5. DRILLING AND TRENCHING

To evaluate the gravity results, some of the negative anomalies were drilled. The first stage of the drilling programme was to try to locate gravel deposits associated with gravity low features. Once gravel deposits had been located, the second step was to determine whether they were diamond-bearing.

Two different types of drill were used. To identify the nature of the negative gravity anomalies a 165 millimetre air drill was used and to obtain samples of gravel large enough to acquire a reasonable indication of its diamond content a Masserenti Jumper drill with a drill-head diameter of 1,8 metres was used.

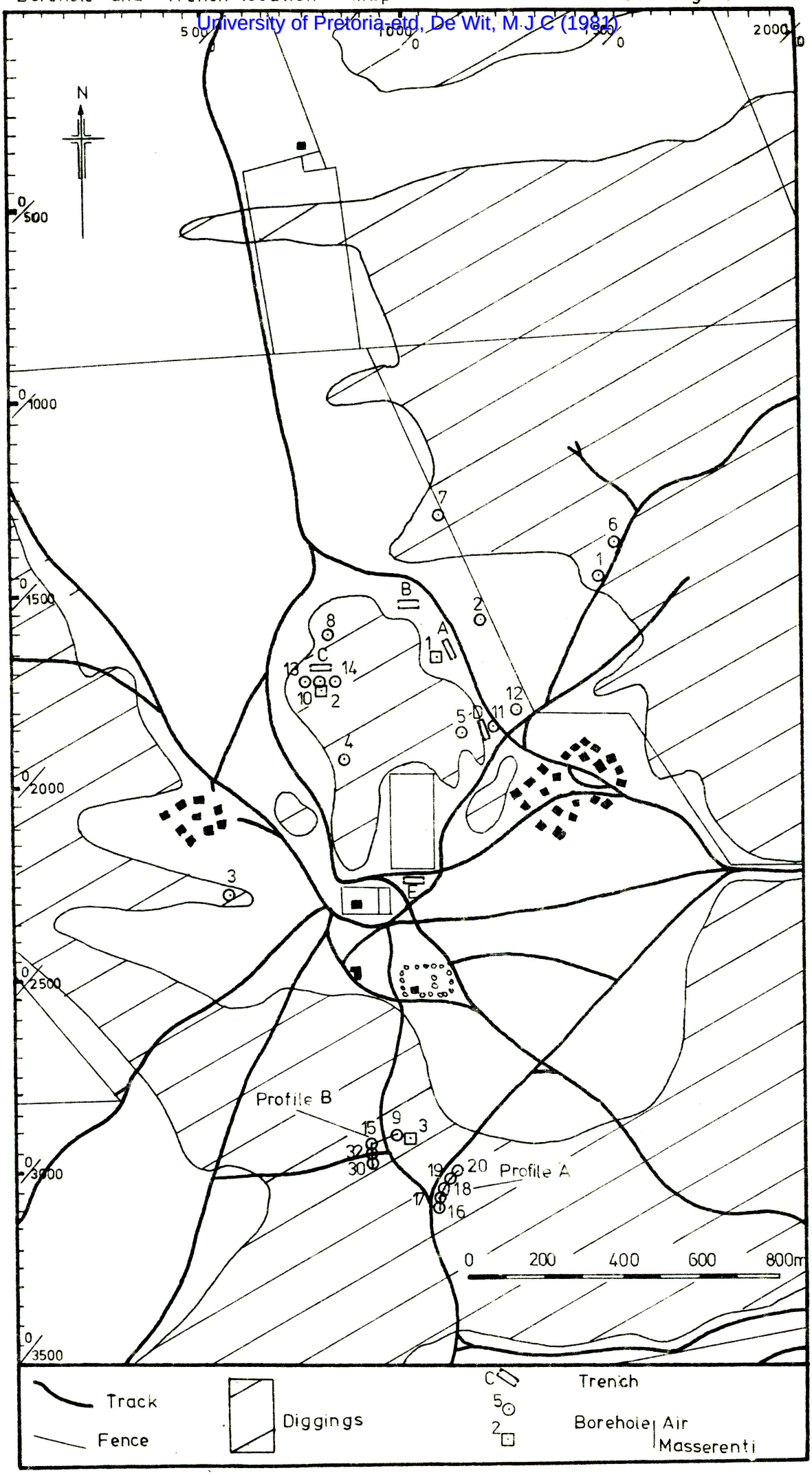
All the logs of the air drill holes are given in the figs. 21 to 25 (boreholes I-V). Interesting thick gravels were obtained in the vicinity of 800/1650 (boreholes 10, 13 and 14) and around 900/2875 (borehole 9) (figs. 21 and 22).

Success with the Masserenti drill was obtained only in one of the three holes drilled with it (fig. 17, hole 2). Other holes drilled with this drill had to be abandoned when relatively consolidated material, such as weathered chert and dolomite which had only been transported vertically over a very short distance, was encountered. From the one successful hole two diamonds with a total mass of 0,115 carats were recovered.

Prior to the drilling several trenches were dug to guide the drilling operation (fig. 17). Trenches A and B both reached weathered chert after a thin soil cover of 0,15 m. A well-developed gravel was found in trench C below a cover of manganese-rich soil of 0,25 metres. It was in this gravel that the above-mentioned diamonds were found. Boreholes 10, 13 and 14 (figs. 17 and 22) proved that the gravel in this area was deposited in a small, isolated depression with a diameter of approximately 250 m and a maximum depth of about 5 m. It does not

Borehole and Trench location map

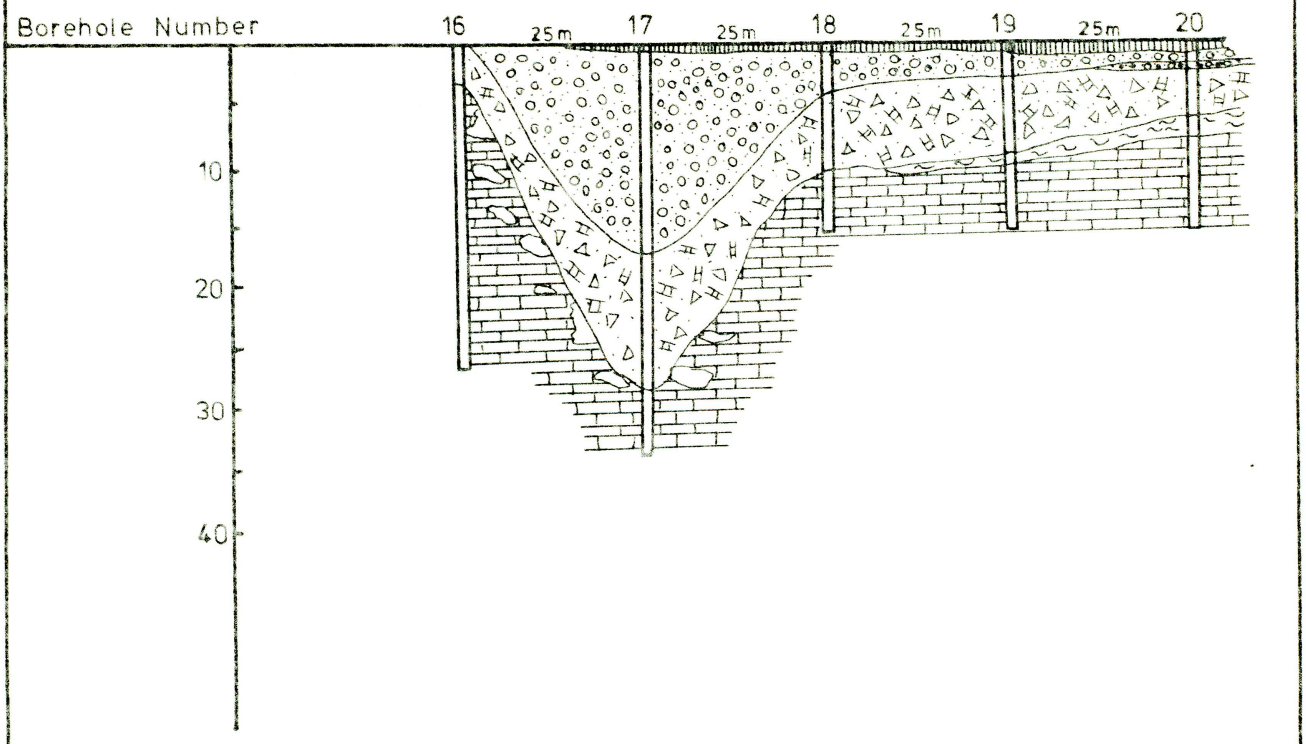
Figure 17



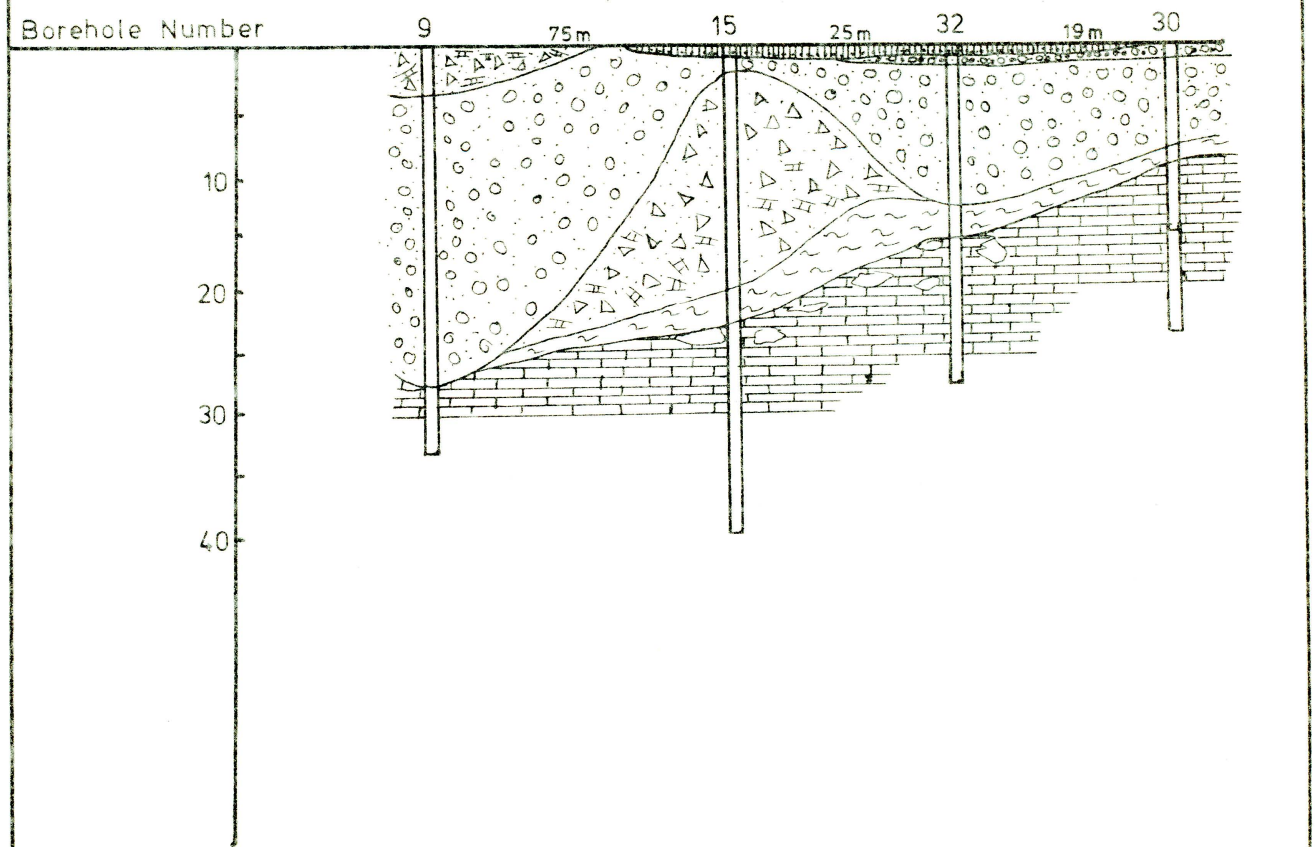
Drilling Profiles

Figure 18

Profile A (depth in metres)



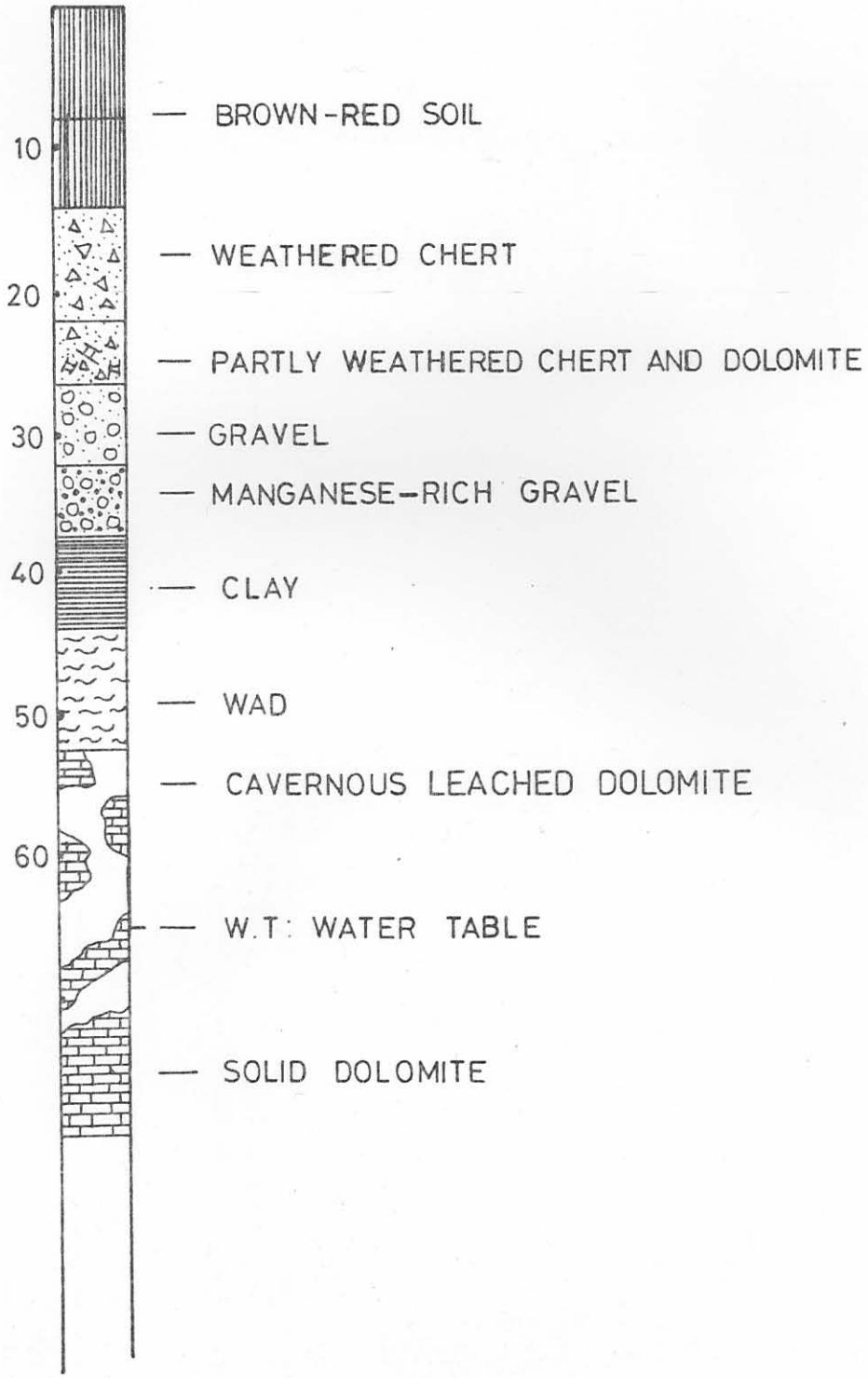
Profile B



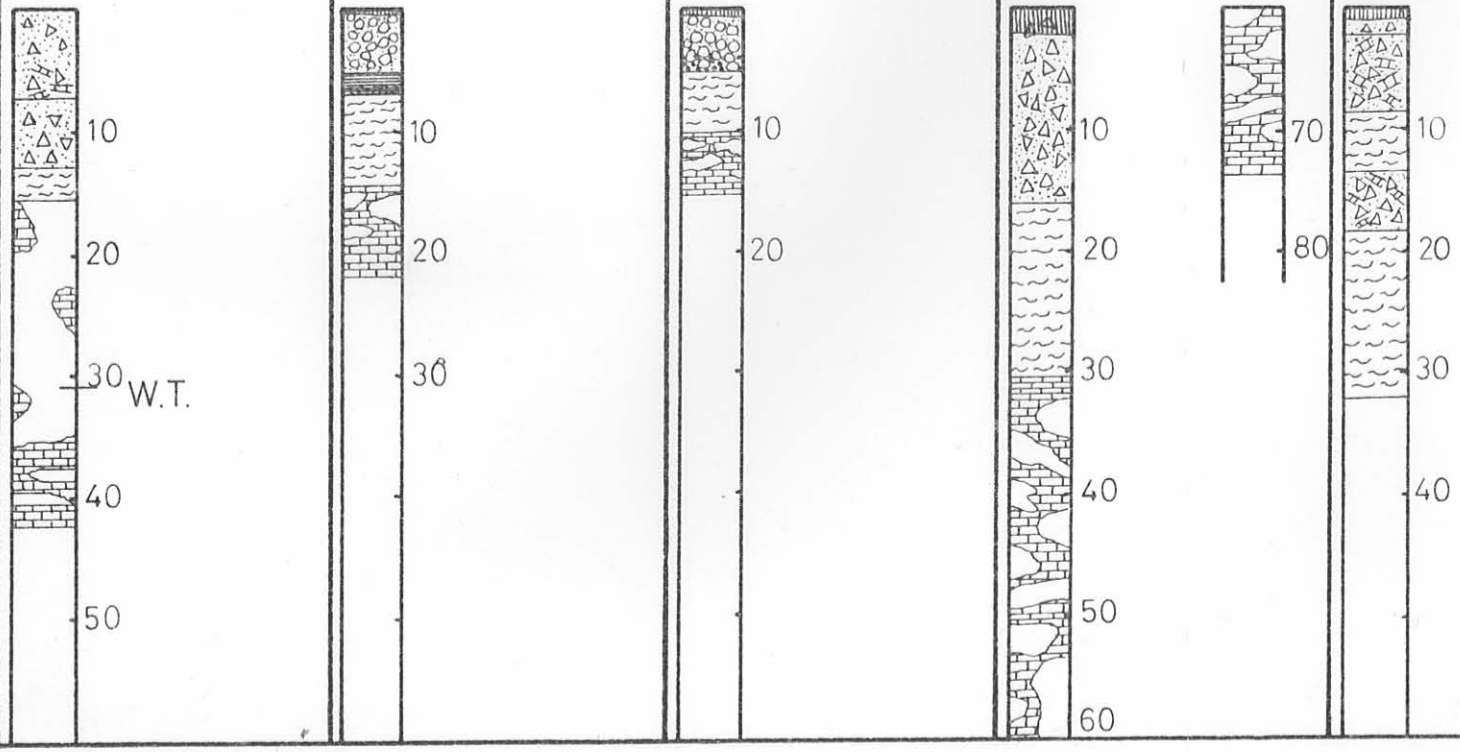
See figure 18 for the legend and figure 16 for the location of the above profiles.

LEGEND TO BOREHOLES AND PROFILES (FIG. 17)

(Depth in metres)



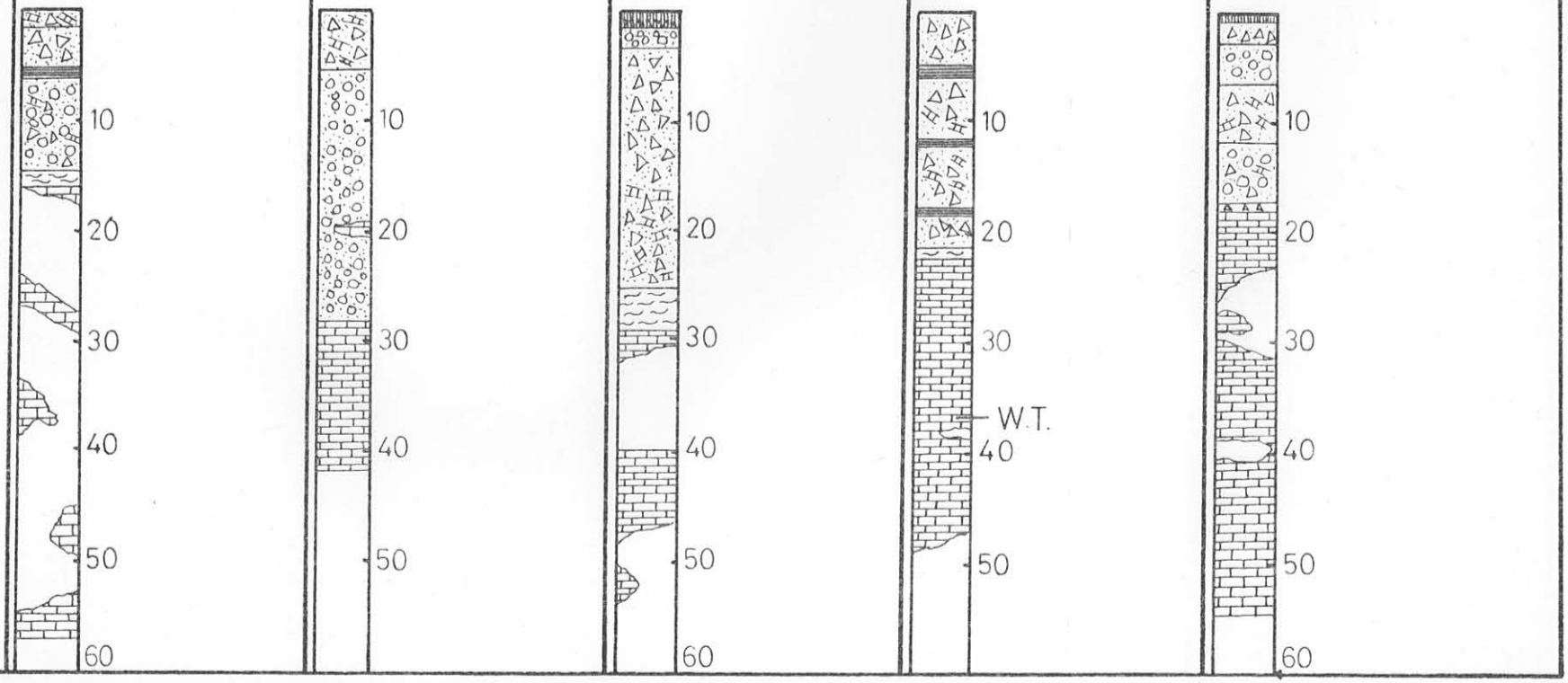
BOREHOLE NUMBER	8	12	11	5	4
COORDINATES: X	790	1300	1240	1150	850
COORDINATES: Y	1565	1800	1820	1850	1925
COLLAR ELEVATION.	1500 m	1499 m	1499 m	1502 m	1502 m



BOREHOLE LOGS I

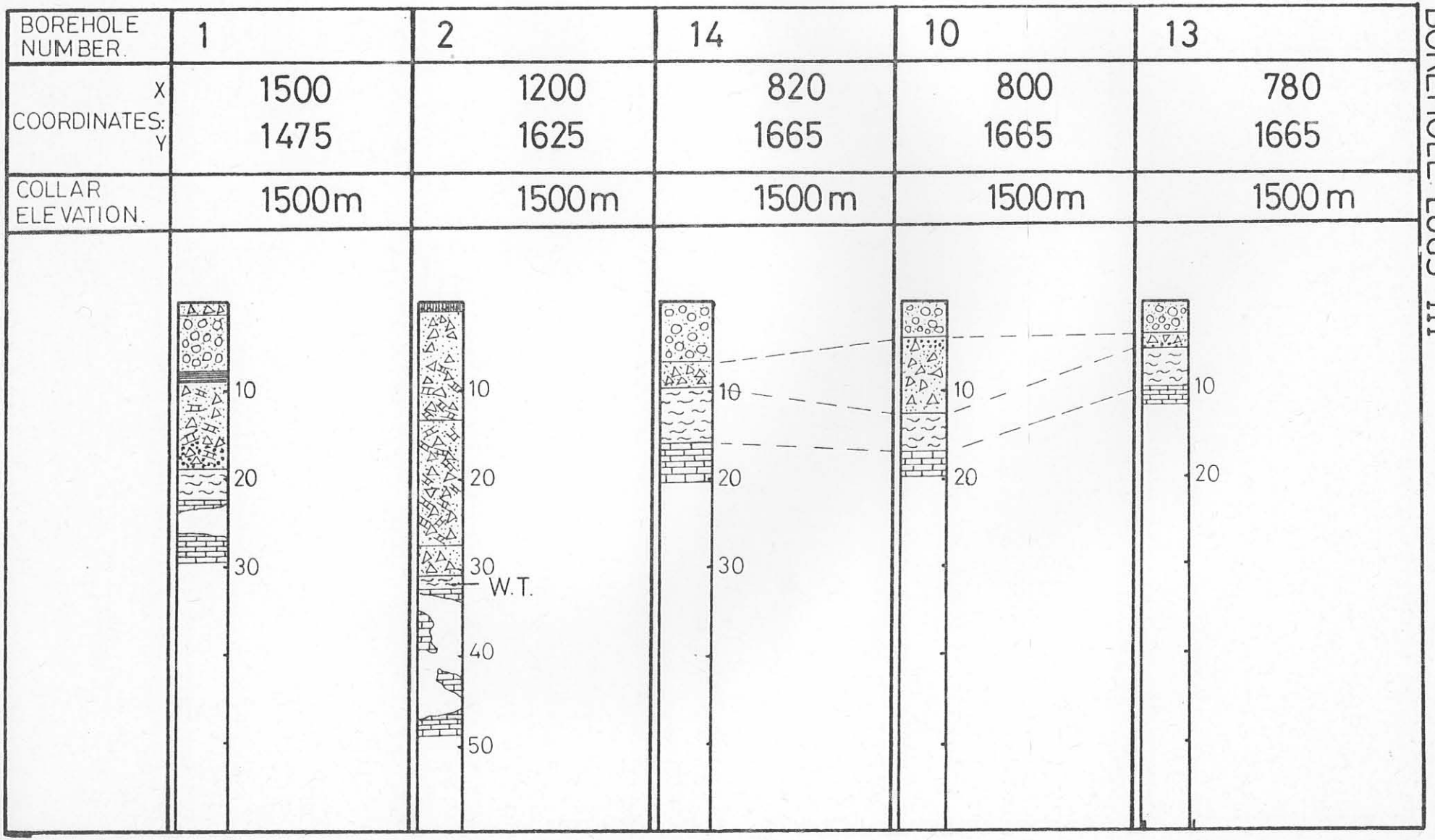
FIGURE 20

BOREHOLE NUMBER.	3	9	15	7	6
COORDINATES: X	550	925	890	1100	1575
COORDINATES: Y	2300	2875	2925	1300	1350
COLLAR ELEVATION.	1499m	1502 m	1502 m	1501m	1501 m



BOREHOLE LOGS II

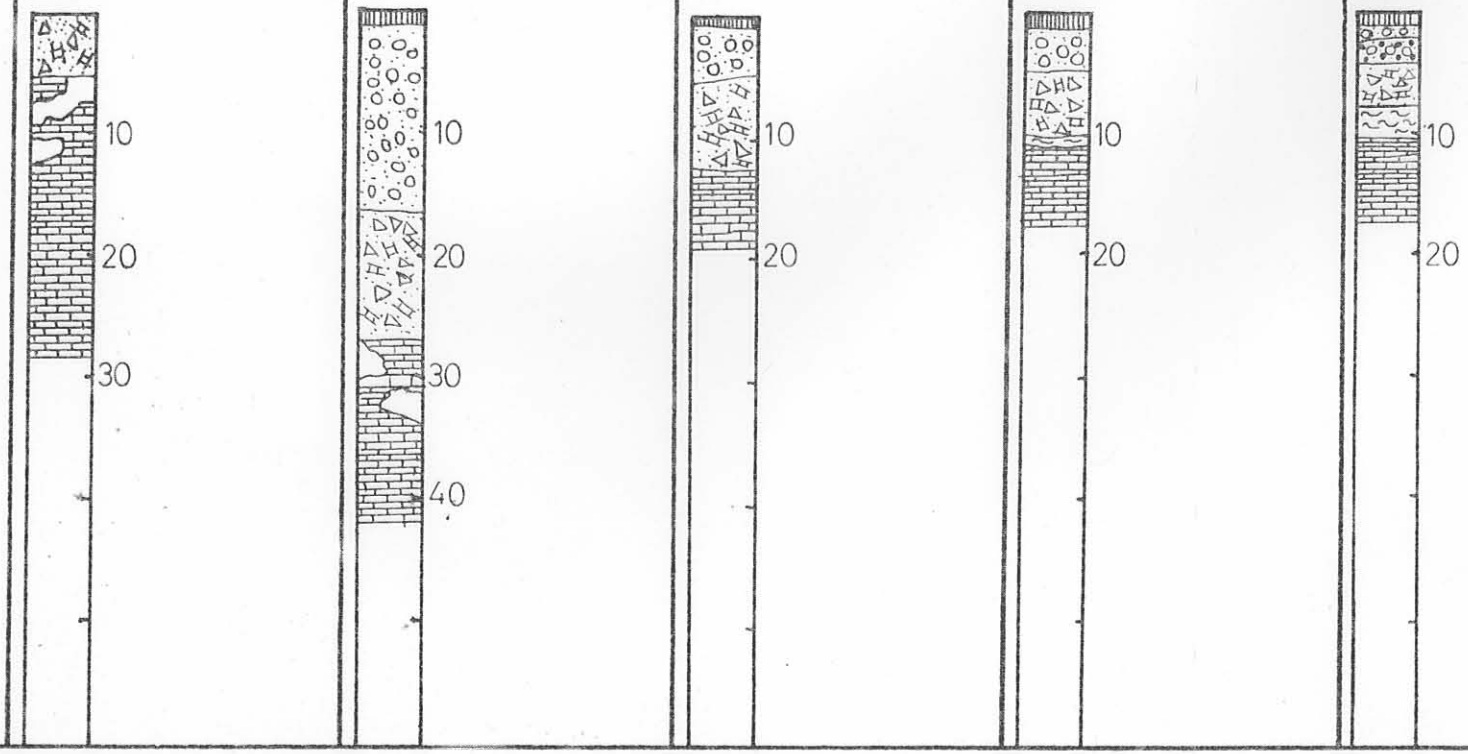
FIGURE 21



BOREHOLE LOGS III

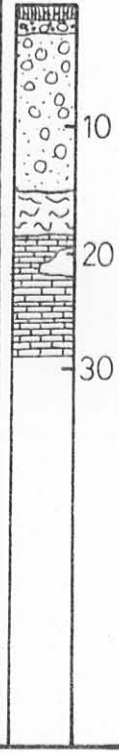
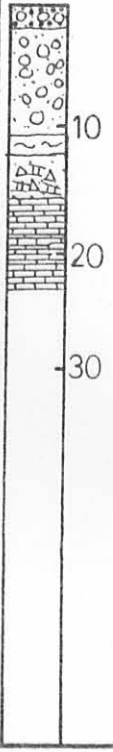
FIGURE 22

BOREHOLE NOMBER	16	17	18	19	20
X COORINATES	1040	1045	1055	1060	1070
Y	3090	3070	3050	3030	3010
COLLAR ELEVATION	1503m	1503m	1504m	1504m	1504m



BOREHOLE LOGS IV

FIGURE 23

BOREHOLE NUMBER	32	30			
COORDINATES: X	880	870			
COORDINATES: Y	2950	2970			
COLLAR ELEVATION	1501m	1502 m			
					

BOREHOLE LOGS V

FIGURE 24

form part of any gravel run, and has not been exploited by any diggers.

Two holes (holes 11 and 12, figs. 17 and 20 respectively) were drilled and a trench (D) was dug just north-west of the main black village in the study area, around peg 1250/1800 - 1250/1830 (fig. 17). Water-worn pebbles were found in a red-brown soil approximately four metres thick which was probably deposited on a flood plain. This soil is underlain by wad and weathered chert before solid dolomite is encountered.

A place of great interest is in the south-eastern part of the area (around peg 925/2875, fig. 11, map 4) where thick gravels were found in a circular structure (fig. 21, borehole 9). Profiles A and B (fig. 18) give an indication of the volume of unworked gravel in this area under a cover of weathered chert and dolomite (which have only been transported vertically over a short distance) and finally manganese-rich soil. The Masserenti drill failed to penetrate the top 5 m of weathered chert, so that no indication of the diamond content of the underlying gravels could be obtained.

The two profiles A and B and the large gravity anomaly (around peg 925/2875), which was interpreted as a circular pothole (fig. 35, model 10), prove that large amounts of unworked gravel are still present. However, these buried gravels are usually inaccessible to the underequipped individual digger.