

carryalls, and Athey wagons. It will take up to eighteen months of stripping before coal can be won from this area, but it is estimated that 527,000 tons of coal will eventually be obtained after 2,406,000 cubic yards of overburden have been removed.

A steady output from Kemp's Mine was maintained during the year, but the mine now approaches exhaustion, stripping operations having already been completed and only a few thousand tons of coal remaining to be extracted. As a replacement for Kemp's, work was commenced on Hillcrest Mine, in the vicinity of Wilton State Coal-mine, and an access road 85 chains long has been constructed and 15,000 tons of coal stripped ready for winning when Kemp's is finally exhausted.

At Rotowaro production from Alison's Pit ceased, but two new units, Thompson's and Barker's, have been opened up, the latter producing much needed coal over the Christmas holiday period. In addition, the Summit Mine, under private control, was opened up and produced coal during the latter part of the year.

*Taranaki.*—At Waitawhena operations were continued on the No. 2 area and for the first time it was found possible to advance stripping operations well ahead of coal-winning. Although no improvement in stripping conditions was experienced, a satisfactory output was maintained. Road access to No. 5 area was commenced from the No. 2 area towards the close of the year.

*Reefton.*—Opencast operations known as the South-east Opencast have recently been commenced on a portion of the vertical coal-seam at Garvey Creek estimated to contain 45,000 tons of coal requiring the stripping of 85,000 yards of overburden. Conditions are unusual for New Zealand, in that overburden has to be removed from both the floor and roof of the seam in a wedge-shaped excavation, the seam, which varies in width from 10 ft. to 40 ft., occupying the centre of the wedge.

*Wangaloa.*—Operations continued successfully during the year, but more difficult conditions must be faced in the future as the mining moves into the southern side of the excavation where overburden is thicker and the old workings of the Wangaloa Coal Co. are approached. By the acquisition of an adjoining area to the south, portion of which had already been worked by underground mining, the life of the mine has been considerably extended. While there is an appreciable tonnage of unworked coal available, it is hoped that a proportion of the coal abandoned in the underground workings may also be recovered.

*Ohai.*—The Black Diamond Mine was opened up further during the year, and while it was previously thought that stripping with tournapulls would have to be suspended during the winter months, in practice it was found possible to continue operations almost throughout the whole year.

A new opencast, McLean's Opencast, situated on the State Star Coal-mine area, was opened up in time to produce coal for the Christmas holiday period and has continued in successful operation. Further boring has been proceeding in areas adjacent to this mine.

*Restoration.*—The restoration of the surface of opencast mines on the completion of mining operations has continued to receive attention.

At Glen Afton the pines that were planted continue to grow well. At Kemp's, where more difficult conditions pertain owing to the high sulphur content of the spoil, the overburden has now stabilized and some trees have sprouted. At Thompson's the topsoil has been stockpiled and the area will eventually be restored to productivity while at McLean's topsoil has been treated in similar fashion.

In view of the considerable measure of success already met with in opencast mining, the effort is being made to expand production, and to this end considerable attention has been paid to the exploration of prospective opencast mines and close boring for the purpose has been carried out in the Huntly, Buller, and Ohai Coalfields.