SUMMARY REPORT

for 1990 Program

on

DUNCAN LAKE MINERALS PROPERTY

(Valentine MC; Ted#1,Ted#2 MCs

Duncan Lake Area

Slocan Mining Division B.C.

Latitude: 50°25'Longitude: 117°57'

by

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Consulting Geological Engineer

WESTBANK,B.C.

31 January 1991

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INTRODUCTION

The following report is a summary of the work carried out and the data obtained during the 1990 field season.The purpose of the work was to further evaluate the potential of this talcose deposit as a soapstone quarry and/or an industrial talc producer. Work done in 1988 and 1989 indicated that sufficient potential existed to warrant continuing evaluation. As a soapstone quarry it was known that some of the varieties of stone available here were desirable with respect to color, workability,texture and consistency. It was less certain as to what size range of material could be expected, and what reserve existed. As an industrial talc producer, it was known that the reserve potential was large and that asbestos was not a problem in the samples analyzed to date. Further research was needed to determine if any other contaminants exist, and if the deposit is amenable to simple beneficiation methods.

The results from the 1990 field season confirmed the deposit as being viable as a soapstone quarry. Product ranging to several tons were quarried, establishing that a full size range of stone can be obtained from this deposit.

With respect to the industrial talc potential, analyses indicated no obvious harmful contaminants. A preliminary metallurgical test confirmed that a saleble product can be produced with simple flotation methods. Further research will be directed to improving recovery, determining optimum grind and reagent preference.

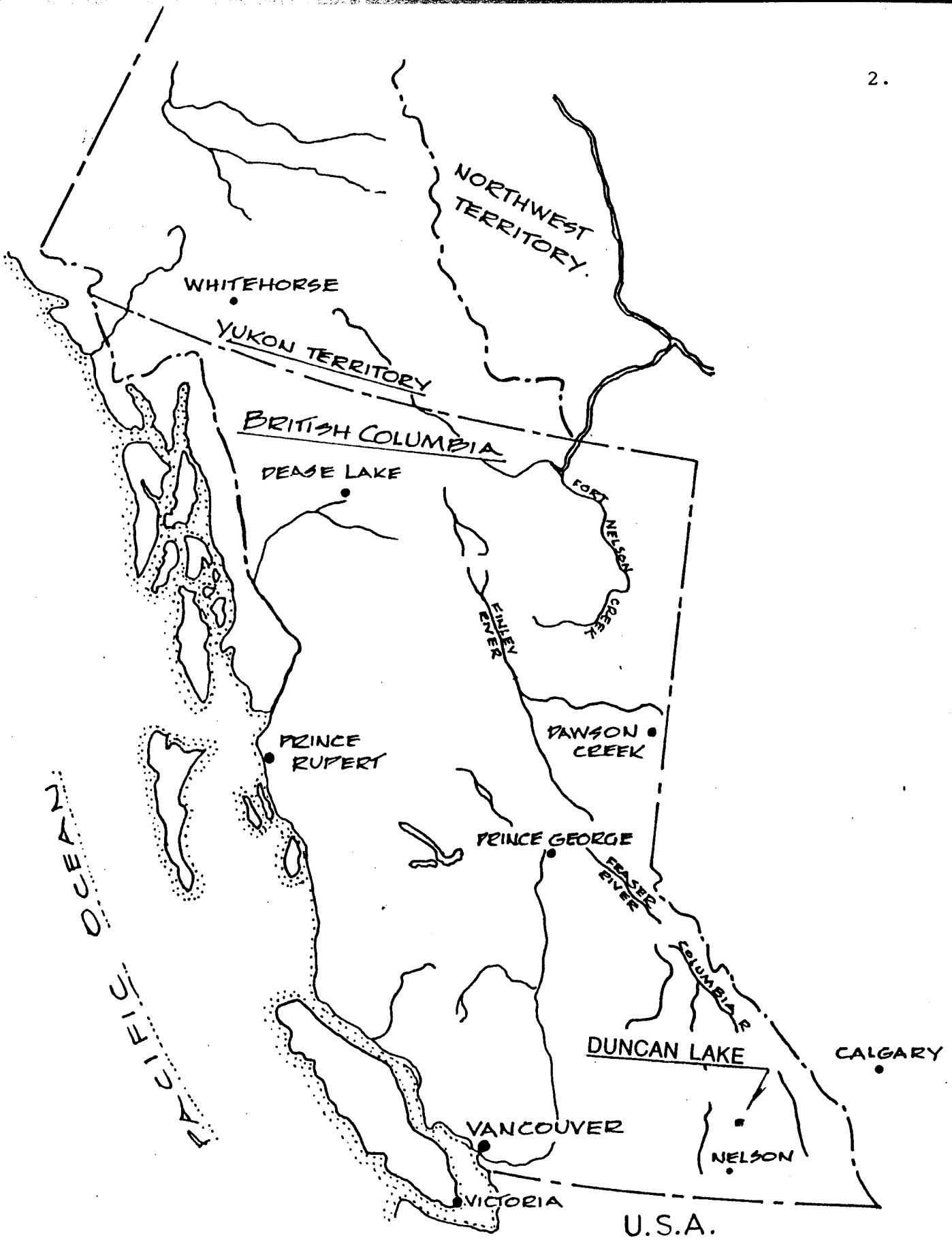

NORTHWEST TERRITORY
WHITEHORSE
YUKON TERRITORY
BRITISH COLUMBIA
DEASE LAKE
FORT NELSON
FINLEY RIVER
CREEK
PRINCE RUPERT
DAWSON CREEK
PRINCE GEORGE
FRASER RIVER
COLUMBIA R.
DUNCAN LAKE
CALGARY
VANCOUVER
NELSON
VICTORIA
U.S.A.
PACIFIC OCEAN
LOCATION MAP
SCALE: 1" = 140 MILES APPROX.
100 0 100 200 300 MILES.

figure 1.

SUMMARY REPORT
DUNCAN LAKE MINERALS PROPERTY
DUNCAN LAKE AREA
SLOCAN MINING DIVISION

SUMMARY

This property consists of one 20-unit mineral claim and six two-post claims. Talcose material with potential as carvable soapstone or as industrial talc is present at least three near vertical zones. One of which, the 'Main' zone, has been found over a strike length of two miles and avertcal range of 1400 feet. The thickness ranges from 50 feet to 200 feet.

The mineral of principal interest here is talc. Two possible uses exist for this talc. One is for industrial talc and the other is for carving stone(soapstone). Previous work was to establish the carvability and extent of the deposit, and to determine if potential exists for industrial quality talc. As well as visual examination of samples for colour characteristics, grittiness and uniformity; whole rock ICP,27 element ICP and microscopic analyses were carried out.

Work in 1990 consisted of quarrying and further geology and research to establish the industrial talc viability.

Quarrying in 1990 was located at the Main zone of the Bluff area and also the Randy area. The Bluff area is the name applied to the exposures that exist where the main logging road cuts through the bluffs immediately above Duncan Lake-about the 35.5 kilometer mark. The Randy quarry is located on the north edge of the recently logged area located at about the 2.6 kilometer point of the North creek logging road. Quarrying was confined mainly to the black variety of stone, and established that it is a desirable and saleable product that there is sufficient material evident on surface to meet requirements for at least 5 years at the present rate of production.

SUMMARY(continued)

Evaluation of the industrial talc potential consisted of whole rock ICP, 27-element ICP and asbestos detection analyses to determine if any harmful contaminants exist. Results from this work were encouraging. Samples were also taken for petrographic analyses and for preliminary metallurgical testing. Results of this work were positive, indicating that a simple flotation method using environmentally friendly reagents would produce a saleable product. Further tests will be carried out to determine optimum grind, reagent consumption and other variables needed to estimate capital and operating costs. This work will also be directed to maximizing recovery and concentrate grade.

PROPERTY OWNERSHIP

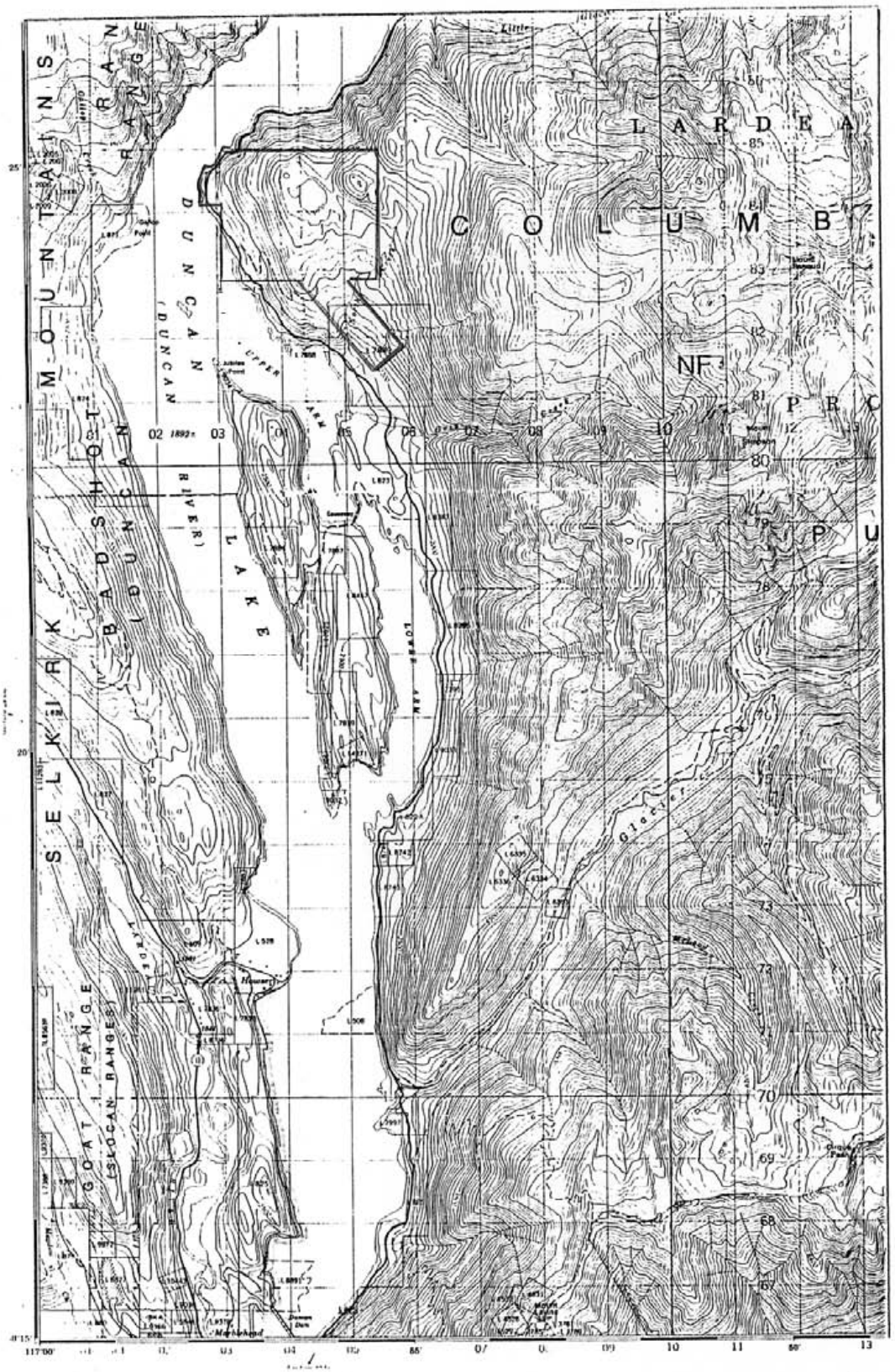
The property consists of one 20-unit mineral claim(Valentine) and six two-post claims. Figures 2 and 3 show the location of the claims. The status of the claims at the time of writing (including assessment applied to the Valentine MC in December 1990) is as follows:

CLAIM	STAKING MODE		RECORD NUMBER	EXPIRY
Valentine	modified grid	20 units	5580	7Dec91
Ted#1	2-post	1 claim	5694	19May97
Ted#2	2-post	1 claim	6399	6May91
DLM#1	2-post	1 claim	6419	10Jul91
DLM#2	2-post	1 claim	6492	25Oct91
DLM#3	2-post	1 claim	6493	25Oct91
DLM#4	2-post	1 claim	6494	25Oct91

The Valentine MC is currently held by W Osachoff in trust for the R.B. Savage Estate as to 50%; with the remaining 50% held by Marvin K. Singleton as security for a loan to the estate. All the two-post claims are held by E.A. Lawrence.

PHYSIOGRAPHY

Duncan Lake is located in the north-south trending Purcell trench. The Purcell Mountains rise steeply to the east, some peaks reaching elevations of 10000 feet. The property is located on the steep slope of the valley, commencing at the east shore of Duncan Lake. Approximately 700 feet south of the lake a bench area of lower slope with some narrow flat sections extends to about 3000feet from the lake. From this point the slope steepens somewhat but is still easily traversed on foot. Vegetation consists mainly of thick young evergreens. Logging has removed most of the mature timber in the central area of the property. No creeks flow through the property. North Creek,the closest, is about 2500 feet south of the Randy Qarry.



DUNCAN LAKE MINERALS

Valentine Property

PROPERTY PLAN

1:100,000

FIGURE 2

REGIONAL GEOLOGY

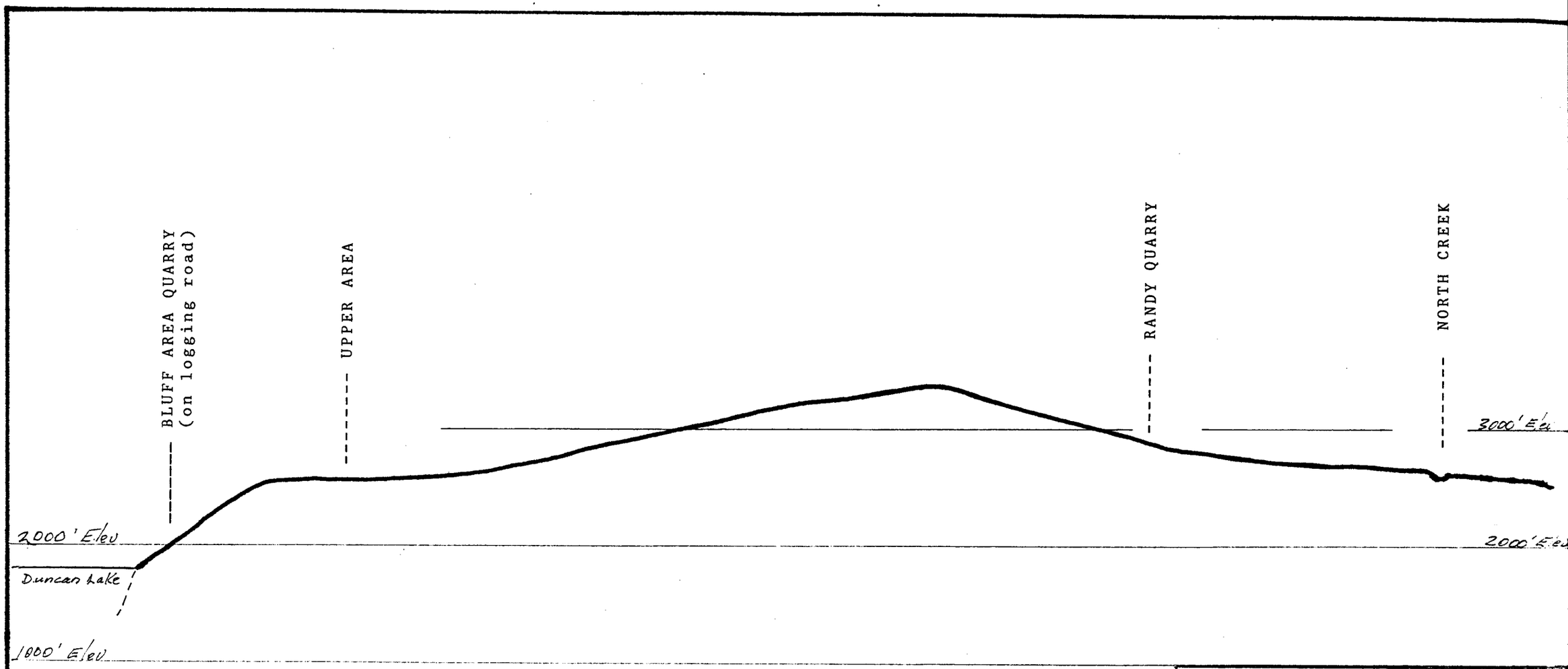
The Duncan Lake area contains complexly folded sedimentary and volcanic rocks in a low to medium grade of regional metamorphism. These rocks belong to the Hamill Group. Rare mafic dykes and amphibolite sills occur in the area. No plutonic rocks have been found in the area near the talcose zones.

GEOLOGY OF THE PROPERTY

The talcose zones of interest occur on the eastern limb of the Howser syncline, within schists of the Lower Index formation. Dips of the schistose rocks vary from vertical to steeply west in the map area. Three talcose zones were observed along the roadcut of the Bluff area. However, in the vicinity of the Randy quarry about 7000feet to the south, only one zone has been observed to date. This zone is significantly wider, up to 200 feet wide. With the data presently available these zones appear nearly parallel to the regional trend, however crosscutting features were reported by Fyles in Bulliten No. 49, 'Geology of the Duncan Lake area'. Petrographic work done in 1990 suggests that these talcose zones are in fact altered dunite dykes.See Appendix I.

Figure 4 shows the geology in relation to topography and roads. The contours are derived from the Duncan Lake 1:50000 topographic sheet (82K/7), and are only approximately oriented with respect to the ground survey. The ground survey is a chain and transit survey carried out in the fall of 1990. Orientation for this work was derived from compass, and thus is subject to error. Due to the remote location of this property it will be necessary to establish true orientation by making an astronomical observation. This will be done in 1990.

Geologic mapping in 1990 indicates that the Main zone has a reasonable degree of continuity for a strike length of over 10000 feet, from the Location Corner Post(LCP) on the Duncan Lake logging road, to the Randy quarry near North Creek. Further mapping will be needed to confirm continuity in those areas where information is presently scarce. More prospecting



DUNCAN LAKE MINERALS

LONGITUDINAL SECTION
LOOKING NORTHEAST

Scale: 1:12000	Drawn: EAL
FIGURE 6	Date : 16 Jan91

GEOLOGY (continued)

will be carried out in the area south of North Creek next season.

Petrographic work was done on two specimens of typical industrial type talc(non-black variety). See Appendix I for the report on this work. In essence , the petrography indicates that the talcose zones are derived from dunite dykes. This is not inconsistent with the overall structural picture as observed to date. Talc content ranged from 52 to 75%, with magnesite ranging from 21 to 47%. Minor constituents such as chlorite, chromite, pyrite, magnetite and chalcopyrite account for about 2%. No petrography was done on the 'black' soapstone which is a favoured carving stone. From visual examination it is believed to be a talc-chlorite mixture. In its natural state it is a greyish colour, but polishes to a very fine black colour.

Figure 5 shows the geology on a scale of 1:6000. Figure 6 shows a longitudinal section looking easterly at a scale of 1:12000.

LOCATION AND ACCESS

The property is accessible by a good allweather logging road. This road branches east off Highway 31 immediately south of the Cooper Creek bridge, then carries on along the east shore of Duncan Lake. The Bluff area is located at about the 35.5 kilometer point. The Upper area and the Randy quarry are accessed by the North Creek logging road which branches off at the 33.6 kilometer point. The Upper area is reached by following the northerly trending road that branches off the North Creek road at the third switch-back. The Randy quarry is reached by branching to the left on the first road after the fifth switch-back. See Figure 3.

PREVIOUS WORK

Earlier attempts to locate data from the exploration done in the '70s was unsuccessful. However in the summer of 1990 contact was made with Dennis Currie of Nelson,B.C., who was able to direct the author to Arnold Rennich of the Creston office of Imasco. Mr. Rennich confirmed that their company had done some work in the '70s, but unfortunately didn't have access to the reports at this time.

It wasn't until 1987 that additional work was initiated on the property. In 1987, RPW Holdings, under the direction of the late Ted Savage of Taghum,B.C. removed asmall tonnage of black soapstone from the Bluff area. Selected samples were sent to soapstone sculptors in the Northwest Territories for their evaluation. In early 1988 the author carried out preliminary geological evaluation work. This initially involved a chain and compass survey to tie in the showings at the Bluff area with those at the Upper area. Vertical angles were carried in order to determine rough elevation differences between these showings.Geologic mapping followed at a scale of 1:1200 in the immediate area of the reconnaissance line. 11 short -0.30meter-holes were drilled throughout the map area to test for hardness beyond the surface weathering. With the light gas drill used, it was not possible to penetrate unless the rock was near the hardness of talc, thereby giving a simple means to differentiate between talc and schist. Detailed mapping at ascale of 1:120 was done on the Bluff area exposures from station A to station C. The exposures along the road in the vicinity of station A were cleaned up utilizing a back-hoe/frontend loader and a truck. Two loads were taken to Nelson for sorting, cleaning and sampling.

Hand-trenching on the Main zone at the Bluff area near station B was done to further expose a section of higher grade material. A few hundred pounds were removed for specimens samples and test work.

PREVIOUS WORK (continued)

In 1989 the author showed the property to an associate of a consulting firm that has had experience with industrial talc. Following this examination it was decided to obtain samples to determine if any serious contaminants exist that could cause marketing problems. The Main zone was targeted for this study in that more backgroundiformation was available on this zone. Cuttings were collected from 6 foot percussions holes, drilled to crosscut the formation. These were composited and analyzed for asbestos, and also were analyzed with whole rock ICP and 27-element ICP. In addition to the above, a large sample was obtained by drilling and blasting. This provided a fresher sample than was previously available. About 35 tons of rock was broken which yielded a number of good specimens, and a representative sample from the Bluff area of the Main zone. Two 6-foot holes were also drilled into an area of serpentine at the Bluff area, providing a good sample of cuttings from this material.

In addition to the Bluff area work, cuttings and a large rock sample were obtained from the old quarry near station x-8. The drilling and blasting in both areas also provided some good information on the feasibility of extracting soapstone using controlled blasting techniques.

A very rusty 15 inch band of sulphide, located beside the road near station X-10, was sampled and analyzed for gold. Only 5 ppb gold was detected. No harmful contaminants were detected in any of the other samples.

CURRENT WORK

Quarrying for 'black' soapstone at both the Bluff area and the Randy quarry resulted in much more exposure of this variety. This has added to the understanding of the shape, continuity, internal variations and size range possibilities of the black soapstone, which in turn has helped to plan

CURRENT WORK(continued)

for future quarrying by improving confidence in reserves,quality and size range. Experience gained has also helped to design a more productive extraction method.

Exposure of the rock adjacent to the black soapstone has also revealed other carving varieties that could be extracted simultaneously with the black stone. Although there is a lower demand for this material, the extra cost of quarrying is low. Therefore it would be worthwhile to treat it as a potentially marketable product, rather than as waste.

In addition to the quarrying activities in 1990, a 9900-foot transit-chain survey was carried out to tie together the various zones. Preliminary geologic mapping along the strike of the deposit was also done. Field data was then calculated, analyzed and plotted, the results plotted on 1:1200, 1:2400 and 1:6000 scale plans. See Figure 5 for the 1:6000 plan.

To obtain more data for evaluating the industrial talc potential, more samples of the non-black varieties were collected. Petrographic analysis and flotation test work was done on these samples. A summary of the results is incorporated under 'Results' later in this report.

PROCEDURES

Quarrying

The quarrying method utilized was to drill and blast adjacent to the vertical 3-7 foot band of black soapstone, so that damage would be minimized. The adjacent material was usually a non-carving variety, therefore blasting damage was not a concern. Following a blast the non-black broken material would be removed by a back-hoe, exposing the black variety. If the black stone was loose enough,it would be scaled off with hand tools and loaded into the back-hoe bucket. Some

PROCEDURES (continued)

sorting and grading was also done at this time, discarding material that wasn't up to standard. If the black material wasn't easily scaled by hand, then the back-hoe would be used to dislodge it. Occasionally it was found that insufficient natural fractures existed,resulting in pieces too large for the back-hoe to handle. In this case it was necessary to drill and very carefully blast. The technique used was to space the holes no more than 6 inches apart, and to load every other hole with up to 1½ sticks of 40% Forcite, stemmed with fines for 12 inches. Lines of holes as described above would be spaced about 5 to 6 feet apart. Using this method, it was usually possible to loosen pieces of not more than 10 tons weight. These would be dragged by cable or chain to a working area where they would be reduced to the maximum size the loader could handle(about 3 tons). This size reduction would be accomplished by drilling closely spaced holes and splitting with a hammer and wedge. Or in more difficult cases, by blasting lightly with ¼ to ½ stick of 40% Forcite. Blasting was done only as a last resort due to the losses incurred by unwanted fracturing. A further stage of reduction to produce pieces no larger than 18"x18"x18" (maximum size wanted by buyer) was carried out with a hand-held, gas-powered,'cut-off' saw. This tool utilizes a 14-inch circular disc of abrasive-impregnated material that rotates at about 1000rpm. It was tested both with and without water. Using water greatly reduced the dust, and also increased blade life by about five times.

Surveying

The purpose of the survey was to tie together the two quarry sites, one at the extreme north end of the property and the other about 8000 feet to the south. Orientation was derived by compass, and therefore is subject to error, possibly as high as $1\frac{1}{2}^{o}$. Time didn't permit a closed loop survey. This

PROCEDURES(surveying continued)

is planned for 1991, as well as astronomical observations to determine true azimuth. Surveying method was by transit and steel chain. Station X59 at the Bluff area corresponds to the LCP of the Valentine MC. Station X45 at the Randy quarry is located at an old invalid claim post close to the quarry.

Geologic mapping

Preliminary mapping north from the Randy quarry was carried out at a scale of 1:2400, for a length of about 1000 feet. Location was determined by compass-hip chain method, tying in to transit stations where possible. The basic method was to criss-cross the visible contacts of the talcose zone with the schists of the Lower Index formation, thereby establishing an approximate width of the zone. Field identification was accomplished with a handlens and a needle or knife for hardness testing.

Petrography

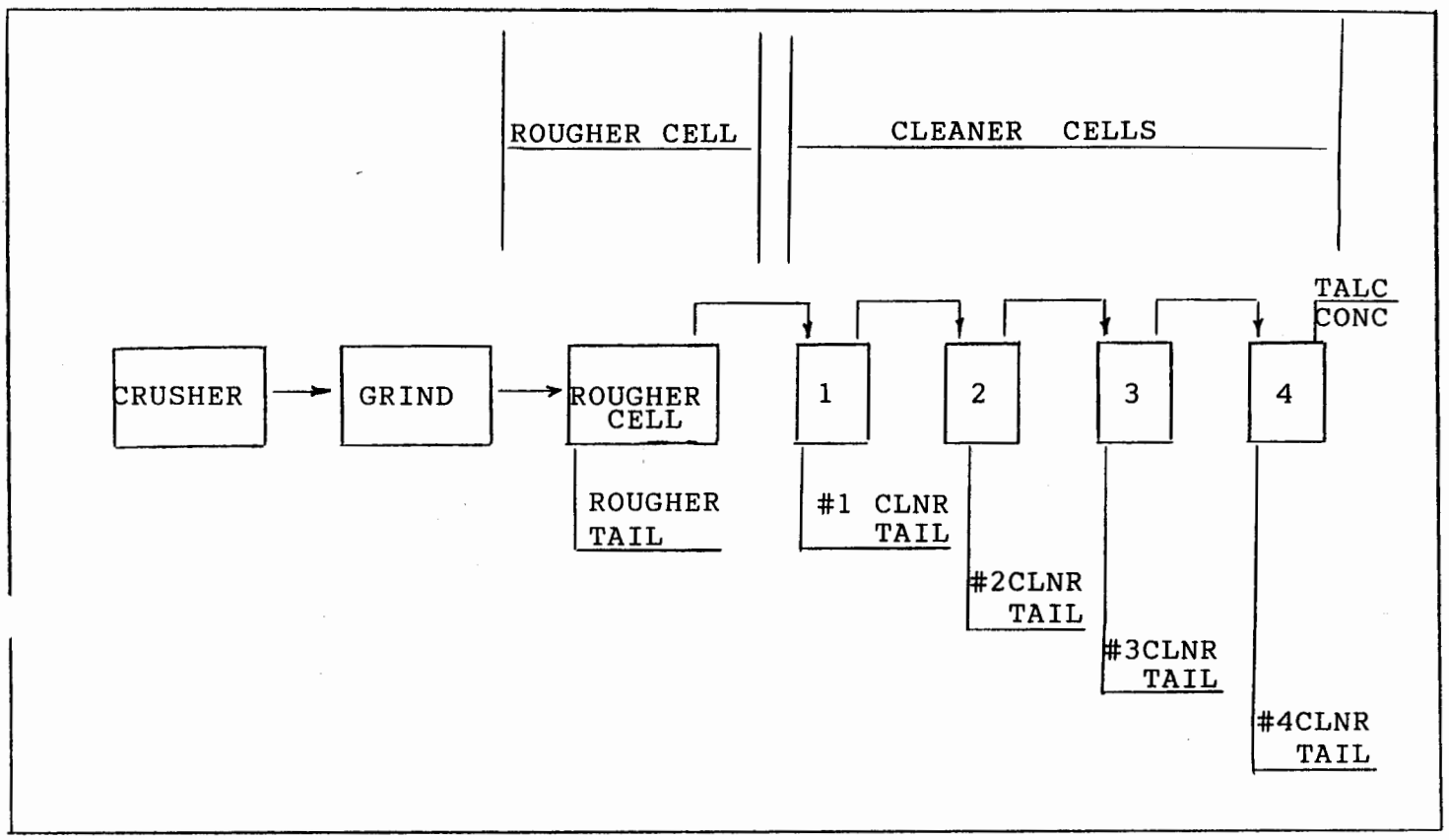
Thin-sections were prepared from typical non-black talc specimens from the Upper and Randy areas. The thin-sections were then examined using a petrographic microscope to determine what minerals were present and their respective percentages. This analytical work was all done by an established laboratory. The data derived from this work was used to assist the later metallurgical research.

Metallurgy

One preliminary flotation test was completed in order to determine if there are any obvious hindrances to producing a saleable concentrate. The sample material consisted of about 60% talc and about 35% magnesite, with the remainder being various Fe sulphides and chlorite. A 35 pound sample of typical Randy zone talc (non-black) was used for this test work.

PROCEDURES(Metallurgy continued)

Test work involved crushing, grinding, and flotation. Flotation was accomplished by one rougher cell plus four cleaning stages. The flow chart below shows method employed and where the samples were taken.



Whole rock ICP analyses were done on the five tail products and on the talc concentrate.

In addition , the head sample and the talc concentrate were analyzed for talc using the 'insoluble' method. See Appendix 2 for the results of these analyses.

MIBC was used as a flotation reagent. Quebracho was used to depress the magnesite.

RESULTS

Quarrying

Quarrying for carving stone,mainly the black variety, produced approximately 30 tons of final product. Examination by a number of experienced sculptors indicates that this deposit is of good carving quality. Initial data suggests that an adequate reserve exists to meet needs at projected rates of quarrying for at least 5 years.

Surveying

Chain and transit surveying tied the Bluff area to the Randy quarry by means of a 9900 foot open traverse, giving a much better fix on the horizontal and vertical extent of the deposit and the location of the claims. However, because orientation was established only by compass, the true orientation of the deposit may not be exactly as shown on the plans.

Geologic mapping

Mapping in the area immediately north of the Randy quarry (elevation 3200feet), confirmed the existence of talcose material for a strike length of at least 1000 feet, in widths from 100 to 200 feet. This material appears identical to the Upper zone(2600 feet elevation) and the Bluff area (2000 feet elevation). Attitude was consistently near vertical in all locales. Mapping showed that the non-black rock consists mostly of a medium grained,grey-green mottled talcose material. This is the same rock that comprised the petrographic specimens. Other varieties were obseved also within the talcose zone, but with present information,represent less than 5% of the total. Black soapstone accounts for about 5 to 15% of the total.

Considering the property as awhole, the talcose zone has been demonstrated to have a length of two miles, and a vertical range of about 1400 feet.

RESULTS(continued)

Petrography

Petrographic work established that the grey-green mottled rock is a talc-magnesite schist averaging 63.75% talc and 34.25% magnesite for the two specimens examined. It was the opinion of the petrographer that the talcose material is an altered dunite. Chromite,pyrite and magnetite were found in minor amounts.

Metallurgy

The preliminary flotation test performed indicates that a concentrate in excess of 95% talc can be produced with a simple flotation process. Recovery on this first test was only 59.24%,but it is felt that additional test work can improve this figure. Removal of some of the Fe by magnetic methods is expected to further improve concentrate grade. Assuming that the final tail is composed of the rougher tail and the #1 cleaner tail, then that product would grade 67% magnesite and about 32% talc.

Please refer to Appendix 2 for details of the metallurgical test work.

CONCLUSIONS

Exploration work and laboratory testing indicates that this property has potential for two distinct markets. One being carving stone(soapstone), the other being industrial talc.

Soapstone

Carvable soapstone has been known to exist at this property for more than 15 years. However, 1990 was the first year the product was distributed and used by a broad representation of carvers. The response has been favourable from the amateur through to the full-time recognized sculptors. It was also demonstrated during 1990 that the cost of production, while quite high due to the labour intensive nature of the method

Figure 4

GEOLOGICAL MAP
OF THE
DUNCAN LAKE AREA

Geology by James T. Fyles 1960-1963

Valentine MC

HOWSER KNOB

GALLOP POINT

JUBILEE POINT

GOLDHILL

Duncan Mine

Deception Cr.

Grizzly

Surprise

HOWSER

DUNCAN LAKE

UPPER ARM

LOWER ARM

LEGEND

- GEOLOGICAL CONTACT — defined, approximate, assumed
- FAULT — defined, approximate, assumed
- ATTITUDE OF FOLIATION — prominent foliation planes undifferentiated — inclined, vertical
- ATTITUDE OF BEDDING — inclined, vertical
- ATTITUDE OF CLEAVAGE AND SCHISTOSITY — inclined, vertical
- Plunge of lineations and axes of minor folds
- Adit
- Prospect
- Marble quarry
- Main road
- Side road
- Trail
- Building

Scale 0 1 2 Miles

Contour interval 500 feet

LEGEND

Areas of little or no outcrop.

BROADVIEW FORMATION
6 Green and grey quartzite, greywacke, grit and fine grained mica schist.

JOWETT FORMATION
5 Fine grained green chlorite schist.

TRIUNE, AJAX, AND SHARON CREEK FORMATIONS
4 4c- dark grey to black argillite. 4b- massive grey quartzite. 4a- grey and black quartzite.

INDEX FORMATION
3 Interlayered fine grained green and grey schist, minor limestone and quartzite.

UPPER INDEX: mainly fine grained green schist.
3d- chlorite schist.
3c- green mica schist and garnet mica schist.

LOWER INDEX: mainly fine grained grey schist, grey and white limestone, brownish quartzite,
3b- minor green and grey schist.

3a Fine grained grey mica schist and garnet mica schist.

BADSHOT AND MOHICAN FORMATIONS
Cm 2 Grey and white crystalline limestone and dolomite and interlayered limestone and mica schist.

MARSH ADAMS FORMATION
1 Grey and brown micaceous quartzite, mica schist and white quartzite.

Amphibolite

To accompany B.C. Department of Mines and Petroleum Resources Bulletin 49, 1964

CONCLUSIONS(continued)

used this season, was within the range needed to show a positive cash flow. The modified method of extraction proposde for 1991 should lower operating costs. The market volume is still an uncertainty, but it is believed that over a period of several years a volume of 100 tons annually should be possible. However, rather than carrying out the primary extraction by hand and back-hoe methods,it is planned to use an in-situ cable cutting technique that has the potential to significantly reduce overall costs and to result in less loss, and a more consistent product.

Industrial Talc

Results of tests to determine if the deposit contains material that would exclude it from the industrial talc market have so far been encouraging as noted earlier. Also, preliminary metallurgical testing indicates that a high quality talc concentrate can be produced with a relatively simple flotation-type concentrator. Magnetics might be used to reduce the minor amount of Fe bearing minerals. This preliminary also indicates that the tailings, which will be about 2:1 magnesite and talc, may also be marketable. It may be useful as awhitener for applications where chemical purity is not a factor.

In summary, it is concluded that the deposit could be viable as an industrial talc producer, and is worthy of continued investigation as financial resources permit. This work would consist of further geological field work to delineate the extent of the talcose zones; additional sampling for further metallurgical testing; completion of the transit survey to establish a closed loop and astronomical azimuth; and additional metallurgical work. Further investigation of the market potential for the talc concentrate and the magnesite-talc tailing should also be carried out.

STATEMENT OF COSTS

DUNCAN LAKE MINERALS

20 May 1990 to 31 Oct 1990

PHYSICAL WORK		
BACKHOE	112 hrs@ $45/hr	$ 5040
DOZER	33 hrs@ $45/hr	1485
COMPRESSOR/DRILL	23 days@ $38/d	874
MOBILIZATION/DEMOBILIZATION		862
DRILLING LABOUR	185 hrs@ $16.50/hr	3052
OTHER LABOUR	63 days@ $75/d	4725
3/4 ton 4x4	18 days@ $40/d	720
DUMP TRUCK	18hrs @ $50/hr	900
STONE CUTTING EQUIP. RENT		1921
SUPERVISION	20 days@ $250/d	5000
SUPERVISION TRANSP		2707
ACCOMODATION		1939
MEALS		1026
WCB		441
FUEL,CUTTING WHEELS,EXPLOSIVES		678
PHONE,POSTAGE,FAX,RADIO RENTAL		798
TOTAL PHYSICAL WORK		$32168

GEOLOGY,ENGINEERING FIELD AND OFFICE WORK		
GEOLOGIST	4 days @ $250/d	1000
SURVEYOR	7 days @ $200/d	1400
SURVEYOR HELPER	7 days @ $75/d	525
GEOL. FIELD ASS'T	4 days @ $75/d	300
EQUIPMENT RENTAL(TRANSIT,CHAINSAW)		155
ACCOMODATION		412
MEALS		182
4x4 TRANSPORT		670
ANALYTICAL(PETROGRAPHY, METALLURGY,ICP)		311
REPORT PREP	6 days @ $250/d	1500
MISC SUPPLIES,SAMPLE FREIGHT		222
PRINTING, COPIES,DRAFTING SUPPLIES		47
TYPING,ASSEMBLING REPORT		75
WCB		19
PHONE,FAX		43
TOTAL GEOLOGY/ENGINEERING		$ 6861
GRAND TOTAL		$39029

NOTE: $2876 of this expense has been already applied as assessment for Valentine MC, in November 1990. Thus, $36153 remains for future assessment.

See pages 21 and 22 for detailed breakdown between the TED and DLM Groups.

STATEMENT OF COSTS

DUNCAN LAKE MINERALS, VALENTINE PROPERTY
20 May 1990 to 31 October 1990

NOTE: TOTAL COST OF WORK CARRIED OUT WAS $39029, HOWEVER THIS HAS BEEN APPORTIONED IN ORDER TO APPLY ONLY THAT WHICH WAS RELATED TO 'PREPARATORY' WORK.

PREPARATORY WORK				[redacted]
BACKHOE	6	hrs@	$45/hr	$270
DOZER	3	hrs	$45/hr	135
COMPRESSOR/DRILL	1	days	$38/d	38
MOB/DEMOB				215
DRILL LABOUR	9	hrs	$17/hr	153
OTHER LABOUR	3	days	$75/d	60
3/4 TON 4x4	1½	days	$40/d	60
DUMP TRUCK	1	hrs	$50/hr	50
STONE CUTTING EQUIP. RENT				100
SUPERVISION	1	days	$250/d	250
SUPERVISION TRANSP.				135
ACCOMODATION				97
MEALS				51
WCB				22
FUEL, CUTTING WHEELS, EXPLOSIVES				34
PHONE, POSTAGE, FAX, RADIO RENTAL				20
TOTAL PREPARATORY WORK				$1855

GEOLOGY, ENGINEERING FIELD AND OFFICE WORK				
GEOLOGIST	1	days	$250/d	$250
SURVEYOR	2	days	$200/d	400
SURVEYORS HELPER	2	days	$ 75/d	150
GEOL. FIELD ASS'T	1	days	$ 75/d	75
EQUIPMENT RENTAL (TRANSIT, CHAINSAW)				62
ACCOMODATION				165
MEALS				73
4x4 TRANSPORT	670	miles	@0.40/m	268
ANALYTICAL (PETROG'Y, MET'LGY, ICP)				124
REPORT PREP	2	days	$250/d	500
MISC. SUPPLIES, SAMPLE FR'T				89
PRINTING, COPIES, DRAFTING SUPPLIES				35
WCB				7
PHONE, FAX, TYPING/ASSEMBLING REPORT				47
TOTAL GEOLOGY/ENGINEERING				$2245
GRAND TOTAL				$4100

STATEMENT OF COSTS

DUNCAN LAKE MINERALS, VALENTINE PROPERTY
20 May 1990 to 31 October 1990

NOTE: TOTAL COST OF WORK CARRIED OUT WAS $39029, HOWEVER THIS HAS BEEN APPORTIONED IN ORDER TO APPLY ONLY THAT WHICH WAS RELATED TO 'PREPARATORY' WORK.

PREPARATORY WORK

BACKHOE	8	hrs@ $45/hr	$ 360
DOZER	5¼	hrs $45/hr	236
COMPRESSOR/DRILL	2	days $38/d	76
MOB/DEMOB			216
DRILL LABOUR	14	hrs $17/hr	238
OTHER LABOUR	5	days $75/d	375
3/4 TON 4x4	2½	days $40/d	100
DUMP TRUCK	2	hrs $50/hr	100
STONE CUTTING EQUIP. RENT			140
SUPERVISION	1½	days $250/d	375
SUPERVISION TRANSP.			203
ACCOMODATION			145
MEALS			77
WCB			33
FUEL, CUTTING WHEELS, EXPLOSIVES			51
PHONE, POSTAGE, FAX, RADIO RENTAL			29
TOTAL PREPARATORY WORK			$2754

GEOLOGY, ENGINEERING FIELD AND OFFICE WORK

GEOLOGIST	3	days $250/d	$ 750
SURVEYOR	5	days $200/d	1000
SURVEYORS HELPER	5	days $ 75/d	375
GEOL. FIELD ASS'T	3	days $ 75/d	225
EQUIPMENT RENTAL (TRANSIT, CHAINSAW)			93
ACCOMODATION			247
MEALS			109
4x4 TRANSPORT	1005	miles @0.40/m	402
ANALYTICAL (PETROG'Y, MET'LGY, ICP)			187
REPORT PREP	4	days $250/d	1000
MISC. SUPPLIES, SAMPLE FR'T			133
PRINTING, COPIES, DRAFTING SUPPLIES			52
WCB			12
PHONE, FAX, TYPING/ASSEMBLING REPORT			71
TOTAL GEOLOGY/ENGINEERING			$4656
GRAND TOTAL			$7410

STATEMENT OF QUALIFICATIONS

I, E.A. Lawrence,P.Eng., of RR1 S13 C17, Westbank,B.C.,

DO HEREBY CERTIFY

1) That I am a graduate of the University of British Columbia with a degree of B.A.Sc. in Geological Engineering (1959)

2) That all of the technical field work carried out in 1990 and included in this report, was done by me.

3) That I personally supervised all the non-technical work done in 1990.

4) That I am a registered Professional Engineer in the Province of British Columbia.

E.A. Lawrence,B.A.Sc.,P.Eng.

Dated WESTBANK
in the Province of British Columbia,
this 31st day of January 1991.

REFERENCES

FYLES,J.T. (1964) Geology of the Duncan Lake Area,B.C. Department of Mines, Bulletin #49.

MACLEAN,M. (1987) Talc and pyrophyllite in B.C. B.C. Mineral Resources Division,open 1988-19

LAWRENCE,E.A. (1989) Geological Summary Report Valentine Property, Duncan Lake,B.C.

LAWRENCE,E.A. (1990) Geological Summary Report Valentine Property, Duncan Lake,B.C.

APPENDICES

APPENDIX I PETROGRAPHIC ANALYSIS

APPENDIX II METALLURGICAL ANALYSES

APPENDIX III PRELIMINARY SURVEY CALCULATIONS

APPENDIX 1

Vancouver Petrographics Ltd.

JAMES VINNELL, Manager
JOHN G. PAYNE, Ph.D. Geologist
CRAIG LEITCH, Ph.D. Geologist
JEFF HARRIS, Ph.D. Geologist
KEN E. NORTHCOTE, Ph.D. Geologist

P.O. BOX 39
8080 GLOVER ROAD,
FORT LANGLEY, B.C.
V0X 1J0
PHONE (604) 888-1323
FAX. (604) 888-3642

Report for: Ed Lawrence,
(768-5554)
WESTBANK, B.C.

Job 127
December 1990

Samples: Talc Specimens: S-1, S-3

Summary:

Samples are of talc-magnesite schists formed by alteration of dunite. They contain relic chromite grains altered slightly to completely to magnetite, and secondary patches of pyrite.

Sample S-1 is a **talc-magnesite-(chromite) schist** containing porphyroblasts of magnesite and relic grains and fragments of grains of chromite in a weakly to well foliated groundmass of talc. Pyrite, altered moderately to hematite, is concentrated in lenses parallel to foliation.

Sample S-3 is a **talc-magnesite-(chlorite) schist** dominated by talc with abundant porphyroblasts of magnesite, and much less abundant flakes of chlorite and minor patches of chromite-magnetite and of pyrite. In much of the sample, talc grains and aggregates are contorted tightly. Foliation is defined by the axial planes of these kinks and elongation of some recrystallized talc and chlorite grains. Chlorite appears to be secondary.

John G. Payne

John G. Payne
(604)-986-2928

Sample S-1 **Talc-Magnesite-(Chromite) Schist**

Porphyroblasts of magnesite and relic grains and fragments of grains of chromite are set in a weakly to well foliated groundmass of talc. Pyrite, altered moderately to hematite, is concentrated in lenses parallel to foliation.

talc	50-55%
magnesite	45-50
chromite	1- 1.5
pyrite	0.1

Talc forms aggregates of flakes ranging from extremely fine up to 0.3 mm long. Where it surrounds magnesite porphyroblasts and patches, it has an unoriented texture. Talc-rich seams up to 0.3 mm wide contain oriented, extremely fine grained flakes.

Magnesite forms ragged to subhedral equant to elongate, prismatic porphyroblasts and clusters averaging 0.8-1.5 mm in size and locally up to 2.5 mm long of grains averaging 0.3-1 mm in size, and smaller adjacent grains averaging 0.1-0.2 mm in size. Elongate grains are oriented parallel to foliation.

Chromite forms subhedral, rhombic grains up to 0.8 mm in size and irregular grains up to 1.7 mm in size. A few grains are deep brown in color. Many grains are almost opaque, suggesting that they were altered towards magnetite. Most larger grains are fractured moderately and fractures are filled with magnesite. Some patches up to 0.6 mm across contain abundant extremely fine to fine fragments of chromite grains intergrown with talc. It also forms equant grains averaging 0.02 mm in size in talc-rich seams.

Pyrite forms equant grains averaging 0.02-0.05 mm in size and lenses averaging 0.05-0.15 mm long. These which are concentrated in talc-rich seams. Alteration is slight to strong to hematite. A few lenses up to 0.5 mm long of grains up to 0.2 mm in size are altered strongly to hematite.

Sample S-3 **Deformed Talc-Magnesite-(Chlorite) Schist**

The rock is dominated by talc with abundant porphyroblasts of magnesite, and much less abundant flakes of chlorite and minor patches of chromite-magnetite and of pyrite. In much of the sample, talc grains and aggregates are contorted tightly. Foliation is defined by the axial planes of these kinks and elongation of some recrystallized talc and chlorite grains.

talc	73-77%
magnesite	20-22
chlorite	3- 4
pyrite	1
chromite-magnetite	0.3
chalcopyrite	trace

Talc forms aggregates ranging from extremely fine grained up to 0.6 mm. In many finer grained patches, flakes are warped moderately to strongly. Coarser grained patches interstitial to magnesite porphyroblasts were protected somewhat from deformation. Some patches contain relics of coarser grains intergrown with finer grained aggregates, whose textures indicate that the finer grained aggregates were formed by shearing and recrystallization of coarser grains.

Magnesite forms ragged porphyroblasts averaging 0.7-1.5 mm in size. A few are up to 4 mm across.

Chlorite forms flakes averaging 0.2-0.3 mm in length, which are concentrated in certain patches and are intergrown intimately with finer grained talc and less commonly as disseminated inclusions no magnesite porphyroblasts. Chlorite is pale green to colorless and has a low birefringence.

Chromite forms ragged patches up to 2.5 mm in size intergrown irregularly with magnesite and less talc. It is altered almost completely to magnetite, and only a few relic cores up to 0.1 mm in size of chromite are preserved in larger grains. Magnetite forms a few euhedral grains up to 0.3 mm in size.

Pyrite forms clusters up to 0.7 mm in size of irregular grains, commonly intergrown with magnesite. Smaller, very irregular patches up to 0.3 mm in size are intergrown with talc. In many of the patches, two phases of pyrite are present. A yellowish pyrite is brecciated and healed by a paler cream pyrite with slightly higher reflectivity. The second minerals may be marcasite; however it is isotropic whereas marcasite characteristically has a strong anisotropism. Pyrite also forms a few lenses from 0.1-0.15 mm in length parallel to foliation.

Chalcopyrite forms a few grains up to 0.03 mm in size enclosed in pyrite.m

ACME ANALYTICAL LABORATORIES LTD. 852 E. HASTINGS ST. VANCOUVER B.C. V6A 1R6 PHONE(604)253-3158 FAX(604)253-1716

WHOLE ROCK ICP ANALYSIS

Kamloops Research & Assay Lab. PROJECT KM236-1 File # 91-0009

912 - 1 Laval Crescent, Kamloops BC V2C 5P5

SAMPLE#	SiO2 %	Al2O3 %	Fe2O3 %	MgO %	CaO %	Na2O %	K2O %	TiO2 %	P2O5 %	MnO %	Cr2O3 %	Ba ppm	Sr ppm	La ppm	Zr ppm	Y ppm	Nb ppm	LOI %	SUM %
RO.TL.	20.38	1.29	7.33	33.12	4.15	.05	.33	.08	.14	.30	.325	36	71	11	11	5	20	32.1	99.61
1st CL TAIL	42.71	2.16	4.98	30.58	1.67	.29	.28	.06	.22	.13	.233	92	28	2	10	5	20	16.5	99.83
2nd CL TAIL	55.30	1.40	3.38	29.56	.61	.05	.16	.04	.14	.05	.145	148	10	5	9	5	20	9.1	99.96
3rd CL TAIL	58.37	.91	2.87	29.80	.19	.12	.26	.03	.14	.03	.113	5	10	11	9	5	20	7.2	100.04
4th CL TAIL	58.33	1.28	3.09	29.65	.19	.06	.15	.04	.13	.03	.120	127	10	2	9	5	20	6.9	99.99
TALC CONC.	59.77	.86	2.64	29.51	.11	.29	.11	.03	.21	.02	.091	91	10	2	9	5	20	6.4	100.06

.200 GRAM SAMPLES ARE FUSED WITH 1.2 GRAM OF LIBO2 AND ARE DISSOLVED IN 100 MLS 5% HNO3.
- SAMPLE TYPE: PULP

DATE RECEIVED: JAN 2 1991 DATE REPORT MAILED: Jan 11/91. SIGNED BY. C Leong .D.TOYE, C.LEONG, J.WANG; CERTIFIED B.C. ASSAYERS

APPENDIX II

:KM2361

WEIGHT AND ASSAY TABLE						DISTRIBUTION TABLE %		
RODUCT	WEIGHT	% WT.	SIO2%	MGO%	FE203%	SIO2	MGO	FE203
ALC CON	157.80	13.39	59.77	29.51	2.64	20.58	12.60	6.75
CT	236.10	20.03	58.33	29.65	3.09	30.05	18.95	11.82
CT	35.90	3.05	58.37	29.80	2.87	4.57	2.90	1.67
CT	33.55	2.85	55.30	29.56	3.38	4.05	2.68	1.84
CT	183.70	15.58	42.71	30.58	4.98	17.12	15.20	14.82
J TAIL	531.70	45.11	20.38	33.12	7.33	23.64	47.66	63.12

JTAL WEIGHT---
1178.75

ALC. HEAD (%) 38.89 31.34 5.24

:KM2361A

WEIGHT AND ASSAY TABLE					DISTRIBUTION TABLE %	
RODUCT	WEIGHT	% WT.	AL203%	CAO%	AL203	CAO
ALC CON	157.80	13.39	0.86	0.11	8.48	0.67
CT	236.10	20.03	1.28	0.19	18.89	1.72
CT	35.90	3.05	0.91	0.19	2.04	0.26
CT	33.55	2.85	1.40	0.61	2.94	0.79
CT	183.70	15.58	2.16	1.67	24.80	11.79
J TAIL	531.70	45.11	1.29	4.15	42.86	84.77

JTAL WEIGHT---
1178.75

ALC. HEAD (%) 1.36 2.21

Recd 17 Jan. 91
1st test on tale from
P. Jane

B:KM2361
SIO2 CUMULATIVE ANALYSIS FROM TALC CON TO 1 CT

GRADES	RECOVERIES
59.77	20.58
58.91	50.62
58.86	55.19
58.60	59.24
54.09	76.36

B:KM2361
MGO CUMULATIVE ANALYSIS FROM TALC CON TO 1 CT

GRADES	RECOVERIES
29.51	12.60
29.59	31.55
29.61	34.45
29.61	37.13
29.88	52.34

B:KM2361
FE2O3 CUMULATIVE ANALYSIS FROM TALC CON TO 1 CT

GRADES	RECOVERIES
2.64	6.75
2.91	18.56
2.91	20.23
2.94	22.07
3.52	36.88

B:KM2361A
AL2O3 CUMULATIVE ANALYSIS FROM TALC CON TO 1 CT

GRADES	RECOVERIES
0.86	8.48
1.11	27.37
1.09	29.41
1.12	32.34
1.41	57.14

B:KM2361A
CAO CUMULATIVE ANALYSIS FROM TALC CON TO 1 CT

GRADES	RECOVERIES
0.11	0.67
0.16	2.39
0.16	2.65
0.19	3.44
0.61	15.23

Lead 17 Jan 91

(1)

24 Sept '90

APPENDIX III

Transit & Chain Survey Calculations
Duncan Lake Minerals.
Commencing at X9 (See Fig 4, 1:1200, 7 Apr. 90)

(Deduct ½° from transit compass rdg due to incorrect declin setting)

From	To	HA	VA	SD	HD	Assume X9-10 S35E Bearing	Transit Compass Bearing	Lat cos	Dep sin	Lat	Dep	VD	Elev	
X9	X10	0°00'	—	—	—	S35°00'E	S34 E	-		20,223.9	19,843.4		2638.7	X9
	X17	0°02'	-1°55'	273.5	273.3	34°58'	S 34 E	-223.9	+156.6	20,000.0	20,000.0	-9.1	2633.1	
X17	X18	168°38'	+8°10'	383.9	380.0	46°20'	46	262.3	274.8	19,737.7	20,274.8	+54.5	2691.1	
	X19	175°15'	+12°37'	212.7	207.5	5°05'	5¼	130.3	161.4	19,607.4	20,436.2	+46.4	2741.0	
	X20	195°56'	+7°20'	259.1	257.0	35°09'	35¼	210.1	147.9	19,397.3	20,584.1	+33.1	2777.6	
	X21	179°01'	+11°58'	141.0	137.9	36°08'	36½	111.4	81.3	19,285.9	20,665.4	+29.2	2810.3	
	X22	189°57'	+4°20'	629.5	627.7	26°11'	26½	563.3	276.9	18,722.6	20,942.3	+47.6	2861.4	
	X23	183°19'	+12°25'	172.1	168.0	22°52'	22½	154.8	65.3	18,567.8	21,007.6	+37.0	2901.9	
	X24	175°16'	+2°11'	129.7	129.6	27°36'	27½	114.8	60.0	453.0	21,067.6	+4.9	2910.3	
	X25	181°16'	-4°26'	165.3	164.8	26°20'	25½	147.7	73.1	305.3	21,140.7	+12.8	2901.0	
	X26	171°03'	+3°21'	160.0	159.7	35°17'	35	130.3	92.2	175.0	21,232.9	+9.3	2913.8	
	X27	188°00'	+5°30'	233.9	232.8	27°17'	26½	206.9	106.7	17 968.1	339.6	+22.4	2939.7	
	X28	183°27'	+11°15'	74.4	72.9	23°50'	23½	66.7	29.4	901.4	369.0	+14.5	2957.7	
	X29	169°59'	+3°46'	108.5	108.2	33°51'	34	89.8	60.2	811.8	429.2	+7.12	2968.3	
	X30	177°33'	+12°50'	146.6	142.9	36°18'	36	115.1	84.6	696.7	513.8	+32.6	3004.4	
	X31	183°02'	-5°56'	246.8*	245.4	33°16'	33½	205.2	134.6	4916	648.4	-25.5	2982.4	
	X32	183°29'	+8°20'	128.0	126.6	29°47'	30	109.9	62.9	381.6	711.3	+18.5	3004.4	
	33	181°35'	+13°32'	375.5*	365.0	28°12'	28	321.6	172.5	170.69.0	883.8	+87.9	3095.8	
	34	181°48'	+2°55'	118.1	117.9	26°24'	25	105.6	52.4	16954.4	936.2	+6.0	3105.3	
	35	177°11'	+3°57'	525.7	524.4	29°13'	29	457.7	255.9	496.7	22,192.1	+36.2	3145.0	
	36	184°06'	+7°58'	325.3	322.1	25°07'	25	291.6	136.7	205.1	328.8	+45.1	3193.6	
	37	172°18'	+8°50'	111.2	109.8	32°49'	33	92.3	59.5	112.8	388.3	+17.1	3214.2	
	38	180°37'	+4°44'	112.4	112.0	32°12'	32	94.8	59.7	18.0	448.0	+9.3	3227.0	
	39	172°12'	-0°40'	135.2	135.2	40°00'	39	103.5	86.9	15914.5	534.9	-1.6	3225.9	
	40	189°30'	-16°53'	208.8	199.8	30°30'	31	172.1	101.4	742.4	636.3	-60.6	3171.8	
	41	180°47'	-14°25'	140.8	136.3	29°43'	29½	118.3	67.5	624.1	703.8	-35.0	3140.3	
	42	182°11'	-11°19'	226.6	222.2	27°32'	27	197.0	102.7	427.1	806.5	-44.5	3099.3	
	43	164°05'	-20°50'	130.5	121.9	43°27'	44	- 88.5	83.8	14338.6	22890.3	-46.4	3056.4	
	44	168°24'	-10°58'	842.2*	826.9	55°03'	54½	- 473.7	+ 677.8	14 864.9	23 568.1	-160.2	2899.7	
44	X45	060°58'	+3°34'	746.8	745.3	N 5°55'E	N.06½ E	+ 741.3	+ 76.8	15 606.2	23 644.9	+46.4	2949.6	

RSF 95

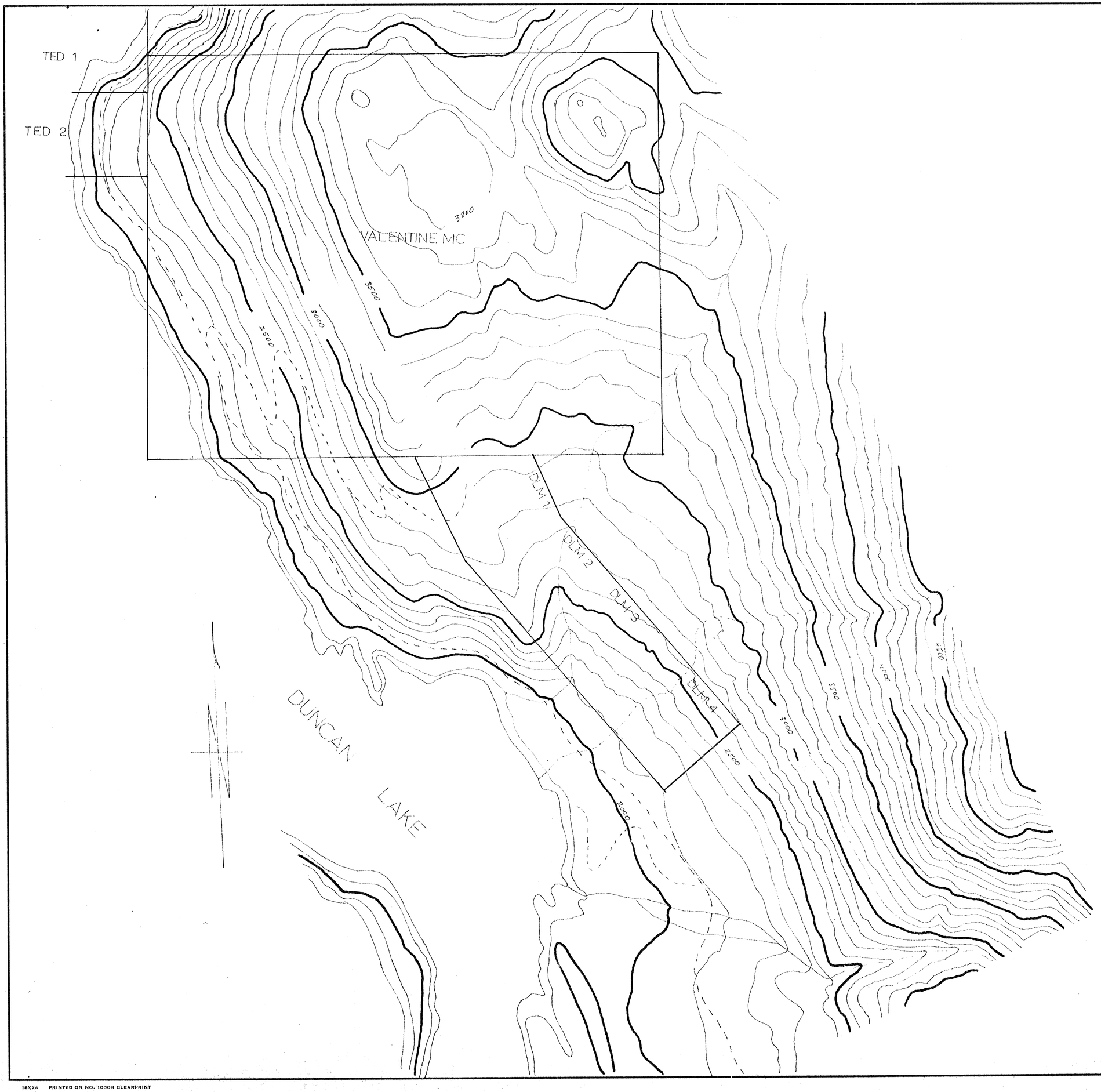
(2)

12 Oct 90

Transit & Chain Survey Calculations
Duncan Lake Minerals
Commencing at X9, northwesterly to Bluff area, LCP.

From	To	HA	VA	SD	Sta-Inst HI	HD	Calc. Bearing	Transit Compass Rdg	Lat cos	Dep sin	Lat	Dep	VD	Elevn
X9	X10	0°00'					325 S 35 E				20,223.9	19,843.4		2638.7 X9
	X45B	180°45'	-4°08'	227.8	3.6	227.2	325°45' N 34°15' W	N33 W	+187.8	-127.8	20,411.7	715.6	-16.4	2625.3 X45
X45B	X46	183°47'	-8°02'	127.2	3.7	125.9	329°32' 30°28'	N30 W	106.6	63.8	518.3	651.8	-17.8	2611.8
	X47	153°42'	-13°24'	99.2	3.6	96.6	303°14' 56°46'	N55½ W	52.9	90.8	571.2	571.0	-23.0	2592.4
	X48	194°38'	-6°08'	184.8	3.9	183.8	317°52' 42°08'	N41¼ W	136.3	123.3	707.5	447.7	-19.7	2576.6
	X49	192°40'	-6°40'	293.4	3.6	291.6	330°32' 29°28'	N29 W	253.8	143.4	961.3	304.3	-34.1	2546.1
	X50	200°46'	-0°21'	269.3	3.5	269.3	351°18' 08°42'	N08 W	266.2	40.7	21,227.5	263.6	-1.6	2548.0
	X51	158°18'	-3°04'	123.0	3.8	122.8	329°36' 30°24'	N29 W	105.7	62.5	333.2	201.1	-16.6	2545.2
	X52	162°12'	-11°45'	121.0	3.6	118.5	311°48' 48°12'	N47½ W	79.0	88.3	412.2	112.8	-24.6	2524.2
	X53	195°20'	-15°41'	136.7	3.1	131.6	327°08' 32°52'	N32 W	110.5	71.4	522.7	041.4	-36.9	2490.4
	X54	172°44'	-28°15'	90.8	3.5	80.00	319°52' 40°06'	N39½ W	61.1	51.6	583.8	18,989.8	-43.0	2450.9
	X55	188°16'	-31°20'	166.8	2.8	142.5	328°08' 31°52'	N31 W	121.0	75.2	704.8	914.6	-84.7	2367.0
	X56	168°35'	-37°20'	79.0	2.2	62.8	316°43' 43°17'	N43 W	45.7	43.1	750.5	871.5	-47.9	2321.3
	X57	190°48'	-45°31'	98.8	1.8	69.2	327°31' 32°29'	N31½ W	58.4	37.2	808.9	834.3	-70.4	2252.7
	X58	205°59'	-43°55'	368.4	2.8	265.4	353°30' 06°30'	N06 W	263.7	-30.0	22,072.6	804.3	-255.5	2000.0
	X59	210°36'	0°	58.0	5.0		24°06' 24°06'	N26 E	+52.9	+23.7	22,125.5	18,828.0		Assume 2000.0

~2444 feet



GEOLOGICAL BRANCH
ASSESSMENT REPORT

21,331

feet
500 1000 1500 2000 2500
meters
150 300 500 700

100 foot contour intervals
Data base: Duncan Lake Sheet 82K/4 (1979)

DUNCAN LAKE MINERALS

SCALE: 1:12000	APPROVED BY:	DRAWN BY E.M.
DATE: 7 FEB 91		REVISED

CLAIM PLAN and TOPOGRAPHY

DRAWING NUMBER
FIG. 3

25000E

30000E

15000N

VALENTINE MC

3500

3000

2500

2000

SCHIST

TALCOSE ZONE

SCHIST

TALCOSE

SCHIST

Bluff Quarry
1990 excavation
6m x 6m x 2.4m
~ 260 tons

LOP

XSP

TED 1

TED 2

Randy Quarry

1990 excavation
4.5m x 6.0m x 2.4m?
~ 225 tons

DLM 1

DLM 2

DLM 3

DLM 4

NORTH

CREEK

Duncan Lake Main Road

North Creek Road

DUNCAN LAKE

DUNCAN LAKE

LEGEND

- contact, approx., assumed
- outcrop
- 1 fine grained black mica schist
- 2 green mottled serpentine
- 3 brown weathering talc-magnesite
- 37 survey station

AR 21331

DUNCAN LAKE MINERALS

SCALE: 1:6000 | APPROVED BY | DRAWN BY EL

DATE: 15 Nov 90 | Revised Sept/91

TALCOSE ZONES and TOPOGRAPHY

DRAWING NUMBER Figure 5