

boring to exist through the fault. A return airway was driven to connect with the 70 ft. main ventilating-shaft. Numerous small faults proved troublesome in developing a section, and a considerable amount of stone-mining was necessary in order to keep the roads on a workable grade. An average mine output of 40 tons per day has been maintained and delivered to the Hikurangi Coal Company's screens. The Act and regulations are properly observed by the management of this small party.

**Hikurangi No. 2 (New) Mine:** During the year No. 2 downcast shaft was equipped with modern machinery. The Robey winding-engine consists of 2-14 in. cylinders by 30 in. stroke and 6 ft. drum, and is fitted with automatic speed-controllers and steam cut-off. A Davis signalling appliance has been installed and indicates banksmen's and onsetters' signals both by sound and visible signals electrically operated. This completed shaft now deals with the output of the whole mine, but No. 1 upcast shaft still remains fitted with winding-apparatus, and is available at short notice to return the men to the surface should occasion demand its use. An influx of surface water necessitated the management installing additional electrical pumping machinery to cope with the flow, and considerable trouble was experienced in keeping the sumps clear of silt. Subsequently numerous subsidences occurred on the surface at a point 6 chains from the nearest working-place underground. These were due possibly to the surface water clearing the silt from the cavities known to exist in the limestone strata overlying the coal-seam. The east section bords are standing on the proved 60 ft. downthrow fault, and preparations are being made to extract the pillars in the section. The coal-seam was intersected through the 35 ft. downthrow fault in the west section, and electric power has been installed to supplant the steam pumps and winches. Consequent to an accident occurring on the surface haulage-road a safe-working track has been formed and provided for the use of employees. Considerable difficulty is being encountered in conducting the air-current in sufficient quantity to the farthest working-places. The two Waddle fans are inducing fully 30,000 cubic feet per minute at the fan-drifts, but there is considerable surface leakage, due to the wooden casing at the top of the upcast shaft and fans. The management contemplate enclosing the top of the shaft and the fan-drifts with brick or concrete casing, thus making same leak-proof.

**Wilson's Colliery.**—During the year the output has been maintained from the pillars in No. 7 section and bords in the stone drive section. Owing to various natural conditions, increasing temperatures at the faces of pillar workings have been experienced, despite the benefits obtained through the reheightening of the return and intake airways. A new stone drive for haulage and second connection for ventilating purposes, running parallel a distance of 500 ft. with the existing prospecting stone drive, was holed to the coal-seam through the 60 ft. upthrow fault. An intrusive band of fireclay of 2 ft. in thickness has been met in the coal-seam in the advanced dip workings. Percolating water coming from adjoining workings through the fault-line near the bottom of the upcast shaft continues to maintain its flow, and preparations are being made by the management to line the sides of the shaft with a concrete ring in order to dam the water back. The ventilation of the working-places has been maintained within the statutory limits, but the efficiency of the fan at the working-faces is low, owing to excessive leakage through the disturbed porous limestone barrier between the intake and the return. The increased distances between intake and return and fireproof stoppings provided for by the Amendment Act, 1924, will undoubtedly in a large measure improve the condition of the existing and future airways. Driving from the base of the 60 ft. upthrow fault a crystalline limestone with marine fossils was exposed in the strata underlying the only known coal-seam. As the formation is similar to the overlying measures it is reasonable to assume that another coal-seam exists under the present working-seam. A fenced separate surface travelling-road has been formed and provided by the company for the use of employees travelling to and from the mine.

**Kerr and Co. (The Rocks Mine).**—Development operations were confined to the West Byron section, which was reopened after thirty years' abandonment. A dip drive through the fault intersected a much-tilted coal-seam. Pillars continue to be extracted in the Rocks sections. Mining operations have ceased under the houses in this locality, and the surface owners of the land are being granted liberal freehold rights to the land affected by subsidences. Abnormal winter rains temporarily flooded the mine-workings on several occasions, the pumps being inadequate to cope with the inflow. The mine is adequately ventilated, by natural ventilation, by means of upcast shafts.

**Silverdale Colliery (Foot and Doel's).**—(Owing to the lack of orders this small mine, operating on a Crown lease, produced only 450 tons during the year. Preparations are being made to win a block of coal of superior quality and of greater thickness than has been formerly mined. Upwards of 21,505 tons of coal have been won since the party commenced mining operations on the abandoned area formerly worked by a company.

**Northern Co-operative Mine (Cunningham's Crown Lease).**—The workings have been safely conducted on this lease during the year. The outcrop pillar coal is almost exhausted, and boring operations did not prove a workable seam on the adjoining area secured under a coal-prospecting license.

**Glen Nell Colliery (Crown Lease).**—Mining operations were suspended early in the year owing to an intrusive band of shale splitting the coal-seam into seams too thin to be profitably mined. Several shafts were sunk to determine the thickness of the seam in advance of the workings.

**Foot's Coal-mine (Crown Lease).**—Pillars have been extracted under favourable conditions from this area which had been abandoned by a former owner. The roof consists of shaly beds, and is strong, permitting the whole of the pillars to be extracted. Props are systematically set, and the regulations properly observed by the management. The output is delivered to the Hikurangi Railway-siding by motor-lorries.

**Christie's Colliery (Freehold).**—During the year operations at this mine were confined to the extraction of the pillars. A party of miners are contracting with the owners at a fixed price to hew the coal and truck and convey same over a surface tramway to motor-lorries. The mine-workings are in good condition and well timbered, and the regulations are properly observed by the certificated mine-manager in charge.

**Rautangata Colliery (Freehold).**—The workings of this mine have been advanced in the direction of the old Kamo Mine workings to a fault, and the remaining available coal pillars are being withdrawn towards the free-drainage drive-opening. The coal is clean and of an average thickness of 11 ft., and the output is used on the premises for the burning of fireclay bricks. All the working-places are closely timbered with chocks and props.

**Waro Colliery, Whangarei (Freehold).**—This colliery is situated about three miles from Whangarei. The main dip has been advanced to develop a thicker area of coal about 4 chains from the bottom level. Pillars are being extracted from bords of the first working, and the ventilation of all working-places has been good. The 200 ft. downcast winding-shaft is in good repair, and the appliances and machinery for operating the shaft are in good order. The output is disposed of principally in Whangarei for household purposes.

**Kawakawa Colliery.**—A party of miners are operating on a Crown area at Kawakawa, comprising the old workings formerly mined by the Bay of Islands Coal Company during the years 1880-94. Boring operations disclosed a workable block of coal along the fringe of the eastern outcrop and above the water-level of the abandoned colliery workings. The coal is of good quality and is sub-bituminous, and the proximity of the freezing-works, railway terminus, and the deep-water harbour wharf at Opau would warrant the development of a large coal-producing mine in the district.

#### Waikato (including Mokau).

**Taupiri Extended Colliery.**—On the 11th April, 1924, coal-production at this colliery was suspended after being in continuous operation for a period of thirty-five years. A total output of 3,101,064 tons of superior brown coal was obtained solely from the bords and headings of the first working. On the 27th June the West District, embracing Nos. 2, 3, 4, 5, and 6 sections, was sealed off with substantial brick stoppings at a point below the entrance to No. 1 section. These stoppings were erected to isolate the disturbed crushed and fire-affected sections from the No. 1 development dip headings, which were at that time being vigorously extended to develop a large unworked area between the west and north sections. A system of hydraulic sand filling of the bords in the north section had been adopted by the company as a means to arrest a creeping movement already commenced in No. 5 section north, and to subsequently provide for the practicable working of the top seam and future extraction of pillars. Operations were in process to flush the bords with sand when an unlocated fire broke out on the 26th July, supposedly to have originated in the bords of