

(5) In paragraph 36 we will consider questions in connection with the disposal of trade wastes. It is obvious that as the volume of these wastes is considerable it is essential for the proper planning of a scheme that a decision should be made as to whether or not they will be discharged into the sewers. As will be shown, we have come to the conclusion that, subject to certain exceptions, trade wastes should be discharged to the sewers.

(6) The estimation of the provision to be made for rain-water, storm-water or ground-water entering sewers through surface fittings, illegal connections, or leaky sewer joints is very difficult. In wet weather it is impossible to keep these waters out of sewers and the flow increases considerably. It is the universal practice to provide overflows in sewerage systems so that the diluted sewage above a predetermined amount can be diverted to a convenient watercourse or storm-water channel, where further dilution will occur as the watercourse or channel will then be flowing nearly full. Mr. Porter proposes that provision be made for five times the average "dry weather flow" or four times the average domestic "dry weather flow" plus twice the trade waste average rate, and we consider this is a reasonable provision.

METHODS OF DISPOSAL OF SEWAGE

32. (1) There appears to be no doubt that the disposal on land of the sewage of the Auckland district is rendered impracticable by the lack of a suitable large area of reasonably level land with porous subsoil and low rainfall conditions to deal with a large volume of sewage containing strong trade wastes. It seems clear, also, that the use of the effluent from the sewage after treatment for land irrigation or for commercial and industrial purposes would be entirely uneconomic, and that it is only in areas where water is scarce or can be obtained only at high cost that this use of sewage effluent is practicable.

(2) There also appears to be no serious dispute about the impracticability because of the excessive expense involved of discharging sewage or sewage effluent into the open sea on the west coast. From an engineering point of view, disposal of sewage by this method is possible, although additional expense will be incurred in protecting the outfall sewer from disintegration of concrete material which occurs when gases are evolved from the sewage after being so long in the sewer flowing to the outfall. There is the further disadvantage that useful by-products would be lost.

(3) In the report made in 1932 by the Committee appointed by the Health Department it was stated:—

(a) "On the principle that sewage should be removed by the back entrance the proper direction to take the sewers of the Southern Area would appear to be westward to the Tasman Sea at Manukau Heads. This would involve the construction of a maximum sized outfall sewer 13 miles in length from the Whau Creek (the Western side of the district served) to Manukau Heads, and the heavy cost of such a sewer makes it extremely doubtful whether this was a practical proposition at any stage of the development of Auckland City."

(b) "From a public health point of view this project (the Committee is referring to discharge at Manukau Heads) is ideal, but we do not think it practicable from a financial point of view."

Mr. D. M. Robinson, the President of the Auckland and Suburban Drainage League, in his evidence criticized the views expressed by the Committee on the ground that its report "was based more on financial than on health considerations," and he contended that "if another scheme is ideal from the public health point of view then their acceptance of the Brown's Island scheme for 'financial considerations' is acceptance of a second best." He also contended that "the health of the community must not be endangered because of economy in sewage treatment." The latter contention is, of course, sound, but it assumes that the Brown's Island scheme will endanger public health, an assumption which, as will be shown later, is not justified. In any case, we are unable to agree with the contention that the Committee's report "was based more on financial than on health considerations."