

Last year reference was made to the seriousness of the position in respect to the amount of outstanding water rates and the necessity for some immediate action on the part of the Government. The Otago Land Board was requested to investigate the affairs of those irrigators who were in arrears, and report to the Public Works Department on their ability to pay. As a result of the report from the Land Board, a total reduction of 32 per cent. was made upon the amount of rates outstanding. Although the irrigators who were in arrears with their payments were relieved to this extent, this concession has not had the effect of inducing them to pay the balance of the overdue rates, nor to pay the current season's rates, and it is therefore proposed to withhold the supply of water this season to those in arrears until they have paid off a portion of the arrears equivalent to the coming season's water rates.

So far only 30 per cent. of the past season's water rates have been paid.

In connection with the supply of irrigation water, the percentage of each month's supply to the total supplied for the season has been almost the same during the past season as the average over the last three seasons, and is as follows: September, 1 per cent.; October, 9 per cent.; November, 16 per cent.; December, 14 per cent.; January, 18 per cent.; February, 15 per cent.; March, 20 per cent.; April, 7 per cent. This shows that the demand is greatest in the month of March just when the yield from the rivers is generally at its lowest, and indicates why it is necessary to resort to storage under some of the schemes.

NEW SCHEMES.

Idaburn Scheme.—This is a small scheme to supply water to eight settlers, and work was commenced on it in June, 1931. A concrete arch dam 35 ft. high was built across the Idaburn near Oturehua Railway-station. From this dam $7\frac{3}{4}$ miles of races have been constructed, including 35 chains of pipe siphons and flumes. The whole scheme was completed during December of last year, and water was supplied during the past season to an area of 280 acres.

Omakau Scheme.—Work on this scheme, which is to supply irrigation water to an area of 14,000 acres in the Manuherikia Valley in the vicinity of Lauder and Omakau, was commenced in November last. As nearly the whole of the yield of the Manuherikia River during periods of lowest flow is required for the present Manuherikia irrigation scheme, it was necessary to have a storage reservoir. A site just above the falls in the Manuherikia River near St. Bathans was chosen, and it was decided to construct here a dam of the rock-fill type with a reinforced concrete impervious facing on the upstream slope. It is necessary to divert the river during the construction of the dam, and a diversion tunnel of 17 ft. diameter and 600 ft. in length is proposed.

Work on this tunnel has commenced at both ends, and to date 160 ft. has been completed.

Power for this work, as well as for quarrying stone and other work, is obtained from two Diesel-engine electric-generating sets transferred from the Poolburn Dam. All construction plant, partly from that source also and partly from other works, is now erected at the site and in operation.

Two quarries for rock for the dam have been opened up, one on each side of the river, and a start has been made to fill in the rock where the foundation of the dam is above flood-level.

The stripping of the foundation of the dam is finished. This work necessitated the removal of 23,000 yards of materials unsuitable for the rock filling.

An access road, 3 miles in length, has been formed and metalled to the dam from the main road. In addition to the power-house, two staff cottages, a works office, a cookhouse, and camps for the men have been erected. A foot suspension-bridge and a traffic bridge have been built across the river at the dam site to give access to the quarry on the right bank and to the works generally.

The main race, which lifts the water from the Manuherikia River, 11 miles below the dam, is approximately 30 miles in length, and the excavation of this race was commenced early in January. To date 3 miles have been completed, entailing the excavation of 36,000 yards of clay and rock.

Two permanent racemen's cottages, a works office and camps for 120 men have been erected near Lauder. At the present time there are 240 men on the Omakau irrigation scheme, 98 at the dam and 142 on race construction.

ADDITIONS TO SCHEMES IN OPERATION.

Hawkdun Scheme.—The strengthening of the Mines Department's old Eweburn dam with a backing of rock is now in progress on this scheme, and about 15 men have been employed thereon.

Ardgour Scheme.—Special work in addition to maintenance was carried out. This consisted of the dismantling of the main pipe-line, 1,650 ft. long, the recoating of the pipes both inside and out, and the reconstruction of the pipe-line.

SURVEYS AND INVESTIGATIONS.

Maniototo Scheme.—The survey party which commenced work on the investigation and survey of this scheme last year has now completed the survey work. A complete contour plan of the 100,000 acres of land under this scheme has been made. Investigations into and the general design of the scheme are now being carried out, and should be completed by the end of the year.

Storage Dams.—Surveys for storage dams in the Manorburn Stream near Galloway, on the Fraser River at Shepherds Flat and on Conroy's Creek, have been completed.

Automatic water-level recorders have been installed at Lake Wanaka, Lake Hawea, Poolburn Dam, and Teviot River.