GEOLOGICAL REPORT

on the

ELM GROUP OF MINERAL CLAIMS
KAMLOOPS M.D.

NTS 92I/15W
Lat 50°58'N Long 120°52'W

by

J.D.MURPHY,P.Eng

Owner and Operator

1990-10-20

RECORD NUMBERS

9273 to 9278,8689 & 8690

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LIST OF ILLUSTRATIONS

ADDENDA

INTRODUCTION

The ELM Group of eight claims,located under the 2-post system,is centred on the junction of Criss and McGee creeks,25 km straight line distance almost due north of Savona and 41.5 km by road. Access from Savona is via the Trans Canada Highway 9.3 km west to Deadman Creek road. This is followed north for 12.4 km, the first 5 km being hard surfaced, the balance well maintained gravel. From Deadman Creek road an active logging road branches northeast for 10.6 km to the 23 km sign. From here the road branches north for approximately 7 km, then southeast by a little used track for 2 km, to the ELM claims at Criss Creek.

The claims have been partially logged, mainly on the west side of the creek, but also on ELM 7 east of the creek. The resulting network of logging trails provides good access within the claims. The area is now extensively used for cattle grazing during the snow free period.

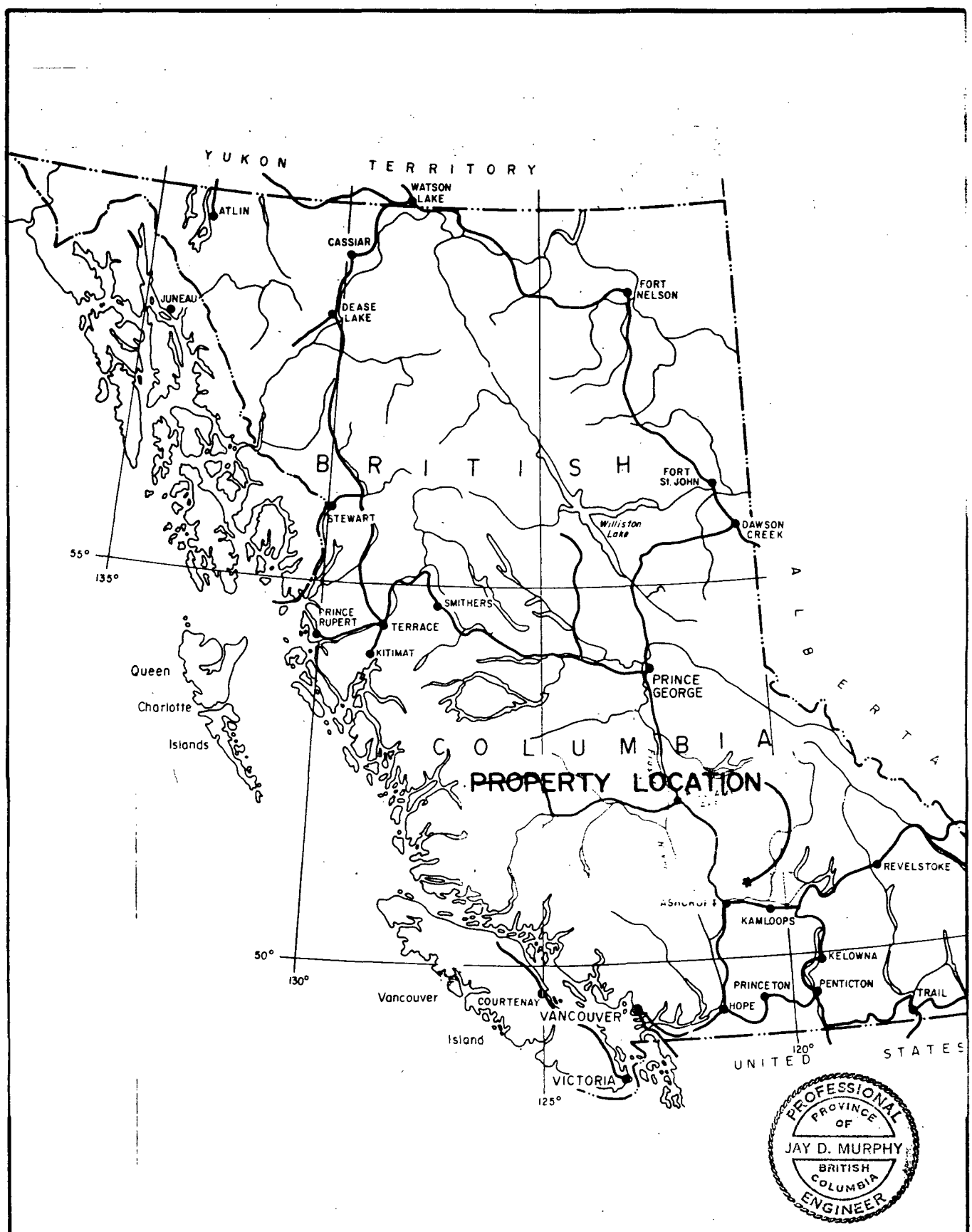
Elevations within the claims vary from 900 to 1100 metres. Relief is generally moderate. One exception is the northwest trending ridge along the southwest side of the claim group, which slopes steeply southeast to Criss Creek, a drop of over 200 m. The area is well drained by Criss Creek, a fast flowing stream draining southwest to Deadman Creek, which in turn flows south to the Thompson River.

Bush is fairly open and park-like, with little underbrush, even where tree growth is thickest. Topography is subdued, with relatively gentle slopes except immediately adjacent to Criss Creek, where rock scarps up to 30m, but usually much less, are common. Rock exposures are confined mainly to the channels and banks of Criss and McGee creeks. Elsewhere, overburden predominates and rock exposures are restricted to ridges and road cuts.

Overburden varies from a thin mantle of detritus from the present erosion cycle, to remnants of glacial outwash deposits 5 to 10 m thick as seen at several locations along Criss Creek. These remnants vary from silt grade to boulders and exhibit distinct cross bedding.

Government reports indicate that mineralization on Criss Creek has stimulated exploration activity since at least 1893. Initial work was done for placer gold, later, mercury and lode gold. More recently, molybdenum and silver have been the minerals of interest.

Previous work on the claim group included driving five short adits, drilling at least three diamond drill holes, eight percussion drill holes, and several geochemical surveys involving both stream sediment and soil samplimg. Most recent work reported was by Craigmont Mines in 1976, and included eight percussion holes totaling 635 m.



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Km 100 0 100 200 300 400 Km

Miles 100 50 0 100 200 Miles

PLATE NO. I

ELM MINERAL CLAIMS
KAMLOOPS M.D. 921/15W

LOCATION MAP

J.D.M	89-03-27	SCALE NOTED

Molybdenum mineralization is associate with a small granite body of Triassic-Jurassic age, intrusive into Triassic Nicola Volcanics. Gold-silver mineralization is associated spatially with a small diorite plug of probable Triassic age, intruded into clastic Nicola Volcanics. The Au-Ag Zone is located at the faulted contact between Nicola Volcanics and Ashcroft Formation conglomerate of Jurassic age, and is hosted by a quartz-carbonate-mariposite schist.

A study of recent publications by the Geological Survey Branch of B.C. has led to the speculation that Gold-Silver Zone mineralization in Criss Creek may represent a listwanite type of deposit. Most of the work covered in this report was directed toward proving this idea through mapping, sampling and prospecting. Some work was done to extend the strike length of the Au-Ag Zone. Fill in mapping was done in other areas, including outcrops in Criss Creek newly exposed by unusually high water in early summer.

SUMMARY AND CONCLUSIONS

ELM Group mineralization has many features in common with typical listwanite deposits from across British Columbia, and has tentatively been placed in this category. It follows that work is warranted to determine whether platinum group elements are present in economic quantities.
The Gold-Silver Zone, as currently defined, represents a valid diamond drill target.

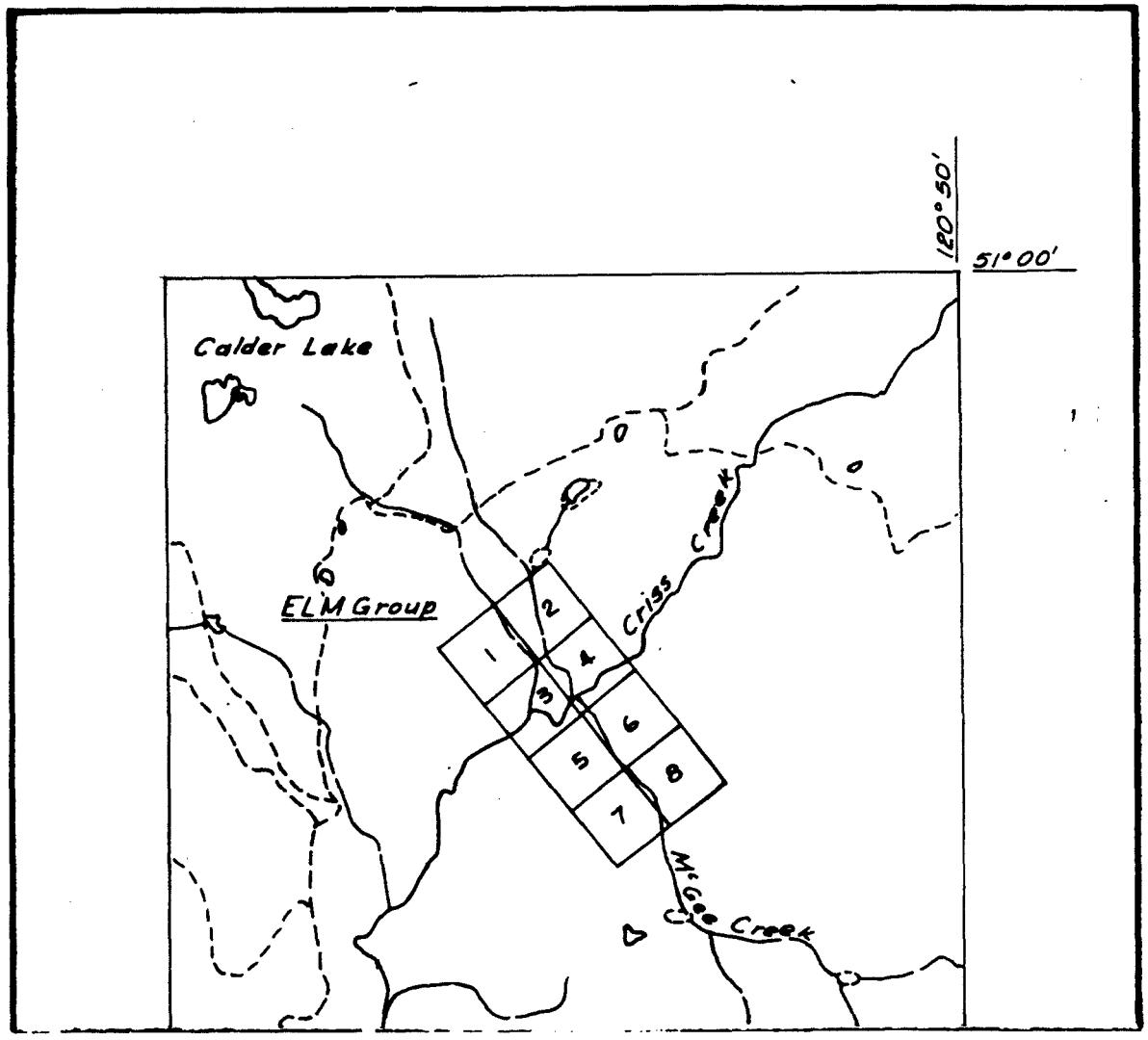
RECOMMENDATIONS

1. Reassay better grade samples for platinum group elements, or take new samples if necessary.

2. Drill at least two, preferably three, diamond drill holes, BQ size or larger, to sample the full width of the Gold-Silver Zone from hanging wall to footwall at a hole spacing of 50m. This would require an estimated maximum of 350m of drilling. Assay all core for gold, silver, lead, zinc and copper. Check higher grade samples for platinum group elements.

FIELD PROCEDURES

Several hundred metres of old picket line were reestablished to provide control for mapping. Compass and hip chain traverses were run to tie in various features outside the established grid. Geological mapping was done on a scale of 1:1000.



N ASTRONOMIC

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Metres
1000 0 1000

Scale: 1:50000

PLATE NO. 2

ELM MINERAL CLAIMS
921/15W

CLAIM MAP

J.D.M	1:50000	85-04-22

DISCUSSION OF RESULTS

Current work has extended the favourable quartz-carbonate-mariposite host rocks more than 100m to the northwest from the old adits in Criss Creek (Plate No.3). No significant mineralization was noted and no samples taken from this extended zone.

Assay results from Sample 477, taken near the southeast end of the Au-Ag Zone, indicate that good grade sulphides persist over the 200m of strike length exposed along the creek. Similar grade material was found near the adits and in the Hanging Wall Vein, as recorded on Plates 3 and 3-A.

Mapping in the Quartz Zone area near elevation 980m (Plate No.3-A), indicates that the same vein is exposed in both the Upper and lower adits. Previously, because of strike differences, it was thought that two parallel veins might be present, or the same vein was offset by faulting between the two adits. It is now believed that the Quartz Zone is one continuous bull quartz vein that increases in true width up dip from 5m at the Lower Adit to about 12m at the Upper Adit.

Previously, it was thought that the Gold-Silver Zone represented a strong shear at the contact of Nicola Volcanics to the northeast with Ashcroft Formation cobble conglomerate to the southwest. It was assumed that the intensity of shearing had destroyed all primary features of the original conglomerate, which was subsequently altered and replaced by quartz-carbonate-mariposite-sulphide mineralization, and intruded by mafic and felsic dikes as well as abundant quartz-dolomite veins and stringers. No ultramafic unit was recognized or suspected, except for limited exposures of soft, talcose, sheared,dark green material in McGee Creek. This was thought to represent a highly sheared equivalent of one of the numerous trap dikes (fine grained diorite), common to the area. Considering the geology from the perspective of a possible listwanite association, the talcose rocks in McGee Creek,and the quartz-carbonate-mariposite mineralized zone in Criss Creek,might both be more logically explained as altered ultramafics.

A recent re examination of the Au-Ag Zone at low water, following the extremely high water of early summer, revealed some rock types never seen before, in proximity to the hanging wall vein. This material is dark green, fine grained, soft and talcose, tentatively classified as a serpentinized ultramafic.

During the same recent examination,and also near the hanging wall, a small exposure of what appears to be strongly kaolinized wallrock was noted for the first time. This material is creamy white in color, soft and powdery, with a strong clayey odor. Similar material had been noted previously, over a width of a few tens of metres, at a location two km to the northwest and roughly on strike with the fault zone.

Prospecting and mapping newly exposed bedrock on the northeast side of Criss Creek,across from the mouth of McGee Creek, located some good molybdenum mineralization with quartz stringers in monzonite. This was the first occurrence of molybdenum in place noted outside McGee Creek, except for some weak distribution with the massive vein in the Quartz Zone adits.

Work covered in this report has led to a comparison of Gold-Silver Zone mineralization with typical listwanite deposits from various localities in British Columbia. ELM Group mineralization shows a correlation with known deposits in the following respects;

1. Mineralization is associated with a strong break, mapped by the G.S.C. as a reverse fault with a strike length of 4.5km.

2. Mineralization is hosted by an alteration zone, best described as a quartz-carbonate-mariposite-schist,probably a hydrothermally altered ultramafic.

3. Some significant potassic alteration is associated with mariposite.

4. The main metals present, including Au,Ag,Pb,Zn,Cu and Sb, are all characteristic of B.C. listwanites. Arsenic is also common in known deposits, and , while it has not been assayed for in ELM samples, is probably present as tennantite.

5. Common sulphide minerals include pyrite, tetrahedrite and sphalerite, with lesser galena and occasional strong chalcopyrite.

6. Alteration and mineralization decrease away from the fault.

STATEMENT OF COSTS

The following costs were incured on the ELM Group of Mineral Claims. Fieldwork was carried out beween 1990-04-18 and 90-06-19. Report preparation was completed from 90-10-10 to 90-10-20. All work was done by J.D.Murphy, P.Eng.

LABOUR		
12 days fieldwork, grid,mapping and sampling @ $250/day	$3000.00	
30 hrs report preparation and drafting @ $40/hr	$1200.00	
TOTAL LABOUR	$4200.00	4200.00
TRANSPORTATION		
12 days 4 x 4 rental @ $30/day	$360.00	
800 km @ $.25/km	$200.00	
TOTAL TRANSPORTATION	$560.00	560.00
FOOD AND LODGING		
12 days @ $25/day		300.00
TYPING		
7 pages @ $4/pg.	$28.00	
1 page @ $6/pg.	$6.00	
TOTAL TYPING	$34.00	34.00
TOTAL COSTS		$5094.00

STATEMENT OF QUALIFICATIONS

I, JAY D.MURPHY, hereby certify;

1. That I am a Consulting Geological Engineer, resident at 1335 Todd Road, Kamloops,B.C. V2C 5B4

2. That I am a graduate of the University of Manitoba (1954) with a B.Sc. in Geological Engineering.

3. That I have practiced my profession continuously since graduation.

4. That I am a member of the Association of Professional Engineers of British Columbia and Ontario.

5. That the information contained in this report is based on a personal examination of the subject property.

Jay D.Murphy P.Eng.

APPENDIX NO.1

KAMLOOPS
RESEARCH & ASSAY
LABORATORY LTD.

B.C. CERTIFIED ASSAYERS

912 - 1 LAVAL CRESCENT, KAMLOOPS, B.C. V2C 5P5 PHONE (604) 372-2784 FAX 372-1112

CTA

** ASSAY CERTIFICATE **

To: Mr. Jay Murphy
1335 Todd Rd.,
Kamloops, B.C.
V2C 5B4

Attn:

Number: K 10193

Date: August 14, 1990

Proj.:

No.	Description	Au ozs/ton	Ag ozs/ton
1	475		<.01
2	477	.068	12.7

Derek A Blundell

B.C. Certified Assayer

N ASTRONOMIC

22°42'

N MAGNETIC

SYMBOLS

- Outcrop boundary, small outcrop or boulder
- Quartz-carbonate vein, stringer
- Geological contact
- Bedding
- Shear
- Fault
- Adit
- Claim post & boundary
- Sample location & number
- Dolomitic vein

MOLYBDENUM ZONE

Pyritic qtz. str. zone

Criss Creek

Boulders, gravel

Old cabin

ELM 3

ELM 4

ELM 5

ELM 6

GOLD-SILVER ZONE

Adit No. 1

Adit No. 2

Adit No. 3

METRES

0 50 100

GEOLOGICAL BRANCH
ASSESSMENT REPORT

20,351

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
JAY D. MURPHY

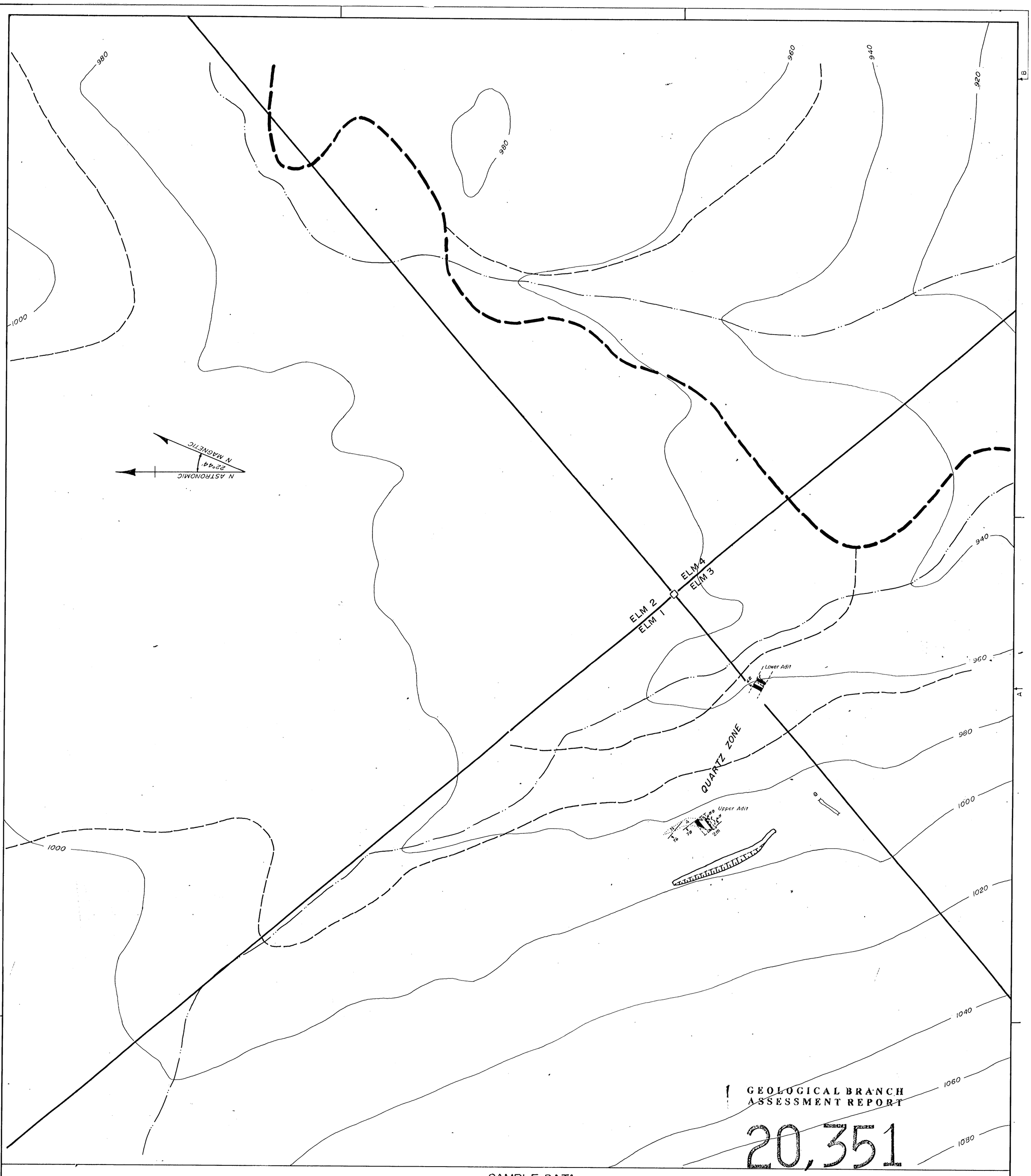
PLATE NO. 3

ELM MINERAL CLAIMS
CRISS CREEK AREA
KAMLOOPS M.D. 92I/15W

GEOLOGY

GOLD-SILVER AND MOLYBDENUM ZONES

J.D.M	1986-09-22	1:1000	



GEOLOGICAL BRANCH
ASSESSMENT REPORT

20,351

SAMPLE DATA

NUMBER	AU (g/t)	AG (g/t)	PB (%)	CU (%)	ZN (%)	REMARKS	
181	—	17.8	—	—	—	Grab- white dolomite vein to 40 cm at edge of creek, heavy Py & lesser Tetrahedrite	HANGING WALL VEIN
182	—	5.8	—	—	—	Grab - 30 cm dolomite - qtz vein with strong Py, scat'd Tetrahedrite, abundant fuchsite	
183	—	>20	—	—	—	Mineralized aplite dike, v fine Py, poss. Tetrahedrite	
184	—	8.9	—	—	—	Pyritic conglomerate including qtz strs from hanging wall of vein	
185	—	5.1	—	—	—	Grab across 50 cm qtz-carb vein with strong Py & scat'd Cpy	
186	4.2	298.3	—	1.27	—	Grab from 40 cm block of float in place w strong Py, Cpy & lesser Tetrahedrite	
187	—	222.8	—	—	—	Grab- 20 cm qtz vn in place w strong Py, poss Tetrahedrite	
151	.55	624.0	.27	1.92	—	Grab- good sulphides, including Tetrahedrite, from 15 cm shear	
469	—	14.8	—	—	—	Grab- qtz-carb vn. with Tetrahedrite	
477	2.33	435.4	—	1.37	—	Grab over 20 cm dolomite w Py, Tetrahedrite, Cu oxides & fuchsite	
.91882	4.1	568.5	4.11	1.96	3.62	Selected high grade	SAMPLED BY NORTH SLAVE EX. 1968
5	.68	174.8	1.15	.41	11.33	10-15 cm qtz strs w Py, Tetrahedrite, Sphalerite & Galena	
6	7.54	826.3	.27	2.13	2.37	Hanging Wall Vein (?)	
9	.68	181.7	.30	.37	1.98	Adit No. 1	
10	1.37	349.7	39.78	.67	6.29	Adit No. 2	

LEGEND

- 4 — Trap dike
- 3 — Diorite
- 2 — Porphyritic granite, m-monzonite, a-aplite & felsite
- 1 — Boulder conglomerate
- N — Nicola Volcanics, a - flows, b - clastics
  - s sheared
  - c cherty
  - d dolomite-mariposite

SYMBOLS

- Outcrop boundary, small outcrop or boulder
- Quartz-carbonate vein, stringer
- Bull quartz vein
- Dolomite vein
- Geological contact
- Bedding
- Shear
- Fault
- Adit
- Claim post & boundary
- Trench, pit
- 151 Sample number
- • ○ Sample location defined, approximate

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PLATE NO. 3-A

ELM MINERAL CLAIMS
CRISS CRISS AREA
KAMLOOPS M.D. 92I/15W

GEOLOGY

QUARTZ ZONE

J.D.M	1990-10-15	1:1000	