

SWAKUM MOUNTAIN PROPERTY

DRILL PLANS AND
DRILL LOGS

1965

Sm # 1 #9

W. G. Hainsworth

800512

insert map

November 29th, 1965.

The President & Directors,
Torwest Resources (1962) Ltd.,
702 - 850 West Hastings St.,
Vancouver 1, B.C.

Gentlemen:-

This is the summation report pertaining to the work done during the year of 1965 on your leases located on Swakum Mountain.

This property has been well investigated having been previously tested by:

Gov't Strategic Minerals Committee	in 1941
A Toronto Syndicate	in 1951
Torwest Resources (1962) Ltd.	in 1959

In the tungsten-copper area some 44 holes totally better than 6,500 feet have thoroughly tested this area.

The 1965 drilling by your company coupled with the previous drilling proved the existence of two erratically shaped tungsten structures of non-economical grade. The copper occurrences are sporadically distributed with no definite structurally tie-in to the tungsten values.

On the basis of the total work done on the property the writer recommends that no further work be contemplated for this property at the present price of tungsten.

Respectfully submitted,



W. G. Hainsworth, P.Eng.
Consulting Geologist

WGH/mhl

DIAMOND DRILLING

The writers recommendations of July 23rd, 1965, as regards diamond drilling was carried out to the extent of 1719 feet distributed in nine holes. Seven of these holes totalling 1521 feet probed the tungsten-copper area whereas the remaining two holes checked out the Alameda Shaft gold-silver-lead structure.

In the tungsten area the drilling proved two tungsten structures existing at varying elevations. What has been classified as the upper zone assayed out at 0.318% W_3O_8 over an average core width of 22.3 feet. The lower zone averaged 0.282% W_3O_8 over a core width of 19.5 feet (north-south extent of this zone is 155 feet). Copper values from this area averaged 0.56% across an average core width of 12.9 feet over a drilled length of 125 feet.

The erratic distribution of the tungsten values make a drill tonnage calculation next to impossible. However, a previous tonnage guesstimate of some 300,000 tons has been upheld and possibly firmed and enlarged to 350,000 tons.

The deposit assumes a crescent-shape dipping to the east. On my sections the structure forms two zones of variable elevation which may prove with further drilling to be a continuous zone, exhibiting weak linking mineralization.

The depth of the zone precludes any adit mining. The narrowness of the structure eliminates an open-pit operation. As a consequence mining of an economical body would require shaft sinking.

The grade of the intersected tungsten and copper structures is below economical limits. At the present inflated price of tungsten (E M J Oct. 1965, \$26.00 short ton unit) the in-situ price of the ore is \$7.80. To extract at this grade would mean a losing proposition. The copper values do not upgrade the ore picture to any extent.

Two holes were put down in the vicinity of the Alameda Shaft. This water-filled shaft purported to go to 100 feet on a 60° incline showed interesting ore specimens in the dump. A level at the 55 foot elevation is reported to carry a stope at the north end of the drift. The drilling was laid out to intersect at this level (SM # 9) and midway to surface (SM # 8). The vein structure was cut in both holes with only the higher hole carrying anything worth assaying. On the basis of these two holes further drilling in this area was discouraged.



DIAMOND DRILL INTERSECTIONS

WO₃ GRADE

SM # 6 Section

<u>Hole #</u>	<u>Upper</u>	<u>Lower</u>
# 4	10.0 x .20	
#14	18.0 x .25	
SM # 6	11.0 x .282	14.0 x .13

9 Section

# 9	6.5 x .23	2.5 x .38
	11.5 x .11	
#20	16.1 x .20	
#21		10.9 x .17
#22		14.1 x .20
#23		15.5 x .23
		4.0 x .25

SM # 7 Section

SM # 7	40.0 x .18	
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SM # 1 Section

# 5	13.5 x .53	
#12	18.0 x .45	
#13	40.0 x .10	
#38	102.0 x .48	14.2 x .54

SM # 2 Section

#11	12.3 x .48	
#39	22.5 x .25	20.25 x .32
	15.5 x .17	3.5 x .89
#32	3.5 x .43	20.0 x .173
SM # 2		62.5 x .311

SM # 4 Section

#40	11.0 x .42	
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SM # 5 Section

#10	17.1 x .80	6.5 x .20
		82.25 x .24
#16		48.8 x .377
		16.0 x .20
		5.75 x .28

#18

DIAMOND DRILL INTERSECTIONS CONT'D

SM # 5 Section Cont'd

	<u>Upper</u>		<u>Lower</u>
#16			21.5 x .223
#18			20.67 x .243
			5.0 x .20

<u>AVERAGE</u>	<u>.318</u>	<u>.282</u>
	22.3'	19.5'

CU. GRADE

#32	3.5	x	1.50
36	9.0	x	1.10
38	14.3	x	.35
	19.0	x	.25
	25.5	x	.50
SM # 7	41.0	x	.29
SM # 6	5.0	x	2.42
SM # 5	20.0	x	.67
SM # 2	2.5	x	1.22
	5.0	x	.40
	5.0	x	.37
SM # 1	5.0	x	.80

AVERAGE =	<u>.56</u>
	12.9'

- Note: (1) No copper values in SM #3 and SM #4
 (2) SM #4 undercut trench from which 2.70% Cu over 8.8' had been cut.
 (3) SM #5 undercut trench from which 1.20% Cu over 13.5' had been cut. Values in hole were some 60' east of trench and at a relatively shallow depth of 35'.

ALAMEDA SHAFT AREA

<u>Hole #</u>	<u>Width</u>	<u>Au</u>	<u>Ag</u>	<u>Pb</u>	<u>Zn</u>
SM # 8	1.0	0.15 oz/t	1.10	0.64%	2.00%
SM # 9	Weak intersection - nil sulphides - not assayed.				

W. G. Hainsworth

W. G. Hainsworth, P.Eng.

July 23, 1965.

The President & Directors,
Torwest Resources (1962) Ltd.,
702 - 850 W. Hastings St.,
Vancouver, B.C.

Gentlemen:

At your request, the writer visited the Swakum Mountain property of Torwest and reviewed all data pertaining to the property. The claims were examined July 6th, 1965.

In brief, the geology of the property consists of interbedded volcanics, limestones and skarn material forming what may be the truncated east flank of a north-south trending anticline.

Mineralization in the form of pyrite, pyrrhotite, chalcopyrite and scheelite occurs in patchy sections confined primarily to the garnet-epidote skarn areas. Drilling by the Government in 1944 and a private concern in 1952 has indicated a deposit of 300,000 tons grading 0.298% WO_3 . The tungsten zone is still open at both ends and at depth.

The copper values, from rather sketchy information, appears to lie on the footwall side of the tungsten zone. No copper sampling was undertaken in the earlier tungsten drilling.

The writer cut a 13-1/2' sample from the Last Chance workings, which ran 0.20 oz/t silver and 1.20% copper. The same structure 100' to the south ran 1.90 oz/t silver and 2.70% copper across 8.8 feet. Two other samples on a parallel structure returned low copper values.

The 1958 drilling of Torwest on the Swakum Mountain property was confined to a large S.P. anomaly lying well to the south of the copper-tungsten structure. This anomalous condition was proven up as a graphitic tuff horizon. Other than for one hole drilled parallel with the structure, no attention was given this promising area.

A selected grab sample from the dump of the Old Alameda shaft ran 0.48 oz/t gold, 8.10 oz/t silver, 17.46% lead and 7.00% zinc.

On the basis of the above facts, the writer recommends that an initial drill program of 2500 feet be undertaken with the expressed intent of:

1. Upgrading the tungsten values.
2. Proving the existence of commercial copper values at depth.

It is also recommended that a minimum of two drill holes be laid out to intersect the Alameda structure at depth.

Respectfully submitted,

W.G. Hainsworth, P.Eng.
Consulting Geologist

WGH:mw

COLLAR CO-ORDS

NORTH _____
 EAST _____
 ELEVATION _____
 DIP _____
 BEARING 450

DIAMOND DRILL RECORD

COMPANY TORWEST RESOURCES (1962) LTD
 PROPERTY SWAKUM MOUNTAIN
 LOCATION MERRITT, B.C.

HOLE SM #1
 PAGE _____
 STARTED July 28th, 1965
 FINISHED Aug 3rd, 1965
 LOGGED BY WGH
 PURPOSE _____

FROM	TO	DESCRIPTION	SAMPLES			ASSAYS		SLUDGE			ASSAYS		
			TAG NO.	FROM	TO	WIDTH	Copper	WO ₃	TAG NO.	FROM	TO		
0	36	Casing	11561										
					<u>FROM</u>	<u>TO</u>							
					<u>55</u>	<u>65</u>							
				<u>62</u>	<u>65</u>	<u>75</u>							
36	48	Andesite - altered, sl. chloritic, ni mineral, massive @ 44' - mud seam (8")	<u>63</u>		<u>75</u>	<u>85</u>							
			<u>64</u>		<u>85</u>	<u>95</u>							
48	57	Andesite - fine grained, feldspar phenocrysts, altered locally by fine epidote, nil mineral	<u>65</u>		<u>95</u>	<u>105</u>							
			<u>66</u>		<u>105</u>	<u>115</u>							
			<u>67</u>		<u>115</u>	<u>120</u>							
57	66	Skarn - epidote - chlorite - calcite alteration											
66	105	Limestone - light grey, occ. mafic inclusion, occ. fracturing, nil mineral occ thin calcite veining @ 60° to cor											
105	115	Skarn - occ pyrite											
115	140	Limestone - as before											
		@ 121' - 15" heavy chalcopyrite with trace golden yellow fluorescent mineral		<u>120</u>	<u>125</u>	<u>5</u>	<u>0.80</u>						
		@ 137 1/2' - 18" fine grained dark dyke material with lime		<u>125</u>	<u>130</u>	<u>5</u>	<u>0.10</u>						
				<u>130</u>	<u>135</u>	<u>5</u>	<u>0.15</u>						
				<u>135</u>	<u>140</u>	<u>5</u>	<u>0.10</u>						
140	144 1/2	Skarn @ 141 1/2' - 5" dykes as before (possibly andesite)		<u>140</u>	<u>145</u>	<u>5</u>	<u>0.10</u>						

COLLAR CO-ORDS

NORTH _____
 EAST _____
 ELEVATION _____
 DIP _____
 BEARING _____

DIAMOND DRILL RECORD

COMPANY TORWEST
 PROPERTY SWAKUM MOUNTAIN
 LOCATION MERRITT, B.C.

HOLE SM # 2
 PAGE _____
 STARTED Aug 7/65
 FINISHED Aug 11/65
 LOGGED BY WGH
 PURPOSE _____

FROM	TO	DESCRIPTION	SAMPLES				ASSAYS			SLUDGE			ASSAYS
			TAG NO.	FROM	TO	WIDTH	Leu	WO ₃	Au	TAG NO.	FROM	TO	
0	49	Casing											
49	90	Volcanic - dk green, chopped core to 80' some suggestion of bedding @ 45° to core											
90	104	Skarn - light grey, scattered pyrite from 95 - 97.5 chalco with WO ₃ , @ 101 - 6" scattered chalco	11577	95	97.5	2.5	1.22	0.80					
			11583	97.5	104.5	5	7.0	0.28	TN				
104	122	Garnetite - local blebs of pyrite, pinpoint scheelite throughout	11578	104.5	110	5.5	0.23	0.12					
			11579	110	115	5	0.09	0.005					
122	124.5	Quartz - with limestone, pyritized large scheelite crystals	11580	115	120	5	0.18	0.30					
124.5	126	Garnetite - with minor scheelite	11581	120	126	6	0.10	0.575	0.01				
			11582	126	136	10	0.10	TN					
126	136	Limestone - tr. pyrite, fractured											
136	141	Skarn - scattered pyrite, slight chalco, pinpoints of scheelite	11584	136	141		0.40	0.38					
			11585	141	146		0.07	0.325					
141	164	Garnetite - from 153 - 154.5 quartzitic @ 161 - 8" heavy scheelite with epidote alterations	11586	146	151		0.09	0.34					
			11587	151	156		0.10	0.325					
			11588	156	161		0.37	0.41					
			11589	161	166		0.09	0.34					
164	165	Dyke-black fine grained, vertical footwall - 30 H.W. contact	11590	166	171		0.07	0.418					

from 115 to 171.5
= 0.311 WO₃
62.5"

COLLAR CO-ORDS

NORTH _____
 EAST _____
 ELEVATION _____
 DIP _____
 BEARING _____

DIAMOND DRILL RECORD

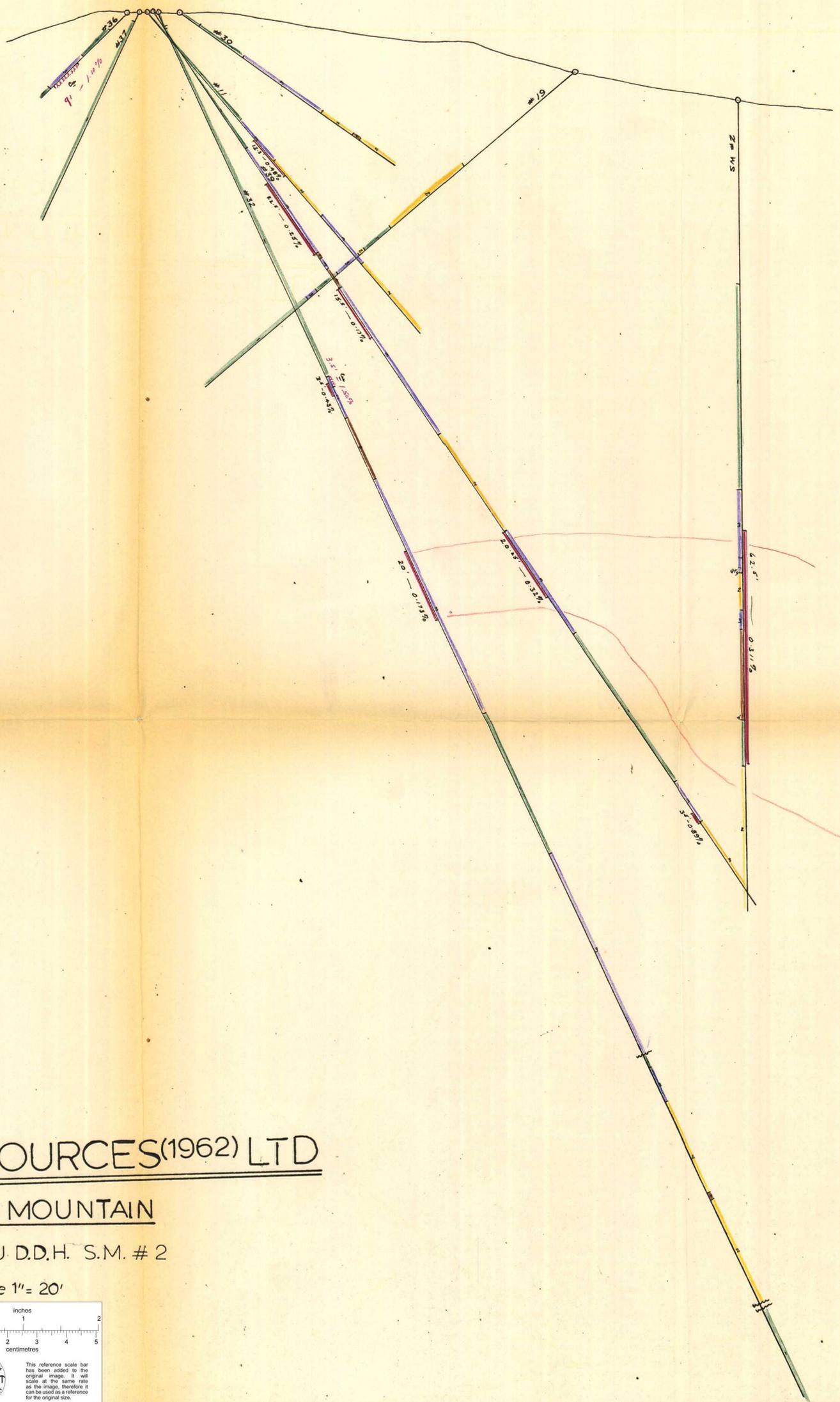
COMPANY TORWEST RESOURCES
 PROPERTY SWAKUM MOUNTAIN
 LOCATION MERRITT

HOLE SM # 7
 PAGE _____
 STARTED _____
 FINISHED _____
 LOGGED BY _____
 PURPOSE _____

FROM	TO	DESCRIPTION	SAMPLES			ASSAYS		SLUDGE			ASSAYS	
			TAG NO.	FROM	TO	WIDTH	Cu	W ₃	TAG NO.	FROM	TO	
0	8	Casing										
8	15	Limestone - light grey, nil mineral										
15	51	Skarn - heavy to garnet locally minor pyrite, scattered light scheelite with occ. heavy sections, local epidote alteration	5513	15	20							
51	56	Dyke, dark green, fine grained, lost core 54 - 55.5	14	20	25							
56	88	Skarn - garnetite as before	15	25	30							
			16	30	35							
			17	35	40							
			18	40	46	0.25						
88	107	Volcanics - dk green, nil mineral local epidote alteration	19	46	51	0.18						
			20	51	56	0.15						
107	110	Skarn	21	56	61	0.28						
			22	61	66	0.50						
110	117	Dyke - black calcite stringers sharp contacts	23	66	71	0.40						
			24	71	76	0.25						
117	121	Skarn - with epidote	25	76	81	0.23						
			26	81	86	0.10						
121	129	Talc - Sericite schist - with calcite sections @ 124 sl. trace of metallic mineral (galena?) @ 126 - 24" calcite vein	27	86	91							
			5531	124	126							

N 70W

5000'

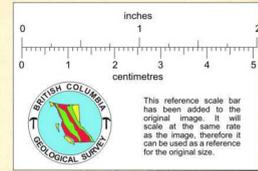


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SWAKUM MOUNTAIN

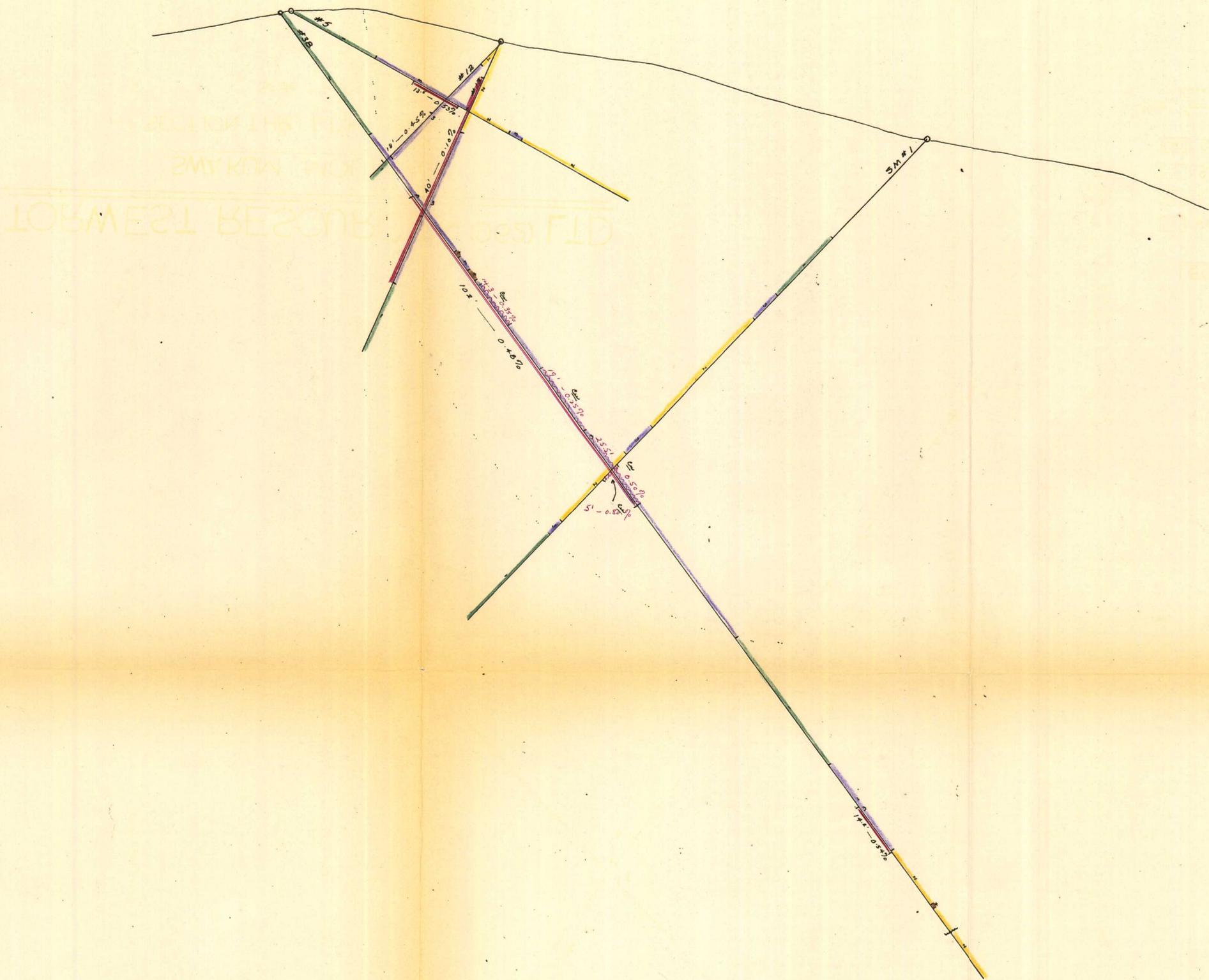
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Scale 1" = 20'



N70W

5000'

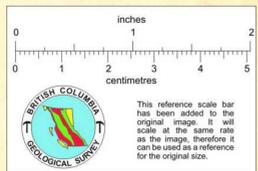


TORWEST RESOURCES (1962) LTD

SWAKUM MOUNTAIN

SECTION THRU D.D.H. SM #1

Scale 1" = 20'



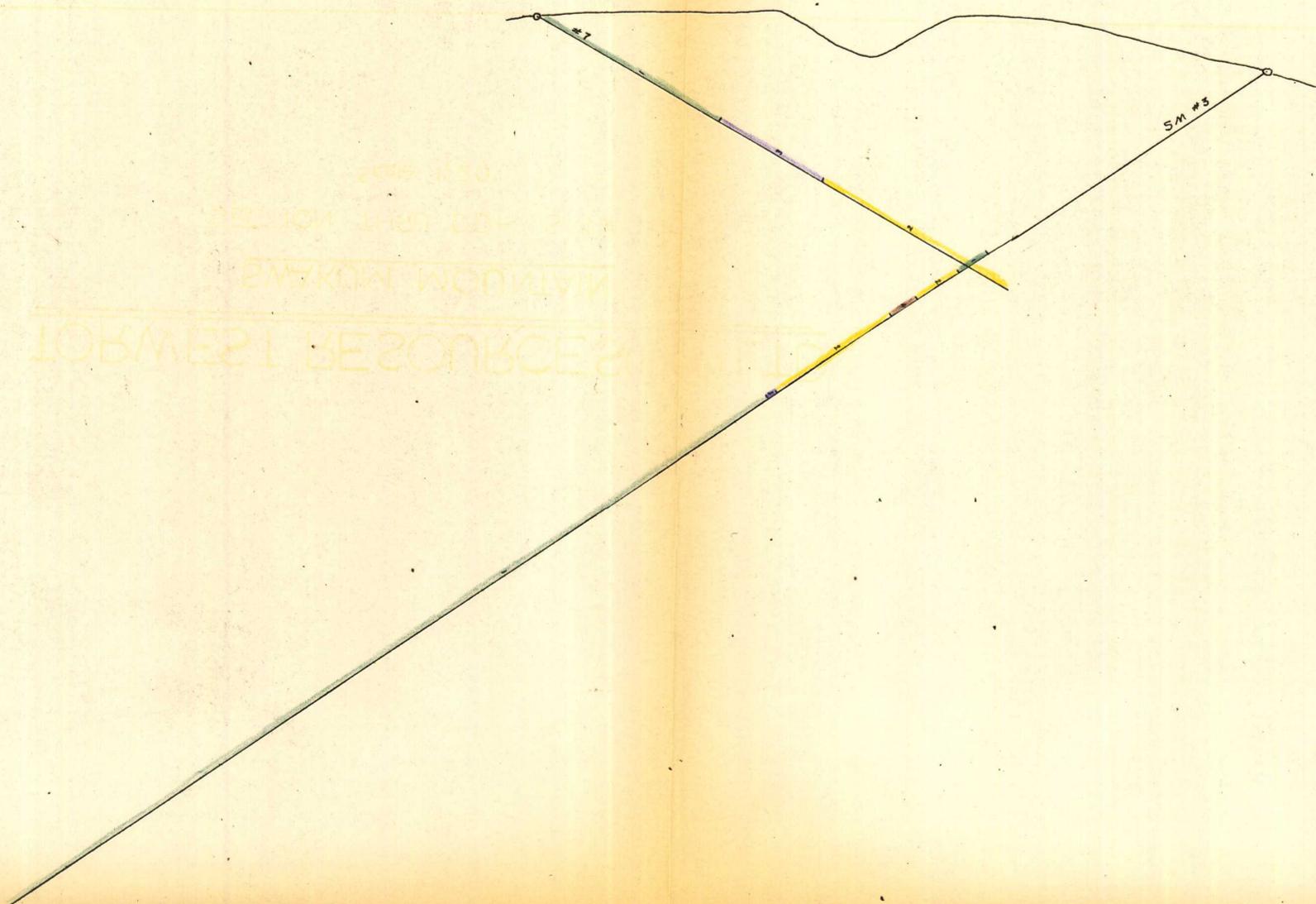
LEGEND

- 1 Volcanic
- 2 Limestone
- 3 Skarn (Garnetite)
- 4 Dyke

*Note: Copper Assays in Red.
Tungsten Assays in Black.*

N 70W

5000'

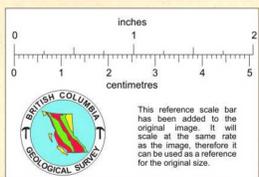


TORWEST RESOURCES(1962) LTD

SWAKUM MOUNTAIN

SECTION THRU D.D.H. SM # 3

Scale 1:20'



N 70W

5000'

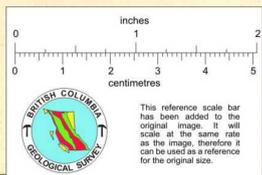


TORWEST RESOURCES⁽¹⁹⁶²⁾ LTD

SWAKUM MOUNTAIN

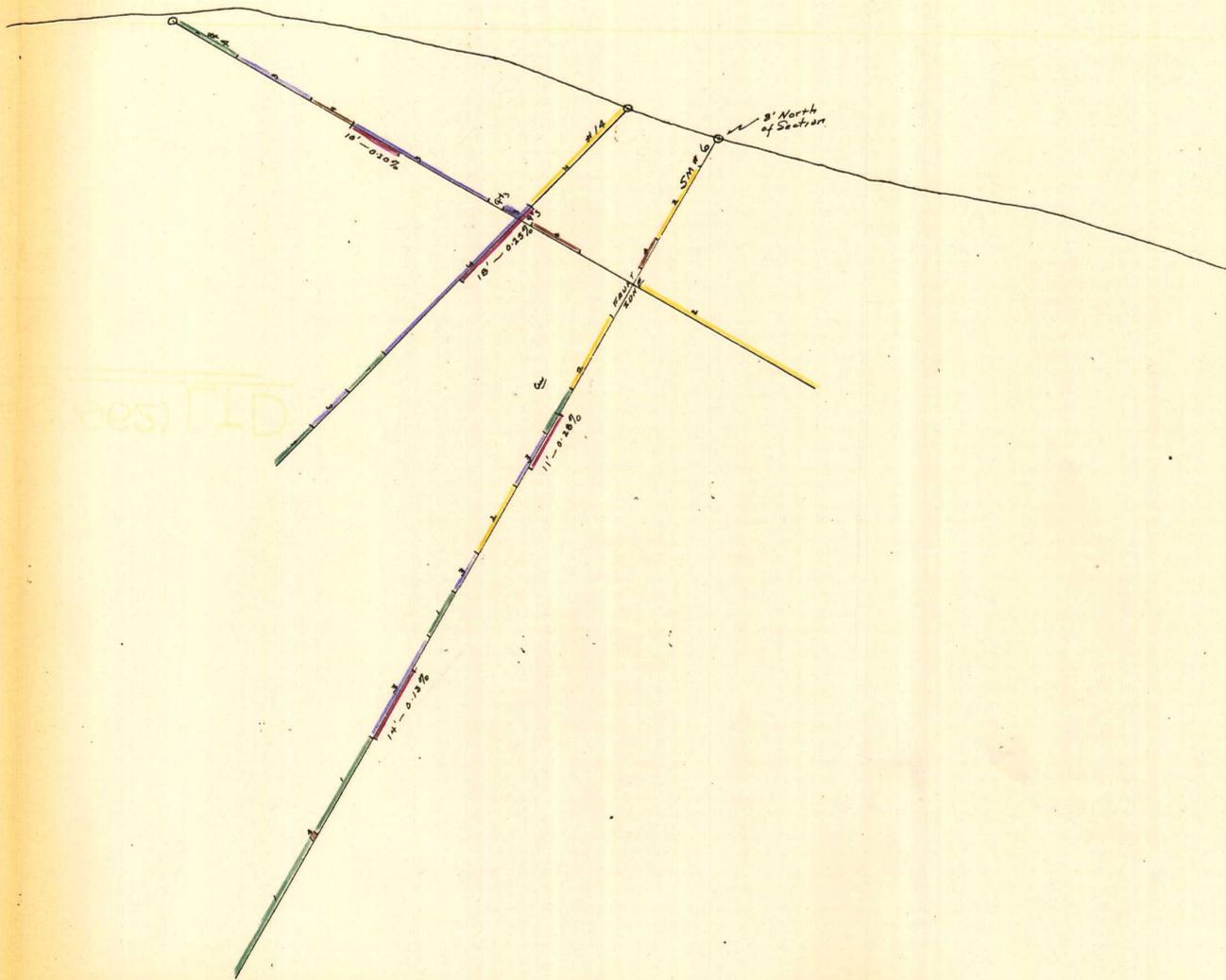
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Scale 1" = 20'



N70W

5000'

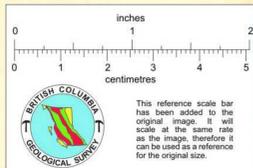


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SWAKUM MOUNTAIN

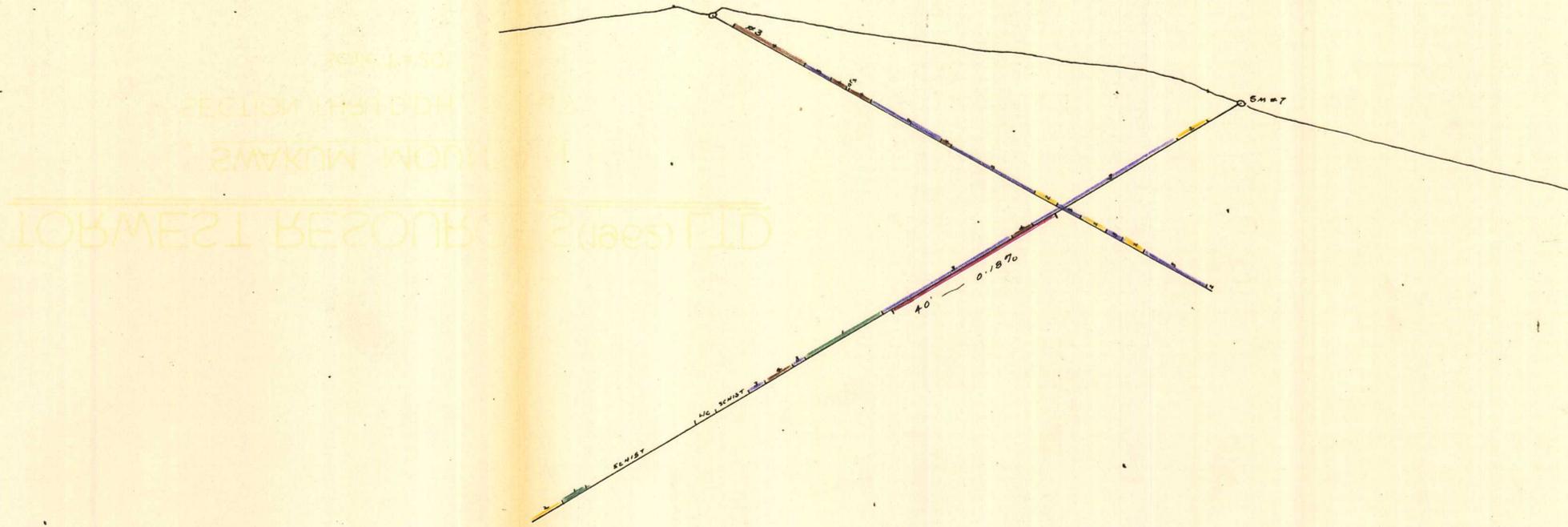
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Scale 1" = 20'



N 70W

5000'

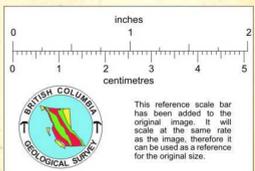


TORWEST RESOURCES (1962) LTD

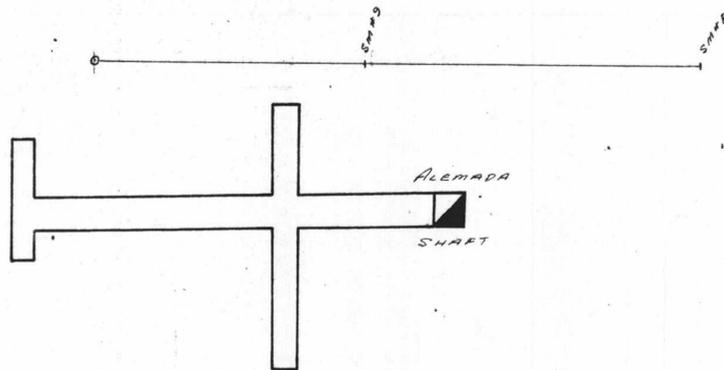
SWAKUM MOUNTAIN

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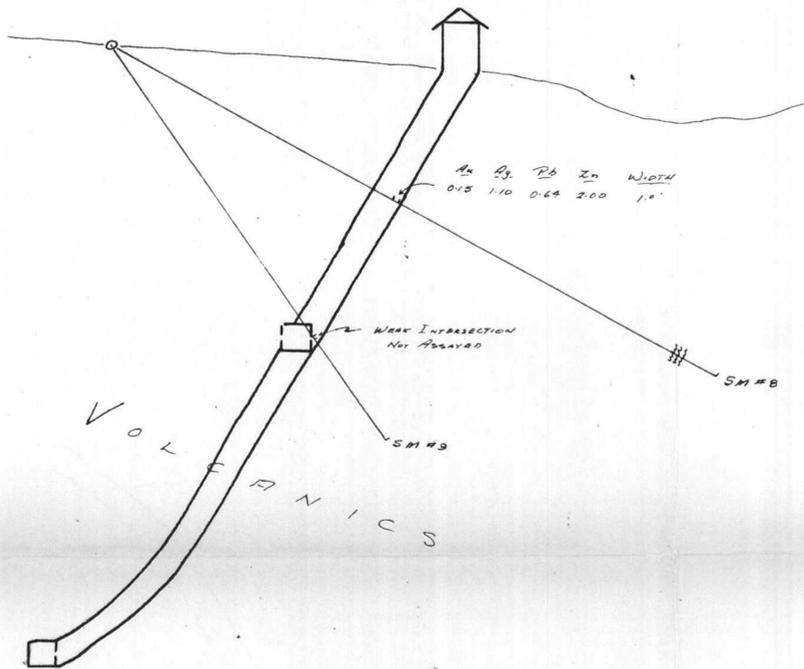
Scale 1" = 20'



- 1 Greenstone
- 2 Limestone
- 3 Shale
- 4 Dike



WEST

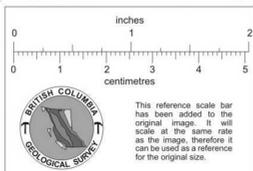


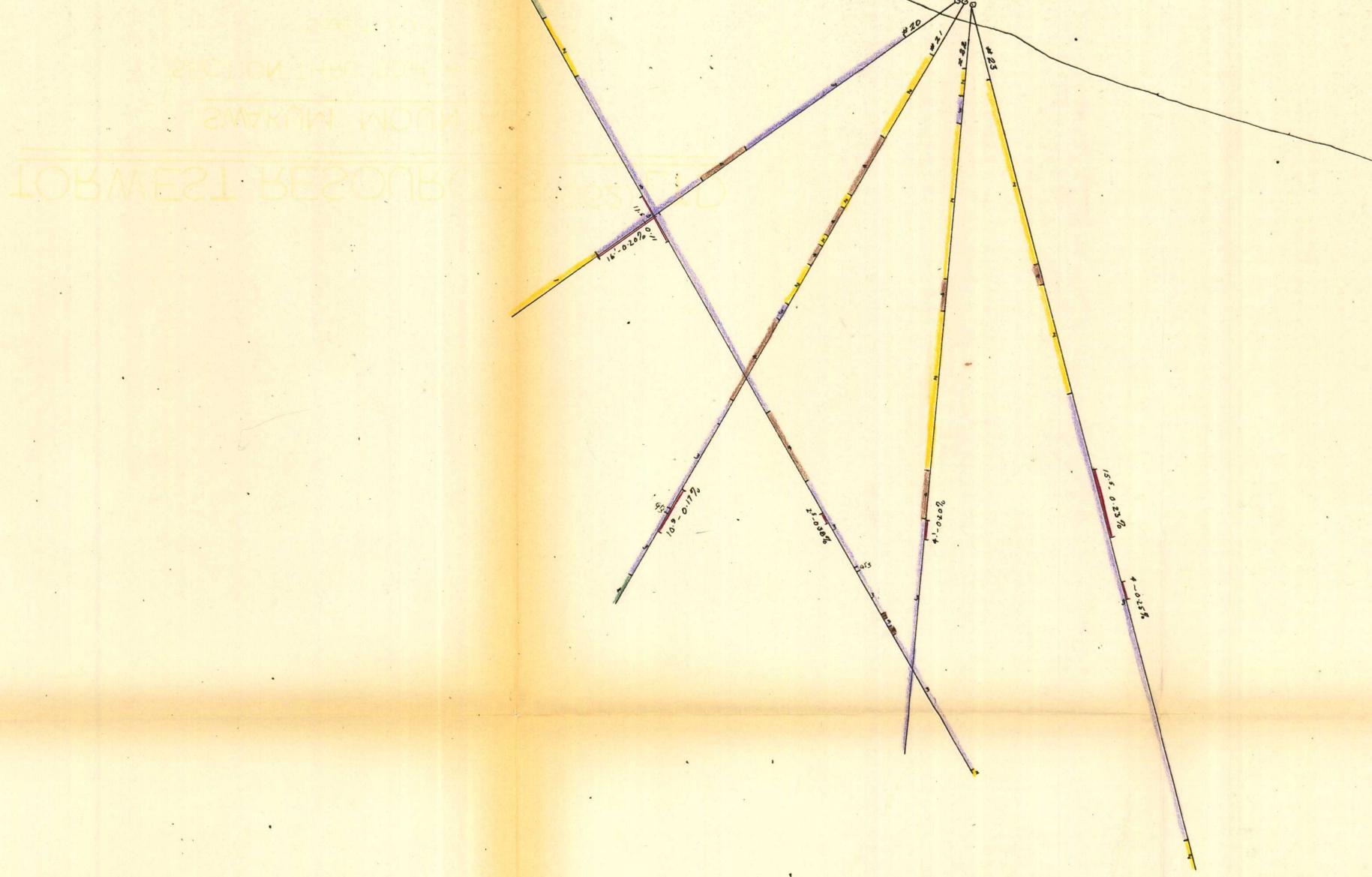
TORWEST RESOURCES (1962) LTD

SWAKUM MOUNTAIN

SECTION THRU DDH SM# 8 & 9

Scale 1 = 20'





TORWEST RESOURCES (1962) LTD

SWAKUM MOUNTAIN

SECTION THRU D.D.H. # 9

Scale 1" = 20'

