

186. Do you not think that practically all the drains are placed, as regards outlets, at the wrong angles to the river?—Yes.

187. And would you recommend them to be placed at one angle?—At an angle down the stream.

188. A material angle?—Yes, of 25° or 30°.

189. You are aware that there was a flood-gate there?—Yes; I am given to understand that it entirely disappeared in one of the floods. The opening of the drain into the river has become very much enlarged. I have no doubt the flood-gate would have been still there if a little attention had been given to it.

190. Was the County Council a River Board when you were its officer?—Yes.

191. And did it do anything as a River Board?—No; there was an annual meeting held at which the financial position of the Board was considered; and the receipts and expenditure were nil.

PAEROA, TUESDAY, 31ST MAY, 1910.

ARTHUR HERBERT VIVIAN MORGAN examined. (No. 53.).

1. *Mr. McVeagh.*] You are Director of the Waihi School of Mines?—Yes.

2. I think you were handed a large number of samples of silt of various descriptions for the purpose of examination and report?—Yes.

3. Samples that were taken at the instance of the Waihi Borough Council?—Yes.

4. You have prepared a report, with a tabulated statement, explanatory of the results of your investigations?—Yes.

5. I think this is the report and explanatory table?—Yes. [Exhibit No. 44.]

6. I observe from the tabulated statement that you have dealt with three classes of silt-deposit?—Yes.

7. And the third class is the last on your tabulated statement?—Yes.

8. That is numbered certain figures over 3?—Yes.

9. You were given to understand that the No. 3 series was taken in the neighbourhood and above Te Aroha?—Yes.

10. Who were they taken by?—By Mr. Morpeth. The No. 2 series was taken by Mr. Haszard and Mr. Morpeth in conjunction, and the No. 1 series was taken by Mr. McArthur and Mr. Haszard.

11. Will you explain the system of classification that you adopted in your investigation?—The object of the investigation was to determine as far as possible what proportion of the samples might consist of mining tailings and what proportion could not possibly consist of mining tailings, or, in other words, consisted of natural river-sediment. The method adopted was to grade the material into coarse and fine material, the coarse material being too coarse to be possibly mining tailings, and the fine material being so fine that it might possibly be mining tailings. Then the coarse material was put on one side as being impossible to be mining tailings, and the fine material was further examined under the microscope and in other ways to see what proportion of it was mining tailings.

12. I think you have a series of columns marked A and B: Please explain these columns?—The samples were separated into four grades, A, B, C, and D. A was the coarse grade, and would remain on a 30-mesh sieve; B was the next coarsest—it passed a 30-mesh and remained on a 60-mesh sieve; C passed a 60-mesh and remained on a 90-mesh; D passed the 90-mesh. I took it that A, which remained on a 30-mesh sieve, could not possibly be tailings. It was coarse material, and it was obvious to the naked eye that it was not tailings. It consisted in most cases of pumice and grains of quartz.

13. *The Chairman.*] Did you deal with these wet or dry?—Dry.

14. *Mr. McVeagh.*] As to grade B?—Grade B was quite unlike tailings in appearance, and I have no doubt the greater proportion of it was not tailings. I have the grades here, and I think it is almost obvious to the naked eye that this grade is not tailings. C and D, however, which are fine enough to be tailings, have the appearance of tailings, and I consider that they are principally tailings.

15. I think your table shows the percentage of material in each sample that might possibly be tailings?—Yes.

16. *The Chairman.*] By bulk, or weight, or how?—By weight.

17. *Mr. McVeagh.*] Some samples were taken above Te Aroha in the neighbourhood of the Gordon Settlement?—I believe so.

18. I think they were taken for the purposes of comparison?—Yes.

19. I think no tailings have been discharged up at that point?—I believe none have been discharged above Waiorongomai.

20. Just refer to the results you have arrived at in regard to these tailings taken above Waiorongomai in respect to their degree of fineness. I think you have in your examination found a much higher degree of fineness than in the samples taken from the Waihou River?—Yes, in some cases. In sample No. 11, for example, there are 52·2 per cent. of fine material and 49·8 per cent. of coarse; and in sample No. 12, 70·8 of fine material and 29·2 of coarse. No. 11 came from the bank of the creek at the Gordon Bridge, and No. 12 came from a wash-out on the road just past the Gordon Bridge.

21. You have set forth the result of your investigation of every sample in that report?—Yes.

22. *The Chairman.*] What was the microscopical appearance of that finer material you mention?—The finer material under the microscope was in all respects similar to that of a sample