

1946
NEW ZEALAND

DEPARTMENT OF LANDS AND SURVEY
RANGITAIKI LAND DRAINAGE

REPORT FOR THE YEAR ENDED 31st MARCH, 1946

Presented to both Houses of the General Assembly in pursuance of Section 10 of the Rangitaiki Land Drainage Act, 1910

Department of Lands and Survey, Wellington, 28th June, 1946.

SIR,—

I have the honour to submit herewith the report of the Chief Drainage Engineer on drainage operations on the Rangitaiki Plains for the year ended 31st March, 1946, pursuant to the provisions of the Rangitaiki Land Drainage Act, 1910.

I have, &c.,

R. G. MACMORRAN,

Under-Secretary for Lands.

The Hon. the Minister of Lands.

REPORT OF THE CHIEF DRAINAGE ENGINEER

SIR,—

In accordance with the provisions of the Rangitaiki Land Drainage Act, 1910, I have the honour to submit a report on the work carried out during the year ended 31st March, 1946.

The rainfall recorded at Thornton, for the twelve months ended 31st March, 1946, was 30.36 in., rain falling on seventy-seven days. This is an exceptionally low annual rainfall, the average over the last twenty-eight years being 49.58 in. The wettest month was May, 1945, with 7.52 in., and the driest February, with 0.23 in. The heaviest fall occurred on the 18th May, when 4.20 in. was recorded. During the summer exceptional drought conditions were experienced, and for the four months November, December, January, and February the total rainfall was only 1.94 in. At the end of this period many drains in the district were dry, and record low levels were recorded in the rivers and canals. This caused excessive growth of weeds in the drains and will greatly increase the cost of the annual drain-cleaning this autumn.

Considering the conditions mentioned above, it is not surprising that the output of dairy-produce from the district is less than last year. The dairy factory at Edgecumbe, which is supplied by the farms of the district, manufactured 4,365 tons of butter for the year ended 31st March, 1946, compared with the previous year's figures of 4,711 tons. The peak year was 1941, when the output was over 5,000 tons. The small drop of $7\frac{1}{2}$ per cent. on last year's figures indicates what commendable efforts the settlers have made to maintain production, and also shows the great value of low-lying land in times of low rainfall.

The topographical and soil survey is still being carried forward, and some 49.7 square miles of country have now been covered with a preliminary network of levels and bore holes. This comprised the taking of 107 miles 17 chains of levels and the sinking of 277 boreholes to a depth of from 10 ft. to 30 ft. during the year. Automatic river-stage

recorders have now been established at the mouth of each of the three rivers, and another is projected on the Rangitaiki at Te Teko. When the survey is complete an accurate picture will be obtained of the present contours of the area and also of the future contours after subsidence of the overlying peat has taken place.

During the year, four drag-line excavators were employed in the Rangitaiki district and were engaged on maintenance of, and improvements to, main drains, canals, and rivers. These machines have now seen many years of service, and as difficulty is being experienced in keeping them in repair much time is lost in overhaul and replacement of worn parts. As soon as new plants become available at least two of these machines should be replaced with up-to-date equipment. The following are details of the work completed by each machine:—

No. 17 Monigan Drag-line Excavator.—This machine was previously employed on the Awaiti Canal, and travelled from there to the Rangitaiki River, where the plant was laid up for two months for urgent repairs. A start was then made with widening and battering back a bad convex bend on the left bank of the Rangitaiki River near Thornton. On completion of this work the plant was again laid up for three months while heavy machine parts were being made and installed to replace worn equipment. The excavator then travelled south and commenced work on the next convex bend shortly before the end of the year. When this work is completed at about the end of May, 1946, it will be necessary to move this machine to the other side of the river. This will be a costly undertaking, as it will involve complete dismantling, carting of the parts by truck, and the reassembling on the new site. Despite the delays occasioned by overhauls, this plant handled 26,980 cubic yards of spoil during the year.

No. 30 Bay City Excavator.—At the commencement and towards the close of the year this plant was engaged in cleaning, widening, and deepening the Tarawera Western drain and removing portion of old bank for a distance of 474 chains. The machine was also used on the urgent work of bank revetment and stop-bank improvements on the left bank of the Rangitaiki River south of Edgecumbe, where it placed 5,148 cubic yards of material on 24 chains of stop-bank and loaded 1,500 cubic yards of spoil on to trucks for the same purpose. It was then taken to the Awakaponga Quarry to load trucks with rock for the bank revetment work mentioned above. Other work done by the machine included the removal of 2,650 cubic yards of spoil in the cleaning of 48 chains of Central Drain and the preparation of site and the driving of piling for a new flood-gate in eastern drain. The output for the year totalled 26,953 cubic yards.

No. 32 Ruston Bucyrus Model 10.—The principal work carried out with the plant was the cleaning, widening, and deepening of the Western Drain for a distance of 132 chains, working northwards from the point 60 chains south of McLean's Road. On the right bank 14,880 cubic yards of spoil was excavated and placed in a medium level stop-bank. Other works carried out with this machine included improvements to 59 chains of the Kopeopeo West Canal and right-bank stop-bank working up stream from the Thornton-Whakatane Main Road, repairs of flood damage on the White-pine Drain and on the Te Rahu Canal south of the railway, cleaning of 12 chains of the Eastern Drain in the same locality, assisting with the river-bank revetment work on the Rangitaiki River south of Edgecumbe, the cutting-back of two convex bends on the right bank of the river south of Edgecumbe, and the excavating of a spillway and placing of spoil over the new flood-gate at the north end of Eastern Drain. The total spoil handled by this machine for the year was 36,735 cubic yards.

No. 33 Ruston Bucyrus Model 17.—This machine has been working northwards in building a stop-bank on the left bank of the Te Rahu Canal from the Rotorua-Whakatane Main Highway, and by December had completed to the Whakatane River. This bank has been made very substantial, being about 10 ft. wide on top and 3 ft. above flood-level. Included in the work was the filling of a breach in the canal-bank caused by a previous flood, and this entailed the carting with trucks of 4,692 cubic yards of spoil. In January a start was made with improvements to the Whakatane River left stop-bank, working down-stream from the Te Rahu Canal, but shortly after commencement a complete breakdown of the plant occurred and necessitated a complete overhaul

of the engine in the Public Works Department workshops at Whakatane. During the year this machine excavated 50,202 cubic yards of spoil in completing 111½ chains of bank.

The total output for the four excavators for the year was 140,870 cubic yards.

On the left bank of the Rangitaiki River south of Edgecumbe serious erosion has occurred on 14 chains of bank near Factory Road. At this point, and also at other places in this locality, improvements to the stop-bank and to the river-bank to prevent erosion are badly handicapped by the close proximity of the road and the Matahina Tramway Co.'s line. Until the road and tram-line are removed from the edge of the river, any work done here must be regarded as only of a temporary nature. On this occasion the road and tram-line were moved back a small distance, the stop-bank rebuilt and 3,108 cubic yards of rock carted from the quarry at Awakaponga was used to form a stone breastwork, in an attempt to arrest the erosion. As a further safeguard, the convex bends on the opposite side of the river were cut back with a drag-line excavator.

During the year frequent attention was paid to the west bank of the Tarawera River, where there has always been general overflow along several miles of the bank, and the river-level requires to be closely watched to prevent a large-scale break-through.

Other works carried out during the year included the cleaning of 116 miles 58 chains of drains by manual labour, 8 miles 75 chains by weed-cutting launch, and the widening and deepening of 5 miles 45 chains by hand labour, involving the removal of 3,692 cubic yards of spoil, cutting of willows and bank-protection work on the Rangitaiki River between Thornton and Edgecumbe, and the control of noxious weeds on river-bank and drain reserve. A new 5-ft.-diameter flood-gate was constructed in the north end of the Eastern Drain to prevent back-flow from the Orini Canal, and a spillway constructed around it, to take charge of excessive flood-water. A new bridge was constructed over the Awaitei Drain to give access to Johnston's Block, Otakiri. A new three-roomed cottage was erected at Thornton for the accommodation of a married workman, and two other cottages were extensively repaired and renovated.

The workshop at Thornton carried out all running repairs to the excavators, tractors, cars, trucks, launch, &c.

The accommodation problem at Thornton, as elsewhere, is acute, and this has greatly increased the difficulty of obtaining replacements of key workmen. As soon as building materials become available it will be necessary to consider the erection of further accommodation to attract good men to this type of work.

EXPENDITURE AND RATES

Expenditure on maintenance for the year amounted to £14,441.

Rates struck: Special, £10,578; general, £9,255.

Rates collected, including arrears: Special, £11,011; general, £9,161.

MAORI RATING

The total Maori rates paid, including arrears, during the year under review was £1,809. Maori rates levied for the year 1945-46 amounted to £2,123.

The amount shown as expenditure on maintenance may be subject to slight variation on completion of accounts.

I have, &c.,

E. TAYLOR,

Chief Drainage Engineer.

The Under-Secretary for Lands, Wellington.

STATEMENT OF ACCOUNTS

A statement of accounts is published in parliamentary paper B.-1 [Pt. IV].

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