384

KENNCO EXPLORATIONS, (WESTERN) LIMITED

REPORT

- <u>ON</u>

GEOLOGICAL SURVEY

Matt Claims 1-75 incl. Greenwood Mining Division

British Columbia

<u>49 119 SE</u>

82E/6E

<u>By</u>

<u>C. S. Ney</u> <u>P.Eng.</u> April 29-October 20, 1961

TABLE OF CONTENTS

Page

LIST OF CLAIMS & SUMMARY OF WORK APPLIED	1
AFFIDAVIT DETAILING WORK PERFORMED	4
INTRODUCTION	7
FIELD METHODS	7
GENERAL GEOLOGY Wallace Group Granodiorite Porphyritic Quartz Monzonite Monzonite Porphyry Dykes Quartz Monzonite Porphyry Granular Porphyry Breccia Basic Dykes Alteration Structure	8 9 9 10 10 10 11 11 12 12
CONCLUSION	13

MAPS

Geology, Matt Claims

 $1^{\prime\prime} = 400 \text{ ft.}$

MATT CLAIMS 1-75 incl., TUZO CREEK

ASSESSMENT 1961

LINE CUTTING

Wages:

Name	Period		Days	Rate	Amount
G.O.M. Stewart	Apr.29-Sept	10/61	<u>Days</u> ,34	\$12,50	\$ 425 . 00
D. Knowlton	17		37	9.60	355.20
D. Hale	` <i>n</i>	<u>n</u>	5	11.54	57,70
D. Roadhouse	"	<i>.</i>	4	10.58	42.32
R. Cannon	"	"	7	10,58	74 _e 06
H. Goddard		"	8	12,50	100,00
	*	• .	95		\$1,054.28
Costs Directly Ap	plicable:-			3	475.00
· •					\$1,529.28

GEOLOGICAL MAPPING

Wages:

Name	Peri	od .	Days	Rate	Amount
C.S. Ney	Apr.29-00	t.20/61	Days 63	<u>\$35</u> 00	\$2,205.00
J.M. Anderson	11	17	58	30,00	1,740,00
W.H. Thompson	<u> </u>	"	8	30,00	240,00
G. Davies			19	17.30	328,70
L. DeBriské	, in	n	22	12,50	275,00
G.O.M. Stewart		17	6	12.50	75.00
D. Knowlton			13	9.60	124,80
	÷.	. ~	189		\$4,988,50
Costs Directly A	945.00				
-	,			-	\$5,933 . 50
Consulting: Dr.	J.A. Gower	3 davs	@ \$50 =	\$150	,
	Sullivan		@ \$50 =	••	200.00
					\$6,133,50

LIST OF CLAIMS & SUMMARY OF WORK APPLIED

C

and the second second

<u>Claim No.</u>	Group No.	Record No.	Tag No.	Date of Record.	Work Done	Wo Physical	rk Appli Geol.	ed Total
Matt 1	Tuzo No.4	18077	386701	December 2,1960	Access road - applied	\$ 72	\$ 28	\$100
2	4	18078	386702	FR .	to all claims.	, 72	. 28	100
3	4	18079	386703	12		72	28	100
4	4	18080	386704		Geology done on most	72	28	100
5	4	18081	386705	17	claims and applied	72	28	100
6	4	18082	386706	<i>n</i>	to all claims.	72	28	100
7	4	18083	386707	11		72	28	100
8	4	18084	386708			72	28	100
9	4	18085	386709			72	128	200
10	4	18086	386710	· //		72	28	100
11	4	18087	386711	17		72	128	200
12	4	18088	386712	11		72	28	100
13	, 1	18089	386713	11		51	149	200
14	4	18090	386714	11		72	28	100
· 15	1	18091	386715	88		51	149	200
16	4	18092	386716	<i>II</i>		72	28	100
17	2	18093	386717	<i>//</i>		52	48	100
18	4	18094	386718			72	28	100
19	2	18095	386719	58		52	48	100
20	4	18096	386720	<i>[1</i>		72	28	100
21	4	18097	386721	11		72	128	200
22	4	18098	386722	11		. 72	128	200
23	4	18099	386723	11		72	128	200
24	4	18100	386724	11	Open Cuts \$580	72	128	200
25	1	18101	386725	<i>[]</i>		51	149	200
26	1	18102	386726	<i>n</i>		51	149	200
27	1	18103	386727	×10		51	249	300
28	. 1	18104	386728	"		51	149	200
29	1	18105	386729	"		51	249	300
30	1	18106	386730			51	149	200
31	1	18107	386731			51	149	200
32	1	18108	386732	11 11		51	149	200
33	2	18109	386733	••		52	48	100

-

. .

C

- -

Ļ

(

-

- ·

C

<u>Claim No</u> .	Group No.	Record No.	Tag No.	Date of Record,	Work Done	<u>Wo</u> Physical	rk Appli <u>Geol</u> .	<u>ed</u> Total
Matt 34	Tužo No _# 2	18110	386734	December 2,1960		52	48	100
35	2	18111	386735	11		52	48	100
36	2	18112	386736	88		52	48	100
37	2	18113	386737			52	148	200
38	2	18114	386738	18		52	148	200
39	2	18115	386739	18		52	148	200
40	2	18116	386740	12	Packsack Drilling	52	148	200
41	1	18117	386741	28	\$181, 50	51	149	200 🕫
42	1	18118	386742	18		51	149	200
43	1	18119	386743	50		51	249	300
44	1	18120	386744	11		51	249	300
45	1	18121	386745	12		51	149	200 - 1
46	1	18122	386746	18		51	249	300
47	1	18123	386747	<i>1</i> 9		51	149	200
48	1	18124	386748	12		51	149	200
49	2	18125	386749	14		52	48	100
50	2	18126	386750	11		52	48	100
51	2	18127	386751	, 11		52	148	200
. 52	2	18128	386752	12		52	148	200 k
53	2	18129	386753	17		52	148	200 '
54	2	18130	386754	18		52	148	200
55	3	18131	386755	11		57	143	200
. 56	3	18132	386756	11		5 7	143	200
57	3	18133	386757			57	143	200
58	3	18134	386758	18		57	143	200
5.9	3	18135	386759	18		57	143	200 ^I u`
60	1	18136	386760	84	OPen Cutn- \$142	51	149	200
61	3	18137	386761	12	•	57	143	200
62	1	18138	386762	18		51	149	200
63	2	18139	386763	18		52	48	100
64	2	18140	386764	10		52	48	100
65	2	18141	386765	77		52	48	100 (

.

 $\left(\right)$

C

	•			· · · · ·			rk Appli	
<u>Claim No</u> .	Group No.	Record No.	Tag No.	Date of Record.	Work Done	Physical	<u>Geol</u>	Tota
•					• ·			
Matt 66	Tuzo No.2	18142	386766	December 2,1960		52	48	100
67	3.	18143	386767			57	43	100
68	3	18144	386768	11		57	43	100
69	3	18145	386769	87		5.7	43	10
70	3	18146	386770	77		57	43	10
71	3	18147	386771	18		57	43	10
72	3	18148	386772	78		57	43	100
73	-3	18149	386773			57	43	100
74	3	18150	386774			57	43	100
75	3	18151	386775	ET		57	43	100
			×					
			· .			•		
			•					

ا ب ا

. 1

.

.

CONSTRUCTION OF ACCESS ROAD (D-8 Bulldozer) (4.4 miles)

<u>Mages</u>: (for road location & supervision)

Name J.M. Anderson W.H. Thompson G.O.M. Stewart G. Davies L. DeBriske D. Knowlton	Perio June 10-J		Days 15 3 2 1 1 4 26	Rate \$30.00 .30.00 12.50 17.30 12.50 9.60	Amount 450.00 90.00 25.00 17.30 12.50 38.40 \$ 633.20
Contractors Fees	(Interior	Contracti	ng Co.	Ltd.)	2,696.00
Costs Directly Ap	plicable:			" ^	130,00 \$3,459,20

HAND TRENCHING

Wages:

•

Name	Perio	ł	Days	Rate	Amount
R.W. Stevenson	May 6-June	15/61	6	\$30,00	\$ 180,00
G. Davies	<i>ta</i> .	11	10	17 . 30	. 173.00
L. DeBriske	<i>u</i>	"	10	12,50	125.00
G.O.M. Stewart		"	3	12_50	37,50
D. Hale	-17	· //	1	11,54	11,54
R.D. Cannon	11		2	10,58	21,16
D. Knowlton		ä	1	9.60	9.60
	`	~	33		\$ 557 <u>.</u> 80
Costs Directly Ap	plicable:				185,00
	-				\$ 742.80

PACKSACK DIAMOND DRILLING

(Footage drilled = 30)

60.00 181.54

Wages:

· ...

Name R.W. Stevenson	Period May 12-May 2		<u>ys Rate</u> 2 \$30,00	Amount \$60.00
L. DeBriske		ыотот <u></u>	3 .12.50	⊕ 60 <u>6</u> 00 37 <u>6</u> 50
G.O.M. Stewart	"	<i>n</i>	1 12,50	12,50
D. Hale	<i>n</i>		1 11,54	11,54
•	· •	÷.	7	\$ 121.54

, -

Costs Directly Applicable:

ACCESS ROAD - total	\$ 3,459,00
OPEN CUTS - on Matt #24 \$580 - on Matt #60 <u>\$162</u> \$742	742 . 00
PACKSACK DRILLING - on Matt #40	181.00
	\$ 4,382 _° 00

GEOLOGICAL MAPPING	 Geology \$6,133 LineCutting 1,529	4	<u>7,662.00</u>
.*	•	1	\$12,044.00

•

. . .

.

<u>Geology of Matt Claims</u> <u>Greenwood M.D., B.C.</u> 49-119 SE

INTRODUCTION

The Matt Claims were located by agents of Kennco Explorations, (Western) Limited in November 1960 on the basis of certain very tenuous indications of widespread mineralization.

The claims are situated west of Westkettle River, 5 to 7 miles southwest of Beaverdell, British Columbia. The terrain is moderately rugged, with elevations ranging from 2500 to 5000 feet above sea level. Timber cover varies in kind and density with burns of several ages. Much of the northeast portion of the property is in good stands of fir and larch. The southwest slope is mostly in jackpine.

In the summer of 1961 Kennco explored the claims by geochemical prospecting, physical prospecting, and geological mapping. Physical prospecting included a small amount of drilling with a Packsack Drill and several small open cuts. A road 4.6 miles long was constructed with the dual object of access and uncovering bedrock. A particularly intensive attack on the geology of the area was made in an effort to relate the complex history of intrusive activity and alteration to possible hidden mineralization. The results of the geological mapping to date are presented herewith.

The mapping was done jointly by J. M. Anderson and C. S. Ney. Some geological help was given by G. O. M. Stewart and L. DeBriske. Several students gave assistance in providing topographic control. Geological advice was given by Dr. J.A. Gower and C.J. Sullivan of Kennco Explorations, (Western) Limited. Details of wages and costs are included in this report.

FIELD METHODS

A topographic map on a scale of 1'' = 1000' was prepared by Photographic Surveys Ltd. from British Columbia government air photos. Satisfactory accuracy of topography was retained when this map was enlarged to a scale of 1'' = 400'. The map was useful in the early stages of our work, and later for general presentations of the geology.

In mapping the rocks it was soon apparent that considerable complexity existed, not only in the geology but in the shape and distribution of the outcrops as well. In order to profit at all from a study of the geology, we had to map on a scale of 1'' = 100'. The map compiled from air photos provided no useful control in this work, and accordingly a network of tape-compass loops was established, and within the loops, pace-compass traverses of short length were run. Thus, there is no formal pattern of lines in the map area, but a network of surveys running according to topography and geology, the density of points depending on geological interest.

GENERAL GEOLOGY

The actual percentage of sound outcrop in the map area is about 10. There are few areas of large outcrop providing good exposures, but point outcrops are very numerous. Areas of debris broken down and scattered but local in origin are extensive. They provide lithological data but structural data can be obtained from them only by painstaking effort.

The three units, Wallace, Granodiorite, and Porphyritic Quartz Monzonite, form a country rock into which are intruded a variety of dykes of the composition of monzonite and quartz monzonite. Alteration began prior to the intrusion of the porphyries and continued along with them. At least three kinds of basic dykes were intruded after the porphyries, and after most of the alteration. Most fault structures appear to be pre-basic dykes, but some later movement and alteration is recognized.

Wallace

Rocks exposed along the road for 1000 feet west of the site of an old sawmill, are dark green andesites and are correlated provisionally with the Wallace formation, defined by Reinecke as a metamorphosed volcanic group of probable Mesozoic age.

Areas underlain by granodiorite north of Tuzo Creek carry large numbers of xenoliths of fine grained dark hornblende diorite. These also may be correlated with Wallace Volcanics and probably indicate that the granodiorite in the northeast quadrant of our map-area is exposed near its original roof contact.

Granodiorite:

Granodiorite is the main country rock of the map-area, and it greatly predominates in exposures in the north and east sectors. In the central and south sectors it is extensively intruded by later rocks so that the distribution is now fragmentary. According to published geology, it forms a mass of batholithic dimensions, occupying large areas north and south of Beaverdell.

The normal rock in our map-area is a moderately coarse equigranular rock containing, in addition to plagioclase feldspar, 20-25 percent quartz, 15-30 percent orthoclase, and 5-10 percent hornblende, with accessory sphene and magnetite. Much of the rock north of Tuzo Creek is coarser grained and richer in hornblende. Varieties in the central and south parts of the area containing more quartz and orthoclase and less hornblende, have resulted from alteration.

The age of the granodiorite is known only from Geological Survey literature to be probably late Mesozoic. It is the earliest intrusive recognized in our map-area.

Porphyritic Quartz Monzonite:

Porphyritic quartz monzonite is widely exposed along the western side of the map-area, and it forms a slight embayment toward the east at 19N. It has not been mapped in detail, and the westward limits are not known.

Like the later porphyries, it is characterized by large phenocrysts of potash feldspar, which may comprise 50 percent of the rock. The phenocrysts are contained in a moderately coarse equigranular matrix of plagioclase, orthoclase, quartz and fine biotite. The biotite makes up less than 5 percent of the rock. The phenocrysts are seldom terminated, and are frozen-walled.

The relations with granodiorite are not clearly indicated. At some points the contact appears gradational over a few tens of feet. In the vicinity of 20N, 15E the two rocks are separated by an aplitic zone 50-100 feet wide. At 25.5N, 16.5E the contact is sharply defined by a band of flow structure a few inches wide streaked with hematite. There is no chill zone on either rock. The Porphyritic Quartz Monzonite is clearly cut by some of the quartz monzonite porphyry dykes, but the proportion of such dykes is much smaller than in the granodiorite.

Monzonite Porphyry Dykes:

In this unit are several small dykes which appear to have antedated the main period of porphyry intrusion. They are recognized mainly in the central, portion of the map-area.

They are reddish porphyritic aphanitic rocks with sparse phenocrysts of potash feldspar generally less than onehalf inch in maximum dimension. Quartz is not seen as phenocrysts.

Quartz Monzonite Porphyry:

In this unit are included a great number of dykes and irregular masses. In the northeast sector of the map they appear as well-defined dykes from a few tens to a hundred feet or more wide. The prevailing attitude is a northeast strike and moderate to steep northwest dip, but a few of them fall in the northwest guadrant. In the central and southwest sectors of the map they widen and coalesce so that areas 1000 x 1000 feet may be all of this rock type. Much of the central area is an intricate stockwork of branching and swelling porphyry intrusives containing mega-xenolithic masses of well altered granodiorite.

The most common rock type is a porphyritic aphanitic rock with 30-50 percent phenocrysts of potash feldspar up to 3 inches in maximum dimension. In contrast to those in the earlier Porphyritic Quartz Monzonite, these phenocrysts are euhedral and free-walled. Quartz phenocrysts up to one-half inch across are also present to the extent of 20-30 percent of the rock and are likewise euhedral (bipyramids). Plagioclase and biotite are also present as phenocrysts. Fluorite has been noted as an accessory in some porphyries.

These rocks correlate with the Beaverdell Quartz Monzonite of Renecke, which he considered to be of late Mesozoic, possibly early Tertiary age. In our area there appear to be several ages of porphyry relative to progressive alteration. Some are well-altered, others are fresh with chilled borders against well-altered rocks. The porphyry mapped at 19.7N, 15.7E is a good example of the latter. It has been noted that they cut the Porphyritic Quartz Monzonite but are much less prevalent in it than in Granodiorite.

Granular Porphyry:

This is a distinctive body in the southeast corner of the mapmarea. The southward limits are not known.

In composition and general appearance the rock is similar to the other Quartz Monzonite Porphyries. The orthoclase phenocrysts are however seldom large and distinct, but are fragmentary and irregular in size. Sometimes the rock has a definitely cataclastic appearance, particularly on the weathered surface.

The cataclastic texture is uniformly developed without any recognizable planar structures, and is thought to be a result of gas motivated movement after most of the material was crystallized.

The granular porphyry is cut by the Quartz Monzonite Porphyry dykes, and therefore may be slightly earlier.

Breccia:

In the southeast portion of the map-area there are several irregular masses of breccia. Some are tabular and only a few feet wide, and mark the contact between the porphyry and granodiorite. Others are irregular, dyke-like, and up to 100 x 200' in plan. A large mass may be present at 14.5N, 19E where small occurrences are noted on either side of an overburden covered depression.

The typical material has subangular to rounded fragments three to ten inches in diameter in a matrix of progressively smaller fragments of rock and rock minerals. The fragments may be porphyry or granodiorite and are seldom more than a few hundred feet horizontally from a possible source. No exotic materials were seen amongst either fragments or matrix.

The breccia is related in space and probably also in time with the Granular Porphyry. A few Quartz Monzonite Porphyry dykes are clearly intrusive into it.

Basic Dykes:

<u>Augite-Feldspar Porphyry</u>. Several dark porphyritic dykes have been given this field classification. They vary from a few feet to over 100 feet wide and trend northeasterly with a moderate dip to the northwest. They terminate, spread, and branch very irregularly. Unusually large developments on the west side of the mapmarea are often dip-slope exposures. <u>Biotite Porphyry</u>. The distribution and character of these dykes is similar to the Augite porphyries. Biotite phenocrysts are prominent, and the matrix may be rich in potash feldspar. The two types intergrade, and even the same dyke may show contrasting facies within a short distance.

<u>Felsite</u>. This is a distinctive unit appearing in dyke segments with a slightly east of north trend over the full length of the map-area. Surface outcrops have a characteristic sheet structure developed from flowage. It is a light grey aphanitic rock with very small phenocrysts of plagioclase.

Alteration:

Hypogene alteration has affected Granodiorite, Porphyritic Quartz Monzonite, and some of the Quartz Monzonite Porphyries. The maximum alteration is in the central area of maximum complexity of structure of the porphyries and granodiorite.

The main alteration is a clay sericite-silica type. Sericite is general, clay is local, and silica is the best developed. Granular siliceous rocks containing over 60 percent quartz are developed from granodiorite. Locally there are developments of a fine-grained aggregate containing silica, sericite, and fluorite. Pyrite and very sparse molybdenite are found in the altered areas.

Magnetite and hematite are associated with some of the alteration, but they extend in an independent zone through otherwise unaltered rocks.

A lower stage of alteration affects granodiorite in a large area southeast of the main alteration. This is characterized by chlorite, calcite, and pyrite.

Secondary potash feldspar has been developed in granodiorite in what appears to be an aureole mostly outside the main alteration.

Structures:

Mapping has so far not indicated any large fault structures. Both the quartz monzonite porphyries and the basic dykes which followed them must have been guided by tensional breaks with a north to northeast strike.

There is a low intensity widespread northwesterly shearing in the Porphyritic Quartz Monzonite. Throughout the map-area generally there is some evidence of small right handed offsets in a west of north direction.

Many minor shear structures and fractures have been observed, particularly in the road cuts. They indicate a fairly high degree of structural intensity in the map-area which is not appreciated in natural exposures.

In many cases where basic dykes appear to be abruptly offset a few tens of feet, inspection of the contacts showed that the dykes themselves were not faulted but the structures guiding them apparently were before the dykes were emplaced.

CONCLUSION

The mapping has shown a coincidence between complexity of porphyry intrusive activity, hypogene alteration, and widespread introduction of sulphides.

Charles D. hey

Charles S. Ney

Vancouver, B. C.

November 29, 1961

(REEDICES DEFILIER) - ON EDIX (449	1. 67
0 4,9%	
	3. 0(

с Р

(12, e44.co

CONSTRUCTION OF ACCESS MOAD (D-3 Bulldesor) (4.4 milos)

Macon: (for read location & supervision)

Happ	Porio		Days	Rate	Arount og
J.H. Andertea	June 10-J	uly 7/01	70	\$39.00 30.06	3 450.00
U.H. Thompson	CP .		0 ^		90.00
G.O.N. Utszart			24	12.50	25.00
C. Devics	Ċ2 `	C2	2	17.30	17.90
L. DeDricto	3	17	1	12.50	12.50
D' Encritor	<i>D</i> · · ·	C)	4	5.60	33.40
	· · ·	•	26		8 633.29
Centrestors Poes	(Interior	Centrott	ng Co.	Led.)	2,696.00
Costs Directly is	plicable:			•	<u>130.00</u> 33,459,20

MAD TRACINES

Manog:

distant because the			200 102 102 103	LASHEDURG
Liay 5-June	15/61	6.	500.00	<u>j 180.00</u>
် ည	ວັ	20	17.00	173.00
' <i>(</i>)	60	20	12.50	125.00
ø	¢2	3	12.50	37.50
<i>t</i> 2	Ø	2	11.56	11.54
<i>1</i> 0	Q	2	20.53	21,19
(7	a	1	9.60	9,60
••		88		3 557.00.
	မ က က က က	ယ အ လ မာ လ ယ ယ ထ ယ ထ	ມີ ອີ <u>10</u> ອີ ອີ <u>10</u> ອີ ອີ ອີ ອີ ອີ ອີ <u>1</u> ອີ ອີ ອີ <u>1</u>	ω μ 10 17.00 φ μ 10 12.50 φ μ 3 12.50 φ μ 3 12.50 φ μ 1 11.55 φ 2 10.55

Costs Directly Applicable:

PACKLACK DIANCED DEILLING

(Festage drilled = 39)

lisona

<u>Hene</u> R.M. Stevenson	Noy Perio	d y 25/61	Deve	Rate USD.00	100.00
L. DoBricko	£3.	<i>12</i>	3	12.50	37.50
G.O.N. Staart	rà.	<i>ii</i>)	1	12.50	12.59
D. Holo	11	63		11,54	11.54

Costs Directly Applicable:

60.00	4
181.54	

195.00

MATT CLAIME 1-75 incl., TUZO CREEK

ABJESTERT 1951

LINE CURTING

Norres:

Part P

NG G.	D.N. Staast	Poriod	10/61	Deve 34		Aronint 5 425.00
D.	Encilton	13	Ø	37	9.60	355.20
D.	Inle	to	C)	5	11.54	57.70
D.	Readisouso	Ø	$\boldsymbol{\omega}$	4	20.50	43.03
B.	Cannon	₽	F7	7	10.50	74.03
и.	Goddard	c 7	Ø	8	18.60	199.00
				95		31,054.28

Cests Directly Applicables-

475.00 11,529.29

GEOLOCICAL IMPETING

Liceas:

Rann C.J. Ney	iver.29-	01 1.20/61	Doyn 63	<u>Recco</u> 335.00	Arount 32,205.00
J.H. indoroca	Q	£3.	58	30.00	1,740.00
U.H. Thereas	0	σ	8	00.03	240.00
C. Davies	IJ	æ	19	17.30	920.75
L. DoBrioko	. <i>p</i>	2	22	12.50	275.06
0.0.11. Stonart	a car	Ø	Ğ	12.50	75.00
D. Knowlton	<i>to</i> .	13	10	2.60	124.80

Costs Directly Applicables-

545.00 35,933.50

Cenculting: Dr.	J.A.	Gottoz	3	daya	Q)59	 \$150
		livan		day			

	200.00	
10	133.50	

DOMINION OF CANADA:

PROVINCE OF BRITISH COLUMBIA.

In the Matter of

Assessment Work Re: Matt Claims 1-75 inclusive.

To Wit:

I, Charles S. Ney, Kennco Explorations, (Western) Limited

of Vancouver

in the Province of British Columbia, do solemnly declare that work done on the Matt Claims 1-75 inclusive is as set forth on the attached statement, and totalling \$12,044.00.

And I make this solemn declaration conscientiously believing it to be true, and knowing that it is of the same force and effect as if made under oath and by virtue of the "Canada Evidence Act."

Declared before me at the (anione have A , in the of Province of British Columbia, this day of Imbe Gold Commissioner of taking Affidavits within British Columbia or A Commissioner for taking Affidavits within British Columbia.





