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THE VICTORY GOLD

MINING COMPANY NO LIABILITY

Location and Leases: The Victory Mine is situated immediately to the south of the township of Gladstone.

The following leases are held by the company:- 10689/M of 11 acres, 10687/M of 10 acres, 10688/M of 10 acres, and 10690/M of 10 acres making a total of 41 acres, chartered in the name of A. Hart.

History: The company's leases embrace a number of old mines including the Royal Tasman, Royal Standard, Royal Mint, No. 1 North Tasman, South Royal Standard, Deskford, and the South Royal Mint. Active work was carried on at these mines during 1880-1882 and treatment plants were erected by the Royal Tasman, and the Royal Mint companies. Returns from the Royal Tasman decreased and operations were stopped in 1883, and the field remained idle for many years.

In 1909 the Dreadnought Gold Mining Syndicate carried out some prospecting work on the North Tasman Reef.

In 1916 and 1917 the Gladstone Gold, Tin and Wolfram Developing Company carried out prospecting operations on Fleming's reef which included the sinking of a shaft and driving of an adit, while in 1917, Moore sank a shaft to the south of the Royal Mint.

No other work appears to have been done until in 1931, the Victory Gold Mining Company N.L. was formed and acquired the leases.

The Reefs: Numerous reefs have been opened up on these leases, but it is only in the case of those which contained appreciable values in gold and to a less extent tin, that work has progressed beyond the prospecting stage. Thus the main reefs are the Royal Standard, the Wolfram reef, the North Tasman (or Royal Tasman No. 2), the Royal Tasman (No.1), Fleming's reef, and the Royal Mint.

The quartz is a typical white reef quartz, and often has a peculiar fine grained marble-like appearance.

Gold is the principal mineral of economic importance in the latter four reefs, while cassiterite and wolfram occur in the Wolfram reef, and cassiterite in the Royal Standard reef. However a small amount of cassiterite appears to be present in all the reefs, and gold is probably also present in all. The gold is not visible to the naked eye, and apparently occurs finely disseminated throughout the quartz and also associated with the sulphide minerals.

The most abundant sulphide is arsenopyrite. In the Victory workings on Fleming's reef, it occurs in pieces up to one inch in size in the quartz. A fairly clean sample was picked out and assayed (387/32) and found to contain 16 dwts 8 grs of gold and 2 dwts 5 grs of silver per ton. Pyrite is also present, but to a much less extent. Chalcopyrite occurs in the quartz from the Deskford shaft and also in the first vein in the long adit (North Tasman) driven to cut the Royal Standard reef. It is also present in Fleming's reef.

The concentrates from the Victory battery consist chiefly of arsenopyrite, with lesser amounts of pyrite and chalcopyrite. No free gold is visible with a pocket lens but assays indicate a gold content of 20 to 60 ozs. per ton. One sample (389/32) was found by assay to contain 48 ozs. 3 dwts 1 gr. of gold and 14 ozs. 11 dwts. 9 grs of silver per ton. It is apparent from the above assays that the arsenopyrite is not the principal carrier of the gold unless its content is extremely variable. It would appear that the gold in the sulphides must occur in an extremely finely divided state.

Tests of the gold in two samples (one from the N.W. face and the other from near Fleming's shaft) proved that practically all the gold can be extracted with mercury and that all of it is soluble in cyanide solution. This tends to show that practically all the gold is in a free state, but the amount of sulphides in these samples was too small to render the tests conclusive. A test of the concentrates from the battery would be more conclusive, but a supply is not available at present.

The Royal Tasman Reef: This reef has a strike of 140° and outcropped along a length of 240 feet as judged by the line of fallen-in stopes at the surface. The underground work was carried out from two short adit crosscuts driven at a bearing of 80°, and one or two shafts sunk on the reef. A longitudinal section dated 1895 shows the reef as stoped for 250 feet at the surface and down to No. 1 level, and for a length of 150 above the No. 2 level. The No. 1 level is shown as being 30 feet below the surface and 250 feet in length, and the No. 2 as being 75 feet below the surface, and 230 feet in length. Two shafts are also shown connecting with the No. 2 level, and a winze 23 feet deep sunk below No. 2 level in the vicinity of a tin lode. The northern end of the worked out ground is vertical and apparently represents the end of the reef. Unworked reef is shown at the southern end for a length of 100 feet between the two levels and also the whole distance beneath the No. 2 level.

The dip of the reef is not known but it is apparently nearly vertical. Little is known of the width but Thureau (1881) quotes the following:-

7ft 6 inches	-	above No.1 level at end of No.1 adit
3 " 0 "	-	60 feet south east of end of No.1 adit
		Top of drive
2 " 6 "	-	do. do.
		Bottom of drive
7 " 6 "	-	42 feet north west of end of No.1 adit

In 1886 Thureau reported that "it was, firstly, wrong to crush quartz 8 feet wide, when less than 2 feet of it was mineralised and gold-bearing". Twelvetrees (1916) quotes the reef as reported to range from 2 to 6 feet in width.

As the workings are inacessible, no sampling of the reef could be made. The results of crushing give the value of the quartz crushed and treated, but it must be remembered that this contains a small amount of quartz from the North Tasman reef.

Date		Quartz Tons	Gold Yield Ozs.	dwts.	grs.	Value per ton Ozs.	dwts.	grs.
1880	Trial crushing, Ballarat	1	20	9	12 (smelted)	20	9	12
	- - Bendigo	1	21	-	-	21	-	-
1881	First crushing at Mine	322	467	10	- (retorted)	1	9	-
1881	Second - - -	595	611	7	- (retorted)	1	0	13
1881	Third - - -	641	231	-	-	0	7	5
1882	crushing at Mine	500 (approx)	158	-	-	0	6	7
	ditto	600 (approx)	123	4	-	0	4	3
	ditto	252	38	15	-	0	3	1

The values show a progressive decrease, and this might reasonably, as often happens, indicate a reduction of values with depth when passing from the oxidised and secondarily enriched zone into the primary zone. No doubt this factor has caused part of the decrease, but a number of others also appear to have played their part. Thus Thureau (1881) reports that the above recoveries are of free gold only and that the residues (sulphide concentrates) await treatment. The results of such treatment, if made, are not known but as shown above these concentrates might have contained high gold values and this gold would have considerably increased the value per ton of the quartz. Moreover, the quartz from the deeper workings would have contained more sulphides and thus there would have probably been more gold per ton of quartz from the greater depths than the shallower ones. The additions of this gold would have shown that the values did not decrease as much as shown in the above table. As regards the residues Thureau recommended grinding in pans &c before final chlorination (It may be noted that in 1901-1902 the Royal Tasman tailings were cyanided with, it is stated, good results)

Another features is that the battery consisted of 15 head of stamps and apparently an attempt was made to keep the battery fully occupied. Thus low grade quartz was treated, instead of payable stone only, or as reported by Thureau (1886) "With regard to gold - - the partial failure of the Royal Tasman Co. has caused grave doubts as to the stability of the whole region, on the supposition of their lode declining in value. Much might be said on this subject, but in my opinion it was, firstly, wrong to crush quartz 8 feet wide when less than two feet of it was mineralised and gold-bearing, and, secondly, the character of the quartz at the lower levels does not correspond with that got higher up, and, lastly, the well-known existence of an extensive "slide" or "fault" renders it possible of the old reef having been thrown, and a new one, not nearly so good, to have been mistaken for the other".

Nothing can be said as to the last two factors quoted by Thureau, but if they actually exist, they would considerably effect the question.

It has been claimed that the Royal Tasman Reef has been faulted at both ends. At the northern end, the North Tasman reef was considered to be its faulted continuation, but this does not appear probable, and it is more likely that the reef has a natural ending due to petering out. If it continues beyond the workings, the reef should have been cut in the adit driven to intersect the North Tasman reef. It was stated that the track was visible near the entrance, but Twelvetrees could find no satisfactory evidence of same.

At the southern end, the reef terminates while Fleming's reef outcrops some 25 feet further east up the hill. This might suggest that the two reefs are faulted portion of one, but the strikes rather suggest that they are two separate reefs. Any further work in driving north on Fleming's reef would definitely decide this question.

North Tasman Reef and Workings thereon. This reef was apparently discovered on the Royal Tasman property and prospected and mined by that company. The North Royal Tasman Co. also prospected the reef on their lease adjacent and north of the Royal Tasman property. In 1909, the Dreadnought G.M. Syndicate did some work on the reef, while recently O'Halloran broke some quartz out of a shaft.

The Royal Tasman workings on this reef consist of an adit x cross cut 360 feet in length and bearing $12\frac{1}{2}^{o}$. A vertical shaft was sunk to a depth of 110 feet and connected with the adit, while levels were opened out at depths of 37, 68, and 110 feet, the latter being the adit level. On the longitudinal section drawn in 1895, the reef is shown as being stoped along a length of 87 feet at the surface, 75 feet at the 37 foot level and 86 feet at the 68- feet level. No stoping was done below the 68 feet or below the adit level. The reef is shown as cut off by a slide at the north end down to the 68 feet level, and by another slide at the south end down to the 37 feet level.

The North Tasman workings consist of a shaft 40 feet deep from which a crosscut west 14 feet in length cut the reef where it is reported by Thureau to have had a promising prospect of gold.

At the surface a narrow-excavation 100 feet long appears to represent the fallen-in stopes of the Royal Tasman workings. To the north-west the reef does not appear to have been found on the surface although a trench was excavated to search for it but a proper examination of same is not now possible. The North Tasman shaft is 80 feet north of the old stopes and if as reported the west crosscut from it, cut the reef it must continue to the north at depth. If it extends still further north it should have been cut by the long adit (started by the North Tasman Co. and continued later to cut the Royal Standard Reef) about 460 feet from the entrance. At 462 feet, Thureau (1881) reported that 5 feet of quartz had been intersected, but a search during the recent visit did not reveal any evidence of this reef. Instead there is a southerly drive at that point but only country rocks (slates) are exposed in this drive and apparently merely a westerly dipping wall or bedding plane was driven on. This drive is 135 feet in length (with a short rise at one point) but it is not on the North Tasman reef and if continued would be some

distance west of that reef.

Thirty feet to the south of the fallen-in stopes, the reef is exposed in a shaft (possibly sunk in 1909 and shown on the plan as O'Halloran's shaft). Between 110 and 180 feet S.S.E. of O'Halloran's shaft, two shafts and an L-shaped trench exposes a reef, which is probably the southern extension of the North Tasman reef. The reef has not been traced further south.

The strike of the reef at the surface is 310° at the northern end and 335° at the southern end. The dip at the surface is practically vertical but according to Thureau, a flat fault comes in at a depth of 35' in the Royal Tasman shaft and throws the reef 12' to the north, the faulted portion below having a dip of 60° - 70° to the west. A similar dip is said to exist in the crosscut from the North Tasman shaft, but its direction is not stated.

The width in the Royal Tasman workings is reported by Thureau as 4 to 6 feet. In O'Halloran's shaft, the width is 18 inches at least, while in the shafts to the south it ranges from 30 to 36 inches with narrow parallel veins to the west. At the adit level, Twelvetrees reports the width as 5 or 6 feet.

The value of the quartz crushed is not known. The following samples indicates the value of the quartz at the few places where tested.

	Sample	Width	Gold Ozs.dwt.grs.	Silver Ozs.dwt.grs.
	Adit level (Twelvetrees 1916). Trench near O'Halloran's Shaft (J.B. Scott, 1930)	5 to 6'	0 9 19	Trace
		2 feet	Nil	Nil
471	From dump outside adit	"	Trace	Trace
472	From dump of shaft at south end.	2' 6"	Nil	Nil
473	From dump of O'Halloran's shaft.	1' 6"	Trace	Trace

These do not indicate any values, but it is curious to note the discrepancy between the first and second assays which should generally represent similar material.

Fleming's Reef and Workings thereon:

This reef was found by Fleming about 1916 at a point about 160 feet S.S.E. of the Royal Tasman Stopes. Fleming's shaft was sunk on it to a depth of 23 feet. An adit was then driven to give 30 feet of backs, the reef being cut at 49 feet and the adit continued to 75 feet. A north drive was driven to 66 feet and a south drive to connect with the shaft. The quartz mined was not treated. The Victory company have crushed all the quartz that had been brought to the surface, have extended the north drive and stoped above it in places, and have stoped around Fleming's shaft from the surface down nearly to the adit level.

In addition to the underground work, the reef has been traced northwards from Fleming's shaft by two

prospecting shafts and two trenches.

Near Fleming's shaft the reef has a strike of 320° but to the north the strike alters to 340° or 350° . Similar strikes also occur in the underground workings. The dip is not constant and it may be vertical or high to the west or east, but in the northern part, an easterly dip is suggested. As seen on the plan, Fleming's reef at its northern end will pass to the east of the south end of the Royal Tasman reef at a distance of 20 to 30 feet. To the south the reef has not been traced and it appears to peter out in the under hand stopes south of Fleming's shaft. If it should continue to the south-east, it will be represented by one of the veins in the deep trench in that direction.

In the underground workings the width and characteristics of the reef are well shown. At the face of the south drive the reef appears to end along a vertical plane in the country rocks. Going north 9 to 12 ins of quartz were visible in the back while just north of Fleming's shaft 2 feet of quartz were visible. On the north side of the filled-in crosscut, the reef is 12 ins. wide and dips S.W. at 75°. On the south side of the adit crosscut, it is 7 ins. wide and dips west at 65°. In the north drive, very little can be seen owing to the timbering and the stoping. In Morrison's rise, the reef dips east at 80°, while to the north 6 to 12 ins. of quartz are visible under foot and dips to the east. In the second rise the quartz visible in the top shows a sudden change in strike. From here north, only narrow, irregular veins occur, but a cut to the east intersected the "Cross reef", some 18 ins. wide and dipping S.W. at 70°. This was followed to the north for 13 feet, when it turned and passed out into the west side of the drive (If this "Cross-reef" continues to the north-west, it may possibly be connected with the Royal Tasman reef). On the east side of the drive, quartz made on the north side of this wall and continued to the face (a distance of 10 feet) where 12 to 14 ins. of quartz were showing.

The values of the reef at certain places are indicated by the following assays;

		Width inchs.	Gold Ozs.	dwt.	grs. per ton	Silver Ozs.	dwt.	grs. per ton
	10' down Fleming's shaft (Twelvetrees 1916)		8	1	9	1	4	7
	13' down Fleming's shaft (Twelvetrees 1916)		10	9	2	4	9	0
	Sample taken by Fleming		4	1	0	0	7	20
	23' down Fleming's shaft		0	15	17	0	2	0
	South side of adit		0	1	20		Nil	
477	East side south drive north of Fleming's shaft	10	6	18	12	0	18	7
476	Between rises, north drive under-foot on east side	12 to 15	0	0	16	0	1	3
475	"Cross reef" North drive	15	0	0	19	0	0	11
474	Face, north drive	12	1	12	16	0	3	22

These figures show that the reef was rich in gold in and near Fleming's shaft, but is variable both there and otherwise.

The following figures representing the results of the treatment of the quartz by the company during the early part of 1932, give a much better idea of the average grade of the quartz. The quartz crushed included that at grass (mined by Fleming and others) and included in the first three crushings above), that mined from Fleming's reef by the Victory Company, and a small amount collected from old dumps at other reefs (and included in the last crushings). In general, however, it represents the quartz from Fleming reef.

Quartz Crushed	Retorted Gold obtained	Value per ton
Tons	ozs.	dwts.
41	12.14.	5.92
38	9.92	5.22
26	9.92	7.62
35	17.30	9.88
18	5.62	6.24
36	11.70	6.50
27	4.08	3.02
14	2.91	4.16
235	73.59	6.26

Thus the value ranged from 3.02 to 9.88 dwts per ton with an average of 6.26 dwts. This does not include the gold from the concentrates. Grab samples from the concentrates have given assay values as high as 60 ozs. of gold per ton, but the average value is not known. Such gold would however raise the above average value of the quartz; however, it must be remembered that much of the quartz came from around Fleming's shaft where assay results are high and the quartz is probably richer than elsewhere.

Deskford Reef. The Deskford shaft is 150 feet south-east of Fleming's shaft. Thureau (1881) reports as follows "The workings in this ground are progressing at a depth of 53 feet 6 ins. from the surface, leaving 5 feet for a well; a cross cut has been driven 10 feet south-east in hard country interspersed with small leaders; on the opposite side the drive has been extended nearly 100 feet, showing leaders of quartz from 6 inches to 2 feet in thickness".

It does not appear whether any veins were followed, but, it seems rather that they were crossing the north-west drive. If intended as crosscuts, it is a wonder that the drives were not made to the south-west and north-east so as to cross the lines of the known reefs.

All that can be seen on the dump of the shaft is quartz with the typical marble-like appearance. The quartz contains a considerable amount of chalcopyrite and its oxidation products malachite and tenorite.

Royal Mint Reef. Little or nothing can be seen of this reef and all the former workings have fallen in. The reef is generally parallel to the others and and has a strike of 320°. The main workings consisted of an adit driven S.W. for 220 feet where it connected with an underlay shaft 64 feet deep sunk on the reef. A depression along the surface suggests fallen-in stopes both north and south of the shaft.

A drive was commenced to the south-east to connect with another shaft distant 300 feet from the first. Other surface workings are shown on the plan.

The width of the reef is stated to be four feet in the first shaft, two feet in the other (south-eastern) shaft and 8 to 16 ins. in the south-east drive.

No figures to indicate the gold content of the quartz are available firstly because the reef cannot now be sampled and secondly because there is no record of the battery returns from this mine.

Thureau (1881) reports two cross veins near the Royal Mint reef. The first is stated to occur 10 feet east of the first shaft, to be nearly vertical; 18 ins. wide; and to be gold-bearing. The second vein is stated to be 90 feet further east and to have been payable for a considerable distance along the surface (the irregular workings south-east of the first shaft and possibly the outcrop east of the adit mouth are probably on the line of this cross vein).

Moore's Reef. This name is given to the reef or reefs stated to have been cut in Moore's and Birkett's shafts to the south of the Royal Mint. This shaft was probably sunk by Moore in 1916, while the other some 35 feet to the north-west was sunk by Birkett later. It is stated that a gold-bearing reef, up to 12 ins. in width was located in both shafts and had a westerly dip. Short crosscuts to the south-west picked up the reef after it dipped out of the shaft. A wider but poorer reef is also said to have been cut to the west of the narrow reef.

The trenches and old shafts north of Birkett's shaft appear to have no connection with Moore's reef. Quartz occurs on some of the dumps but the shafts have fallen in and cannot be examined.

Royal Standard Reef. The main workings on this line of reef occur to the north of the Victory leases. In the north-east corner of lease 10689/M, a long trench and excavation show a wide quartz reef similar to the Royal Standard. However it is somewhat off the line of the Royal Standard and unless the latter is faulted or suffers a change in strike, the reef in the excavations would be a separate one and might more correctly be called the South Royal Standard Reef.

Summary and Conclusions. The above descriptions show that the Victory leases include a number of short and narrow parallel quartz reefs all of which have been opened up in the past and the quantity of quartz treated. The results of the crushings are only partly known, but the operating companies eventually closed down without attaining any financial success. Whether any greater success will be attained in future operations depends entirely upon the results of the development work.

With short and narrow reefs in which the gold

values are not exceptionally uniform it is essential that they should be properly developed and that the development work should be so much ahead that a continuous supply of quartz is available for battery treatment. The future of the mine depends upon, among other things

(1) The discovery of new reefs. This can only be brought about by surface and underground prospecting. The latter could be undertaken by means of North-Easterly - South-Westerly adit crosscuts which would cross the general strike of the known reefs, or what is more likely by crosscuts from the underground workings that are open and are being continued.

(2) Development of the known reefs. There is some scope for this type of work and it would probably be best to carry it out in the following manner and the order indicated.

(a) Fleming's Reef. Development work on this reef should include driving north from the present face; testing the quartz by winzes below the north and south drives particularly near Fleming's shaft; and possibly driving North West and South East on the "Cross reef" in the north drive.

(b) Royal Tasman reef. The northern drive on Fleming's reef will make clear the relation between Fleming's and the Royal Tasman reef. If driven 50 feet, then a 30 foot crosscut to the west would pick up the known southern end of the Tasman reef. The North Western drive on the cross reef if continued would reach the same objective. An alternative means of developing the Royal Tasman reef is to open up the lower of the two old adits.

(c) Royal Mint Reef. This could be prospected and developed by opening up the old adit.

(d) North Tasman reef. This could be prospected and developed by opening up the old adit.

(e) Moore's reef, and country between it and Royal Mint. Moore's reef and others in the vicinity should be prospected first by trenches and shafts and if such work proves a number of reefs and prospects are somewhat favourable then they could be tested at depth by a long crosscut or drive from the Royal Mint workings.

The actual plan of development would, of course be arranged in accordance with the results of that first undertaken.

The gold content of the quartz will of course be determined as a result of the development work. In spite of high individual assays, it will be found, judging by the results of past treatment that the

average gold content will be low and not exceed 6 dwts per ton and the actual contents will probably be less than this figure.

The company has installed a five -head battery with amalgamated plates and blankets with race to save the pyritic concentrates. This plant should be sufficient to treat and test all the quartz obtained during any developmental work. The plant is driven by a Pelton Wheel, a water supply being obtained from the Mt. Cameron Water Race.

In conclusion it must be emphasised that the success of the mine depends solely upon the results of any future developmental work that is undertaken.

GOVERNMENT GEOLOGIST.
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