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TECK EXPLORATION CO LTD.  
REPORT OF WORK ON DONJEK AND MUSKETEER CLAIMS,  
ARCH CREEK, YUKON.

INTRODUCTION:

The Donjek group of claims was staked in August 1952 for Conwest Exploration Co Ltd. with some extra staking in 1953, while the Musketeer claims were staked in June and July 1953 for Teck Exploration Co Ltd. Representation work was recorded on both groups in 1953.

During the summer of 1955, Teck Exploration Co Ltd. completed a program of geophysical exploration on these two groups, consisting of linecutting, electromagnetic surveying, and some magnetic surveying, to trace the favourable peridotite. This work was carried out by, and under the supervision of A. James Walker, while Dr. M.H. Frohberg was the consulting geologist.

LOCATION AND ACCESSABILITY:

These Donjek and Musketeer claims are located at Arch Creek, about 1 mile east of the Donjek River, and 5 or 6 miles west of the main camp of Hudson Bay Mining and Smelting Co. at Quill Creek. The groups may be reached from the Alaska Highway (Mileage 1111) by driving the Hudson Bay road to a point 1 mile west of their camp. It is then necessary to use a foot trail to go the last 4 miles. The group has also been reached by driving the Donjek River flats from the Alaska Highway (mileage 1130) to the mouth of Arch Creek, (12 miles) using a 4-wheel drive vehicle. The property is about 25 miles from Burwash Landing and 200 miles northwest of Whitehorse.

TOPOGRAPHY:

Arch Creek traverses the group from east to west, near the southern portion of the group. The creek drops about 1,000 feet, from the east part of the group, to the Donjek River, (about 3 miles distance). The banks rise steeply for 300 to 500 feet above the creek. The banks are gravel in the east section and rock canyon in the west or lower section. After their first rise above the creek, a bench or flat section of the older valley bottom is encountered, which represents heavy overburden on the claims north of Arch Creek. The bench varies in width from 1,000 feet in the east to 2,500 feet in the west section. The mountains then rise sharply north of this bench, with slopes from 30° to 45°, and the overburden does not appear to be too heavy on most slopes. The canyon on Arch Creek is very rough, with steep to vertical slopes. It was not possible to survey considerable area around this canyon. There are some good stands of spruce on the bench above Arch Creek, the best being near the Donjek River.

GEOLOGY:

As general geological reconnaissance and mapping was carried out in 1953, (See reports of J.R. Woodcock of Conwest and Dr. M.H. Frohberg of Teck Exploration Co. ), no actual geological survey was carried out. However, some magnetic work was done to trace a peridotite dike in heavy overburden, across several claims.

As previously described by other writers, the claims are located in an area of Permian sediments and volcanics, trending north westerly, and have been intruded by diorites, gabbros, and peridotites, the latter being related to several nickel-copper showings in these ranges, including the Hudson Bay at Quill Creek.

MAGNETOMETER SURVEY:

A limited amount of magnetic work was carried out to trace the extension of the favourable peridotite outcrops and to search for other dikes in the area. The higher magnetite content of the peridotite enabled us to readily trace the probable outline of the dike.

The map titled "magnetometer survey" shows the individual readings along the picket lines. The magnetic profile for these readings is also shown. The interpretation of the dike location is also indicated on this map.

Survey Detail:

Crew:	A.J.Walker. F.K.Mills. T.English.
Type of Instrument:	Watts - Schmidt Type.
Sensitivity:	29.55 gammas per scale division.
Base Station:	At camp on Arch Creek.
Readings:	360 (on all groups)
Distance Surveyed:	36,400 feet.
Linecutting:	Used lines cut for E-M, except to south of Arch Creek, where compass traverses used.

ELECTROMAGNETIC SURVEY:

This part of the exploration program was the main effort to locate mineralization of economic importance, by locating conductive zones.

The principle of the method is that an electro-magnetic field is set up by passing a high voltage alternating current through a vertical coil. The field from this coil will induce a current in a subsurface conductor of near vertical attitude. The conductor, then having an alternating current, will also have its own electromagnetic field, (called the secondary field), which may be detected by the receiver of this equipment, as the operator takes readings along a section line. Conductors may be sulphide bodies, graphite in schists, or shear zones, or carbonaceous rocks. Sharp topographic changes as well as overburden conditions may produce conductive effects on the instrument readings.

To perform this survey it was necessary to establish a base line and to cut a grid of picket lines at 400 foot intervals at right angles to the base line. We then established chainage pickets at 100 foot stations along the picket lines. Lines were cut mostly by local labour on a contract basis. Picket lines were turned off the base line by using a transit.

Anomalies indicated were not of great interest. Some sulphides were found in relation to those conductors on lines 80 and 84 west. No conductors were indicated along the peridotite dike, or at either the Conwest showing or Teck showing, with the electromagnetic equipment. We also rechecked much of this ground, using a resistivity type survey. This work was done by Dr. A.R.Clark and will be submitted in another report.

Survey Detail:

Crew:	A.J.Walker.	Toronto, Ont.
	F.K.Mills.	Cincinnati, Ohio. U.S.A.
	T.English.	South Africa.
	Russel Dickson.	Burwash Landing, Y.T.

Several linecutters were also used as assistants.

Observations:	1,479
Distance Surveyed:	137,000 feet.
Instrument Used:	Sharpe - S.E. 100.

LINECUTTING, TRANSIT WORK, AND CHAINING:

Crew:	T.English.	Engineer.	South Africa.
	F.K.Mills.		Cincinnati, Ohio.
	M.McCallion.		Whitehorse, Yukon.
	James Cox.		" "
	James Watt.		Burwash Landing, Yukon.
	George John.		" " "
	Thomas Joe.		Kloo Lake, Yukon.
	Frank Isaacs.		Aishihik, Yukon.
	Joe Jacquot.	Cook.	Burwash Landing, Yukon.

The following were wranglers at different times during the work program:

Frank Isaacs.	Burwash Landing.
Jim Watt.	" "
Russel Dickson.	" "
Larry Jacquot.	" "

Lines cut:	136,000 feet.
Drafting & Report:	A.J.Walker. Toronto, Ont.
Consultant:	Dr. M.H.Frohberg. Toronto, Ont.
Fieldwork:	May 20th. 1955 to July 23rd. 1955.

DETAIL OF REPRESENTATION WORK:

No work was performed on Musketeer Claims 41 to 52 inclusive (12 claims), or on Donjek Claims 7 to 12 inclusive and 25 and 26 (8 claims).

The cost of transportation from Edmonton to Whitehorse has been submitted as a cost for work, for the following 3 men:

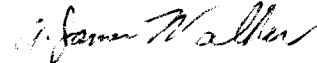
A.J.Walker, Engineer in charge of party.

T.English, Mining Engineer, Surveyor.

F.K.Mills, Magnetometer operator and assistant.

In grouping of claims it was found necessary to make the Donjek # 3 claim common to 2 groups. The attached table is a breakdown of work performed, grouping of claims, and costs for this work. No charge has been made for rental of equipment and instruments used.

AJW/HSB



A. James Walker.

22 Nov. 1955.

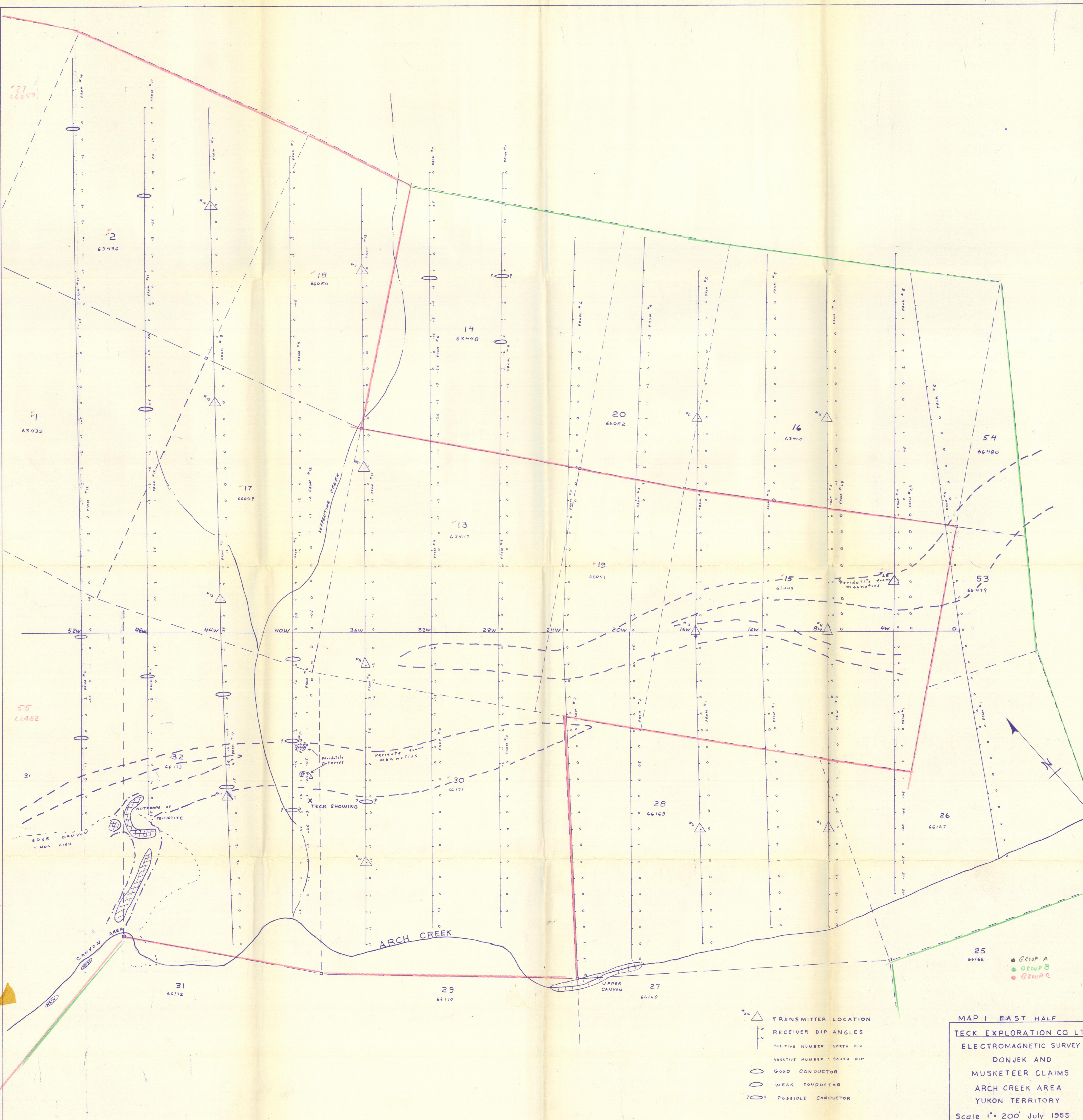
BREAKDOWN TABLE OF WORK, GROUPING, AND COSTS.

	GROUP A <sup>*</sup>	GROUP B	GROUP C <sup>*</sup>	GROUP D
Line cutting, including base line.	36,750'	24,750'	59,350'	4,800'
<u>E-M SURVEY:</u>				
Readings.	370	290	640	179
Distance surveyed.	31,750'	24,450'	53,400'	15,500'
<u>MAGNETIC SURVEY:</u>				
Readings.	17	94	249	
Distance surveyed.	2,800'	8,600'	23,500'	
Claim numbers in each group	Donjek 3-63437 5-63439 6-63440 21-66053 22-66054 23-66055 24-66056 Musketeer 38-66179 56-66483 57-66484 58-66485 59-66486 60-66487 61-66488 62-66489 63-66481	Donjek <del>14-63488</del> 16-63450 20-66052 Musketeer 25-66166 26-66167 27-66168 28-66169 29-66170 31-66172 33-66174 35-66176 37-66178 39-66180 40-66181 53-66479 54-66480	Donjek 1-63435 2-63436 3-63437 4-63438 13-63447 15-63449 17-66049 18-66050 19-66051 27-66059 Musketeer 30-66171 32-66173 34-66175 36-66177 55-66482 14-63448	Musketeer 64-66194 65-66195 66-66196 67-66197
<u>Note:</u>	See letter to Donjek 6/5 File 20576 Donjek			(51)
Donjek # 3 is common to group A and group C.				
	16 claims	16 claims	15 claims	4 claims

COSTS:

Line cutting, surveying, chaining (Labour)	\$ 517.	\$ 362.	\$ 845.	\$ 108.
E-M Survey (Labour).	348.	264.	588.	153.
Mag. Survey (Labour)	15.	81.	204.	
Supplies.	346.	318.	721.	100.
Transportation to Yukon.	112.	104.	234.	
" in Yukon.	106.	220.	96.	50.
Truck rental (2400 miles)	147.	135.	306.	
Unemployment Insurance.	2.	2.	3.	
Horses.	55.	50.	114.	10.
Building camp.	37.	35.	78.	
Cook wages.	105.	97.	218.	60.
Wrangler.	100.	92.	208.	
Workmen's Compensation.	14.	13.	29.	
Equipment Insurance.	38.	36.	79.	
Preparation & Drafting.	50.	46.	104.	
Consulting fees.	56.	52.	117.	

TOTALS. ✓ \$ 2,048. ✓ \$ 1,906. ✓ \$ 3,944. \$ 481.



27  
66059

2  
63436

18  
66050

14  
63448

20  
66052

16  
63450

54  
66480

17  
66049

13  
63447

19  
66051

15  
63449

53  
66479

55  
66482

32  
66173

30  
66171

28  
66169

26  
66167

31  
66172

29  
66170

27  
66168

25  
66166

- GROUP A
- GROUP B
- GROUP C

- △ TRANSMITTER LOCATION
- ⊕ RECEIVER DIP ANGLES
- POSITIVE NUMBER - NORTH DIP
- NEGATIVE NUMBER - SOUTH DIP
- GOOD CONDUCTOR
- WEAK CONDUCTOR
- POSSIBLE CONDUCTOR

MAP 1 - EAST HALF  
 TECK EXPLORATION CO. LTD  
 ELECTROMAGNETIC SURVEY  
 DONJEK AND  
 MUSKETEER CLAIMS  
 ARCH CREEK AREA  
 YUKON TERRITORY  
 Scale 1" = 200' July 1955  
 A.J.W.



MAP 2 WEST HALF  
 TECK EXPLORATION CO LTD  
 ELECTROMAGNETIC SURVEY  
 DONJEK AND  
 MUSKETEER CLAIMS  
 ARCH CREEK AREA  
 YUKON TERRITORY  
 Scale 1" = 200' July 1955



