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REPORT ON MOUNT PARIS TIN MINING LEASES.

The purpose of the investigation has been to determine from all available data whether the Tin oxide occurrence in the Mount Paris Leases held in the name of the Mount Paris Tin Mining Syndicate is sufficient in value to warrant the flotation of a Public Company, and thereby obtain capital for its economic exploitation of the Property.

The points dealt with have been divided into the following references:-

REFERENCE A. COLLECTION OF DATA.

1. Location, Transport, Climate.
2. History.
3. Topography, Geology.
4. Tin oxide occurrence.
5. Past and Present Workings.
6. Method of Working.
7. Sampling.
8. Water.

REFERENCE B. CONSIDERATIONS INVOLVED BY REFERENCE A.

Volume and Value.

REFERENCE C.

Findings and Opinion.

Advice.

CONCLUSION.

APPENDICES.

Assay Sheet, Aneroid Readings.

Plans, Open Cut, Part Tracing of Feature Plan.

(1)

REFERENCE A. COLLECTION OF DATA.

1. LOCATION, TRANSPORT, CLIMATE.

The Leases which are 201 acres in extent, are situated 5 miles south east of the Railway Town of Branxholm. From Branxholm the road to the Mine is in fine weather capable of carrying the heaviest machinery to within a mile of the present camp, which is 340 feet below the summit of the Mount. The last mile of the road ascends 430 feet and is little more than a bush track. Regrading would be essential should it be necessary to convey machinery by this route.

The climate of the District is excellent. The rainfall is stated to average 60 inches per year. The rainfall is principally in the winter months, and during three or four months of summer there is usually very little rain.

2. HISTORY.

Tin oxide was discovered at Mount Paris when it was called Nugget Hill about 50 years ago. For a number of years the alluvium was worked in creeks and on the surface by Chinamen. At this time Ruby Flat the valley on the north watershed was being vigorously exploited. This valley is reputed to have returned more than £1,000,000 worth of Tin oxide.

Later the Leases were acquired by the Appalachian Co., which exploited the Lodes. During this period of tenure Tunnels No. 1, No. 2 No. 3, and No. 4 were driven. About 1900 the name of the mountain was changed to Mount Paris, and a Company was formed called the Mount Paris Tin Mining Co. After a year the Company ceased work and the property was acquired by Kruschka and Stewart who erected a 10 head Stamper Mill. After a short period of more or less success they also ceased work and the area was idle for many years. In 1927 the Mount Paris Syndicate was formed and acquired the area. In 1928 a Water Race of 6½ miles in length was made. This has only partly proved a success. During the tenure of the Mount Paris Syndicate about 25,000 cubic yards have been sluiced from the Open Cut, yielding about 22 tons of Tin oxide.

3. TOPOGRAPHY AND GEOLOGY.

Mount Paris is situated in a Range of Mountains having a height of 200 — 300 feet above sea level. These Mountains have an east and west trend. Though steep, the sides are not precipitous. Except where saw mills have been in operation or recent bush fires have occurred they are rather heavily timbered.

The southern watershed feeds the Dorset River which flows through the Ringarooma Valley.

Mount Paris which is 1810 feet above sea level has an almost regular conical summit. The rock at the summit is a particularly hard granite called greisen consisting principally of quartz and a little muscovite mica. The grain size is medium and very frequently crystals of cassiterite are discernable to the naked eye. The flanks of the mountain are covered with boulders of this greisen rock some of which are of very large size.

There has been so far no Bulletin issued by the Tasmanian Government describing the Geology of the vicinity. Mount Paris appears to be one of a number of granite masses which have intruded the country rock which I understand has been classified as metamorphosed sedimentaries. Both within your Main Leases and in the Bakhap Lease these altered rocks which appear to have been originally sandstones and in part argillaceous shales cover a considerable area. They are to be seen outcropping in the water race near the Pipe line junction immediately west of the summit and also in the lower race at about middle distance between the Open Cut and the Dam.

In many places in the creek also they may be noticed south of the Open Cut, and on the track near No. 3 Tunnel entrance they are seen, and appear to be thinly covering a coarse porphyritic granite. In a water race immediately north of your northern boundary they are almost continuously seen and judging by detrital pieces appear to extend to within 300 or 400 feet of the summit of the mountain. Immediately west of the summit and about 200 yards distant they occur on the Ruby Hill Track which is wrongly marked on the Feature Plan. A belt of about half a mile in width separates the Granite of Mount Paris and the Granite of Bakhap Lease. The south western portion of the Leasehold was not visited. There was little time and access was difficult for there were no tracks nor were boundary lines passable.

Included in the granite are frequently found floaters of altered sedimentary rock. A large mass is cut by No. 1 Tunnel for a distance of 65 feet. There are several small floaters of a few feet in size included in the Aplite of the Open Cut. It would seem that it is not long since that denudation reached the granite horizon.

The granite appears to be of two types, one of a coarse variety containing quartz, felspar (kaolinized), and muscovite mica. There is present also a greenish decomposition mineral perhaps epidote resulting from biotite mica. This granite grades into a granite, porphyritic in felspar. The second type of granite is more acidic, finer in grain containing quartz, felspar (kaolinized) and muscovite mica. The former occurs in the vicinity and below No. 3 Tunnel and in the portion sampled was almost barren of Tin oxide and the latter is found so far as yet has been determined in the vicinity of the summit and the Open Cut and also in the Bakhap Lease. This granite wherever examined or sampled always freely showed Tin oxide. The mineral tourmaline is also present but not in such abundance as is usually with the case ~~in~~ Tin bearing Granites. It is impossible with the little evidence to state of the two types of granite whether one is intrusive in the other or whether the difference is due to magmatic differentiation.

The Tin ore occurrence in the acid granite, the so called Greisen and Aplite is a primary deposit and classified under the term Igneous Syngenetic. In this kind of Tin ore deposit the granite is very frequently pegmatic or if fine grained graphic in texture. A coarsily crystalline vein of the first mentioned character is to be found north of the summit and I am inclined to think the Aplite is of graphic texture. It is accepted that greisen and quartz are the final differentiations of granitic magma, and also that when cassiterite is present the tendency is to enrich the final differentiation and also to rise as high in the magma as circumstances of solidification permit. The first tnedency is undoubtedly exemplified in the Mount Paris deposit.

The greisen except in the summit is not quite true to type and frequently contains a little felspar. The so called Aplite seems invaribly to contain muscovite mica. Its felspar is mostly decomposed to Kaolin. The granite occurs in veins on Lodes varying in width from a few inches to nearly 20 feet. Of those examined on the property the trend is about 285°M dipping slightly to the north. It would appear that they are not persistent in length but form a series of lenses up to 30 or 40 feet in length.

A matter of enormous importance is the effect of decomposition of the contained felspar. The greisen has a little or in no degree been affected by the kaolinization of the felspar. On the other hand the Aplite has been greatly affected and frequently in such degrees that it disintegrates and crumbles at the slightest touch. The depth to which this decomposition is likely to occur has been much discussed. Mineralization may have had a minor influence but undoubtedly the major influence has been due to the percolation of superficial waters through fractures in the joints very probably principally in the harder greisen. The depth of kaolinization in such a climate and topography as at Mount Paris may be 1000 feet or more. But it must not be expected that decomposition is regularly complete throughout this depth. Almost at the surface at the bottom of the Open Cut there is an area of nearly 200 square feet of tin bearing Aplite which is almost as hard as unaltered granite.

Frequent mention has been made that the altered sedimentaries flank-

ing Mount Paris form merely a casing of a few feet in thickness encrusting the underlying granite. There seems little doubt that the many granite exposures in North Eastern Tasmania are part of a granite Batholith. Whether also such a protuberance as Mount Paris is laccolitic or semi laccolitic from the main mass it is difficult to say. The conical appearance suggests that it may be so.

In my examination I saw no evidence of dome tilting. On the other hand the east-west trend of the greisen lenses indicating directional flowage suggests dyke formation. Altered sedimentaries extend several miles to the east and I am informed nearly as far as Derby to the North. I am inclined to think that generally not far distant from the contact of granite the depth of altered rock overburden would be too great for ordinary alluvial mining.

4. TIN OXIDE OCCURRENCE.

Tin oxide occurs in the Leases as alluvial (this includes detrital), in Lodes and veins and segregations in Granite. Under the sub heading History it has been mentioned that the early miners washed the alluvium of the small streams and water courses and also the lower portion of the Leases, ground sluiced many acres of surface soil. The Appalachian Lode is typical of Lode occurrence. This Lode is about 20 feet across and runs through porphyritic granite and through altered sedimentary rock. Its walls are well defined and sampling showed the country rock to be almost barren of Tin oxide. In many places at the contact of tin carrying granite small veins of Tin oxide can be seen running into the altered sedimentaries. Also in the tin carrying granite are many small veins some filled with quartz and others with Kaolin which seem secondary to the granite mass in which they are contained.

The main Tin occurrence however is in the Greisen and Aplite previously mentioned. The Greisen seems almost invaribly the richer and though the change mostly of the greisen to Aplite is gradual, in some cases division is well defined. Sampling has shown that the change of Tin oxide content is also in considerable degree gradual. The cassiterite varies considerably in size — from specimens in veins and sometimes in greisen to medium and fine grain size generally in the Aplite. The concentrates won is remarkably free from impurities. There is perhaps a little Wolfram, but there is very little magnitite. In the Aplite certainly and it would seem also so in the Greisen that a very high recovery is obtainable by washing after disintegrating the material to crystal size. In material from veins and sometimes also from Greisen the Cassiterite can be seen embedded in quartz.

5. PAST AND PRESENT WORKINGS.

Under the sub heading History, mention has been made of stream washing and surfacing. It is estimated that about 20 acres of covering soil was ground sluiced. Later endeavours were to discover and exploit Lodes. Three Tunnels are shown in your Feature Plan. In addition there are several small open workings.

No. 1 Tunnel which is situated near the Summit is 444 feet long. The site of the Tunnel was ill chosen. The maximum depth of overlaying ore is less than 70 feet. Details of the character of the material passed through are shown in accompanying Drawing and Assay Sheet. A cross cut shows a large greisen mass which forms as it were the summit core. This greisen mass is known as the Big Lode. Underfoot for a length of 65 feet appears to be an included sedimentary rock and overhead Aplite forms the Tunnel roof.

No. 2 Tunnel passed through what is now the Open Cut, the western end has collapsed and the entrance blocked.

No. 3 Tunnel is of long length. 295 feet of Tunnel were sampled. Beyond this a fall of ground prevented access. At this point I estimated a vertical depth of 110 feet. For 180 feet the Tunnel passes through a barren porphyritic granite when the Appalachian Lode is met. This Lode has a width of about 20 feet and was considerably exploited by cross cutting. The porphyritic granite is generally hard in character. In a width of 23 feet

however it was considerably decomposed. It was not recognised quite where the character of the granite changed into the Aplite variety. Further north there were several small greisen veins which cut through the granite which was usually considerably harder than the material of No. 1 Tunnel.

Connections had been made between the Tunnels enabling ore to be passed even from No. 1 Tunnel to the Battery.

Open Cut. This has been principally exploited by the present owners. Details of the Open Cut are shown in the accompanying Drawing. - missing. The cut is on the mountain side of a slope of about 20°. The bottom of the cut rises at a somewhat less angle. The maximum depth measured from the side of the Cut is 43 feet. The surface area is 3150 square yards. One large greisen Lode of a maximum width of 13'-6" is shown in the Drawing. In shape it is lenticular and I am assured had a length of 40 — 50 feet. The hardness appeared less than in many of the other Greisen Lodes sampled. The Aplite also varies considerably in hardness. In the bottom a patch of Aplite about 150 square feet in area is quite hard. On the western side of the cut there has been a slip and the Aplite which has fallen in blocks seems to have presented considerable difficulty in the sluicing operations. There are a number of heaps of greisen and hard granite stones and also forkings packed in the Open Cut. Forkings also line one side of the sluice boxes for a considerable distance. In August last it was estimated that 21,900 cubic yards of material had been excavated.

6. METHOD OF WORKING.

The method of working the Open Cut has been by sluicing. Not withstanding many disabilities due to scanty and irregular water supply a degree of success has been achieved. When running the supply of water is estimated at 4 Tasmanian Sluice Heads. The apertures of nozzles used have been 2 and 2½ inches depending on the amount of water available. The direction of attack has been generally from the south to the north. It would seem obvious that the attack in line with the Greisen Lodes would be more advantageous not only in breaking ground but also facilitate the collection of greisen and granite blocks which are too hard for sluicing. Sluicing is helped by means of explosives in breaking down and splitting boulders. It would seem also a spalling hammer is in frequent use. In addition to the hard material stacked in the Open Cut the bank of the sluice boxes are packed with forkings which the water power was unable to disintegrate. On the average it would seem that the estimated figure of 20% is somewhat low. By the use of higher pressure water the present pressure is 130' and I am informed by Mr. Fraser that at small cost on pipe line the pressure could be increased to 180', there is no doubt very considerable improvement could be effected both in breaking down and in disintegration of material. The manager estimates a loss due to the latter of 50% of the Tin content which he is unable to catch in his sluice boxes. I have been given no figures of winnings and cost per cubic yard of ground worked.

7. SAMPLING.

Open Cut. The first sampling undertaken was of the Open Cut in order to determine the Tin oxide association and the value of the faces. The perimeter of the Open Cut was divided into 20 feet sections by means of coordinates and the face sampled horizontally by two grooves in each section. Samples were disintegrated by rolling with a bottle on a flat sheet. 4 pound samples were weighed and after washing free of Kaolin were panned and the dried concentrates weighed. Greisen samples were rubbed down on a buck-board to pass 12 mesh Builders Screen (the only screen available) and then treated similarly to Aplite Samples. Results are shown on the attached Assay Sheet and Drawings. The results were derived by using the conversion factor of 1 cubic yard of material in face as being equal to 2 tons in weight. This is on the assumption that a block of ordinary granite measuring 13.3 cubic feet weighs 1 ton. Concentrates were kept and samples were taken from those representing less that 3lb per cubic yard and those above this value for assay of metallic Tin content whereby to adjust Field results to the basis of 70% Tin oxide concentrate.

It was decided to consider in the valuation of the Open Cut Faces, only those samples taken transverse to the trend of the Greisen Lodes. On the western face for a distance of 200 feet the average result is 6.39lb (Field value) per cubic yard. This is perhaps somewhat excessive owing to great irregularity of section values. On the eastern face the result for 120 feet is 3.67lb (Field value) per cubic yard and for 80 feet about ¾lb per cubic yard. These results signify that the material associated from the Open Cut has had an average value of a little more than 4lb per cubic yard. The Greisen Lode over a width of 13' 6" gave a Field value of .57% Tin oxide per ton.

Natural Banks of Sluice Boxes and Tail Race. These run zig-zag fashion down the mountain side. Results were generally low. In one place however for a width of about 100 feet the results give a Field value of 3.4lb Tin oxide per cubic yard.

No. 3 Tunnel. Results were disappointing. The Tunnel was driven mostly through barren granite. The Appalachian Lode gave a result for a width of 20' 6" of .25% Field value of Tin oxide per ton.

No. 1 Tunnel. A length of 444 feet was sampled. In the Tunnel the Greisen sampled totalled 78 feet in length. Allowing 10 additional feet for small lodes and veins the Field value of the Greisen is .52% Tin oxide. For 358 feet the Aplite averages 3.4lb per cubic yard. The Big Lode which in the Cross Cut workings shows an unfinished width of more than 60 feet was not sampled.

8. WATER.

The present water supply is estimated at 4 Tasmanian Sluice Heads. A Tasmanian Sluice Head is the supply of .4 cubic feet of water per second and is approximately equivalent to 16 Miner's Inches. It has been mentioned that the supply is irregular and that during the Summer months the supply usually ceases. At the inlet and 6½ miles distant there is little storage capacity and the race is badly constructed. The delivery end at the mine has a pressure of 130 feet. I was informed by Mr. Fraser that at small cost this could be increased to 180 feet pressure.

A proposal has been made that the present race should be repaired and a new race cut for a distance of 12 miles connecting with Dams at McIntyre's Creek and near the old Morning Star Mine. The estimated cost is £25,000. It was a pleasure to accompany Mr. Donald Fraser a well known Tasmanian Engineer, who reported on the scheme and made the estimate of cost, on a visit of inspection of the Dam Sites and the route of the proposed race Mr. Fraser impressed me greatly with the local information he possessed and the specialist knowledge of water conservation and delivery. Though the estimated costs of dam erecting seem extremely low Mr. Fraser showed and explained how in winter months by the use of small supplementary dams he could sluice material and thereby very cheaply build the retaining walls.

The amount of water Mr. Fraser calculates will be conserved and delivered is 20 Tasmanian Sluice Heads for 16 hours daily in the Summer months and 20 Sluice Heads for 24 hours daily or even as much as double this amount during the Winter months. The 4 Sluice Heads from the repaired race will be additional but only available during winter months, as at the present time. It is unfortunate that the delivery pressure from the proposed dams will be only 100 feet at camp level. This means that without power boosting ground only below this level can be sluiced with this water.

I have every confidence in Mr. Fraser's ability and unhesitatingly accept his Report.

I did not see the Hydraulic Plant in operation and could form no idea from actual operation the rate of excavating and washing. If the excavation of 3 cubic yards of wash is accepted as the average duty of a Miner's Inch in 24 hours 20 Sluice Heads should excavate about 25,000 yards monthly. It has been mentioned that the material to be excavated varies greatly. The rate of excavating soft aplite would no doubt greatly exceed the average, on the other hand the breaking down and thorough disintegration

of harder granite would be considerably less than average performance.

REFERENCE B.

VOLUME AND VALUE.

The evidence gained seems to show that the deposit of Aplite granite in the Leases is more or less closely delineated by its contacts with porphyritic granite and altered sedimentaries. So far the contacts have been roughly and partly defined. Except for a fringe skirting the summit of the Mountain to the North and the East the deposit runs westward, south of the east and west line passing through the summit. This may not be but it would seem that the average width of the deposit in the Leases is not greater than 850 feet. In length the maximum would appear to be about 2000 feet. These figures represent an area of approximately 40 acres. At the Royal Gordon Mine which I visited and where the deposit is also decomposed granite a maximum depth to about 60 feet has been worked. A very considerable portion of the Open Cut is shallow and the depth not greater than 10 to 15 feet from the surface. This seemed apparently due to the harder underlying granite in this part of the Cut. I have received no authorative information why this mine ceased operation some years ago except the repeated statements that this and other mines of similar character in the District operated with difficulty owing to insufficiency of water.

The very disturbing feature of the Mount Paris Aplite Deposit is the presence of patches of harder material which are with difficulty sluiced or even perhaps unsluicable. These have already been commented on as occurring in the Open Cut and in No. 1 Tunnel. It is unfortunate that No. 2 Tunnel could not be entered in order to obtain further information in this respect and also for another reason to be mentioned later. It is unsafe then to predict any depth of sluicing on present evidence than say 30 feet which is about the average depth of the present Open Cut.

If the width be considered extending from the northern extremity of No. 1 Tunnel to where values fall off in the southern end of the Open Cut (this distance scales 620 feet on the Feature Plan) the Aplite value is between 3½ and 4lb of Tin oxide (Field value) per cubic yard. An extension of 200 feet further south the value is between 1 and 2lb per cubic yard. The width of 620 feet includes approximately 100 feet of Greisen Lodes having a Field value of .5% SnO_2. This does not include the Big Lode showing in the Cross Cut of No. 1 Tunnel. Using the same conversion factor as before the excavation of 21,000 cubic yards of material would mean the supply of 7000 tons of greisen.

On the selling basis of 40/- per unit of Tin oxide Concentrate (70% Sn), equivalent to £200 sterling per ton Metallic Tin, a pound of 70% Sn Concentrate is worth 1/3 Australian Currency.

Thus 520 feet of Aplite on the sampling results have a value of between 4/4 and 5/- per cubic yard and 100 feet of Greisen is worth 14/- per ton Australian Currency.

It is not proposed to discuss the cost of mining and treatment. Obviously sluicing is the cheapest means of excavating the Aplite and by first removal of this material the Greisen could most cheaply be mined.

REFERENCE C.

FINDING AND OPINION.

The results stated in the preceding paragraph on Sampling results can only be accepted tentatively and indicatively. The concentration of Tin oxide towards the mountain top is so intense that it would seem almost too good to be true that such concentration should extend any great distance or depth. Laterally it would appear that the Greisen Lodes or Leases are smaller and situated at wider intervals. There is so far

very little knowledge of the lenses at depth. However, the investigation shows that you Property contains a Tin oxide deposit almost unique in character and though I strongly suspect the work done on the deposit has happened to be in or near the nucleus of the Tin occurrence, extensions should prove also of high values.

Results have been so encouraging that a very detailed programme of exploratory work should be undertaken. The main points to be determined are extensions and in reasonable degree depth of the Tin occurrence and value. Also as far as possible the occurrence of Greisen Lodes and hard Aplite which will not yield to sluicing methods.

ADVICE.

The exploratory I suggest should be as follows:-

1. Detailed geological mapping of the Leases.

2. Surface sampling of the Aplite Deposit. The Tin oxide occurrence is not as in an Alluvial Deposit in horizontal but in vertical layers. Costeening amidst the boulder strewn mountain side would be difficult and I would suggest that small holes cleaned of surface soil spaced say at half a chain intervals and sampled would give a result sufficiently accurate for sluicing depths.

3. Sampling at depth by means of Tunnels driven into the Mountain side transverse to the Greisen trend. Per haps five Tunnels equally spaced and driven that the maximum depth from surface is about 150 feet would give values and width of soft and hard Aplite and Greisen.

CONCLUSION.

Many considerations have not been dealt with such as Power supply, as being somewhat premature. I am informed that the Hydro Electric Power Commission will connect with the nearest distribution centre on a yearly charge of 12% on the capital outlay of installation and £11 per Horse Power year.

I would like to express recognition of the advice and help I received from Mr. Donald Fraser and to express my appreciation of the assistance I received from Mr. D. Murtagh your Manager and his son Mr. Allan Murtagh who worked very long and late hours helping to obtain the information for this Report.

(signed) A.J. PETERSON B.Sc. B.E.

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ASSAY SHEET.

Results are from the pannings of 4 pound samples.
Field Values are derived from weighings of concentrates in the Field, Corrected Values are adjusted results by means of Factors derived from Chemical Assay Samples of Concentrates to 70% Sn.

1. Those above 3lb per cubic yard. Factor.
2. Those under 3lb per cubic yard.

			FIELD VALUES.				CORRECTED VALUES.	
	NO.	Material	Width	Grains	%	lb. per C.Yd.	%	lb. per cubic yard
OPEN CUT.	1	Aplite	20'	36.20	.129	5.79		
	2	"	20'	1.90	.007	.30		
	3	"	20'	5.05	.018	.81		
	4	"	20'	9.40	.034	1.50		
	5	"	20'	14.80	.053	2.29		
	6	"	20'	11.28	.041	1.80		
	7	"	20'	110.55	.398	17.69		
	8	"	20'	14.40	.052	2.20		
	9	"	20'	23.80	.086	3.80		
	10	"	20'	141.50	.522	22.64		
	11	"	20'	54.60	.197	8.74		
	12	"	20'	24.18	.073	3.23		
	13	Aplite & Greisen	20'	180.32	.648	28.85		
	14	"	20'	163.30	.588	26.14		
	15	Aplite	20'	127.90	.311	20.47		
	16	"	20'	12.52	.045	2.03		
	17	"	20'	16.48	.059	2.64		
	18	"	20'	7.63	.046	1.22		
	19	"	20'	40.42	.145	6.47		
	20	"	20'	14.12	.051	3.26		
	21	"	20'	94.50	.124	5.52		
	22	"	20'	33.74	.121	5.40		
	23	"	20'	6.92	.025	1.11		
	24	"	20'	8.21	.030	1.31		
	25	"	40'	3.90	.014	.60		
	26	"	40'	1.20	.004	.17		
	27	"	35'	3.90	.010	.46		
	28	"	40'	5.26	.019	.84		
	31	"	40'	5.26	.019	.84		
	32	"	40'	3.90	.010	.46		
	33	"	40'	2.40	.008	.33		
	34	Hard Aplite	36'	53.70	.193	8.59		
	35	Aplite	40'	15.20	.054	2.44		
	36	"	60'	25.66	.092	4.12		
	37	Bulk Sample	No. 1-12 18-24 31-33	35.14	.126	5.62		
	38	Greisen	13-6	158.10	.570	25.30		
SIDES OF SLUICE BOXES.	29	Aplite	40'	7.60	.027	1.22		
	30	"	40'	7.30	.026	1.18		
	39	"	60'	25.46	.091	4.07		
	40	"	60'	17.26	.062	2.76		
	41	"	60'	2.30	.008	.38		
	42	"	40' & 20'	5.08	.018	.81		
	43	"	60'	17.00	.061	2.72		
SIDE OF TAIL RACE	44	"	60'	5.06	.018	.81		
	45	"	60'	4.82	.017	.77		
	46	"	60'	6.00	.022	.96		
	47	"	53'	13.20	.048	2.11		
	48	"	17'	1.90	.007	.30		

	NO.	Material	Width	Grains	%	lb. per cubic Yard.	%	lb. per cubic yard.
NO. 1 TUNNEL.	49	Granite	20'	3.00	.011	.48		
	50	"	20'	2.50	.009	.40		
	51	Appal-achian. X Cut.	21' 6"	70.66	.283	11.23		
	52	Granite	40'	Trace				
	53	"	40'	"				
	54	"	25'	"				
	55	"	23'	"				
NO. 3 TUNNEL.	56	Aplite	43'	12.70	.046	2.03		
	57	Greisen	7'	104.00	.374	16.64		
	58	Aplite	40'	16.80	.060	2.69		
	59	"	43'	20.00	.072	3.20		
	60	Greisen	18'	50.20	.180	10.00		
	61	Aplite	50'	22.16	.080	3.55		
	62	Greisen	8'	36.00	.130	5.76		
	63	Aplite	28'	22.00	.080	3.87		
	64	Greisen	15'	114.30	.911	18.29		
	65	Aplite	28'	11.28	.041	1.60		
	66	Greisen	15'	204.80	.727	32.77		
	67	Aplite	48'	14.86	.053	2.36		
	68	Greisen	8'	327.30	.823	36.67		
	69	Aplite	50'	43.70	.084	3.79		
	70	"	50'	37.12	.134	5.94		
	71	Greisen	12'	252.30	.908	40.37		

From the washing of several samples of Aplite the clean sand percentage is of the order 55-60%

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ANEROID HEIGHTS.

(from Sea Level).

BRANXHOLM RAILWAY STATION		580'
TRICKETT'S		1040'
MURTAGH'S HUT, MOUNT PARIS		1470'
MT. PARIS RACE, OUTLET END		1630'
NOZZLE IN FACE		1460'
RACE NEAR NO 3 TUNNEL		1190'
TRACK CROSSES NUGGETY CREEK		1060'
ROAD CROSSES BRISEIS RACE		810'
BRIDGE OVER DORSET RIVER		630'
RINGAROOMA TOWNSHIP		840'
NUGGET RACE BELL'S HILL		2040'
OUTLET OF DAM SITE MORNING STAR TUNNEL		1670'
SADDLE ON GRAY'S HILL		1570'
DORSET HOTEL, DERBY	about	500'
HEAD OF PIPE COLUMN MT. PARIS		1590'
REECE'S HUT, STAR OF PEACE		2420'
McINTYRE'S CREEK RACE		2600'
TRAM AT STAR OF PEACE DAM SITE		2430'
RACE FROM MORNING STAR DAM SITE (to be constructed)		
AT OUTLET END MT. PARIS	approximately	1570'

(signed) D. FRASER.

28/12/33

By favour of Mr. D. Fraser.