1919.

NEW ZEALAND.

STATE COAL-MINES

(REPORTS ON WORKING OF) FOR THE YEAR ENDED 31ST MARCH, 1919.

Prepared in accordance with the requirements of Section 118 of the Coal-mines Act, 1908.

MINE-MANAGER'S REPORT.

The MANAGER, State Coal-mines, Greymouth, to the UNDER-SECRETARY, Mines Department, Wellington.

SIR,— Point Elizabeth State Coal-mine, Greymouth, 6th May, 1919.

I have the honour to submit my annual report on the working of the State collieries for the year ended 31st March, 1919.

POINT ELIZABETH COLLIERY.

Coal-winning.

The gross total output for the year was 86,535 tons 9 cwt., a decrease of 31,546 tons when compared with the figures for the previous year. After deducting mine consumption and waste, and allowing for the stock in hand at the beginning of the year, there remained 86,253 tons, which was disposed of as follows:—

	Tons.	cwt.
Export—		
Screened coal	15,598	13
Unscreened coal	41,726	17
Bunker coal	138	0
Small coal	8,592	0
Total	66,055	10
Local sales—		
Screened coal	6,466	11
Unscreened coal	3,405	3
Small coal	1,690	14
Total	11,562	8
Mine sales (unscreened)	137	10
Sold to employees (unscreened)	3,242	17
Used on works (small)	3,405	0
Waste	1,078	4
Stock in bin	771	8

The gross total output won from this colliery since its inception amounts to 2,418,067 tons 9 cwt.

The colliery worked on 236¾ days, and the average daily output was 365 tons 12 cwt., a reduction of 170 tons per working-day when compared with the figures of the previous year. The difference between the time worked and the possible working-time is accounted for as follows: (*a*) Pay Saturdays, 27; (*b*) union holidays, 15; (*c*) bad bar, 9; (*d*) want of shipping, 3¼; (*e*) influenza epidemic, 6; (*f*) Peace days, 2; (*g*) quarterly cavil, 1; (*h*) levy strike, 6; (*i*) stop work through no medical officer, 5; (*j*) stop-work meetings, 2: total time lost, 76¼ days.

The average number of men and boys employed in and about the mine throughout the year in connection with coal-winning was 145, made up as follows: Underground—Coal-hewers, 51; deputies, shiftmen, and truckers, 46; boys, 2. On the surface—33 men and 13 boys.

In addition to those employed under the head of "Coal-winning" there were eight men employed boring and prospecting on the State Coal Reserve between the Seven- and Nine-mile Creeks.

The coal-hewers' average daily earnings (gross) was 24s. 11·38d., and the net average return to each man was 24s. 3·18d., a net increase of 1s. 1·16d. per day over the previous year.

The total payments made on wages account, including stores, mine-timber, and compensation, amounted to £35,786 3s. 10d.

Underground Development.

The whole of the output for the year was obtained from pillar-extraction from both sections (Nos. 1 and 2) of this colliery, and apart from the ordinary routine of operations in opening out old disused bords and headings in order to extract the pillars effectively there has been no new underground development work.

The No. 1 section was abandoned on the 18th February, 1919, the further exploitation of the remaining small pillars being attended with too much danger and expense to warrant any more work being done in the section.

In future the output of the colliery will be obtained from the No. 2 section alone, where only a limited number of pillars of thin coal remain to be worked, and as these pillars are confined to a long narrow series it renders it impossible to employ more than a small number of miners.

Within the course of a month from date the dip workings, which have supplied coal of a superior quality for many years past, and at the present time find employment for three pairs of miners on the day and afternoon shifts, will be exhausted.

In order to maintain a reasonable output the management will endeavour to find places for some of the men out of the dip section by working more places double-shift; but it must be pointed out that, as the remaining pillars to be won are in a portion of the mine where the seam is thin and in several places very dirty, the output will naturally be reduced, and the cost of production correspondingly increased.

Exploratory Work.

During the year much work has been done by means of boring and other prospecting operations on the State Coal Reserve in close proximity to the Point Elizabeth Colliery, and to the northwards of the same on the low coastal range between the Seven- and Nine-mile Creeks.

As a result of these operations a coal-seam of a semibituminous nature, and averaging 8 ft. in thickness, has been proved to exist over an area of 350 acres, and further boring which is at present being carried out will in all probability increase the workable area. The seam occurs at altitudes varying between 200 ft. and 350 ft., and the quantity of coal in the area proved may be safely estimated at 4¼ million tons, of which 75 per cent., or 3¼ million tons, may be won. In several parts of the reserve the seam has been driven on, and it is pleasing to report that the coal was found to be of a very hard nature.

From the following analysis, which is an average of twelve samples, this coal should prove useful for household purposes:—

	Per Cent.
Fixed carbon	40·45
Hydrocarbons	51·12
Water	6·00
Ash	2·43
	100·00
Sulphur	3·4
Calories, per gram	7,254
British thermal units, per pound	13,057
Evaporative power, in pounds of water at 212° F.	13·53

It must be pointed out that, although the average percentage of fixed carbon in this coal is not so high as in the coals of other mines in this district, the combined principal constituents, carbon and hydrocarbons, are equal to those of Blackball, Point Elizabeth, Puponga, and Reefton coals, all of which are largely used for steam and household purposes, and the inert constituents are no greater.

In connection with this field there are also special features, some of which may be enumerated as follows:—

(1.) Easy access by means of a short branch railway near Runanga Station, which presents no engineering difficulties and should be cheaply constructed.

(2.) The cost of establishing a colliery would be comparatively low owing to the fact that very little new plant and machinery would be required, as the plant from Point Elizabeth Colliery will be available within twelve months owing to the exhaustion of that mine.

(3.) If exploited it would supply the State coal depots with a hard marketable coal, which is highly necessary for their future maintenance, as the present source of supply (Point Elizabeth) is being rapidly exhausted.

(4.) The present township of Runanga is only two miles and a quarter distant by level road, and no housing difficulties would arise.

(5.) The working-cost of a colliery on this area should be comparatively low owing to the drainage and haulage expenses being inconsiderable. There is also a plentiful supply of mining-timber on the property, and the coal being situated on the State Coal Reserve no royalty or rental will require to be paid.

Plan of the area on which prospecting has been carried out will be found attached, showing positions of borcholes, outcrops, &c.

Liverpool Colliery.

Coal-winning.

The gross total output for the year was 128,384 tons 2 cwt., an increase of 187½ tons when compared with the figures of last year. After deducting mine consumption and waste, and allowing for stock in hand at the beginning of the year, there remained for disposal 129,475 tons, which was disposed of as follows:—

	Tons.	cwt.
Export—		
Screened coal	2,594	7
Unscreened coal	108,044	19
Bunker coal	156	3
Small coal	1,004	14
Total	111,800	3
Local sales—		
Unscreened coal	9,464	0
Small coal	2,149	14
Total	11,613	14
Mine sales—		
Sold to workmen (unscreened)	225	15
Used on works (unscreened)	3,155	0
Stock in bin (unscreened)	537	1
Total	3,917	16
Stock on wharf—		
Screened coal	466	6
Unscreened coal	236	8
Small coal	151	12
Total	854	6
Waste	1,289	11

The gross total output from this colliery since its inception amounts to 614,022 tons 7 cwt.

The colliery worked on 208½ days, and the average daily output was 615 tons 15 cwt., a reduction of over 33 tons per day as compared with the figures for the previous year.

The difference between the time worked and the possible working-time is accounted for as follows: (*a*) Pay Saturdays, 27 days; (*b*) union holidays, 18; (*c*) levy strike, 5; (*d*) ropeboys' strike, 1; (*e*) stop-work meetings, 2; (*f*) influenza epidemic, 6; (*g*) stop work through no medical officer, 5; (*h*) want of shipping, 21; (*i*) bar unworkable, 12; (*j*) cavilling, 2¼; (*k*) river in flood, 2; (*l*) no work on wharf owing to heavy rain, 2: total time lost, 103½ days.

There were employed in and about the mine in connection with coal-winning 242 men and 23 boys, made up of 107 coal-hewers; deputies, shiftmen, and truckers, 91; on the surface, 44 men and 23 boys. In addition to those employed in connection with coal-winning there were on an average 21 men and 1 boy employed on property and development work, making a total of 263 men and 24 boys.

The total payments made on wages account in connection with coal-winning, including stores, mine-timber, and compensation, amounted to £56,229 8s. 11d.

The coal-hewers' average daily earning (gross) was 23s. 3·86d., and the net return to each man was 21s. 2·38d., an increase of 1s. 4·84d. per day over last year.

Underground Development.

The underground workings of this colliery are divided into three sections, Nos. 1, 3, and 3A, and the principal operations for the year have been confined to sections 1 and 3.

No. 1 section: Development work in the upper seam has again been confined to the headings in a northerly course, also to a small area in what is termed the Crosscut section. In each case the areas operated on are so small, and the seam pinching out as the headings advance, that it is only a matter of a few months when all development work in this section will be completed.

The Morgan seam, which is connected with the upper seam by means of a cross-measure drift, has been worked continuously throughout the year, and operations were confined to the extending of the levels in an easterly and westerly course. The east level has been driven 14½ chains, and th west level 10 chains from the cross-measure drift. The seam is well developed, and, although only

six pairs of miners were employed therein during the year, there are sufficient places for eighteen pairs of miners.

At the present time the Morgan seam is stopped, and all the miners are now employed in the upper seam. This was done in order to centralize operations for the profitable handling of the reduced output owing to shortage of miners; also to exhaust the upper seam as early as possible, so that when the new haulage tunnel which is now in course of construction connects with the present workings of the Morgan seam the upper portion of the present endless-rope haulage-road may be dispensed with.

No. 3 section: Operations in this section have been carried out much on similar lines to those of the previous year. The winning headings continue to be driven in a northerly course, but as the headings advance it is found that the seam is gradually reducing in height; the same applies to the levels driven in an easterly course from these headings. The winning headings are within 8 chains of Garvey Creek, and as this creek forms the boundary for this section it will be readily seen that the time is not far distant when development work will be completed.

In the No. 3A section there has been practically no development work done, the output having been maintained from pillar-extraction. Arrangements are, however, being made to work a small area of coal between two faults on the eastern side of the dip haulage-road.

Accidents.

There have been a few minor accidents during the year, but it is pleasing to report that these have not been of a serious nature.

Development Work.

Work under this head is confined to the construction of a low-level haulage-road into the Morgan seam. This new haulage-road commences from near the upper terminus of the first endless-rope haulage, better known as the "middle brake," and consists of an outside tramway 21 chains in length, and also a tunnel 56 chains long. The object of this new haulage-road is to connect with the Morgan seam, and also the upper seam at its lowest points. The upper seam, which is 21 ft. thick, should be struck at 46 chains from the tunnel-entrance, and the Morgan seam, which is 25 ft. thick, at the full distance of the tunnel.

The area which this new haulage-road will command is approximately 260 acres, and contains about five and a half million tons of coal. To win this coal under the present haulage system would necessitate the installation of a powerful haulage and pumping plant, and, assuming an average daily output of 500 tons, it would take over thirty years to work the coal out of this area. This would mean a heavy annual expense for pumping, and also a costly and lengthy system of haulage; whereas under this new scheme all the coal will be won free of pumping, and instead of hauling the coal up an inclined plane by means of powerful haulage engines it will be lowered by means of self-acting inclines to the tunnel terminus, from which point the coal will be conveyed by means of an endless-rope haulage to the middle brake.

Once a connection is made with the present workings in the Morgan seam the question of dispensing with the upper section of the present haulage-road will be considered. This, of course, will depend upon whether the rise workings in the upper seam will be exhausted to such an extent to enable this to be done.

In addition to the advantages derived as herein enumerated by the construction of this new haulage-road it will to a large extent overcome another serious difficulty, and that is the housing problem. It is well known that, owing to the hilly nature of the country in the vicinity of the colliery, it is no easy matter to find suitable sites for building cottages, and it is also a difficult matter to construct suitable roads. This new haulage-road will overcome the difficulty to a large extent, in that it will enable employees to reside at Runanga and Dunollie and travel to and from their work daily.

To complete the work will probably take two years and a half from date. The route of the new haulage-road is shown on the litho accompanying this report.

Surface Works.

The plant and machinery in and about this colliery has been maintained in good condition and efficient repair.

The electric plant, which is centrally situated and provides power for all ventilating-fans at this colliery, also for the driving of an endless-rope haulage, has been continuously worked during the year without interruption.

The generating-machine is driven by a high-speed Bellis-Morcomb engine, which derives its power from two Babcock boilers; the latter also supply steam for two hauling-engines in the No. 3A mine, and for a self-contained air-compressing plant, which is situated in the boiler-house and supplies compressed air for driving the rock-drilling machines in the new tunnel. As these boilers and the electrical plant are worked continuously throughout the twenty-four hours, with only a stoppage of sixteen hours on Sundays, it will readily be seen that the annual consumption of fuel at this power-house, together with the attendants' wages, is a costly item.

In the near future it will be necessary to duplicate this plant, as a stoppage to this plant means a stoppage for the whole colliery. To duplicate it by means of additional boilers and other machinery required would be a costly undertaking; therefore, before doing anything in this respect, it is the management's intention to ascertain the water-power available from either the Seven-mile or Davy

Creeks. If sufficient power is available a generating plant driven by water-power would be installed as near the railway-station as possible. This plant could be run continuously so long as water-power was available, and the steam-driven plant run only in cases of emergency.

Reconstruction of Storage-bins.

The storage-bins which were completely destroyed by a landslip in January, 1918, are now rebuilt. In the original building there were two conveyors used for distributing coal in different parts of the bin, and the screens were also erected on the eastern end, which necessitated the working of one of these conveyors whether screened or unscreened coal was required. In reconstructing the bins this matter was carefully considered, and instead of erecting two conveyors only one is now installed, in the centre, this being deemed adequate for loading the bin. The screening plant is also erected at the western end; this obviates the use of the conveyors when making screened coal. The erecting of one conveyor in the centre also enabled the height of the building over the unscreened bin to be reduced by 12 ft., and, although the new building is not so massive in appearance as the original one through this cause, there is no doubt it is much stronger, as it is not so top-heavy.

To prevent a landslip occurring in the same place again a protection wall has been built, and to give additional strength to the new structure several large bolts from beams in the interior of the bin are fastened to a reinforced-concrete wall on the hill.

Explosives.

During the year a great deal of trouble has been encountered with the permitted explosive "viking," and the chief cause of the trouble appears to be due to moisture affecting the explosive, through faulty packing at the works where the same was manufactured. It has been the practice when a new shipment of this explosive arrives to open several of the cases, and it was invariably discovered that the ends of almost every plug showed signs of dampness, the dampness penetrating deeper in some plugs than others. In one 50 lb. case in particular no less than 35 lb. had to be discarded as useless, and it is a common occurrence for the magazine attendant to discard some days from 10 lb. to 15 lb. of this explosive.

Then, again, before it is used in the mine the shot-firers examine each plug before inserting it in the shot-hole, and any ends showing signs of dampness are cut off, otherwise the result would be a defective shot. Although every care has been taken in the use of this explosive the number of defective shots during the year was beyond all reason. For the ends of the plugs cut off by the shot-firers the miners were allowed explosives equivalent for the loss, on a written statement from the shot-firer. An allowance is also made to the miners for the defective shots, when the detonator has exploded and the explosive failed.

During the year a new permitted explosive, "ligdynite," was procured; but owing to an unexploded plug in a shot-hole burning with a moderate flame this explosive has been prohibited from all safety-lamp sections of these collieries, but it is being used in the naked-light mines.

Some time ago arrangements were made to try and procure the permitted explosive A1 monobel through the High Commissioner for New Zealand in London, but a reply was received from Nobel's Explosives Company (Limited) that it was impossible at that time to obtain the necessary quantity of potassium chloride for the manufacture of this explosive. However, as the war is now over there should be no difficulty in obtaining the necessary raw material, and therefore, in order to obtain better results in the future and also for the satisfaction of the men and the management, arrangements should be made to procure the explosive A1 monobel.

General.

Reviewing the work for the year it will be seen that the number of working-days at the Liverpool Colliery are considerably less than those worked at the Point Elizabeth Colliery. This is due to the fact that during the greater part of the year there was only a temporary arrangement to deal with the output, and unless wagons were available daily the mine could not be worked. With the Point Elizabeth Colliery the position was entirely different, for if wagons were not available through shipping being held up there was usually space in the storage-bin to enable the mine to work for sometimes two and three days in succession.

It will be noticed that the output from the Point Elizabeth Colliery is considerably reduced. This is due to the near exhaustion of that colliery, and in the course of a few months it is questionable whether this colliery can be profitably worked.

It is advisable to point out that since the signing of the Armistice no less than eighty-seven men have left the Liverpool Colliery, consequently the output is now reduced to about 500 tons per day.

In conclusion I wish to say that all the officers have performed the duties delegated to them in a most satisfactory manner, and the Consulting Engineer has rendered valuable assistance in the various developments connected with the mine.

I have, &c.,

I. A. James, Manager.

The Under-Secretary, Mines Department, Wellington.

SALES MANAGER'S REPORT.

The SALES MANAGER, State Coal-mines, to the UNDER-SECRETARY, Mines Department, Wellington.

SIR,— New Zealand State Coal-mines, Head Office, Wellington, 31st July, 1919.

I have the honour to present the annual report and balance-sheet of the New Zealand State Coal-mines for the year ending 31st March, 1919.

FINANCIAL.

The net profit for the year, after making full provision for interest, depreciation, war bonuses, bad and doubtful debts, and all annual charges, amounted to £30,607 1s. 4d., made up as follows:—

	£	s.	d.
Point Elizabeth Colliery	14,663	7	6
Liverpool Colliery	20,140	0	7
Seddonville Colliery (recovery)	646	16	5
Sale of hulk	1,701	3	0
	37,151	7	6
Less losses—			
Depots (£ 6,451 1s. 1d.)			
Highway robbery (£ 89 0s. 1d.)			
Briquette Account (£ 4 5s. 0d.)			
	6,544	6	2
	£30,607	1	4

The net profit earned represents a return of 8·16 per cent. on the gross capital expenditure to date, and is equal to 10·47 per cent. on the total turnover for the year, which amounted to £292,238 9s. 9d. In comparison with the figures for last year there has been an increase of 1·36 per cent in the profit earned, and 2·55 per cent. computed on the turnover.

Reviewing the financial results for the year it will be noted that the Point Elizabeth Colliery has made a profit of £14,663 7s. 6d., as against £23,572 0s. 3d. for last year, a decrease of £8,908 12s. 9d., due largely to the decreased output consequent upon the gradual exhaustion of the mine.

The Liverpool Colliery shows a net profit of £20,140 0s. 7d., as against £4,825 10s. 9d. for the previous year, an increase of £15,314 9s. 10d. on the year's working; but in this connection it must not be overlooked that in the accounts of this colliery for the year ended 31st March, 1918, £7,064 was written off as representing the book value of the bins and screening plant destroyed by a landslip in January of that year. It will thus be seen that the relative increase in the net earnings for the year under review would have amounted to £8,250 9s. 10d. when the £7,064 written off, as already mentioned, is taken into consideration.

As full information relative to the production and prospects of the State mines is set out in detail in the report of the Manager of the State Collieries it is sufficient for me to confine my remarks to the financial result obtained.

With regard to the depots, it will be seen that the operations for the year have resulted in an aggregate loss of £6,451 1s. 1d. In my two previous annual reports I directed special attention to this phase, and recommended that in view of increased shipping freights, general working-expenses, salaries, &c., the retail price of household coal should be increased in order to enable the depots to show a reasonable margin of profit over working-expenses, but so far nothing has been done in this connection, as it was considered inadvisable to increase the price of coal to householders during the period of the war.

In the case of the collieries, however, the increased cost of production and other increases have been met by a revision of the selling-prices f.o.b. Greymouth, so that they have been enabled to continue to show a reasonable return on the capital invested, while on the other hand the retail portion of the business has during the past three years been bearing large increases in transport, operating and overhead expenses, without passing any proportion of same on to household deliveries. It will be seen, therefore, that if the depots are to be worked at a profit the retail price of coal for domestic use must be substantially increased, and in this connection it may be mentioned that the retail prices of similar coal range from 15s. to 18s. per ton in excess of State coal prices

The decreased output of the Point Elizabeth Colliery has resulted in reducing the allocation to the depots from 47,000 tons in 1917–18 to 27,000 tons for the past year, which illustrates the difficulties which have been experienced in endeavouring to cope with the increased demand occasioned largely by the low price of State coal in comparison with competing coals of the same class.

It will thus be seen that the retail portion of the State Coal Department has been bearing an undue proportion of the increased c.i.f. price charged by the collieries, and owing to no corresponding increase having been made in the retail selling-price through the depots, as recommended by me in the reports for the two previous years, it has not been possible to avoid showing increased losses in the working of the depots, which, moreover, will continue until steps are taken in the direction already indicated.

Owing to decreased and irregular supplies frequent stoppages have taken place in the taking of orders at the depots, as the demand for coal has always largely exceeded available supplies.

OUTPUT.

The gross output of the mines for the year was 214,919 tons, as compared with 246,273 tons for last year, a decrease of 31,354 tons. A comparative statement for the two years is shown below :—

Mine.	Output in Tons, 1918–19.		Output in Tons, 1917–18.	
	Gross.	Net.	Gross.	Net.
Point Elizabeth ..	86,535	82,052	118,077	111,552
Liverpool	128,384	125,229	128,196	124,782
Totals ..	214,919	207,281	246,273	236,334

NOTE.—The difference between the gross and net output is the allowance made for mine consumption and waste.

Point Elizabeth Colliery produced 82,052 tons of marketable coal, a decrease of 29,500 tons on the production of last year. After allowing for stocks on hand and afloat at the beginning and end of the year the disposal was as under :—

Supplied to	Screened.	Unscreened.	Steam.	Small.	Totals.
	Tons.	Tons.	Tons.	Tons.	Tons.
Depots	906	24,563	...	1,559	27,028
Railways	13,691	2,009	...	...	15,700
Other Government Departments ...	115	619	...	...	734
Other consumers	6,319	5,094	...	1,805	13,218
Shipping companies	56	16,798	...	6,752	23,606
Totals	21,087	49,083	...	10,116	80,286

Liverpool Colliery produced 125,229 tons of marketable coal, an increase of 447 tons on the previous year's production. The disposal, allowing for stock in hand at beginning of year, was as follows :—

Supplied to	Screened.	Unscreened.	Small.	Totals.
	Tons.	Tons.	Tons.	Tons.
Depots	572	17,756	192	18,520
Railways	1,458	6,478	...	7,936
Other Government Departments	136	425	...	561
Shipping companies	...	19,359	452	19,811
Gas companies	...	63,928	1,200	65,128
Other consumers	...	10,513	...	10,513
Totals	2,166	118,459	1,844	122,469

The total sales for the year amounted to 202,755 tons, value £256,226, as compared with 239,840 tons, value £267,927, for last year, a decrease in quantity of 37,085 tons, and in value of £11,701.

For the purpose of easy comparison the figures are restated below in tabulated form :

Comparative Statement of Sales.

Mine.	Total Sales 1918–19.		Total Sales 1917–18.	
	Quantity.	Value.	Quantity.	Value.
	Tons cwt. qr.	£ s. d.	Tons cwt. qr.	£ s. d.
Point Elizabeth ..	80,286 1 1	88,493 9 2	113,205 6 2	123,815 5 11
Liverpool	122,469 9 2	167,732 11 10	126,635 4 0	144,111 15 3
Totals ..	202,755 10 3	256,226 1 0	239,840 10 2	267,927 1 2

The average price per ton realized on the total sales for the year was £1 5s. 3·29d., an increase of 2s. 11·19d. on last year's average.

The sales of coal through the medium of the depots totalled 46,721 tons, value £85,200, as against 74,380 tons, value £118,554, for last year.

It will be noticed that there has been an increase of approximately 12,000 tons in the quantity of Liverpool coal supplied direct by the mines to the various gasworks throughout the Dominion, but notwithstanding the increased tonnage supplied the greatest difficulty has been experienced in securing sufficient coal to fulfil all orders placed, but the best possible has been done with the limited supplies available.

In connection with the transport of coal the arrangements made by our contractors for shipping were generally satisfactory, having regard to the exceptional conditions prevailing. A considerable amount of time, however, has been lost at the mines owing to bad weather and other stoppages, which are set out in detail in the report of the Manager of the collieries.

I would like to take this opportunity of pointing out that since the early part of 1918, under arrangements approved by the Hon. the Minister of Mines, my services have been practically solely placed at the disposal of the Hon. Minister in Charge of Coal-distribution, and since the termination of the Munitions and Supplies Department I have been entirely occupied as Officer in Charge of the Coal Control Department, which has consequently left me no time to devote to matters of detail arising out of my position as Sales Manager.

The following items taken from the balance-sheet will prove of interest as indicating the more important items of expenditure, and for reference in respect to the position of Capital Account, reserve funds, and other accounts shown therein :—

	£
The total amount paid as war bonus was	16,292
The amount written off for depreciation for the year was	11,468
The payments for interest totalled	8,739
The payments for sea carriage of coal amounted to	73,079
The cost of railway haulage amounted to	23,786
The total wages paid for coal-winning was	80,738
The amount paid for management and office salaries (Head Office and mines) totalled	3,149
The gross capital expenditure on the whole undertaking to 31st March last was	374,775
The total depreciation written off to date (equal to 58·66 per cent. on the gross capital expenditure) amounts to	219,868
The debenture and loan capital stands at	227,601
The sinking fund is in credit	13,200
The reserve fund stands at	5,884
The amount at credit of Profit and Loss is (last year £8,043)	38,650
The cash in hand and in the Public Account at 31st March last was (last year £102,823)	119,843
The present net book value of permanent or fixed assets is	148,718

In conclusion I have to acknowledge the services of the Acting Sales Manager, Accountant, Depot Managers, and staff for services rendered under difficult and trying conditions in connection with the conduct of the business.

I have, &c.,

The Under-Secretary, Mines Department, Wellington. F. J. Gunn, Sales Manager.

Balance-sheet of the New Zealand State Coal-mines.

Statement of Liabilities and Assets at 31st March, 1919.

Liabilities.	£ s. d.	£ s. d.
Debenture loan	175,000 0 0	
Loan under Appropriation Act, 1912	50,000 0 0	
Inscribed stock	2,601 0 7	
		227,601 0 7
Debenture sinking fund	13,200 0 0	
Reserve fund	5,884 11 2	
		19,084 11 2
Bad-debts reserve		250 0 0
Accrued interest	4,382 4 8	
Sundry creditors	16,131 16 7	
		20,514 1 3
Contract Deposit Account		10 0 0
General Profit and Loss Account—		
Balance, 31st March, 1918	8,042 10 7	
Net profit for year	30,607 1 4	
		38,649 11 11

Assets.	£ s. d.	£ s. d.	£ s. d.
Point Elizabeth Colliery and Development Property Account—			
Expended during year	430 17 7		
Depreciation	430 17 7		
		..	
Machinery, plant, ropes, and rolling-stock—			
Cost at 31st March, 1918		1,386 18 6	
Stores (stock on hand)	10,344 10 4		
Coal (stock on hand at mine and wharf)	690 6 0		
Coal (stock on hand, afloat)	224 11 11		
		11,259 8 3	
Development property, Eight-mile		1,082 10 4	
			13,728 17 1
Point Elizabeth (Liverpool) Colliery and Development Property Account—			
Cost at 31st March, 1918	87,247 14 3		
Additions during the year	2,876 10 1		
	90,124 4 4		
Depreciation	5,910 8 9		
		84,213 15 7	
Machinery, plant, ropes, and rolling-stock—			
Cost at 31st March, 1918	39,024 0 3		
Additions during the year	7,655 11 11		
	46,679 12 2		
Depreciation	3,463 15 5		
		43,215 16 9	
Buildings at mine—			
Cost at 31st March, 1918	4,214 16 6		
Additions during the year	144 5 5		
	4,359 1 11		
Depreciation	341 6 6		
		4,017 15 5	
Cottages at mine	4,178 19 4		
Additions	307 5 8		
	4,486 5 0		
Depreciation	332 6 6		
		4,153 18 6	
Coal (stock on hand at mine and wharf)	1,075 5 6		
Coal (stock on hand, afloat)	1,651 10 4		
		2,726 15 10	
			138,328 2 1
Prospecting Waikokowai—			
Expended during the year		..	2,145 1 2
Hulk Property Account—			
Cost at 31st March, 1918	358 8 9		
Depreciation	59 11 9		
		298 17 0	
Less sale of hulk		298 17 0	
			..

Balance-sheet of the New Zealand State Coal-mines—*continued.*

Statement of Liabilities and Assets at 31st March, 1919—continued

Liabilities—continued	£ s. d.
	£306,109 4 11

Assets—continued.	£ s. d.	£ s. d.	£ s. d.
Wellington Depot Property Account—			
Cost at 31st March, 1918 ..	2,678 6 4		
Additions during the year ..	192 7 6		
	2,870 13 10		
Depreciation ..	303 12 4		
		2,567 1 6	
Stocks on hand ..	..	709 10 0	
			3,276 11 6
Christchurch Depot Property Account—			
Cost at 31st March, 1918 ..	3,942 0 10		
Additions during the year ..	159 14 11		
	4,101 15 9		
Depreciation ..	390 14 9		
		3,711 1 0	
Stocks on hand ..	..	516 16 3	
			4,227 17 3
Wanganui Depot Property Account—			
Cost at 31st March, 1918 ..	1,865 13 0		
Additions during the year ..	35 0 6		
	1,900 13 6		
Depreciation ..	149 3 7		
		1,751 9 11	
Stocks on hand ..	..	572 2 8	
			2,323 12 7
Dunedin Depot Property Account—			
Cost at 31st March, 1918 ..	543 0 0		
Additions during year ..	15 6 0		
		558 6 0	
Depreciation ..	..	86 3 10	
			472 2 2
Sundry debtors ..	..	21,616 1 3	
Suspense Account ..	..	147 14 4	
			21,763 15 7
Cash in hand and in Public Account on 31st March, 1919 ..	..	120,355 15 11	
Less vouchers outstanding ..	..	512 10 5	
			119,843 5 6
			£306,109 4 11

State Coal-mines Office, Wellington, 24th June, 1919.
Louis H. Eilers, F.R.A.,N.Z., Accountant.

W. D. S. MacDonald,
Minister of Mines.

Examined and found correct.—Robert J. Collins, Controller and Auditor-General.

Statement of General Profit and Loss Account for the Year ended 31st March, 1919.

Dr.	£ s. d.	£ s. d.	*Cr.*	£ s. d.	£ s. d.
To Point Elizabeth Colliery Trade Expenses Account ..	39,801 4 2		By Point Elizabeth Colliery Working Account—Gross profit ..	54,202 5 8	
Liverpool Colliery " " ..	93,230 13 7		Liverpool Colliery " " ..	112,826 1 5	
Wellington Depot " " ..	13,298 9 2		Wellington Depot Trading Account—Gross profit ..	8,928 18 10	
Christchurch Depot " " ..	7,429 9 5		Christchurch Depot " " ..	6,817 2 0	
Wanganui Depot " " ..	3,390 18 3		Wanganui Depot " " ..	2,528 0 10	
Dunedin Depot " " ..	659 17 11		Dunedin Depot " " ..	39 14 0	
		157,810 12 6	Dunedin Depot recovery	13 18 0	
					185,356 0 9
Briquette Account	4 5 0		Seddonville Colliery recovery	644 9 7	
Highway robbery (cash lost)	89 0 1		Point Elizabeth Colliery rents, &c.	262 6 0	
		93 5 1	Liverpool Colliery rents, &c.	544 12 9	
Balance: Profit for year	..	30,607 1 4	Charming Creek recovery	2 6 10	
			Hulk sale recovery	1,701 3 0	
					3,154 18 2
		£188,510 18 11			£188,510 18 11
			Balance at 31st March, 1918	8,042 10 7	
			Profit for year	30,607 1 4	
					38,649 11 11
					£38,649 11 11

Statement of Point Elizabeth Colliery Working Account for the Year ended 31st March, 1919.

Dr.	£ s. d.	£ s. d.	*Cr.*	£ s. d.	£ s. d.
To Stock of coal on hand at 31st March, 1918	..	36 0 0	By Sales of coal	88,493 9 2	
Coal-winning—			Sales of timber	162 9 4	
Wages	31,466 18 0		Sales of stores	4,267 9 9	
Materials used	2,643 18 7				92,923 8 3
Stores used	1,403 0 1		Stock of coal on hand at 31st March, 1919—		
		35,513 16 8	At mine and wharf	690 6 0	
Timber cut	121 3 6		Afloat	224 11 11	
Stores sold	3,202 17 4				914 17 11
		3,324 0 10			
Special rate	603 7 6				
Royalty	158 15 6				
		762 3 0			
Balance: Gross profit at mine	..	54,202 5 8			
		£93,838 6 2			£93,838 6 2

Statement of Point Elizabeth Colliery Profit and Loss Account for the Year ended 31st March, 1919.

Dr.	£ s. d.	£ s. d.	*Cr.*	£ s. d.	£ s. d.
To Management and office salaries	1,304 0 5		By Balance of Working Account—		
Interest and exchange	2,842 6 6		Gross profits at mine	54,202 5 8	
Travelling-expenses	77 1 3		Rents	262 6 0	
Printing and stationery	95 1 6				54,464 11 8
Repairs and maintenance	499 10 1				
Telegrams and postages	59 12 3				
Railway haulage	8,679 7 4				
Insurances	161 2 5				
Compensation for accidents and fund	1,978 6 6				
Compassionate allowance	490 0 0				
Cargo adjustments	3 7 9				
General expenses	63 14 11				
Marine freights	22,731 4 9				
Hulks Working Account (proportion)	211 0 9				
Terminal charges	157 6 2				
Audit fees	17 4 0				
Depreciation: Mine, buildings, plant, and machinery	430 17 7				
		39,801 4 2			
Balance: Profit		14,663 7 6			
		£54,464 11 8			£54,464 11 8

Statement of Point Elizabeth (Liverpool) Colliery Working Account for the Year ended 31st March, 1919.

Dr.	£ s. d.	£ s. d.	*Cr:*	£ s. d.	£ s. d.
To Stocks on hand at 31 March, 1918		610 8 9	By Sales of coal	167,732 11 10	
Coal-winning—			Sales of stores	80 6 9	
Wages	49,271 9 1				167,812 18 7
Materials used	3,513 10 5		Stock of coal on hand at 31st March, 1919—		
Stores used	2,935 12 3		At mine and wharf	1,075 5 6	
		55,720 11 9	Afloat	1,651 10 4	
Stores sold	80 6 9				2,726 15 10
Special rate	1,302 5 9				
		1,382 12 6			
Balance: Gross profit		112,826 1 5			
		£170,539 14 5			£170,539 14 5

Statement of Point Elizabeth (Liverpool) Colliery Profit and Loss Account for the Year ended 31st March, 1919.

Dr.	£ s. d.	£ s. d.	*Cr.*	£ s. d.	£ s. d.
To Management and office salaries	1,845 6 11		By Gross profits at mine	112,826 1 5	
Interest and exchange	5,360 19 7		Rents, &c.	544 12 9	
Travelling-expenses	117 0 1				113,370 14 2
Printing and stationery	185 14 3				
Repairs and maintenance	2,302 9 1				
Telegrams and postages	86 8 10				
Railway haulage	15,106 9 4				
Insurances	290 13 9				
Compensation for accidents and fund	875 6 0				
Compassionate allowance	490 0 0				
Cargo adjustments	8 10 5				
General expenses	110 13 3				
Marine freights	50,348 12 2				
Hulks Working Account (proportion)	248 6 8				
Terminal charges	5,281 10 1				
Audit fees	24 16 0				
Loan-flotation charges	500 0 0				
Depreciation: Mine, buildings, plant, and machinery	10,047 17 2				
		93,230 13 7			
Balance: Net profit		20,140 0 7			
		£113,370 14 2			£113,370 14 2

Wellington Depot Trading Account for the Year ended 31st March 1919.

Dr.	£ s. d.	£ s. d.	*Cr.*	£ s. d.	£ s. d.
To Stocks on hand at 31st March, 1918		440 16 11	By Sales of coal	44,387 17 7	
Purchases of coal	34,628 19 8		Sales of firewood, coke, &c.	2,665 2 0	
Purchases of firewood, coke, &c.	1,977 11 0				47,052 19 7
		36,606 10 8	Stocks on hand at 31st March 1919—		
Cartage to depot	974 5 0		Coal	206 10 11	
Wharfage	811 18 2		Firewood, &c.	502 19 1	
		1,786 3 2			709 10 0
Balance: Gross profit		8,928 18 10			
		£47,762 9 7			£47,762 9 7

Wellington Depot Profit and Loss Account for the Year ended 31st March, 1919.

Dr.	£ s. d.	£ s. d.	*Cr.*	£ s. d.
To Wages	4,002 18 4		By Balance of Trading Account	8,928 18 10
Salaries	1,015 17 8		Balance: Loss	4,369 10 4
Rents	700 0 0			
Rates	150 17 2			
Interest	166 2 0			
Travelling expenses and allowances	18 7 9			
Repairs and maintenance	499 19 0			
Telegrams and postages	28 0 0			
Printing and stationery	182 0 7			
Insurances	15 11 0			
Cartage	5,043 18 7			
Sacks	816 3 8			
Freights, &c.	104 19 10			
General expenses	89 14 7			
Alterations	110 0 0			
Audit fees	50 6 8			
Depreciation	303 12 4			
		13,298 9 2		
		£13,298 9 2		£13,298 9 2

Christchurch Depot Trading Account for the Year ended 31st March, 1919.

Dr.	£ s. d.	£ s. d.	*Cr.*	£ s. d.	£ s. d.
To Stocks on hand at 31st March, 1918		664 4 2	By Sales of coal	28,544 7 10	
Purchases of coal	19,754 11 10		Sales of firewood, coke, &c.	2,304 10 8	
Purchases of firewood, coke, &c.	1,312 15 4				30,848 18 6
		21,067 7 2	Stocks on hand at 31st March, 1919—		
Haulage to depot		2,817 1 5	Firewood, coke, &c.		516 16 3
Gross profit		6,817 2 0			
		£31,365 14 9			£31,365 14 9

Christchurch Depot Profit and Loss Account for the Year ended 31st March, 1919.

Dr.	£ s. d.	£ s. d.	*Cr.*	£ s. d.
To Wages	2,502 9 8		By Balance of Trading Account	6,817 2 0
Salaries	953 18 3		Balance: Loss	612 7 5
Rents	96 10 6			
Interest and exchange	220 15 11			
Repairs and maintenance	142 3 9			
Telegrams and postages	15 0 0			
Printing and stationery	79 12 8			
Insurances	16 6 6			
Travelling-expenses	126 12 5			
Cartage	2,493 6 11			
Sacks	187 13 2			
Freights	127 7 11			
General expenses	50 3 8			
Audit fees	26 13 4			
Depreciation	390 14 9			
		7,429 9 5		
		£7,429 9 5		£7,429 9 5

Wanganui Depot Trading Account for the Year ended 31st March, 1919.

Dr.	£ s. d.	£ s. d.	*Cr.*	£ s. d.	£ s. d.
To Stocks on hand at 31st March, 1918		325 12 8	By Sales of coal	12,196 18 9	
Purchases of coal	9,356 1 5		Sales of firewood, coke, &c.	1,111 17 5	
Purchases of firewood, coke, &c.	1,162 12 3				13,308 16 2
		10,518 13 8	Stocks on hand at 31st March, 1919—		
Haulage to depot		508 11 8	Firewood, coke, &c.		572 2 8
Gross profit		2,528 0 10			
		£13,880 18 10			£13,880 18 10

Wanganui Depot Profit and Loss Account for the Year ended 31st March, 1919.

Dr.	£ s. d.	£ s. d.	*Cr.*	£ s. d.
To Wages	625 2 10		By Balance of Trading Account	2,528 0 10
Salaries	593 17 9		Balance: Loss	862 17 5
Rents	189 0 0			
Interest and exchange	84 8 2			
Repairs and maintenance	74 7 10			
Telegrams and postages	8 5 7			
Printing and stationery	24 4 2			
Travelling-expenses	69 9 8			
Insurance	6 10 8			
Cartage	1,234 1 7			
Sacks	19 10 1			
Freights, &c.	72 4 1			
General expenses	21 12 3			
Audit fees	19 0 0			
Compensation	200 0 0			
Depreciation	149 3 7			
		3,390 18 3		
		£3,390 18 3		£3,390 18 3

Dunedin Depot Trading Account for the Year ended 31st March, 1919.

Dr.	£ s. d.	£ s. d.	*Cr.*	£ s. d.	£ s. d.
To Stocks on hand at 31st March, 1918		15 6 10	By Sales of coal	70 18 3	
Purchases of coal		55 4 11	Sales of firewood, coke, &c.	47 6 3	
Wharfages, &c.	5 16 9				118 4 6
Cartage to depot	2 2 0				
		7 18 9			
Balance: Gross profit		39 14 0			
		£118 4 6			£118 4 6

Dunedin Depot Profit and Loss Account for the Year ended 31st March, 1919.

Dr.	£ s. d.	£ s. d.	*Cr.*	£ s. d.
To Wages	244 17 0		By Balance of Trading Account	39 14 0
Salaries	66 15 2		Recovery	13 18 0
Rents	147 18 8		Balance: Loss	606 5 11
Rates	31 12 3			
Interest	53 4 9			
Printing and stationery	1 17 6			
Insurances	2 6 10			
Travelling-expenses	1 17 1			
Cartage	10 0 0			
Freights, &c.	4 3 10			
General expenses	3 7 8			
Audit fees	5 13 4			
Depreciation	86 3 10			
		659 17 11		
		£659 17 11		£659 17 11

Statement of the Receipts and Expenditure of the New Zealand State Coal-mines for the Year ended 31st March, 1919.

Receipts.

	£ s. d.	£ s. d.
To Cash in hand and in Public Account at 31st March, 1918		102,823 5 3
Proceeds of sale of coal	275,836 19 9	
Recoveries	10,131 1 6	
Refunds, &c.	187 12 5	
		286,155 13 8
		£388,978 18 11

Expenditure.

	£ s. d.	£ s. d.
By Point Elizabeth Colliery—		
Property and development	1,373 15 3	
Stores and materials	15,336 6 5	
Wages	31,065 9 1	
Timber	224 16 7	
Special rate	401 11 6	
Royalty	646 11 3	
		49,048 10 1
Liverpool Colliery—		
Property and development	1,977 9 6	
Machinery, plant, and rolling-stock	6,869 10 7	
Buildings	109 13 7	
Cottages	267 17 3	
Stores and materials	3,911 9 1	
Wages	48,265 15 4	
Timber	8 3 9	
Special rate	486 2 0	
		61,896 1 1
Seddonville	18 12 2	
Waikokowai	2,045 8 8	
Briquette	4 5 0	
		2,068 5 10
Hulks, working	383 5 8	
Wellington Depot, working	17,155 8	
Christchurch Depot, working	13,557 13 0	
Wanganui Depot, working	5,823 19 3	
Dunedin Depot, working	617 3 8	
		37,537 9 7
Management and office salaries	3,204 15 1	
Rents	143 0 0	
Interest and exchange	8,739 9 2	
Marine freights	70,767 15 1	
Travelling-expenses	198 4 4	
Printing and stationery	228 11 2	
Telegrams and postages	161 6 1	
Repairs and maintenance	2,495 18 5	
Railway haulage	22,741 17 2	
Insurances	438 8 0	
Compensation for accidents and fund	3,831 5 5	
General expenses	187 19 9	
Terminal charges	5,174 19 3	
Refunds	129 17 10	
Audit fees	28 0 0	
Highway robbery	89 0 1	
Deposit Contract Account	25 0 0	
		118,585 6 10
Cash in hand and in Public Account at 31st March, 1919	120,355 15 11	
Less vouchers passed	512 10 5	
		119,843 5 6
		£388,978 18 11

State Coal-mines Office, Wellington, 24th June, 1919.
LOUIS H. EILERS, F.R.A.,N.Z., Accountant.

W. D. S. MACDONALD, Minister of Mines.

TABLE SHOWING THE POSITION OF THE STATE COAL-MINES ACCOUNT FROM INCEPTION TO 31ST MARCH, 1919.

Name of Works.	Total Capital Expenditure.	Total Amount of Depreciation written off.	Assets: Net Capital as per Balance-sheet, 1919.	Net Profits.	Net Losses.	Liabilities as per Balance-sheet, 1919.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Point Elizabeth Colliery	98,210 9 0					
Less loss by fire and sales	904 8 5					
	97,306 0 7	95,919 2 1	1,386 18 6	131,223 18 5	..	..
Point Elizabeth (Liverpool Colliery)	189,936 0 1	54,334 13 10	135,601 6 3	507 14 11	..	..
Seddonville Colliery	38,187 6 8					
Less sales	548 17 0					
	37,638 9 8	37,638 9 8	..	..	38,736 8 0	..
Briquette-works property	16,135 2 6					
Less sales of plant	2,066 5 0					
	14,068 17 6	14,068 17 6	..	..	22,667 6 11	..
Charming Creek prospecting	5,956 18 6	5,956 18 6	..	..	5,954 11 8	..
Development property, Eight-mile	1,082 10 4	..	1,082 10 4	..	..	..
Prospecting, &c., Waikokowai	2,145 1 2	..	2,145 1 2	..	..	..
Wellington Depot property	6,076 7 9					
Less sales	323 5 6					
	5,753 2 3	3,186 0 9	2,567 1 6	..	5,581 3 3	
Christchurch Depot property	7,814 12 1					
Less loss on horses	40 0 0					
	7,774 12 1	4,063 11 1	3,711 1 0	2,458 19 6	..	
Wanganui Depot property	2,983 12 6					
Less loss on horses	40 0 0					
	2,943 12 6	1,192 2 7	1,751 9 11	..	953 3 8	

TABLE SHOWING THE POSITION OF THE STATE COAL-MINES ACCOUNT FROM INCEPTION TO 31ST MARCH, 1919—*continued.*

Name of Works.	Total Capital Expenditure.	Total Amount of Depreciation written off.	Assets: Net Capital as per Balance-sheet, 1919.	Net Profits.	Net Losses.	Liabilities as per Balance-sheet, 1919.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Dunedin Depot property	2,023 3 7					
Less sale of plant	300 0 0					
	1,723 3 7	1,251 1 5	472 2 2	..	3,766 13 2	..
Hulks property	4,033 15 5					
Less sales	1,948 17 0					
	2,084 18 5	2,084 18 5	..	1,701 3 0	..	..
Office furniture	189 13 9					
Less sales	17 5 0					
	172 8 9	172 8 9	..	..	172 8 9	..
Grand total	374,774 13 4					
Less losses and sales	6,188 17 11					
	368,585 15 5	219,868 4 7	148,717 10 10	..	..	..
Discounts	..	..	..	13 2 9	..	..
Cash lost (highway robbery)	..	..	..	..	89 0 1	..
Totals, profits and losses	..	..	..	135,904 18 7	77,920 15 6	..
Balance, profits over losses	..	..	..	..	57,984 3 1	..
Stocks on hand	..	..	15,784 13 0	..	..	..
Deposit Account	..	..	..	..	..	10 0 0
Suspense and Deposits Accounts	..	..	147 14 4	..	..	..
Sundry debtors	..	..	21,616 1 3	..	..	..
Cash on hand	..	..	119,843 5 6	..	..	..
Debentures and Loan Account	..	..	..	..	..	227,601 0 7
Sundry creditors	..	..	..	..	..	16,131 16 7
Accrued interest	..	..	..	..	..	4,382 4 8
Sinking Fund Account	..	..	..	..	..	13,200 0 0
Reserve Fund Account	..	..	..	..	..	5,884 11 2
Bad-debts reserve	..	..	..	..	..	250 0 0
General Profit and Loss Account	..	..	..	..	..	38,649 11 11
			306,109 4 11	135,904 18 7	135,904 18 7	306,109 4 11

LOUIS H. EILERS, F.R.A.,N.Z., Accountant.

Approximate Cost of Paper.—Preparation, not given; printing (1,200 copies, including maps), £50.

By Authority: MARCUS F. MARKS, Government Printer, Wellington.—1919.

Price 1s.]

PLAN OF
POINT ELIZABETH EXTENDED AREA.

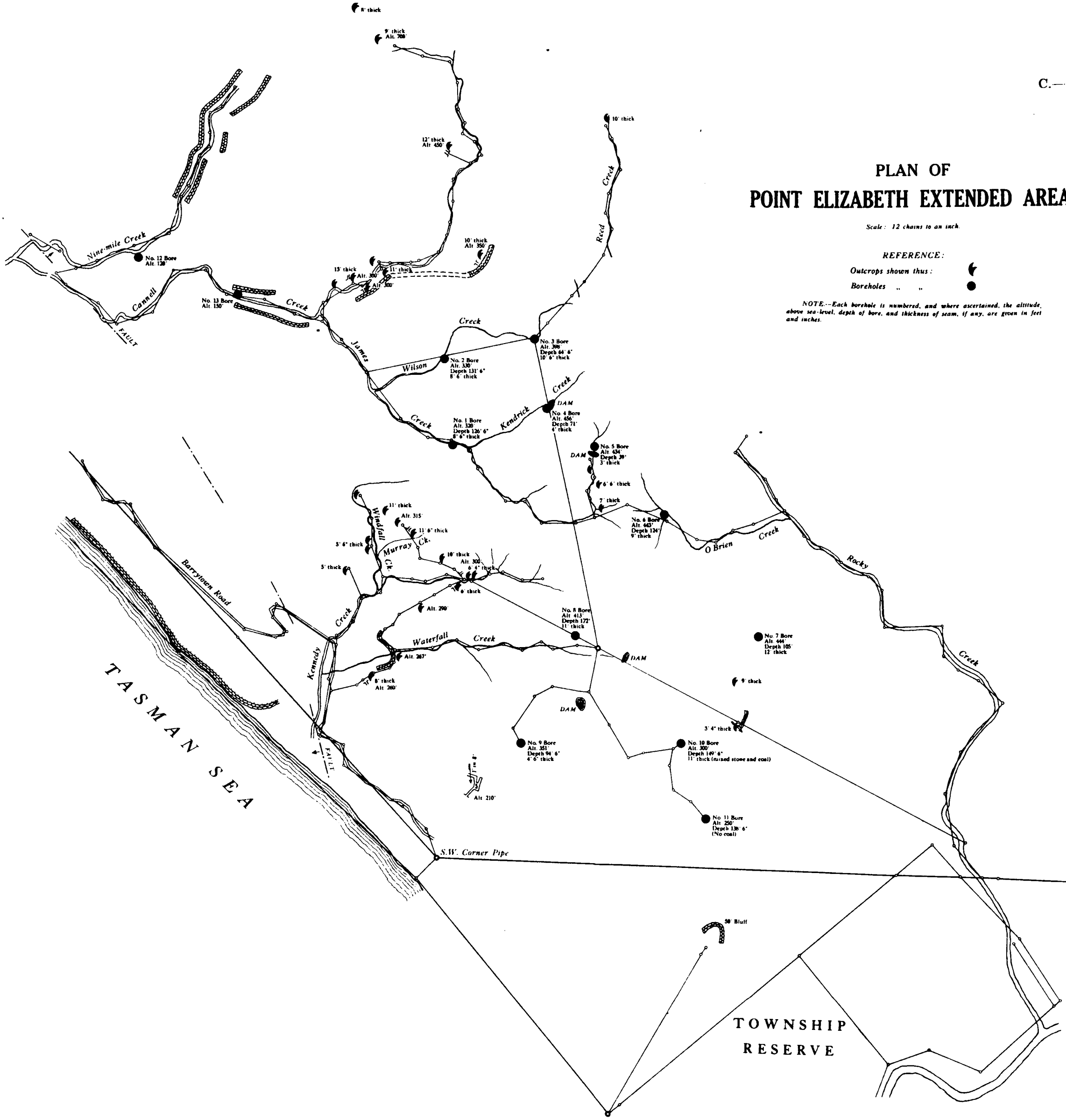
Scale: 12 chains to an inch.

REFERENCE:

Outcrops shown thus:

Boreholes „ „

NOTE.—Each borehole is numbered, and where ascertained, the altitude, above sea-level, depth of bore, and thickness of seam, if any, are given in feet and inches.



Plan of the

POINT ELIZABETH No 1 COLLIERY

at 31st March 1919.

I.A. James MAUGHAN, Manager

Scale of Chains

REFERENCE

Incline and Bord :- Top seam / Bottom seam
Longwall and Pillar:- Top seam / Bottom seam
Fault Lines:-

Jno. Beaumont
Licensed Surveyor 31/3/19

Prospecting Drive

Seven Mile Creek

No 4 Tunnel

No 2 SECTION

No 1 SECTION

FLOODED AREA

No 3 Tunnel

No 2 Tunnel

Blacksmiths

Power House

Tramway

Binns

Coal Creek Falls

Coal Creek

Soft and Hard Coal

No 3 Section.

No 3A Section

Building Sites Group 2

Service Tramway from Dunollie

CAVE

Binns

Railway Station

Tiapu (Dewey) Creek

Seven Mile Creek

New Haulage Road to Morgan Seam (Under Construction)

No 2 Section (Steeped.)

Building Sites Group 3

No 9 Borehole Thin Seams of Coal

Paraiwai Creek

MORGAN SEAM

No 8 Borehole. 25 Ft Coal

No 4 Borehole. On Fault.

No 5 Borehole 20 Ft. Coal

No 6 Borehole. 13 Ft Coal

No 1 Section

No 2 Borehole. 10 Ft Coal

No 3 Borehole 23 Ft Coal

Morgan Seam, shewn thus

No 7 Borehole. 11 Ft Coal

PLAN OF THE

LIVERPOOL STATE COLLIERY

I.A. James - Manager

Scale of Chains

Jno. Beaumont
Licensed Surveyor 31/3/19

TOPOGRAPHICAL AND GEOLOGICAL MAP OF BRUNNER, DOBSON AND SURROUNDING DISTRICT.

Scale

CHAINS 10 5 0 40 80 1 MILE 160 CHAINS (2 MILES)

KILOMETRE 1 0 1 2 KILOMETRES

1 31680

Compiled from data obtained from the Aerial Survey [illegible] and from additional surveys by P. G. Morgan and A. Burrman of the Geological Survey Branch and the Mines Dept. Surveyed by P. G. Morgan and A. Burrman

Compiled and drawn by G. E. Harris 1959

P G MORGAN
DIRECTOR

Reference

- Roads ..... shown thus
- Tracks ..... " " "
- Trigonometrical Stations ..... " " " C ◎ 1841
- Swamp ..... " " "
- Water Races ..... " " "
- Railways ..... " " "
- Tram Lines ..... " " "
- Waterfalls and Dams " " "
- Shafts and Drives " "
- Boreholes " "
- State Coal Mine Reserve " " "

Reference to Geological Colours and Signs

RECENT AND PLEISTOCENE	Gravels &c	
	Greymouth Series	
MIOCENE	Blue Bottom Formation	BB
	Cobden Limestone	C
	Port Elizabeth Beds	E
	Omotumotu Beds	O
	Coal Measures	
EOCENE	Kaiata Beds	K
	Island Sandstone	I
	Brunner Beds	B
	Paparoa Beds	P
PALAEOZOIC	*Greenland Series*	
	Greywackes and Argillites	G

Outcrops with observed strike and dip ... Coal outcrops ... Faults ...

400 9/19-426