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DEPARTMENT OF MINES

SOUTH AUSTRALIA

NORTH EAST URANIUM EXPLORATION.

CROCKER WELL AREA.

- VICTORIA HUT PROSPECT -

PROGRESS REPORT ON DIAMOND DRILLING EXPLORATION TO 20/9/54 WITH PRELIMINARY RESERVE ESTIMATES.

By

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GEOLOGIST.

REPORT NO. C.W. 26
G.S. 147

S.R. 11/2/72

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1. SUMMARY

Twenty diamond drill holes amounting to a total footage of 3,780 feet have now been completed at the Victoria Hut Prospect. These have shown that the lodes extend to a depth of at least 270 feet down dip, but with a gradual decline in the width and grade of the ore in the lower levels.

Two sets of figures for ore reserves have been estimated from the results of diamond drilling completed to date.

(a) Superior grade ore contained in the uppermost and most readily minable portions of the deposit up to 200 feet down dip. These are defined by lode widths greater than 2 feet and grades greater than 2 pounds U_3O_8 per long ton. They amount to 22,250 long tons with an overall assay of 5.8 pounds U_3O_8.

(b) The total reserves include the above and additional section of the deposit which have an overall value of greater than one pound U_3O_8 per long ton for at least four feet width. Ore of such specifications has been proven to a maximum depth of 270 feet down dip and amounts to 42,000 tons assaying 4.00 pounds U_3O_8 per long ton.

Figure 1 Missing

2. PREVIOUS REPORTS

C.W. 18 Pitman R. K., Preliminary Report on the Victoria Hut Davidite Prospect. 30/3/54.

C.W. 21 King D. Progress Report to 9/7/54 on Diamond Drilling at the Victoria Hut Davidite Prospect. 9/7/54.

C.W. 19 King D. & Webb J. Report on Progress of Grade Evaluation Investigation. (Crocker East and Victoria Hut Prospect). 19/8/54.

3. PLANS.

All of the current plans on the deposit accompany this report. These are as follows:-

U.S.437 Surface Geological Plan showing Location of Boresites. Scale 1 inch = 40 ft. (Supersedes Plans Nos., U.S.299 and U.S.336).

U.S.438 50 ft. Level Plan. Scale 1 inch = 40 ft.

U.S.439 100 ft. Level Plan. Scale 1 inch = 40 ft.

U.S.440 150 ft. Level Plan. Scale 1 inch = 40 ft.

U.S.367 Cross-Sections along Diamond Drill Holes. Scale 1 inch = 40 ft. (Includes assay data and geological sections).

U.S.400 Isometric Diagram Showing Cross-Sections along Boreholes.

4. SURFACE GEOLOGY.

In the surface exposure there are strongly outcropping lode formations carrying davidite which mainly occur within an area measuring 300 feet (E.W.) by 150 feet (N.-S). The uraniferous lodes follow along several zones of locally intense shearing, conveying in places, and are

characterised by an abundance of schistose biotite. They are partially replaced and disrupted by post-lode aplitic granite bodies.

The country rock is complex hybrid granite and feldspathised metasediments of Archean age.

There are four main outcropping bodies of the mineralised rock, each of which strike E:W and dip southerly. The northern one described as the Main Lode is the largest, extending laterally (E.W.) for a distance of 250 feet at an average width of 10 feet. Of the others, the South Limb is 100 feet long and converges to meet the Main Lode at its eastern extremity. The Central Lode and South Lode are elliptical in the surface plan, with the largest dimensions being 45 feet and 40 feet respectively.

In addition to the main area of mineralisation described above, several small exposures of similar davidite-biotite lode rock have recently been mapped at distances of 70, 220 and 300 feet to the south-west of the Main Lode outcrop. These exposures are located along the margin of a narrow alluviated belt between prominent outcrops of massive granite (vide Plan U.S. 437) along the line of strike of the Central and Main Lodes.

Two boreholes Nos. VH13 and VH14 are in progress as a means of testing the possible western extension of the Main Lode.

5. D I A M O N D D R I L L I N G.

Exploration of the Victoria Hut Prospect by pattern diamond drilling was commenced in April 1954, and is still in progress. Twenty holes have now been completed, representing a total footage of 3,788 feet.

The drill holes are all directed north, normal to the lode dip. They are spaced at successively distant points from the lode outcrop along each of the north-south grid lines of 50 feet interval extending from 450W to 100W. The initial

TABLE 1.

CROCKER WELL AREA

VICTORIA HUT PROSPECT.

DETAILS OF DIAMOND DRILL HOLES

BORE NO.	CO-ORDS	R.L. OF COLLAR	DIRECTED	DEPRESSION	DEPTH Ft.	DEPTH in.
VH1	254½S : 210W	81.43	north	45°	151	4
VH2	335S : 360W	92.04	"	45°	189	0
VH3A	356S : 450W	98.97	"	45°	171	6
H4	260S : 390W	100.00	"	45°	151	0
VH5	336S : 198W	80.44	"	45°	150	8
VH6	337S : 391W	96.0	"	45°	141	0
VH7	410S : 350W	83.30	"	45°	207	11
VH8	256½S : 300W	90.05	"	45°	132	0
VH9	380S : 300W	84.58	"	45°	203	0
VH10	353S : 250W	83.36	"	45°	158	0
VH11	330S : 150W	74.89	"	45°	194	6
VH11-70	330S : 150W	74.89	"	70°	200	8
VH12	330S : 100W	-	"	45°	abandoned	60'
VH12A	330S : 100W	-	"	45°	156	9
VH13	340S : 507W	-	"	45°	in progress	
VH14	394S : 668W	-	"	45°	in progress	
VH15	434S : 200W	73.34	"	45°	in progress	
.H16	434S : 250W	74.84	"	45°	236	8
VH16-70	434S : 250W	74.84	"	70°	300	0
VH17	458S : 400W	76.33	"	45°	251	0
VH17-70	458S : 400W	76.33	"	70°	280	0
VH18	415S : 450W	-	"		263	0
VH19	450S : 300W	75.25	"		249	10

TOTAL DEPTH DRILLED to 20/9/54 = 3,788 Feet.

boreholes were depressed at 45°, but both 45° and 70° holes were sunk from the same site as the targets became progressively deeper.

The programme of drilling completed to date is illustrated diagrammatically in Plan US400, and location details of each borehole are listed in Table I.

The samples being provided by diamond drilling are highly satisfactory. Core recovery in the lode formations is greater than 95 per cent, and there is no significant loss of the ore mineral which is non-brittle and firmly fixed in the matrix of the lode.

Drilling Costs:-

The Costing Section report that diamond drilling at the Victoria Hut Prospect has cost of the order of £2/10/- per foot.

Details for period 23/5/54 to 13/8/54 one as follows:-

Period	Footage Drilled	Cost per Foot.
23/5/54 to 18/6/54	815	£2/11/7
18/6/54 to 16/7/54	702	£2/9/11
16/7/54 to 13/8/54	1040	£2/9/9

6. ORE MINERALS

The ore is a fine-grained intergrowth consisting of steel grey davidite, rutile, hematite and quartz. It occurs as pea-sized grains together with schistose biotite as disseminations throughout the matrix of the lodes. The margins of the lodes are commonly featured by granular magnetite and pyrite of low radioactivity, and narrow veinlets of intergrown pyrite and magnetite are also abundant parallel to the foliation in the hanging wall migmatites. Chalcopyrite has been observed in numerous bore intersections, particularly in Bore VH9 where it occurs in the Main Lode as large slugs intergrown with davidite, pyrrhotite and covellite.

The association of the davidite intergrowths with schistose biotite is diagnostic of the uraniferous lodes, whereas magnetite and biotite are not found together.

Uranium minerals torbernite and uranophane have been found in small amounts in the surface outcrops.

The following mineralogical observations have been made by the Departmental Petrologist (A. Whittle). Since these listed in previous report on the deposit (C.W. 21 - King).

Samples from D.D. borehole VH9 -

The rock at 26' 10" is a closely banded fine grained gneiss. It is strongly albitized and contains some 20% of albite. Formerly the rock was a quartz biotite cordierite gneiss containing some muscovite. Quartz is largely replaced by albite, but the other minerals remain. Scattered euhedral magnetites are prominent.

The rock at 134' 3" is a quartz felspar sericite biotite gneiss locally heavily impregnated with euhedral magnetite which is, in part, intergrown with ilmenite containing haematite exsolution lamellae. There is also some coarse grained pyrite, occasional chalcopyrite but no davidite.

At 146' 9" there is an irregularly banded oligoclase mica gneiss rich in sericite and containing an abundance of large oligoclase grains. The rock contains disseminated 0.5 mm. magnetites as well as thin 2 mm. veins and scattered 2 - 3 mm. grains of pyrite.

Davidite in small amount occurs in rock at 157'10" Coarse grained pyrite is very abundant. It is associated with finer grained chalcopyrite, pyrrhotite and covellite. Lenticles of a fine granular rutile-haematite intergrowth contain a little interstitial davidite.

Sample from D.D. borehole VH3A.

Rutile, allanite, monazite, altered zircon and opaque minerals are disseminated through the rock. The opaque minerals include davidite.

See also Petrological Reports Nos. 62/54 to 64/54, dealing with mineralogical studies of concentrates from lode material.

7. LODE STRUCTURE

The following structural data has been revealed by diamond drilling.

1. The ore-bodies are tabular lode type formations following shear zones in migmatitic granite.

TABLE 2.

CROCKER WELL AREA

VICTORIA HUT PROSPECT.

SUMMARY TABLE OF LODE INTERSECTIONS AND GRADE

DRILLHOLE NO.	LODE INTERSECTIONS From Ft.	in.	To Ft.	in.	THICKNESS Ft.	in.	WEIGHTED ASSAY (Chemical) lbs. U_3O_8 per long ton.	REMARKS.
	10'	0	20'	0	10'	0	2.1 *	-
VH1	27'	5	29'	4	1'	11	4.9 *	South Limb
	52'	9	62'	1	9'	4	10.6 *	Main Lode
VH2	25'	0	43'	0	18'	0	5.3 *	South Lode
	143'	0	147'	6	4'	6	1.8 *	Main Lode
VH3A	10'	2	16'	0	5'	10	2.2	-
VH4	41'	4	48'	0	6'	8	6.1	Central Lode
	66'	10	69'	0	2'	2	3.1	Main Lode
VH5	93'	0	107'	0	14'	0	5.8	South Limb
	133'	7	139'	9	6'	2	9.9	Main Lode
VH6	63'	0	64'	6	1'	6	11.6	South Lode
	76'	6	77'	6	1'	0	3.1	-
	110'	0	115'	6	5'	6	3.7	Central-Main Lode Convergence
VH7	86'	9	89'	4	2'	7	9.6	South Lode
	194'	0	195'	2	1'	2	5.2	Main Lode
VH8	49'	6	50'	0	0	6	5.2	Main Lode
VH9	154'	0	161'	6	7'	6	9.1	Main Lode
VH10	89'	11	91'	3	1'	4	8.5	South Limb
	138'	0	144'	0	6'	0	3.8	Main Lode
VH11	127'	1	127'	7	0	6	12.3	Main Lode
VH11-70	Nil				Nil		-	-
VH12A	Nil				Nil		-	-
VH13								Not drilled
VH14								Not drilled
VH15								
VH15-70								
VH16	122'	4	126'	2	3'	10	5.8	-
	157'	5	158'	5	1'	0	2.2	South Limb
	198'	8	203'	5	4'	9	7.6	Main Lode
VH16-70	174'	6	175'	0	0	6		South Limb?
	221'	6	222'	2	0	8		Main Lode?
VH17	201'	1	204'	0	2'	11	1.9	Main Lode?
VH17-70	Nil				Nil			-
VH18	52'	6	54'	0	1'	6		-
VH19	199'	6	200'	0	0	6		Main Lode.

2. The surface exposures are representative of the widest and best grade sections of the deposit, there being a marked but gradual decline in width at progressively deeper levels.

3. The lode dip is regularly to the southwards, at angles decreasing from 60° near the surface to 30° - 40° at depths greater than 200 feet down dip.

4. The lode channels have been found to persist in most cases to the maximum depth drilled of 270 feet down dip. (Boreholes VH16-70 and).

5. The pitch of the mineralisation in the lode channels is near vertical, the reserves of ore grade lying between coordinates 400W and 150W as also are the main surface exposures.

6. The Main Lode and Central Lode, which are 45 feet apart in the outcrop, ~~coverage~~ converge at a depth of 70 feet down dip along coord. 400W.

7. The Main Lode and South Limb ~~coverage~~ converge at the eastern end of the lode outcrops, and also in depth approx. 200 feet down dip along coordinates 250W and 200W.

8. The lode system is in places replaced by later intrusive granite, shown conclusively by the presence of xenoliths of davidite-biotite lode material in aplitic granite in Bore VH3A.

8. ORE RESERVES AND GRADE.

The estimation of ore reserves proven by diamond drilling is treated below using two distinctive sets of standards for ore grade and minable width. The estimates are presented in this way because it has been found that the uppermost and most readily minable portions of the deposit, which also comprise a large proportion of the total reserves, are of considerably superior grade to that at deeper levels.

(a) Best Grade Ore Reserves.

Diamond drilling has shown that the best grade davidite ore (similar to that of the surface outcrop) extends in depth to a maximum of 200 feet down dip, and laterally for 250 feet in an E-W direction between grid lines 150W and 450W. The cut-off factors used in the definition of these superior ore reserves are lode widths greater than 2 feet and grades greater than 2 pounds U_3O_8 per long ton. The limits of ore of these specifications is well-defined, and is illustrated in the accompanying geological sections (Plan U.S. 367).

The ore reserves have been calculated from measurements of the cross-sectional areas of the lodes in a vertical plane along each 50 ft. N - S. grid intervals, details of which are listed in Table III. The results summarised are as follow:-

Main Lode:	16,250 tons
South Limb:	3,500 tons
South Lode:	2,500 tons
Total -	22,250 tons.

The weighted average grade of these ore reserves as calculated from chemical assays of a total of 114 feet of drill hole samples is 5.8 pounds uranium oxide per long ton. These figures represent a reserve of approximately 60 tons of uranium oxide.

The bulk of the best ore reserves are provided by the Main Lode (16,250 tons) to depths ranging from 160 to 200 feet down dip, over which it has an average width of 4½ feet and an overall assay of 6.6 lbs. U_3O_8 per long ton.

(b) Total Ore Reserves

The total ore reserves are here defined as including all section of the lode system which have an overall value of greater than one pound uranium oxide per long ton for at least four feet width, and with a minimum grade of half a pound uranium oxide per ton over the whole of this width. Ore of such specifications has been proven to a maximum depth of

TABLE III.

CROCKER WELL AREA

VICTORIA HUT PROSPECT.

FACTORS USED IN ESTIMATION OF BEST GRADE ORE RESERVES.

	GRID LINE	BOREHOLE NOS.	DEPTH LIMIT OF BEST GRADE ORE (Down Dip) Feet.		AVERAGE LODE WIDTH (By Measurement). Feet.	AREA OF VERTICAL CROSS-SECTION Square Feet.
Main Lode	(400W	4,6,17,17-70	200		3.5	1090
	(350W	2,7,7,-70	180		4.5	810
	(300W	8,9,19	170		4.5	760
	(250W	10,16,16-70	200		4.5	900
	(200W	1,5,15	130	*	8.0	1040
	(150W	11,11-70	80		1.0	80
					Total	4680 sq.Ft.

Average area of vertical cross-section along grid lines

$$\frac{4680}{6} = 780 \text{ squ. ft.}$$

$$\text{Main Lode ore reserves} = \frac{780 \times 250}{12} \text{ tons}$$

$$= 16,250 \text{ tons.}$$

South Limb.	(250W	10,16,16-70	-		below Spec.	
	(200W	1,5,15	100	*	8.0	80
	(150W	11,11-70	-		below Spec.	

Assuming 50 ft. lateral extent

$$\text{South Limb ore reserves} = \frac{800 \times 50}{12} = 3,500 \text{ tons.}$$

South Lode	(350W	2-7,7-70	100	*	10.0	1000

Assuming 30 ft. lateral extent

$$\text{South Lode ore reserves} = \frac{30 \times 1000}{12} = 2,500 \text{ tons.}$$

* The lode width as revealed by drilling is accepted as true thickness as the boreholes were directed approximately normal to the lode dip.

TABLE IV.

CROCKER WELL AREA.

VICTORIA HUT PROSPECT.

FACTORS USED IN ESTIMATION OF TOTAL ORE RESERVES

GRID LINE	BORE NO.	LODE INTERSECTIONS From ft.	ins	To ft.	ins	WIDTH Inches	WEIGHTED ASSAY lbs/ton U_3O_8 (Chemical)	LODE DETAILS	AVERAGE WIDTH Inches	DEPTH DOWN DIP Feet	AREA OF VERTICAL CROSS)SECTION. Square feet.
00W		38	3	48	0	117	4.7	Central			
	4	64	0	69	0	60	1.7	Main			
	6	110	0	115	6	66	3.7	Main	70	230 (Plus 70' of Central Lode)	1750
	17	201	0	204	0	35	2.3	Main			
	17-70	-		-		below spec.	-	-			
	2	10	0	43	0	396	3.3	South			
		143	0	147	6	54	1.8	Main	South 214	South 100	South 1800
50W	7	86	9	89	4	31	9.6	South	Main 34	Main 200	Main 575
		194	0	195	2	14	5.2	Main			
	8	42	6	50	0	90	0.8 *	Main			
00W	9	152	3	161	6	111	9.2	Main	82	180	1230
	19	199	6	200	0	-	below spec.	Main			
	10	86	11	91	3	52	3.0	South Limb	S.L. 48	S.L. 210	S.L. 840
		135	0	147	0	144	2.2	Main			
		157	5	158	5	12	2.2 *	South Limb			
50W	16	198	8	203	5	57	7.6	Main	Main 78	Main 270	Main 1750
		168	5	175	0	79	2.5	South Limb			
	16-70	220	0	222	10	34	2.8	Main			
	E	0	0	29	4	332	1.5	South Limb	S.L. 268	S.L. 150	S.L. 3350
		52	9	62	1	112	10.6	Main			
00W		93	0	110	0	204	5.1	South Limb	Main 111	Main 180	Main 1650
	5	133	7	142	9	110	6.8	Main			
50W	11	126	1	130	2	49	2.0	Main South L.	42	100	350

* below specifications, but included in estimates.

270 feet down dip in the central part of the deposit (Bore 16-70).

The estimates outlined below are based on diamond drill data which is tabulated in Fig. IV, and includes only that portion of the deposit between coordinates 400W and 150W.

Main Lode. Average area of vertical cross-section along N-S. grid lines = 1210 square feet.

Ore Reserves = $\frac{1210 \times 250}{12}$ = 25,250 tons

South Limb Average area of vertical cross-section between coords 250W and 150W = 1500 squ. feet.

Ore Reserves = $\frac{1500 \times 100}{12}$ = 12,500 tons

South Lode Area of vertical cross-section = 1800 squ. ft. Assuming lateral extent of 30 ft.,

Ore Reserves = $\frac{30 \times 1800}{12}$ = 4,500 tons.

The total ore reserves are 42,000 tons with a weighted average assay calculated to be 4.00 pounds U_3O_8 per long ton from chemical assays of 180 feet of borehole samples. These figures are equivalent to a reserve of 75 tons of uranium oxide.

9. RADIOMETRIC BOREHOLE LOGGING

Most of the completed boreholes at the Victoria Hut Prospect have been radiometrically logged by I. Mumme, Asst. Geophysicist, and the graphical results are described briefly in a previous report No. C.W. 19. The lode widths and grade values revealed by these investigations correspond in a general way to those obtained by drill core assays.

The logs were calibrated in terms of counts per minute on a ratemeter used with tube and probe of the following specifications:-

Geiger Tube

Cintel No. G.M. 4A5

Length 10¾ inches: Diameter ⅞ inch.

Ethyl formate argon filled.

Operating voltage approx. 1250.

Probe.

1¼" overall diameter brass tube.

5 S.W.G. gauge wall thickness

The approximate calibration figure obtained for the ore at this deposit is that 1800 counts per minute represents one pound uranium oxide per long ton. The background reading is of the order of 300 counts per minute, and the following anomalies greater than 3 times background were defined by the radiometric logging equipment.

Bore No.	Footage	Counts per Minute	Remarks.
VH1	0-10	2,500	South Limb
	10-20	6.120	10'0" -
	20-30	8,540	29-4"
	30-40	1,330	Main Lode
	40-50	1,590	52'-9" to
	50-50	11,850	62'1"
VH2	0-10	1,140	South Lode
	10-20	3,730	25'-43'
	20-30	5,800	
	30-40	11,900	
	130-140	2,870	Main Lode 143'-147'6
VH3A	0-10	1,800	Lode from
	10-20	5,700	10'2" to 16'0"
VH4	20-30	1,880	Central Lode
	30-40	3,160	41'4"-48'0
	40-50	11,900	
	60-70	2,560	
	70-80	1,190	Main Lode
	80-90	1,760	66'10" to 16'0"
	90-100	2,750	
VH5	90-100	11,900	South Limb
	100-110	7,100	93'0"-107'0"
	100-120	1,400	
	120-130	1,900	Main Lode
	130-140	9,500	133'7"-139'9"

Bore No.	Footage	Count per Minute.	Remarks.
VH6	60-70	74,360	South Lode.
	70-80	2,370	63'0-64'6"
	100-110	1,070	Main Lode
	110-120	5,400	110'-115'6"
VH7	80-90	2,900	South Lode
	180-190	2,370	86'9"-89'4"
			Main Lode
			49-6"-50'0"
VH8	40-50	2,560	Main Lode
			49-6"-50'0"
VH9	140-150	5,030	Main Lode
			154'0"-161-6"
VH10	30-40	1,190	
	80-90	3,900	South Limb
	90-100	1,320	89'11"-91'3"
	120-130	1,280	
	130-140	3,500	Main Lode
	140-150	1,490	138'-144'
VH11	90-100	970	Main Lode
			127'1 -127'7"
VH11-70	Nil		No lode.

10. METALLURGICAL INVESTIGATIONS

The following progress report on beneficiation of lode material from the Victoria Hut Prospect was supplied by the Chief Metallurgical Engineer (Mr. N. Jackson).

"Preliminary tests have been conducted on composite samples prepared from drill core sample rejects. Assays of the composite sample are shown in Table V.

TABLE V.

Composite Samples.

Composite No.	U_3O_8 lb/ton.
1	0.4
2	2.4
3	8.4

Test work has been limited to flotation due to

the small amount of ore available and has been concentrated on composite Nos. 2 and 3.

A petrological examination of the ore showed that it contains rutile, davidite, pyrite, chalcopyrite, a little haematite and magnetite, but apparently no ilmenite. Other minerals present are quartz, biotite, muscovite, sericite and felspar. The minerals are more finely disseminated than those in Radium Hill ore which suggests that primary concentration by heavy media separation might not be possible.

The ore is amenable to flotation with the reagent combination developed for Radium Hill ore. Recovery is of the same order as at Radium Hill and grade of concentrate is slightly higher. Concentrated assaying 20 lb. U_3O_8 per ton and 30 lb. U_3O_8 per ton can be produced from ores assaying 2.4 lb. U_3O_8 per ton and 8.4 lb. U_3O_8 per ton respectively.

The fineness of grinding has practically no effect on recovery or grade providing the ore is ground to at least seventy per cent minus 200 mesh. Recovery is lower with coarser grinding.

Typical results of flotation tests conducted on composite Nos. 3 and 2 are shown in Tables VI and VII respectively. Reagents used were 1.5 lb. peltogen per ton, 3.5 lb. S3016 per ton, 12.0 lb. fuel oil per ton and 0.5 lb. cresylic acid per ton. The ore was ground to 75 per cent minus 200 mesh.

More than the usual number of cleaning stages were done in order to determine the maximum grade of concentrate recoverable, also scavenging in the cleaner stages was excessive. With lighter scavenging maximum grade could probably be obtained with two cleanings of rougher concentrate.

Magnetic separation tests have been carried out on the ore, flotation concentrate and tailing and the products have been sent to Parkside for petrological examination and analysis.

A sulphide flotation concentrate was produced from composite No. 3 with butyl xanthate, creosylic acid and copper sulphate. It assayed 2.0 per cent copper and 12.1 lb. U_3O_8 per ton".

TABLE VI.

Flotation of Victoria Hut Ore - Composite No. 3

Product	Per Cent Weight	U_3O_8 lb/ton	U_3O_8 Per Cent Distributio
4th Cleaner Concentrate	20.0	30.9	72.7
4th Cleaner Tailing	1.8	15.1	3.2
*3rd Cleaner Concentrate	21.8	29.6	75.9
3rd Cleaner Tailing	3.2	11.9	4.5
*2nd Cleaner Concentrate	25.0	27.3	80.4
2nd Cleaner Tailing	6.1	5.9	4.2
*Cleaner Concentrate	31.1	23.1	84.6
Cleaner Tailing	13.9	3.8	6.2
*Rougher Concentrate	45.0	17.1	90.8
Scavenger Concentrate	26.1	2.1	6.5
Scavenger Tailing	28.8	0.8	2.7
* Head	100.0	8.5	100.0

* Calculated Grade

TABLE VII.

Flotation of Victoria Hut Ore - Composite No. 2

Product	Per Cent Weight	U_3O_8 lb/ton	U_3O_8 Per Cent Distributio
4th Cleaner Concentrate	2.4	20.7	21.0
4th Cleaner Tailing	2.1	18.9	16.4
*3rd Cleaner Concentrate	4.5	19/9	37.4
3rd Cleaner Tailing	2.4	14.4	14.5
*2nd Cleaner Concentrate	6.9	18.0	51.9
2nd Cleaner Tailing	2.9	7.8	9.5
*Cleaner Concentrate	9.8	15.0	61.4
Cleaner Tailing	8.1	2.9	9.8
*Rougher Concentrate	17.9	9.5	71.2
Scavenger Concentrate	31.4	1.7	22.4
Scavenger Tailing	50.7	0.3	6.4
Head	100.0	2.4	100.0

* Calculated Grade.

11. FUTURE EXPLORATION

A limited number of boreholes now remain to be drilled and unless these reveal encouraging intersections there will be no further drilling work required at this deposit. Proposed additional boreholes including those in progress are as follow:-

VH7-70, VH15-70	Completion of original programme.
VH13, VH14	Testing possible western extension of lode system.
VH20	Deep borehole at rear of VH16-70 designed to intersect main lode channel at approx. 340 feet down dip.

An inclined shaft (No. 1 shaft) is being sunk on the eastern portion of the Main Lode outcrop to provide bulk samples for metallurgical investigations. This has reached a depth of 10 ft. on the underlie.

D. King

D. KING,
GEOLOGIST.

DK:BK
28/9/54

Fig. I Diamond Drill Plant in Operation at the Victoria Hut Prospect.

APPENDIX I.

DETAILED DIAMOND DRILL LOGS AND ASSAY RESULTS.

VICTORIA HUT PROSPECT

VH1

40-54

\- -

UB 336

254½S : 210W

81.43

north 45°

A. Leschen

30/4/54

6/5/54

0	0	9	9	Sheared granite and migmatite. Traces of davidite at 2'0" and torbernite at 8'0".
9	9	20	0	Torbernite at 10'0" and davidite at 11'6", 13'0" and 14'6".
20	0	26	8	Sheared migmatite with occasional radioactive points. Large core loss.
26	8	27	5	Quartz pegmatite with limonite stains. Low radioactivity.
27	5	29	4	Sheared migmatite, with plentiful davidite with biotite (South Limb).
[illegible]	4	34	0	Sheared migmatite.
34	0	37	10	Siliceous migmatite with little biotite.
37	10	52	9	Sheared migmatite. Traces of radioactive minerals.
52	9	62	1	Sheared migmatite with plentiful biotite and rich davidite disseminations (Main Lode).
62	1	67	0	Feldspar pegmatite. Low radioactivity.
67	0	151	4	Sheared migmatite. Occasional biotitic zones and traces of radioactive minerals.

D. King.

7/6/54.

VICTORIA HUT PROSPECT.

BORE VH1

A S S A Y S.

From Ft.	Footage From Ins.	To Ft.	To ins.	Thickness Ft.	Thickness ins.	Sample No.	ASSAYS U_3O_8 pounds per long ton. Radiometric ~~Chemical~~	Remarks
0	0	10	0	10	0	U4/5446	1.2	
10	0	20	0	10	0	U4/5447	2.1	
20	0	27	5	7	5	5448	0.2	
27	5	29	4	1	11	5449	4.9	South Limb.
29	4	37	10	8	6	5450	0.8	
37	10	52	9	14	11	3455	0.3	
52	9	62	1	9	4	3456	10.6	Main Lode.

Plotted on X-section US - 367

VICTORIA HUT PROSPECT

VH2 — 41/54

\- — US 336

3358 : 360W — 92.04

north 45° — C. Serras

10/5/54 — 20/5/54.

0	0	10	0	Migmatite with little biotite. Occasional pegmatite lenses.
10	0	25	0	Sheared migmatite. Weak radioactivity.
25	0	43	0	Sheared migmatite with much biotite. Strongly radioactive (South Lode).
43	0	134	0	Sheared migmatite with little biotite.
34	0	143	0	Pegmatite and sheared migmatite.
143	0	147	6	Sheared moderately radioactive migmatite (Main Lode).
147	0	162	0	Sheared migmatite. Weakly radioactive.
162	0	189	0	Migmatite and granite gneiss.

D. King

16/6/54.

VICTORIA HUT PROSPECT.

BORE VH2.

A S S A Y S .

Footage From Ft.	ins.	To Ft.	ins.	Thickness Ft.	ins.	Sample No.	ASSAYS U_3O_8 pounds per long ton Radiometric	Chemical	Remarks.
0	0	10	0	10	0	U4/3457	0.1		
10	0	25	0	15	0	U4/3458	0.9		
25	0	33	0	8	0	3459	2.6	5.3 weighted	South Lode.
33	0	43	0	10	0	3460	7.4		
43	0	50	0	7	0	3461	0.8		
134	0	143	0	9	0	3462	0.2		
143	0	147	6	4	6	3463	1.8		Main Lode
147	-	162	o	14	6	3464	Nil.		

Plotted on X- sections 20/7/54 Plan U.S. 367

VICTORIA HUT PROSPECT

VH3A

north 45° M. Stock.

0	0	10	2	Granite
10	2	16	0	Lode foliated biotite migmatite with disseminations of rutile. Min. report on sample from 13'. Rutile, Allanite, Monazite.
16	0	25	0	Foliated migmatitic granite. Biotite streaks (80°).
25	0	25	9	Granular magnetite veinlets.
25	9	46	0	Migmatitic biotite granite. Foliated at 40°.
46	0	48	6	Granite
48	6	58	0	Migmatitic biotite granite.
58	0	60	0	Granite.
60	0	78	0	Migmatitic biotite granite.
78	0	78	6	Biotitic migmatite. Foliated 45°. Traces of pyrite.
78	6	80	4	Granite.
80	4	81	10	Migmatite. Biotite clots and magnetite, & disseminated chalcopyrites.
81	10	90	0	Pegmatitic granite.
90	0	92	1	Foliated biotitic migmatite with traces of pyrite.
92	1	94	0	Foliated biotitic migmatite.
94	0	95	10	Migmatitic granite.
95	10	96	1	Magnetite veins in migmatite. Weakly radioactive. Granite replacing lode?

forward ...

96	1	100	0	Migmatitic biotite granite. Traces of pyrite at 97'.
100	0	109	6	Granite.
109	6	120	0	Foliated biotite migmatite (80°).
120	0	122	0	Quartz-rich pegmatite.
122	0	124	0	Foliated biotite migmatite (80°).
124	0	129	6	Pegmatite.
129	6	132	0	Foliated biotite migmatite (80°).
132	0	136	0	Granite.
136	0	156	0	Fine grained biotitic metasediment. Weakly foliated at 80°. Trace pyrite at 155'. Some narrow granite veinlets.
156	0	171	6	Granite, biotitic, and foliated (80°) at 166'.

End of bore at 171'6".

D. King.

9/8/54.

VICTORIA HUT PROSPECT.

BORE VH3A

A S S A Y S.

Footage From Ft.	ins.	To Ft.	ins.	Thickness Ft.	ins.	Sample No.	ASSAYS U_3O_8 pounds/long ton Radiometric	Chemical	Remarks.
10	2	16	0	5	10	4975	1.8	2.2	Lode bearing Allanite.
78	0	78	6			4976	0.1	0.2	Pyritic
78	6	80	4			4977	0.1	0.1	Granite.
80	4	81	10			4978	0.1	0.2	Magnetite & Chalco-pyrite.
81	10	90	0			4979	Nil	0.1	Pegmatite
90	0	92	1			4980	0.1	0.1	Pyritic
92	1	94	0			4981	0.3	0.2	
	0	95	10			4982	0.1	0.1	
95	10	96	1			4983	0.2	0.2	Lode replaced by granite?

VICTORIA HUT PROSPECT

VH4	48.54
- -	US 336
260S : 390W	100.0
north 45°	M. Stack
24/5/54	28/5/54

0	0	18	4	Fractured leucogranite with biotite segregations.
18	4	38	8	Migmatitic granite. Several large slugs of davidite at 21'5".
38	8	41	4	Banded biotite migmatite foliation 50°. Traces of davidite mineralisation.
41	4	43	4	Biotite migmatite with rich davidite disseminations (Central Lode).
43	4	48	0	Banded biotite migmatite. Traces of davidite mineralisation.
	0	64	0	Leucogranite with streaky biotite segregations.
64	0	66	10	Biotite migmatite traces of davidite mineralisation.
66	10	69	0	Fractured biotite migmatite with rich davidite disseminations (Main Lode).
69	0	70	0	Biotite migmatite. Traces of davidite mineralisation.
70	0	77	5	Migmatite leucogranite.
77	5	83	0	Biotite schist metasediments.
83	0	116	0	Leucogranite with streaky biotite segregations.
116	0	116	9	Biotite schist metasediment.
116	9	151	0	Leucogranite. Narrow bands of schistose metasediment at 50° between 124' and 127'.

D. King

6/6/54.

VICTORIA HUT PROSPECT.

BORE VH4.

A S S A Y S.

Footage From Ft.	ins.	To Ft.	ins.	Thickness Ft.	ins.	Sample No.	ASSAYS U_3O_8 pounds/long ton Radiometric	Chemical	Remarks.
38	3	41	4	2	8	U4/3468	1.2	1.6	
41	4	43	4	2	0	3469	6.7	7.4	
				6'8"				5.4	weighted Central Lode.
43	4	48	0	4	8	3470	4.9	5.4	
64	0	66	10	2	10	3471	0.6	0.7	
66	10	69	0	2	2	3472	3.1	3.1	Main Lode
69	0	70	0	1	0	3473	0.2	0.2	

VICTORIA HUT PROSPECT -

VH5 50.54

\- - US 336

3368 : 198W 80.44

north 45° A. Leschen

24/5/54 2/5/54.

0	0	13	4	Biotitic migmatite. Magnetite vein at 9'4".
13	4	29	2	Pink pegmatitic granite.
29	5	45	6	Medium - grained granite with occasional biotite streaks.
45	6	93	0	Hybrid granite - irregularly distributed biotite.
93	0	100	0	Biotitic migmatite. Some magnetite - slightly radioactive.
100	0	107	0	Schistose biotite - davidite lode with some pyrite South Limb.
107	0	111	0	Schistose biotitic migmatite with abundant disseminated pyrite and magnetite veins, 60 - 70° foliation.
111	0	118	0	Medium - grained granite.
118	0	129	7	Schistose biotitic migmatite with magnetite veins.
129	7	133	7	Magnetite - pyrite veins.
133	7	139	9	Schistose biotite - davidite lode. Main Lode some pyrite.
139	9	150	8	Hybrid granite with irregularly distributed biotite.

D. King.

6/7/54.

VICTORIA HUT PROSPECT

BORE VH5

A S S A Y S.

Footage From Ft.	ins	To Ft.	ins.	Thickness Ft.	ins.	Sample No.	ASSAYS U_3O_8 pounds/long ton Radiometric	Chemical.	Remarks.
93	0	97	0	3	0	U4/4944	3.9	4.5	
97	0	100	0	3	0	U4/3489	4.0	3.6	
100	0	107	0	7	0	3490	9.0	7.4	South limb.
107	0	110	0	3	0	3491	1.6	2.0	
130	7	133	7	3	0	3492	0.2	0.2	
133	7	139	9	6	2	3493	8.7	9.9	Main Lode.
139	9	142	9	3	0	3494	0.5	0.6	

VICTORIA HUT PROSPECT -

VH6 57.54

\- - U3 336

3758 : 391W 96.0

north 45° C. Serrao

7/6/54 11/6/54

0	0	17	0	Foliated hybrid granite 50°.
17	0	20	8	Magnetite veins.
20	8	29	2	Foliated hybrid granite.
29	2	32	0	Hybrid granite with numerous magnetite veins.
32	0	60	6	Foliated hybrid granites at 70°. Veinlets of magnetite.
60	6	63	0	Biotitic hybrid granite.
63	0	64	6	Biotitic hybrid granite with rich davidite, South Lode.
64	6	76	6	Biotitic foliated hybrid granite.
76	6	77	6	Biotitic hybrid granite with traces of davidite.
77	6	110	0	Biotitic hybrid granite foliation 70° - 80° Rich magnetite - pyrite veins from 82' - 7 to 83'7".
110	0	115	6	Schistose biotite rich migmatite. (Central Lode Main Lode convergence. sparse davidite.
115	6	141	0	Biotitic hybrid granite.

D. King.

6/7/54.

VICTORIA HUT PROSPECT.

BORE VH6

A S S A Y S.

Footage From Ft.	ins.	To Ft.	ins.	Thickness Ft.	ins.	Sample No.	ASSAYS U_3O_8 pounds/long ton Radiometric	Chemical	Remarks.
60	6	63	0	2	6	U4/4945	0.3	0.3	
63	0	64	6	1	6	4946	9.1	11.6	South Lode.
64	6	76	6	12	0	4947	0.5	0.8	
76	6	77	6	1	0	4948	2.9	3.1	
110	0	115	6	5	6	4949	3.3	3.7	Central Lode Main Lode. Convergence.

VICTORIA HUT PROSPECT

VH7

US 336

4108 : 350E

83.30

north 45° Leschen

0	0	9	7	Biotitic migmatite
9	7	11	2	Magnetite veinlets.
11	2	19	10	Schistose biotitic migmatite. Foliated at 50°.
19	10	28	11	Magnetite veins in migmatite.
28	11	83	5	Leucogranite. Some biotitic inclusions. Magnetite vein at 31'9".
83	5	86	9	Magnetite veins. Traces of Chalcopyrite.
86	9	89	4	Davidite - pyrite lode. South Lode.
89	4	92	4	Schistose biotitic migmatite.
92	4	95	3	Biotite granite.
95	3	98	6	Biotite migmatite. Disseminated pyrite and then magnetite veins.
98	6	108	0	Leucogranite.
108	0	112	0	Foliated biotite migmatite.
112	0	112	4	Pyrite in fractured leucogranite.
112	4	140	7	Foliated biotitic granite (migmatite) 80°. Magnetite at 112'4", 136' and 140'.
140	7	180	6	Grey biotitic granite (migmatite). Magnetite pyrite veins at 157'6", 176'.
180	6	187	0	Foliated biotite schist rich in magnetite and pyrite.
187	0	192	8	Biotitic granite (migmatite).
192	8	194	0	Weak magnetite - chalcopyrite mineralisation in migmatite.
194	0	195	2	Davidite - biotite lode - main lode.
195	2	197	0	Biotite schist 80°.
197	0	207	11	Granite with inclusions of schistose biotite at 70°.

End of bore at 207' 11"

D. King

24/8/54.

VICTORIA HUT PROSPECT

BORE VH7

A S S A Y S.

Footage From	ins.	To	ins.	Thickness Ft.	ins.	Sample No.	ASSAYS U_3O_8 pounds/long ton Radiometric	Chemical	Remarks.
83	5	86	9	3	4	U4/4974		0.2	
86	9	89	4	2	7	4965		9.6	South Lode.
194	0	195	2	1	2	4971		5.2	Main Lode.

VICTORIA HUT PROSPECT -

VH8 60-54

- - US 336

256½S : 300W 90.05

north 45° C. Serrao

15/6/54 21/6/54

0	0	5	3	Pink granite - coarse grained pegmatitic
5	3	19	6	Medium grained mafic granite.
19	6	29	0	Foliated biotitic hybrid granite at 60° - 80° thin magnetite vein at 22'2".
29	0	31	0	Biotite rich hybrid granite. Traces of davidite in biotite segregations at 30' 10".
31	0	42	6	Foliated biotite migmatite at 70°. Pyrite crystal at 32'8".
42	6	49	6	Schistose biotite migmatite. Disseminated pyrite and numerous magnetite - pyrite veinlets.
49	6	50	0	Schistose biotitic migmatite with small amount of davidite. Main Lode.
50	0	132	0	Hybrid granite. Foliated biotite streaks at 60° - 70°.

D. King.

6/7/54.

VICTORIA HUT PROSPECT

BORE VHS

A S S A Y S.

Footage From Ft.	ins.	To Ft.	ins.	Thickness Ft.	ins.	Sample No.	ASSAYS U_3O_8 pounds/long ton Radiometric	Chemical	Remarks
42	6	49	6	7	0	U4/4950	0.2	0.5	
49	6	50	0	0	6	U4/4952	4.3	5.2	Main Lode.

VICTORIA HUT PROSPECT

VH9

59-44

US 336

380S : 300W

84.58

north 45°

A. F. Leschen

15/6/54

23/6/54

0	0	10	9	Massive pink leucogranite.
10	9	17	6	Hybrid biotite granite. Numerous inclusions of fine-grained feldspar - biotite metasediment.
17	6	20	0	Mafic grenite. Numerous biotite and disseminated large inclusions of magnetite.
20	0	34	9	Migmatite granite.
34	9	36	0	Slatey biotite schist with pyrite inclusions.
36	0	44	6	Leucogranite.
44	6	67	10	Migmatite. Mostly strongly foliated (sheared) at 60°.
67	10	69	0	Leucogranite.
69	0	151	0	Biotitic migmatite and leucogranite. Rich magnetite - pyrite veins at 134'3", 138' 6", 142'5", and pyrite clot at 140'6".
151	0	152	3	Magnetite - pyrite veins in migmatite.
152	3	154	0	Weakly radioactive migmatite carrying abundant magnetite and pyrite.
154	0	158	6	Biotite-davidite lode. Abundant pyrite and some chalcopyrite - davidite. Main Lode.
158	6	161	6	Weakly mineralised lode with magnetite, davidite and pyrite. Main Lode.
161	6	170	0	Biotite migmatite (60°) with pyrite at 162'.
170	0	203	0	Mainly leucogranite with migmatite inclusions.

D. King.

6/7/54.

VICTORIA HUT PROSPECT.

BORE VH9

A S S A Y S.

Footage From Ft.	ins	To Ft.	ins.	Thickness Ft.	ins.	Sample No.	ASSAYS U_3O_8 pounds/long ton Radiometric	Chemical	Remarks.
151	0	152	3	1	3	U4/4953	0.2	0.3	Magnetite veins.
152	3	154	0	1	9	4954	1.0	1.3	Magnetite pyrite.
154	0	158	6	4	6	4955	12.1	15.2	Main Lode.
158	6	161	6	3	0	4956	4.7	5.2	Main Lode.

VICTORIA HUT PROSPECT

VH 10 — 56-54

— — US 336

3538 : 250W — 83.36

north — 45° — A. F. Leschen

7/6/54 — 11/6/54

0	0	28	6	Pink pegmatitic granite.
28	6	38	9	Hybrid biotitic granite. Not foliated. Magnetite clot at 29'1".
38	9	44	0	Strongly foliated migmatite. Magnetite-pyrite veins from 41 to 42'.
44	0	89	11	Hybrid granite with irregularly distributed biotite. Magnetite-pyrite veins at 50-52', 56'3", 57'5", 62-65', 73'8", 83-54'. Chalcopyrite grains between 68'6" and 69'9".
89	11	91	3	Biotite rich lode carrying davidite. South Lode.
91	3	97	0	Hybrid granite numerous clots of pyrite.
	0	120	0	Hybrid granite.
120	0	138	0	Hybrid granite rich in biotite. Foli-ation 70° magnetite at 124'0" to 124'6".
138	0	144	0	Biotite-rich lode carrying davidite and pyrite Main Lode.
144	0	158	0	Hybrid granite with foliated biotitic inclusions at 70°.

D. King.

6/7/54.

VICTORIA HUT PROSPECT

BORE VH 10

A S S A Y S.

Footage From Ft.	ins.	To Ft.	ins.	Thickness Ft.	ins.	Sample No.	ASSAYS U_3O_8 pounds/long ton Radiometric	Chemical	Remarks.
86	11	89	11	3	0	U4/3495	0.3	0.5	
89	11	91	3	1	4	3496	8.1	8.5	South Limb.
91	3	94	3	3	0	3497	0.2	0.5	
135	0	138	0	3	0	3498	0.6	0.7	
138	0	144	0	6	0	3499	3.8	3.8	Main Lode.
144	0	147	0	3	0	3500	0.5	0.5	

VICTORIA HUT PROSPECT

VH11

US 336

330S : 150W

74.89

north 45° C. Serrao

0	0	35	0	Medium-grained pink biotite granite.
35	0	58	2	Pink granite-biotite migmatite. Foliated in places at 60°. Mineral for identification in fracture at 48'0".
58	2	61	0	Pegmatite.
61	0	71	8	Siliceous pegmatitic granite.
71	8	113	0	Strongly foliated biotitic migmatite.
113	0	121	8	Pegmatitic granite with some biotite streaks.
121	8	126	1	Migmatite with feldspar augen. Not foliated.
126	1	127	1	Weakly radioactive migmatite.
127	1	127	7	Davidite-biotite lode - eastern end of Main Lode.
127	7	130	2	Weakly radioactive migmatite.
130	2	145	3	Migmatite with feldspar augen - not foliated.
145	3	150	3	Leucogranite with a few biotite streaks.
150	3	194	6	Migmatite. Some bands foliated at 70°. Mostly with feldspar augen.

D. King.

8/7/54.

VICTORIA HUT PROSPECT

BORE VH11

A S S A Y S.

Footage From Ft.	ins.	To Ft.	ins.	Thickness Ft.	ins.	Sample No.	ASSAYS U_3O_8 pounds/long ton Radiometric	Chemical	Remarks.
126	1	127	1	1	0	U4/4957	0.3	0.5	
127	1	127	7	0	6	4958	12.3	12.3	Main Lode.
127	7	130	2	2	7	4959	0.3	0.5	

VICTORIA HUT PROSPECT

VH11 - 70 67/54

US 336

330S : 150W 74.89

north 70° Serrao & Marsland.

0	0	4	9	Granite.
4	9	5	9	Biotite rich metasediment.
5	9	32	5	Foliated migmatite biotite granite (40°).
32	5	34	0	Biotite granite.
34	0	35	10	Pegmatite with coarse biotite segregations.
35	10	59	6	Migmatite biotite granite (45°).
59	6	77	4	Leucogranite.
77	4	96	2	Strongly foliated migmatitic biotite granite (60°).
96	2	103	6	Granite - pegmatitic in places.
103	6	112	6	Strongly foliated (80°) migmatitic biotite granite.
112	6	146	9	Granite with some biotite.
146	9	157	0	Biotite migmatite. Mostly granular. Traces of pyrite at 150'8".
157	0	158	0	Magnetitic granite. Breccia? structure .
158	0	162	0	Biotite migmatite-granular
162	0	174	8	Granite with some biotite.
174	8	178	0	Migmatitic granite, biotitic lenses foliated, and some ptygmatically folded feldspar veins.
178	0	190	8	Granite.
190	8	200	8	Granite. Biotite inclusions foliated at various angles.

End of Bore 200' 8" No. Lode Intersections.

D. King.

9/8/54.

VICTORIA HUT PROSPECT.

BORE VH11 - 70

No samples submitted for assay.

Victoria Hut Prospect

V.H. 12A

70/94

G.S.336

-

3305: 100W

North 45° A.F. Leschen

0	0	6	0	massive granite
6	0	56	0	strongly foliated biotite granite migmatite 45° - 70°
56	0	61	5	Granite
61	9	67	0	Foliated biotite granite migmatite
67	0	76	0	Dominantly granite
76	0	109	0	Granite mixed with foliated biotite granite migmatite
109	0	144	10	Granular biotite - feldspar migmatite
144	10	156	9	Massive granite.

End of bore at 156'9"

__Note__ Bore V.H.12 on same site abandoned because casing difficulty.

End of hole 156'9"

R. King

26.8.54

VICTORIA HUT PROSPECT.

ZONE V.M. 12A.

A S S A Y S.

No ore interactions - no samples sent for assay

VICTORIA HUT PROSPECT

VH 16 — 25/54

— — US 336

4348 x 250W — 74.84

north — 45° — Leschen

0	0	22	2	Pink granite.
22	2	27	10	Biotitic granite migmatite
27	10	33	8	Pink pegmatitic granite
33	8	36	7	Foliated migmatite with magnetite veinlets 60°
36	7	42	3	Biotite granite.
42	3	45	3	Migmatite rich in magnetite and pyrite
45	3	71	0	Grey biotitic migmatite. Foliated at 60°. Magnetite pyrite at 55'6" - 57'0", 61'6", 69'0".
71	0	76	6	Leucogranite
76	6	81	3	Migmatite rich on magnetite-pyrite.
81	3	84	0	Grey foliated biotite migmatite.
84	0	85	5	Pegmatite
85	5	122	4	Migmatite biotite granite. Foliation 70° Magnetite-pyrite at 103'6" - 104', 106'8", 109'4" - 110', 111'-115', 121', chalcopyrite at 95'.
22	4	126	2	<u>Davidite-pyrite lode</u>. (Big core loss or possibly width less)
26	2	157	5	Grey migmatitic granite. Magnetite at 145', 152', 154'6".
57	5	158	5	Davidite pyrite biotite Lode.
				<u>South Limb</u>.
58	5	198	8	Grey migmatitic granite. Weakly foliated 80°. Magnetite at 175'9", 178'6", 190', and 192'
98	8	203	5	Davidite-pyrite-biotite lode. <u>Main Lode</u>.
03	5	236	8	Weakly foliated migmatitic biotite granite 80°.

D. King

25/8/54.

VICTORIA HUT PROSPECT.

BORE VH 16.

A S S A Y S.

FOOTAGE From ft. ins.	To ft. ins.	THICKNESS ft. ins.	SAMPLE NO.	ASSAYS U_3O_8 per long ton Radiometric	Chemical	REMARKS
122' 4	126' 2	3 - 10	U4/4989	6.3	5.8	
157' 5	158' 5	1 - 0	U4/4992	2.0	2.2	South Limb
198' 8	199'11	1 - 3	4990	3.1	3.8	Main Lode
199'11	203' 5	3 - 6	2991	9.6	9.0	Main Lode

VICTORIA HUE PROSPECT -

VH16-70 78-54

- - U.S. 336

4343 x 250N 74-84

Magnetic north 70° E. Marsland

0	0	10	6	Foliated hybrid granite (45°)
10	6	18	0	Pegmatitic granite.
18	0	24	4	Hybrid biotite granite.
24	4	39	4	Hybrid biotite granite with numerous small magnetite clots.
39	4	40	4	Biotite-sericite schist
40	4	50	1	Biotite granite.
50	1	55	6	Biotite granite with numerous magnetite clots.
55	6	69	1	Hybrid biotite granite
69	1	69	7	Magnetite-pyrite
69	7	72	9	Hybrid biotite granite. Foliation 40°-60°.
72	9	76	0	Magnetite-pyrite veins.
76	0	87	0	Biotite granite and pegmatite.
87	0	99	0	Hybrid biotite granite.
99	0	103	6	Magnetite-pyrite
103	6	110	5	Biotite granite.
110	5	115	6	Magnetite pyrite.
115	6	117	10	Foliated hybrid biotite granite.
117	10	130	0	Foliated hybrid biotite granite with abundant magnetite veins. Traces of chalcopyrite. 45°.
130	0	148	6	Hybrid biotite granite. Magnetite at 139'6" and 144'6".
148	6	169	6	Massive biotite granite and pegmatitic granite.
169	6	174	6	Migmatite rich in schistose biotite.
174	6	175	0	Davidite-biotite lode. - South Limb?
175	0	221	6	Hybrid biotite granite. Foliation 45°-60°. Magnetite at 185'6", 186'6", 190'0", 198'6", 212'2".
221	6	222	2	Davidite crystals. Main Lode?
222	2	299	3	Foliated hybrid biotite granite and migmatite. Foliation 45°.

End of bore at 299'3"

D. KING

9/9/54.

VICTORIA HUT PROSPECT

BORE VH16-70

A S S A Y S.

FOOTAGE From ft.	ins.	To ft.	ins.	THICKNESS Ft.	ins.	SAMPLE NO.	ASSAYS U_3O_8 lbs./long ton Radiometric	Chemical.	REMARKS
168'	5	172'	0	3'	7"	U4/4999		2.0	South Limb
172'	0	174'	6	2'	6"	U4/9701	1.0	1.3	
174'	6	175'	0	0	6"	9702	12.3	11.9	
220'	0	221'	6	1'	6"	9703	2.8	3.1	Main Lode
221'	6	222'	2	0	8"	9704	4.5	4.5	
222'	2	222'	10	0	8"	9705	0.3	0.6	

Victoria Hut Prospect

V.H.17 73/54

U.S.336

4505: 4008 76.33

North 45° E. Stack

	0	10	0	Granite with irregular biotite inclusions
10	0	20	0	Pegmatite
20	0	36	0	Pegmatite granite
36	0	37	0	Biotite migmatite - foliated 30°
37	0	67	10	Granite. Increasing biotite content in depth
67	10	82	10	Granite migmatite with irregular biotite inclusions.
82	10	93	6	Biotite rich schistose migmatite. Traces of pyrite
93	6	96	0	Pegmatite
96	0	103	0	Biotite rich schistose migmatite. Foliation 45°
103	0	108	0	Pegmatitic granite
108	0	114	0	Migmatitic granite with irregular biotite and magnetite.
114	0	119	0	Leucogranite.
119	0	133	0	Migmatitic biotite granite. Half inch pyrite vein at 129'.
133	0	146	0	Foliated biotite granite migmatite. Numerous magnetite - pyrite veins and traces of chalcopyrite. Foliation mostly 70-80° but some dragfolding.
146	0	163	0	Foliated biotite migmatite. Magnetite at 152'
163	0	187	2	Biotite migmatite grading to biotite granite. Foliation 80°
187	2	191	6	Strongly foliated biotitic schist with feldspar augen. Feebly radioactive.
191	6	202	8	Foliated 70° migmatitic biotite granite. Recudo-breccia in places magnetite pyrite at 199-8.
202	8	204	0	Biotite schist with feldspar augen. Feebly radioactive.
204	0	251	0	Biotite granite (migmatitic) grading to strongly foliated schistose biotite from 241'- 243'

End of bore at 251'

D. King

25.8.54

Victoria Hut Prospect

V.H.17 - 70

77/54

U.S.336

76.33

4585: 4008

North

70°

N. Stack

0	0	8	6	Biotite rich hybred granite. Foliation 20°
8	6	29	6	Granite and pegmatitic granite with some biotite streaks.
29	6	60	0	Migmatitic biotite granite grading to schistose biotite metasediment from 50'- 57'. Foliation variable 0° - 45°
60	0	68	0	Pegmatitic granite
68	0	100	0	Chiefly granite with some irregular biotite rich zones.
100	0	112	0	Foliated biotitic granite migmatite (40°) with numerous thin magnetite veinlets.
112	0	124	0	Dominantly granite and pegmatite.
124	0	156	6	Dominantly granite with some irregular biotite streaks.
156	6	193	0	Migmatitic biotite granite foliation 50°
193	0	196	6	White siliceous pegmatite.
196	6	256	0	Foliated biotite granite pegmatite. 45° to 60° at depth. Magnetite at 210', 213' & 231'.
256	0	280	0	Dominantly granite with some biotite streaks.

End of bore at 280'

L. Clag

26.8.54

VICTORIA HUT PROSPECT

BORE VH 17.

A S S A Y S

FOOTAGE From ft. ins.	To ft. ins.	THICKNESS ft. ins.	SAMPLE NO.	ASSAYS U_3O_8 per long ton Radio-metric	Chemical	REMARKS
187' 2	189' 1	1 - 11	U4/4993	0.7	0.9	
189'6	189' 8	0 - 7	4994	1.0	1.0	
189'8	191' 6	1 - 10	4995	0.7	1.0	
191'6	192' 7	1 - 1	4996	0.9	1.7	
201'1	202' 8	1 - 7	4997	2.0	2.8	Main Lode
202'8	204' 0	1 - 4	4998	1.5	1.8	

VICTORIA HOT PROSPECT.

BORE V.H.17 - 70

A S S A Y S.

No ore intersections - no samples sent for assay.

VICTORIA HOE PROSPECT

VH 18 — 88-54

— — U.S. 336

4158 s 450W —

Mag. north 45° M. Stack

0	0	39	6	Strongly foliated biotitic migmatite granite 45°. Magnetite at 35'6" and 38'6".
39	6	44	6	Granite.
44	6	52	6	Migmatitic biotite granite. Foliation 50°.
52	6	54	0	Granite containing numerous clots of davidite, rutile.
				Lode.
54	0	59	6	Dominantly granite with some irregular biotite.
59	6	67	6	Biotite migmatite with numerous magnetite veins 60°.
67	6	90	0	Dominantly granite. Magnetite at 69'9", 73'6", and 75'
90	0	92	6	Fine grained biotite metasediment 70°.
92	6	135	6	Granite with some biotite migmatite.
135	6	140	6	Biotite granite migmatite 70°.
140	6	141	6	Pegmatite.
141	6	148	9	Biotite granite migmatite. 60°.
148	9	174	6	Dominantly granite.
[illegible]	6	187	6	Strongly foliated (sheared) biotite migmatite. 80°.
187	6	196	0	Granite.
196	0	201	6	Fine grained biotite rich metasediment.
201	6	243	0	Granite with some lenticular biotite inclusions at 70°.
243	0	263	0	Biotitic migmatite granite. Foliated 70°.

End of Bore 263'

D. KING

14/9/54.

VICTORIA HUT PROSPECT

BORE VH8

A S S A Y S.

FOOTAGE From ft.	ins.	to ft.	ins.	THICKNESS ft.	ins.	SAMPLE NO.	ASSAYS U_3O_8 lbs. per long ton. Radiometric	Chemical
52'	6"	54'	0	1	- 6	-		-

VICTORIA HUT PROSPECT

VH 19

87-54

U.S. 336

4503 : 300ft

75.25

Mag. north 45°

F. Moreland

0	0	34	9	Migmatite granite. Magnetite at 8', 9'10", 20', 26', 27'6".
34	9	37	0	Strongly foliated biotitic migmatite. 45°.
37	0	43	0	Granite
43	0	47	6	Biotite migmatite. Magnetite at 45'.
47	6	51	2	Granite
51	2	54	0	Biotite migmatite with numerous magnetite-pyrite veins.
54	0	71	6	Biotite migmatite. Magnetite at 64' and 65'. Foliation 40°. Calcite veins at 71'5".
71	6	72	6	Pegmatite.
72	6	133	6	Migmatitic biotite granite. 70°.
133	6	146	6	Leucogranite.
146	6	180	0	Biotitic migmatite. Magnetite-pyrite at 170'.
180	0	182	7	Pegmatite
182	7	199	6	Migmatitic granite. 80°.
199	6	200	0	Biotite shear with some davidite. Lode 80°.
[illegible]	0	249	10	Dominantly granite but irregular fractures filled with biotite. 80°.

End of Bore 249'10"

D. KING

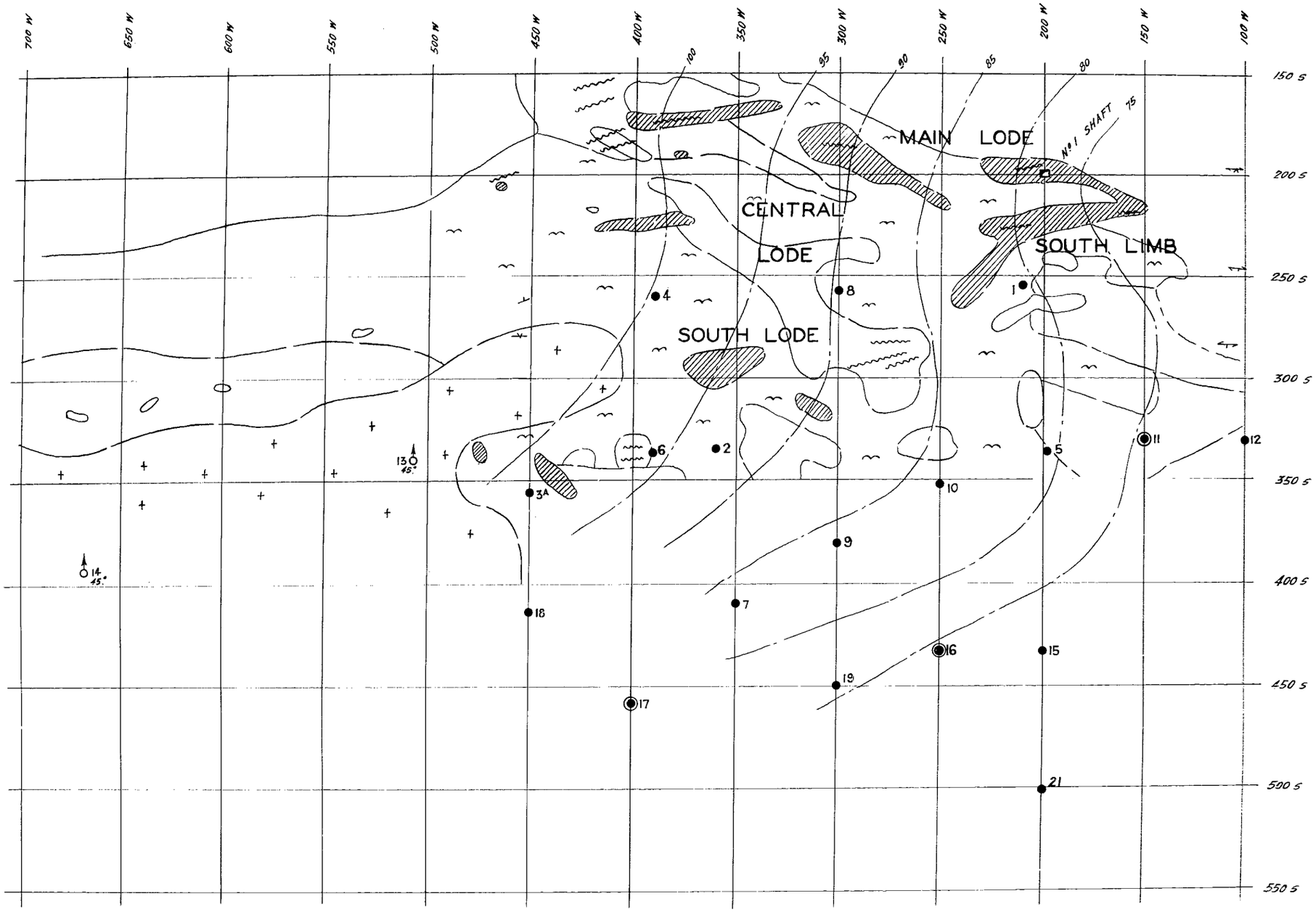
14/9/54.

VICTORIA HUT PROSPECT.

BORE VH19.

A S S A Y S.

FOOTAGE From ft.	ins.	To ft.	ins.	THICKNESS ft.	ins.	SAMPLE NO.	ASSAYS U_3O_8 lbs. per long ton Radio-metric	Chem-ical	REMARKS
199'	6"	200'	0	0 -	6"	-	-		Main Lode



Mineralized outcrop ____

Migmatite _____

Massive red granite ___

Leuco granite _____

Alluvium & scree ___

Quartz _____

Shears _____

SCALE IN FEET
40 0 40 80 120 160 200
SCALE IN METRES
10 0 10 20 30 40 50 60

5

Geology by D. King.

S.A. DEPARTMENT OF MINES

Req. No.
D.M.
Compiled from

VICTORIA HUT PROSPECT
SURFACE GEOLOGICAL PLAN

Amendment	Exd.	Date

Approved Passed

Director of Mines

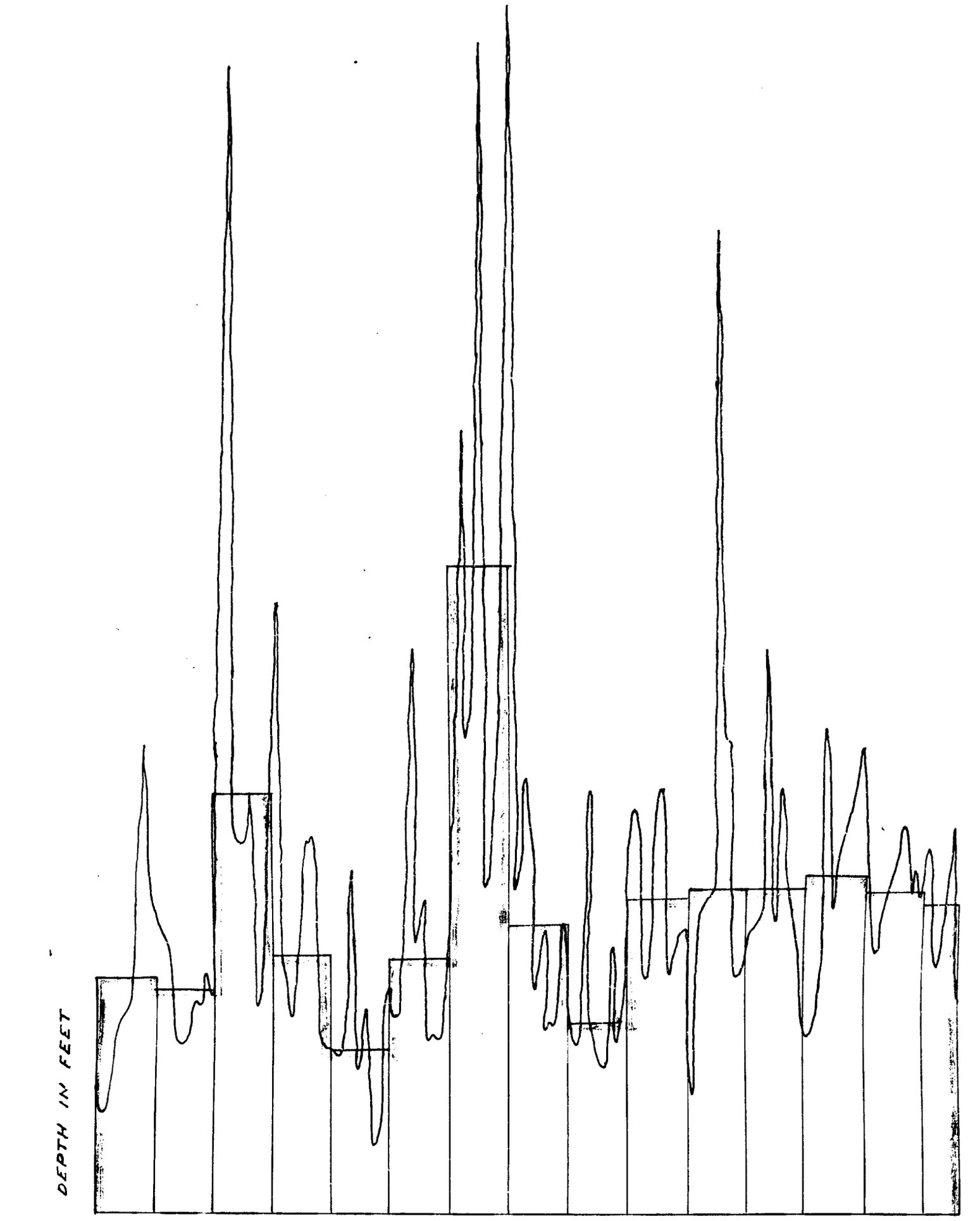
Drn.
Tcd.
Ckd.
Exd.

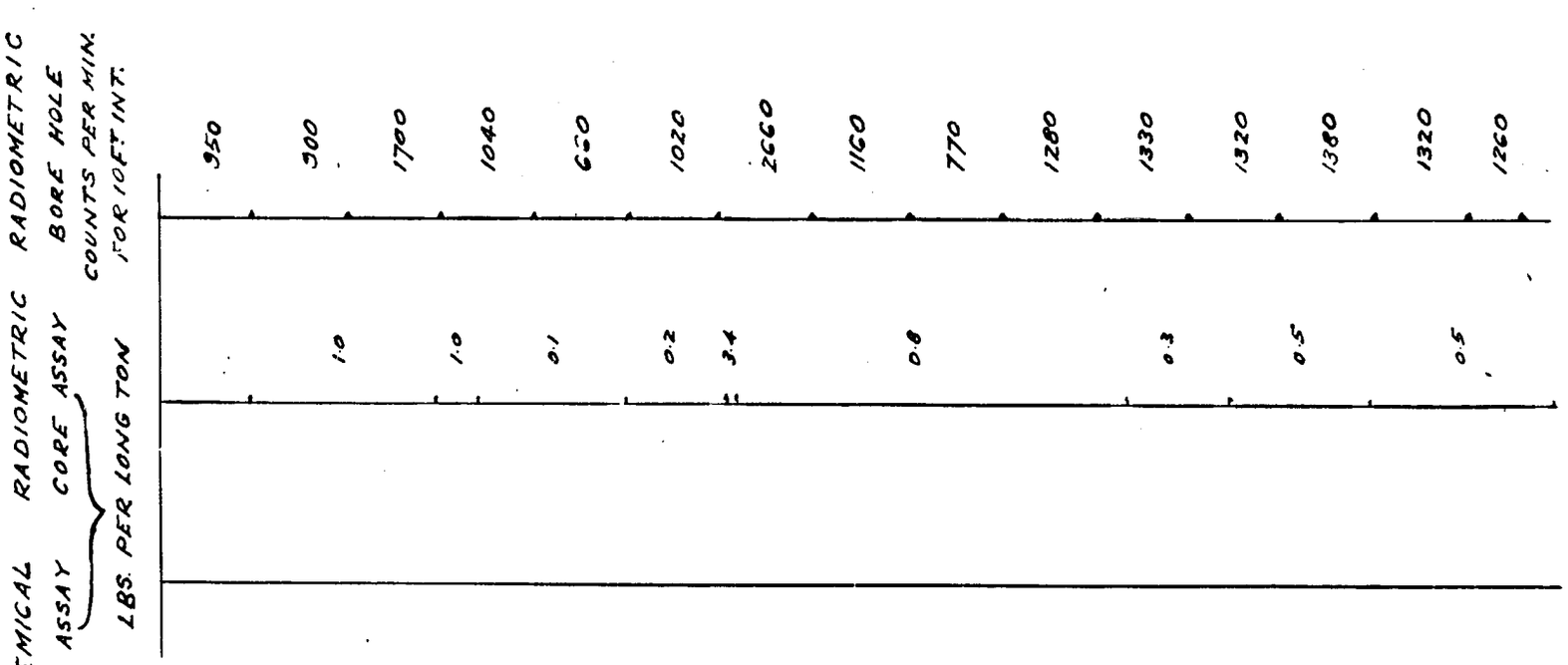
Scale: 40 feet to 1 inch

US - 437

Fd (E.4)

Date 20 · 9 · 54



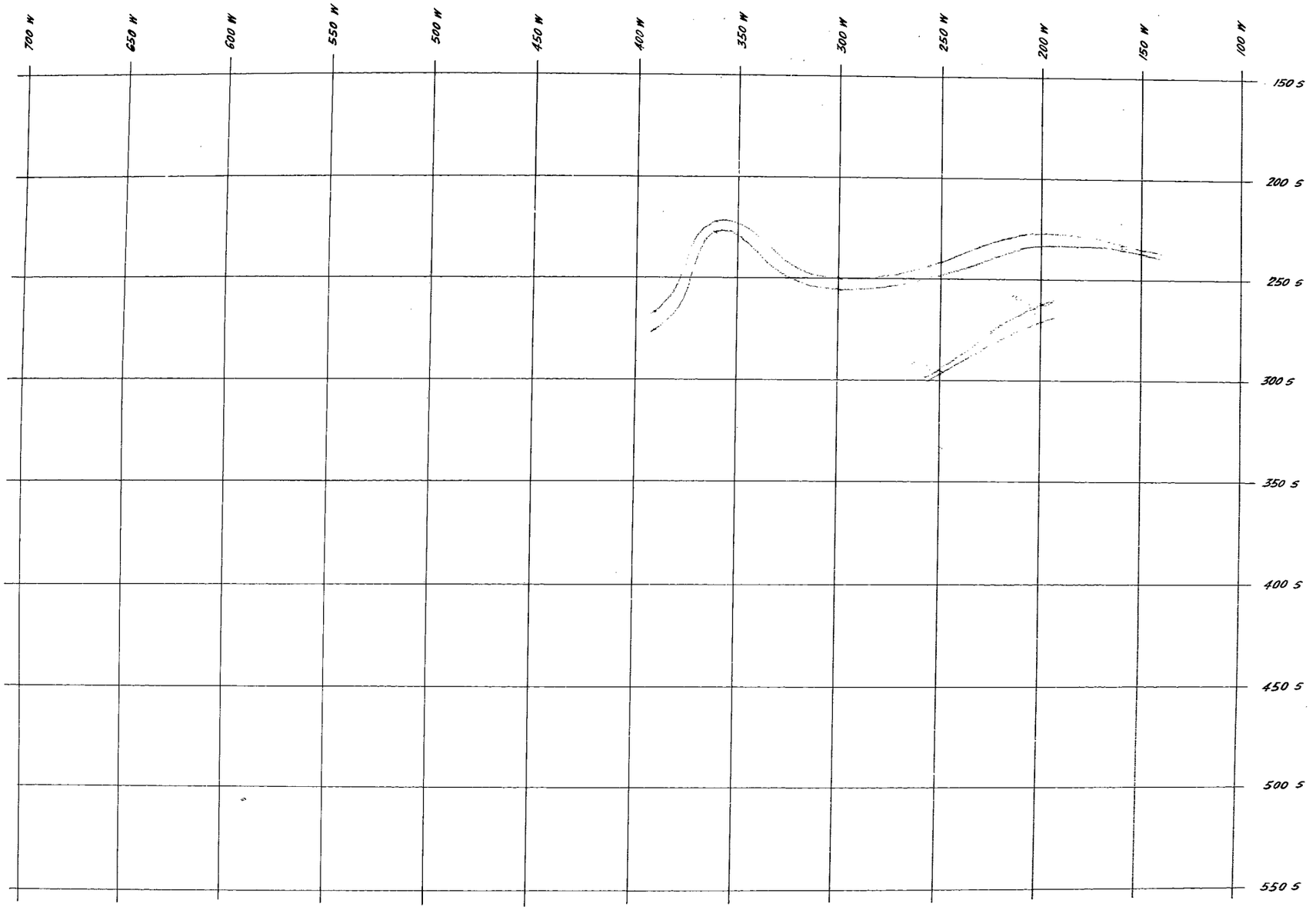


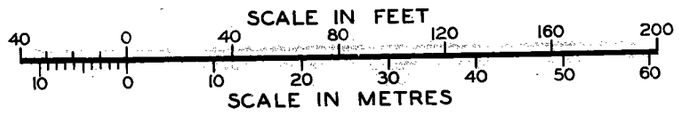
S.A. DEPARTMENT OF MINES

No.	Amendment	Exd.	Date

CROCKER WELL EAST
RADIOMETRIC BORE LOG
E.C. 22

Approved	Passed		Scale :
		Drn.	
		Tcd. R.G.C.	U.S. 433
		Ckd.	Fg
Director		Exd.	Date





5

S.A. DEPARTMENT OF MINES

ing	No.	No.	Amendment	Exd.	Date

Req. No.
D.M.
Compiled from

VICTORIA HUT PROSPECT
100 FT. LEVEL PLAN

Approved	Passed
Director of Mines	

Drn.
Tcd.
Ckd.
Exd.

Scale: 40 feet to 1 inch

US - 439

Fd (E4)

Date 20. 9. 54

32°15' 140°30' 140°45' 32°15'

NEW LUXEMBURG RES.
LUXEMBURG MINE
Cu Au MINE
HURD HILL
BLACK HILL DAM
KING DAM
DAM
GRANT QUARRIES
HOWE DAM
DAM
DAM
DAM

Blk. 913
P.L. 1816
WIAWERA
H.C. Trew

Blk. 655
P.L. 1809
CUTANA
G.F. Wilkin

Blk. 895
P.L. 1759
AROONA
Devonborough Pastoral Co Ltd.

Bore W8
Bore W7
GALLS WELL
Bore
Bore W1
GALLS WELL
Proposed Pipe Line
Proposed Fence
BONYTHON HILL
Cu MINE
DALKEY MINE
CREEK
Bore W3
TOWN SITE
TEASDALES DAM
No1 DAM
No2 DAM
Pipe Line
TANK
GRID
Pipe Line
BRISTOWE HILL
DARK HILL DAM
DAM
Pump
Bore W2
INDUSTRIAL AREA
KAGAAN DAM
Bore W6
Bore W6A
Pump
Pool
Bore W4
Cu
Bore W5
NILPENA WELL
NILPENA RUINS
DAM
ROCKHOLE DAM
QUARRY SITE
Bore W11
OLARY
AERODROME
ROUND HILL DAM
MALDIGO HUT
NILPENA HILL
Bore W9
MALDORKY QUARTZITE AREA
Proposed Lease Boundary Fence as located by Local Survey
Bore W10
NILPENA DAM
HUT
COURSE DAM
DAM
Fence as located by Lands Dept.
Pastoral Lease Boundary
Blk. 962
P.L. 1924
PT NILPENA
F.T. & Mrs. I.N. Heinrich
Blk. 961
P.L. 1926
PT NILPENA
E.P. Francis & I.M. Kenworthy
Blk. 651
P.L. 1912
BALLARA
The Mutooroo Pastoral Co Ltd.
CREEK
2ND COURSE DAM
DAM
DAM
NEW DAM

N

— LEGEND —

BORES COMPLETED ● W2
BORES ABANDONED ✕ W6A
BORES PROPOSED ○ W5
PASTORAL LEASE BOUNDARY

— SCALE —

Chns 40 20 0 40 80 120 Chns

26" x 40" [1P]

Associated Drawing	No.	No.	Amendment	Exd.	Date	Req. No. D.M. Compiled from

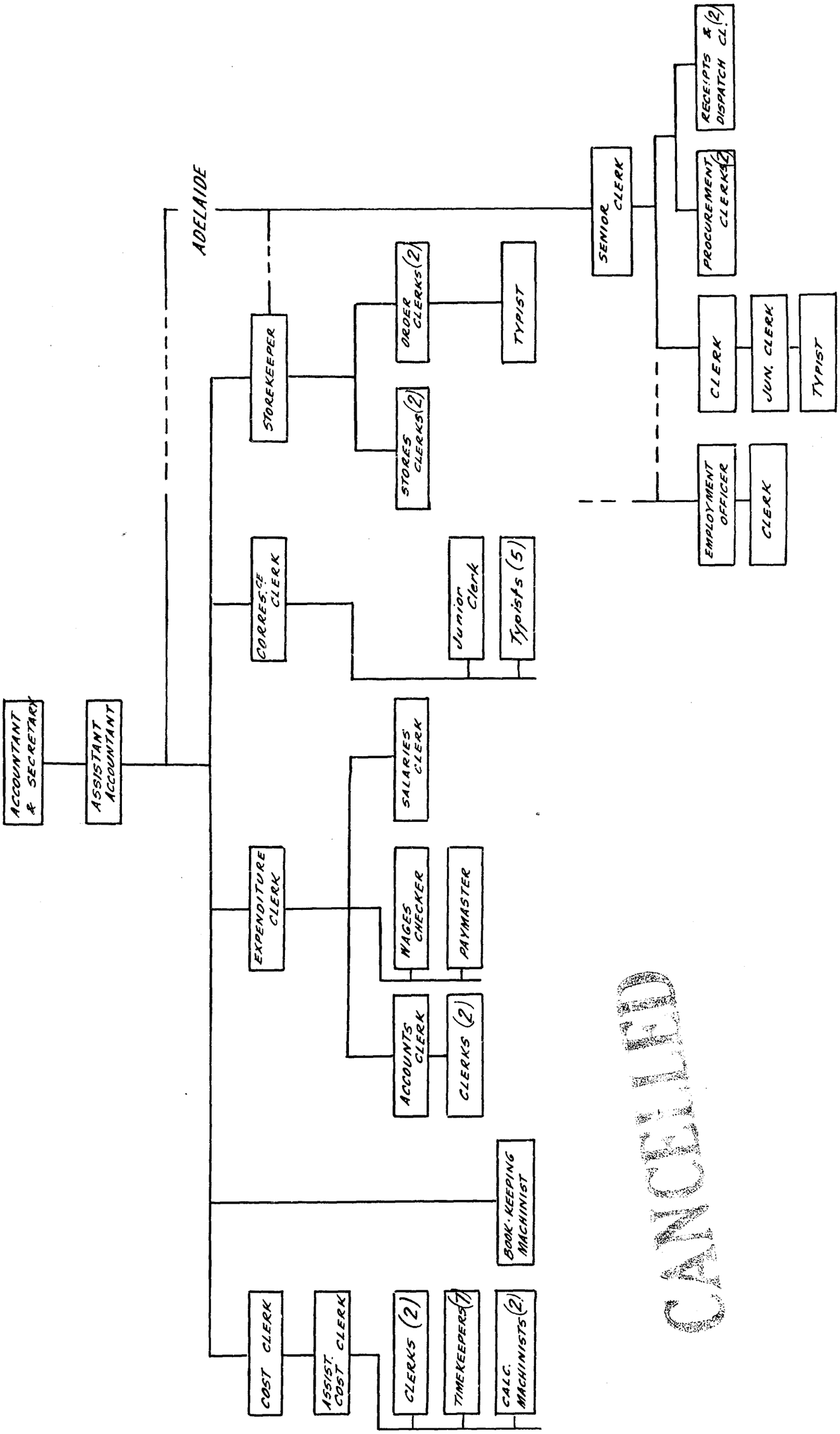
S.A. DEPT. OF MINES

URANIUM INVESTIGATIONS

RADIUM HILL MINE AREA showing ADJOINING PASTORAL LEASES

FOR DEPARTMENTAL USE ONLY

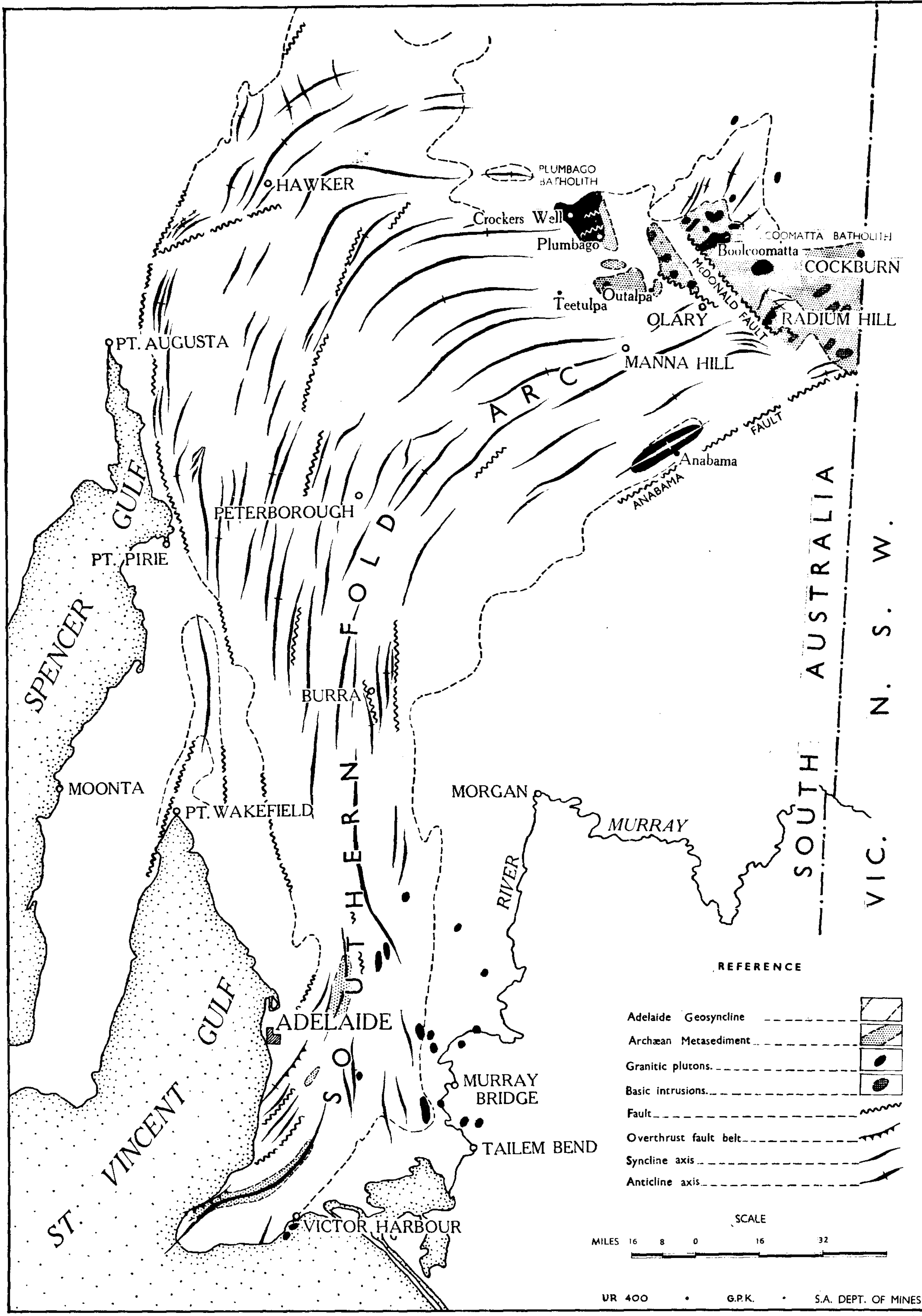
Approved	Passed		
Director of Mines		Drn. A.G.W. & T.W.T.	Scale 1 IN. = 40 CHNS.
		Tcd.	UR-440
		Ckd.	FE (P1)
		Exd.	Date 24-12-52



CONFIDENTIAL

S. A. DEPT. OF MINES

Approved	Passed	Drn.	RADIUM HILL ACCOUNTS SECTION ORGANIZATION CHART	D.M.	Scale
		Tcd.		Req.	SUR-367
		Ckd.			
Director	C.D.	Exd.			Date 7·5·52



STRUCTURAL RELATIONSHIP OF THE RADIUM HILL AREA.

UR 400

900/2 Ckd.