	"A" horizon in boulder till. Road 30'N La France creek 40'S	N^{G}	1
	1350	Sandy loam. Road 10'N. La France creek 50' S	N^{S}	3
	1460	Sandy humus. Road 10'N. Cat disturbed	H^{S}	3
	1580	Humus with sand. Road 20'N	H^{S}	3
	1720	Humus in drainage 40' S of road	HT	8
CA EAST	450	Sandy loam. General drainage	$N^{S}T$	70
	500	Reddish brown loam SE drainage	NT	25
	550	Sandy loam. General drainage from SW	$N^{S}T$	100
D EAST	470	Loam	N	5
	520	Chocolate brown loam. Some humus	N^{H}	10
	570	Humic sandy loam. Moist. Edge of drainage	$N^{H}T$	15
	620	Moist humus and loam. Drainage area	$N^{H}T$	3
	670	Dark red loam	N	3
	720	Dark brown loam. Skid road @ 770'E	N	3
	820	Loam with gravel. W. bank of No. 3 Fork	N^{G}	3
	920	"A" horizon with loam. Extraneous humus. Edge of drainage from SE	$N^{H}T$	2
	1120	Loam and humus. Cat disturbed. Skid road @ 1140'	N^{H}	3
	1320	Very moist loamy clay in qtzitic gravel	$C^{N}T$	1
	1520	Humus. Drainage from south @ 1670'	HT	3

SAMPLE LOCATION GRIDLINE	FOOTAGE	RELATED INFORMATION	SOIL DESIGNATION	TOTAL METAL - COLD EXTRACTABLE ml DITHIZONE
D EAST	1720	"A" horizon and humus in boulder till. La France Creek 20' south	$H^{N}T$	2
F EAST	500	Gravel, clay and loam - Cat distrubed	C^{G}	2
	700	Silt, loam and gravel, burn disposal area	N^{X}	12
	900	Loam and "A" Horizon #3 Fork at 850'E	N	3
	1100	Mainly humus in rocky till. Spring nearby	H	4
	1300	Moist loam and humus. Next to spring	N^{H}	2
	1500	Loam and gravel - cat disturbed	N^{G}	3
FA EAST	700	Chocolate brown loam. Side of Skid Road	N	25
G EAST	580	Dark grey humus & loam. Somewhat moist	H^{N}	2
	750	Gravely loam in rock W side of #3 Fk.	N^{G}	2
	950	Yellow clay and gravel 40'E #3 Fork	C^{G}	2
	1150	Sandy yellow loam. Side of Skid Rd.	N^{S}	2
	1320	Red brown loam. Stream @ 1350'E	N	2
	1500	Wet moist loam and clay. Next to spring	$N^{C}T$	2
H EAST	700	Slightly moist light brown loam	N	2
	900	Yellow brown loam - bank of Skid Rd.	N	2
	1100	Light brown sandy loam	N^{S}	2
	1300	Yellow brown loam in gravel till	N^{G}	2
	1500	Reddish brown loam - some humus	N^{H}	2

ACCOUNTING OF COSTS TO PERFORM SURVEY ON TREN 3 and 4 CLAIMS AUGUST 1977 AND PREPARE REPORT OF SURVEY RESULTS FOR TREN 3 & 4 CLAIMS (SEPTEMBER AND OCTOBER 1977)

SURVEY FIELD COSTS

(a) Professional Fees, August 1977 - organizing survey grid, supervising field work, overseeing soil analysis and evaluating results:

10 hours @ $50/hr.		$ 500

(b) Technician Costs

R.E. Trenaman - Aug. 1 - Sept. 1 4 days @ $70	$280	
R.T. Trenaman - Aug. 1 - Sept. 1 6 days @ $70	$420	700

(c) Materials

Geochemical Supplies		60

(d) Travel Costs

300 miles @ 18¢		54
Total Field Costs		$1,314

Professional Fees - September and October 1977

(a) Supervise preparation of maps and prepare report 12 hrs. @ $50/hr.	$ 600
(b) Technician Costs	
Prepare maps, plot results 2 days @ $70	140
Total	$ 740

TOTAL COST	$2,054

LEGEND
Soil Sample Symbols
N - normal soil
S - sand
X - fine sand or silt
C - clay
G - gravel
H - humus
T - sample collected from active drainage
Example of Symbol Usage: C^G2T reads: Clay, subordinate gravel, 2ml. dithizone, active drainage.
Geochemical Anomolous Values
20-50 ml.
50-75 ml.
75-100 ml.
+100 ml.
Drainage Channel
Logging Road
Skid Road
Claim Boundary
R.T. TRENAMAN
Oct. 1977
GEOCHEMICAL SOIL SURVEY
TREN #3 AND #4 MINERAL CLAIMS
LaFRANCE CK. NELSON M.D.
To Accompany Report
By R.T. TRENAMAN
Oct. 1977
Scale:
1" = ≈ 200'
Drawing No.
6562
LA FRANCE CREEK
No 3 FORK SOUTH
No 3 FORK NORTH
No 4 FORK NORTH
To Kootenay Lake (Approximately 7 miles)
CABIN EL. 4860'
SANDY
D.D. WICKLUND
TREN 3
TREN 2
TREN
INITIAL POST
INITIAL POSTS
FINAL POST
FINAL POSTS
H WEST
G WEST
F WEST
E WEST
D WEST
C WEST
B WEST
A WEST
H EAST
G EAST
F EAST
E EAST
D EAST
C EAST
B EAST
A EAST
Z EAST
Y EAST
X EAST
W EAST
V EAST
U EAST
T EAST
6300
6200
6100
6000
5900
5800
5700
5600
5500
5400
5300
5200
5100
5000
4900
4800
4700