TEN DAYS AND MONTHLY MEANS GAUGE

No. 1

Station: DUEIM

River: White Nile

Year	Date	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1906	1 - 10					10.22	10.29	10.84	12.65	13.81	13.29	12.28	11.92
	11 - 20					10.15	10.47	11.21	13.08	14.07	12.91	12.07	11.84
	21 - end					10.17	10.65	11.71	13.50	13.71	12.49	12.01	11.76
	Mean					10.18	10.47	11.26	13.08	13.86	12.90	12.12	11.84
1907	1 - 10	11.68	10.97	10.49	10.35	10.46	10.17	10.76	11.57	12.83	12.52	11.93	11.73
	11 - 20	11.57	10.70	10.48	10.32	10.35	10.31	10.98	12.03	12.97	12.17	11.84	11.65
	21 - end	11.34	10.58	10.43	10.37	10.18	10.62	11.22	12.62	12.89	12.07	11.74	11.48
	Mean	11.53	10.75	10.47	10.35	10.33	10.37	10.99	12.07	12.90	12.25	11.84	11.62
1908	1 - 10	11.27	10.67	10.33	10.07	9.98	9.95	10.59	12.43	14.24	13.79	12.45	12.06
	11 - 20	11.07	10.56	10.21	9.98	10.00	9.98	10.94	13.65	14.20	13.42	12.26	11.92
	21 - end	10.85	10.45	10.10	10.00	10.05	10.32	10.48	14.18	13.87	12.74	12.13	11.83
	Mean	11.06	10.56	10.21	10.02	10.01	10.08	10.67	13.42	14.10	13.32	12.28	11.94

DUEIM Gauge: Erected on the left bank of the White Nile in 1906

Zero of Gauge: R.L. 362.04 metres assuming Khartoum gauge zero = 360 metres

TEN DAYS AND MONTHLY MEANS GAUGE

No. 1'

Station: DUEIM

River: White Nile

Year	Date	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1909	1 - 10	11.81	11.57	10.66	10.24	10.54	10.63	11.15	12.82	14.24	13.82	12.74	12.31
	11 - 20	11.85	11.22	10.47	10.32	10.50	10.82	11.37	13.52	14.12	13.48	12.54	12.23
	21 - end	11.74	10.94	10.35	10.48	10.47	10.96	11.96	14.00	13.99	13.16	12.40	12.21
	Mean	11.80	11.24	10.49	10.35	10.50	10.80	11.49	13.45	14.12	13.49	12.56	12.25
	1 - 10												
	11 - 20												
	21 - end												
	Mean												
	1 - 10												
	11 - 20												
	21 - end												
	Mean												

TEN DAYS AND MONTHLY MEANS GAUGE

No. 2

Station: DUEIM

River: White Nile

Year	Date	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1910	1 - 10	12.14	11.98	11.14	10.37	10.02	10.34	10.73	11.87	13.75	13.45	12.70	11.95
	11 - 20	12.14	11.85	10.80	10.19	9.97	10.43	11.00	13.16	13.74	13.38	12.29	11.85
	21 - end	12.06	11.56	10.53	10.08	10.10	10.55	11.25	13.56	13.54	13.19	12.08	11.79
	Mean	12.11	11.80	10.82	10.21	10.03	10.44	10.99	12.86	13.68	13.34	12.36	11.86
1911	1 - 10	11.79	11.47	10.58	10.26	10.10	10.28	10.75	12.08	13.77	12.96	12.03	11.76
	11 - 20	11.78	11.21	10.44	10.23	10.02	10.41	11.05	12.76	13.79	12.61	11.85	11.67
	21 - end	11.70	10.75	10.31	10.13	10.17	10.54	11.48	13.50	13.46	12.29	11.79	11.60
	Mean	11.76	11.14	10.44	10.21	10.10	10.41	10.09	12.78	13.67	12.62	11.89	11.68
1912	1 - 10	11.36	10.57	10.28	10.22	10.20	10.15	10.45	12.48	13.24	12.43	11.97	11.71
	11 - 20	11.06	10.44	10.22	10.21	10.19	10.17	10.73	13.20	13.01	12.15	11.87	11.68
	21 - end	10.73	10.37	10.23	10.21	10.17	10.21	11.44	13.23	12.86	12.02	11.76	11.54
	Mean	11.05	10.46	10.24	10.21	10.19	10.18	10.87	12.97	13.04	12.20	11.87	11.64

TEN DAYS AND MONTHLY MEANS GAUGE

No. 3

Station: DUEIM

River: White Nile

Year	Date	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1913	1 - 10	11.36	10.53	10.24	9.98	9.96	10.31	10.44	10.96	12.09	11.66	11.36	10.72
	11 - 20	11.06	10.36	10.20	9.94	10.06	10.43	10.51	11.44	12.22	11.44	11.27	10.55
	21 - end	10.82	10.29	10.15	9.92	10.24	10.43	10.69	11.90	12.10	11.43	11.18	10.37
	Mean	11.08	10.39	10.20	9.95	10.08	10.39	10.55	11.43	12.14	11.51	11.27	10.55
1914	1 - 10	10.22	9.97	9.90	9.86	9.89	9.74	10.22	12.48	13.39	13.09	12.47	11.97
	11 - 20	10.13	9.93	9.84	9.82	9.82	9.88	10.43	13.34	13.20	13.12	12.38	11.85
	21 - end	10.02	9.91	9.90	9.90	9.66	10.00	11.33	13.59	13.03	12.79	12.14	11.76
	Mean	10.12	9.94	9.88	9.86	9.79	9.87	10.66	13.14	13.21	13.00	12.33	11.86
1915	1 - 10	11.78	11.38	10.44	10.13	10.03	10.15	10.60	11.72	12.32	12.88	12.00	11.63
	11 - 20	11.70	11.04	10.27	10.10	10.03	10.20	10.78	12.14	12.73	12.68	11.78	11.53
	21 - end	11.58	10.66	10.15	10.04	10.14	10.38	10.99	12.17	12.99	12.38	11.68	11.54
	Mean	11.69	11.03	10.29	10.09	10.07	10.24	10.79	12.02	12.68	12.65	11.82	11.57

TEN DAYS AND MONTHLY MEANS GAUGE

No. 4

Station: DUEIM

River: White Nile

Year	Date	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1916	1 - 10	11.51	10.60	10.15	9.96	9.94	10.11	10.62	12.73	13.96	13.91	12.89	12.16
	11 - 20	11.29	10.42	10.10	9.95	10.00	10.20	10.99	13.49	14.04	13.82	12.57	12.13
	21 - end	10.95	10.27	10.00	9.90	10.03	10.40	11.81	13.84	13.89	13.39	12.33	12.07
	Mean	11.25	10.43	10.08	9.94	9.99	10.24	11.14	13.35	13.96	13.71	12.60	12.12
1917	1 - 10	12.04	11.96	11.75	10.59	10.38	10.46	11.03	12.92	14.23	14.28	12.79	12.24
	11 - 20	11.99	11.96	11.43	10.42	10.39	10.54	11.34	13.10	14.45	13.90	12.44	12.21
	21 - end	12.01	11.91	10.98	10.42	10.40	10.74	11.81	13.72	14.50	13.38	12.28	12.18
	Mean	12.01	11.94	11.39	10.48	10.39	10.58	11.39	13.25	14.39	13.85	12.50	12.21
1918	1 - 10	12.17	12.26	12.34	12.43	12.04	11.28	11.35	12.14	13.36	12.58	12.04	11.86
	11 - 20	12.21	12.27	12.36	12.37	11.73	11.18	11.56	12.58	13.11	12.32	11.95	11.81
	21 - end	12.24	12.33	12.42	12.27	11.48	11.27	11.81	13.02	12.87	12.12	11.89	11.55
	Mean	12.21	12.29	12.37	12.35	11.75	11.24	11.57	12.58	13.11	12.34	11.96	11.74

TEN DAYS AND MONTHLY MEANS GAUGE

No. 5

Station: DUEIM

River: White Nile

Year	Date	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1919	1 - 10	11.28	10.80	10.59	10.37	10.26	10.30	10.77	12.67	13.49	12.68	11.87	11.73
	11 - 20	11.04	10.62	10.49	10.30	10.12	10.48	11.08	12.84	13.63	12.18	11.81	11.76
	21 - end	10.87	10.61	10.45	10.30	10.16	10.68	11.58	13.26	13.35	11.98	11.81	11.65
	Mean	11.06	10.68	10.51	10.32	10.18	10.49	11.14	12.92	11.49	12.28	11.83	11.71
1920	1 - 10	11.39	10.53	10.28	10.11	10.01	10.31	10.88	12.50	13.04	12.81	12.11	11.73
	11 - 20	11.05	10.47	10.22	10.08	10.08	10.50	11.25	12.95	12.76	12.59	11.96	11.66
	21 - end	10.73	10.42	10.23	9.99	10.13	10.64	11.71	13.11	12.79	12.36	11.83	11.66
	Mean	11.06	10.47	10.24	10.06	10.07	10.48	11.28	12.85	12.86	12.59	11.97	11.68
1921	1 - 10	11.52	10.68	10.30	10.06	9.87	10.19	10.57	11.93	13.17	12.93	11.91	11.58
	11 - 20	11.22	10.49	10.19	10.01	9.96	10.27	10.74	12.68	13.14	12.52	11.69	11.61
	21 - end	10.95	10.36	10.15	9.82	10.14	10.37	11.18	13.20	13.25	12.12	11.63	11.56
	Mean	11.23	10.51	10.21	9.96	9.99	10.28	10.83	12.60	13.19	12.52	11.74	11.58

TEN DAYS AND MONTHLY MEANS GAUGE

No. 6

Station: DUEIM

River: White Nile

Year	Date	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1922	1 - 10	11.40	10.32	9.96	9.51	9.36	9.81	10.44	12.45	13.56	12.99	11.98	11.60
	11 - 20	11.08	10.13	9.79	9.36	9.27	9.99	10.79	13.20	13.61	12.89	11.82	11.58
	21 - end	10.63	10.02	9.65	9.29	9.47	10.23	11.30	13.17	13.19	12.39	11.72	11.54
	Mean	11.04	10.16	9.80	9.38	9.37	10.01	10.84	12.94	13.45	12.76	11.84	11.57
1923	1 - 10	11.50	10.53	9.97	9.85	10.11	10.30	10.83	12.58	13.51	13.40	11.90	11.74
	11 - 20	11.33	10.22	9.89	9.90	9.96	10.53	11.04	13.45	13.32	12.63	11.81	11.73
	21 - end	10.95	10.06	9.80	10.11	9.97	10.65	11.78	13.60	13.56	12.20	11.77	11.70
	Mean	11.25	10.27	9.89	9.95	10.01	10.49	11.22	13.21	13.46	12.74	11.83	11.72
1924	1 - 10	11.60	10.83	10.20	10.04	10.17	10.12	10.60	12.25	13.57	12.83	11.91	11.63
	11 - 20	11.46	10.53	10.05	10.13	10.28	10.28	10.94	12.79	13.60	12.40	11.89	11.60
	21 - end	11.12	10.32	10.00	10.11	10.28	10.38	11.47	13.28	13.14	11.99	11.77	11.63
	Mean	11.39	10.56	10.08	10.09	10.24	10.26	11.00	12.77	13.44	12.41	11.86	11.62

TEN DAYS AND MONTHLY MEANS GAUGE

No. 7

Station: DUEIM

River: White Nile

Year	Date	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1925	1 - 10	11.59	10.75	10.17	10.04	10.10	10.22	10.82	11.96	13.01	12.59	11.81	11.68
	11 - 20	11.46	10.45	10.11	10.04	10.16	10.36	11.01	12.48	12.72	12.31	11.74	11.68
	21 - end	11.15	10.27	10.04	10.06	10.25	10.63	11.36	12.96	12.57	12.02	11.70	11.61
	Mean	11.40	10.49	10.11	10.05	10.17	10.40	11.06	12.47	12.77	12.31	11.75	11.66
1926	1 - 10	11.44	10.50	10.10	10.10	10.04	10.47	10.78	12.73	13.52	12.97	12.04	11.74
	11 - 20	11.15	10.32	10.09	10.06	10.02	10.48	10.96	13.25	13.45	12.55	11.90	11.84
	21 - end	10.78	10.20	10.09	10.02	10.14	10.54	11.47	13.50	13.19	12.30	11.77	11.77
	Mean	11.12	10.34	10.09	10.06	10.07	10.50	11.07	13.16	13.39	12.61	11.90	11.78
1927	1 - 10	11.72	11.42	10.37	10.15	10.09	10.00	10.60	12.34	13.12	12.60	11.57	11.37
	11 - 20	11.68	10.98	10.23	10.10	10.07	10.13	10.93	12.51	12.82	12.25	11.43	11.19
	21 - end	11.62	10.60	10.22	10.14	10.04	10.38	11.31	13.15	12.75	11.79	11.38	10.85
	Mean	11.67	11.00	10.27	10.13	10.07	10.17	10.95	12.67	12.90	12.30	11.46	11.14

TEN DAYS AND MONTHLY MEANS GAUGE

No. 8

Station: DUEIM

River: White Nile

Year	Date	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1928	1 - 10	10.50	10.12	9.93	9.88	10.10	10.51	10.99	12.36	13.65	12.42	11.82	11.70
	11 - 20	10.30	10.06	9.92	9.89	10.23	10.66	11.51	13.18	13.30	12.17	11.73	11.64
	21 - end	10.24	9.96	9.90	9.97	10.42	10.80	12.01	13.57	12.73	12.08	11.73	11.63
	Mean	10.35	10.05	9.92	9.91	10.25	10.66	11.50	13.04	13.23	12.22	11.76	11.66
1929	1 - 10	11.58	10.73	10.33	10.15	10.10	10.72	11.28	13.14	13.93	13.45	12.23	11.74
	11 - 20	11.44	10.49	10.23	10.01	10.33	10.89	11.65	13.58	13.97	13.17	11.94	11.73
	21 - end	11.13	10.41	10.18	9.95	10.48	11.08	12.64	13.71	13.76	12.80	11.81	11.70
	Mean	11.38	10.54	10.25	10.04	10.30	10.90	11.86	13.48	13.89	13.14	11.99	11.72
1930	1 - 10	11.69	11.04	10.42	10.14	10.13	10.12	10.72	12.46	13.04	12.43	11.50	11.32
	11 - 20	11.60	10.79	10.28	10.08	10.19	10.26	11.07	13.12	13.03	11.91	11.46	11.21
	21 - end	11.36	10.58	10.20	10.09	10.15	10.48	11.62	13.02	12.72	11.63	11.41	10.99
	Mean	11.55	10.80	10.30	10.10	10.16	10.29	11.14	12.87	12.93	11.99	11.46	11.17

TEN DAYS AND MONTHLY MEANS GAUGE

No. 9

Station: DUEIM

River: White Nile

Year	Date	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1931	1 - 10	10.76	10.20	9.97	9.87	9.92	9.87	10.45	11.92	13.39	12.79	12.03	11.67
	11 - 20	10.51	10.13	9.92	9.86	9.86	10.09	10.76	12.79	13.24	12.49	11.79	11.65
	21 - end	10.33	10.04	9.89	9.88	9.89	10.33	11.06	13.17	13.28	12.43	11.69	11.63
	Mean	10.53	10.12	9.93	9.87	9.89	10.10	10.76	12.63	13.30	12.57	11.84	11.65
1932	1 - 10	11.45	10.46	10.14	10.04	10.04	10.27	10.81	12.59	13.44	13.21	12.11	11.92
	11 - 20	11.17	10.28	10.09	10.02	10.01	10.47	11.04	13.16	13.55	12.70	11.98	11.94
	21 - end	10.82	10.19	10.06	10.04	10.12	10.67	11.49	13.37	13.42	12.34	11.94	11.98
	Mean	11.15	10.31	10.10	10.03	10.06	10.47	11.11	13.04	13.47	12.75	12.01	11.95
1933	1 - 10	12.02	11.98	10.92	10.37	10.32	10.35	10.63	11.90	13.56	13.13	12.29	12.04
	11 - 20	12.02	11.74	10.65	10.40	10.18	10.42	10.78	12.62	13.66	12.68	12.12	12.00
	21 - end	12.04	11.33	10.48	10.35	10.26	10.47	11.02	12.91	13.32	12.52	12.04	11.96
	Mean	12.03	11.68	10.68	10.37	10.25	10.41	10.81	12.48	13.51	12.78	12.15	12.00

TEN DAYS AND MONTHLY MEANS GAUGE

No. 10

Station: DUEIM

River: White Nile

Year	Date	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1934	1 - 10	11.86	11.19	10.51	10.20	10.24	10.30	10.85	12.42	14.02	13.19	12.08	11.87
	11 - 20	11.81	10.86	10.43	10.17	10.29	10.40	11.25	13.24	13.58	12.75	11.94	11.84
	21 - end	11.58	10.66	10.28	10.17	10.26	10.65	12.04	13.76	13.36	12.33	11.85	11.84
	Mean	11.75	10.90	10.41	10.18	10.26	10.45	11.38	13.14	13.65	12.76	11.96	11.85
1935	1 - 10	11.85	11.29	10.52	10.25	10.34	10.52	11.10	13.14	13.69	13.45	12.09	11.80
	11 - 20	11.80	10.90	10.42	10.32	10.31	10.68	11.66	13.46	13.63	13.05	11.95	11.79
	21 - end	11.63	10.67	10.34	10.42	10.39	10.91	12.37	13.81	13.74	12.44	11.86	11.77
	Mean	11.76	10.95	10.43	10.33	10.35	10.70	11.71	13.47	13.69	12.98	11.97	11.79
1936	1 - 10	11.72	10.93	10.58	10.27	10.20	10.41	10.86	12.50	13.80	13.18	11.85	11.58
	11 - 20	11.57	10.73	10.52	10.17	10.20	10.49	11.39	13.07	13.85	12.65	11.67	11.57
	21 - end	11.20	10.62	10.36	10.13	10.27	10.58	11.88	13.56	13.66	12.13	11.60	11.48
	Mean	11.50	10.76	10.49	10.19	10.22	10.49	11.38	13.04	13.77	12.65	11.71	11.54

TEN DAYS AND MONTHLY MEANS GAUGE

No. 11

Station: DUEIM

River: White Nile

Year	Date	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1937	1 - 10	11.32	10.45	10.27	10.07	9.97	10.29	10.76	12.80	13.74	12.93	12.91	12.89
	11 - 20	10.99	10.35	10.20	10.06	9.98	10.50	11.05	13.33	13.51	12.77	12.91	12.89
	21 - end	10.64	10.29	10.11	10.01	10.11	10.61	11.95	13.71	13.44	12.88	12.88	12.90
	Mean	10.98	10.36	10.19	10.05	10.02	10.47	11.25	13.28	13.56	12.86	12.90	12.89
1938	1 - 10	12.85	12.62	11.25	10.17	10.12	10.24	10.79	13.36	14.15	13.83	13.30	13.41
	11 - 20	12.87	12.22	10.41	10.15	10.15	10.39	11.78	13.77	14.20	13.49	13.36	13.42
	21 - end	12.74	11.82	10.17	10.05	10.19	10.56	12.82	13.96	14.06	13.33	13.44	13.34
	Mean	12.82	12.22	10.61	10.12	10.15	10.40	11.80	13.70	14.14	13.55	13.37	13.39
1939	1 - 10	13.32	13.44	13.31	12.69	11.00	11.59	11.25	14.02	14.25	13.73	13.86	13.88
	11 - 20	13.39	13.34	13.25	12.27	10.46	10.73	12.45	14.31	13.92	13.74	13.87	13.90
	21 - end	13.41	13.26	13.12	11.72	10.37	10.86	13.39	14.33	13.74	13.82	13.87	13.91
	Mean	13.37	13.35	13.23	12.23	10.61	11.06	12.36	14.22	13.97	13.76	13.87	13.90

TEN DAYS AND MONTHLY MEANS GAUGE

No. 12

Station: DUEIM

River: White Nile

Year	Date	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1940	1 - 10	13.88	13.74	12.41	10.26	10.08	10.07	10.52	12.81	14.58	14.30	14.39	14.37
	11 - 20	13.80	13.36	11.77	10.10	10.12	10.24	10.64	13.76	14.78	14.32	14.37	14.37
	21 - end	13.79	12.92	10.86	10.06	10.04	10.41	11.29	14.34	14.72	14.34	14.37	14.34
	Mean	13.82	13.34	11.68	10.14	10.08	10.24	10.82	13.64	14.69	14.32	14.38	14.36
1941	1 - 10	14.32	13.82	12.70	10.31	9.95	10.23	10.74	13.83	14.53	15.00	14.64	14.59
	11 - 20	14.27	13.47	12.10	10.07	9.91	10.38	11.63	14.27	14.81	14.73	14.62	14.64
	21 - end	14.17	13.10	11.26	9.98	9.96	10.55	13.04	14.42	14.98	14.63	14.54	14.65
	Mean	14.25	13.46	12.02	10.12	9.94	10.39	11.80	14.17	14.77	14.79	14.60	14.63
1942	1 - 10	14.68	14.56	13.76	12.39	9.86	10.34	10.76	13.97	14.64	15.12	14.90	14.96
	11 - 20	14.70	14.41	13.28	11.50	9.89	10.45	11.74	14.39	14.99	14.85	14.93	14.94
	21 - end	14.65	14.09	12.76	10.41	10.07	10.55	13.13	14.48	15.14	14.88	14.97	14.88
	Mean	14.68	14.35	13.27	11.43	9.94	10.45	11.88	14.28	14.92	14.98	14.93	14.93

TEN DAYS AND MONTHLY MEANS GAUGE

No. 13

Station: DUEIM

River: White Nile

Year	Date	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1943	1 - 10	14.83	14.77	13.76	12.04	10.04	10.20	10.48	12.97	14.57	15.18	15.28	15.29
	11 - 20	14.83	14.51	13.32	11.11	10.03	10.13	10.69	13.81	14.98	15.21	15.24	15.30
	21 - end	14.85	14.14	12.77	10.24	10.13	10.32	11.53	14.34	15.17	15.24	15.27	15.30
	Mean	14.83	14.47	13.28	11.13	10.07	10.22	10.90	13.71	14.91	15.21	15.26	15.30
1944	1 - 10	15.29	15.25	14.25	12.52	10.06	10.48	10.75	13.71	14.62	15.16	15.23	15.22
	11 - 20	15.26	14.95	13.82	11.56	10.07	10.48	11.12	14.24	15.00	15.18	15.24	15.24
	21 - end	15.32	14.61	13.27	10.59	10.34	10.64	12.65	14.39	15.13	15.25	15.23	15.30
	Mean	15.29	14.94	13.78	11.56	10.16	10.53	11.51	14.11	14.92	15.20	15.23	15.25
1945	1 - 10	15.37	15.22	14.23	12.28	9.72	10.11	10.58	12.70	14.59	15.20	15.27	15.21
	11 - 20	15.33	14.88	13.73	11.25	9.62	10.39	10.73	13.74	14.95	15.24	15.26	15.25
	21 - end	15.29	14.57	13.13	10.17	9.79	10.54	11.22	14.38	15.17	15.26	15.24	15.23
	Mean	15.33	14.89	13.70	11.22	9.71	10.35	10.84	13.61	14.90	15.23	15.24	15.23

TEN DAYS AND MONTHLY MEANS GAUGE

No. 14

Station: DUEIM

River: White Nile

Year	Date	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1946	1 - 10	15.24	15.32	14.78	13.41	10.99	9.86	10.64	13.77	14.78	15.24	15.30	15.17
	11 - 20	15.28	15.23	14.44	12.76	9.72	10.08	11.81	14.24	14.94	15.28	15.24	15.16
	21 - end	15.32	15.11	13.96	12.02	9.78	10.38	12.95	14.56	15.18	15.30	15.19	15.20
	Mean	15.28	15.22	14.39	12.73	10.16	10.11	11.80	14.19	14.97	15.27	15.24	15.18
1947	1 - 10	15.25	15.27	15.39	14.79	13.84	11.63	10.73	13.79	14.48	15.21	15.25	15.24
	11 - 20	15.26	15.32	15.26	14.52	13.39	10.77	11.01	14.23	14.73	15.21	15.27	15.29
	21 - end	15.26	15.39	15.01	14.19	12.69	10.60	12.55	14.40	15.12	15.22	15.25	15.30
	Mean	15.26	15.3[illegible]	15.22	14.50	13.31	11.00	11.43	14.14	14.78	15.21	15.26	15.28
1948	1 - 10	15.29	15.25	14.75	13.67	11.21	10.17	11.08	13.93	14.46	15.23	15.22	15.18
	11 - 20	15.28	15.13	14.46	13.16	10.27	10.35	12.41	14.23	14.85	15.25	15.19	15.17
	21 - end	15.29	15.01	14.11	12.33	10.08	10.68	13.42	14.32	15.12	15.26	15.15	15.17
	Mean	15.29	15.13	14.44	13.05	10.52	10.40	12.30	14.16	14.81	15.25	15.19	15.17

TEN DAYS AND MONTHLY MEANS GAUGE

No. 15

Station: DUEIM

River: White Nile

Year	Date	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1949	1 - 10	15.19	15.21	15.07	13.93	12.25	10.13	10.75	13.38	14.54	15.22	15.20	15.13
	11 - 20	15.22	15.18	14.76	13.52	11.18	10.30	10.94	14.22	14.84	15.23	15.14	15.12
	21 - end	15.24	15.16	14.41	12.97	10.13	10.50	11.95	14.45	15.08	15.24	15.12	15.15
	Mean	15.22	15.18	14.75	13.47	11.19	10.31	11.21	14.02	14.70	15.23	15.15	15.13
1950	1 - 10	15.20	15.24	15.00	13.78	11.91	10.39	10.73	13.59	14.58	15.17	15.20	15.16
	11 - 20	15.21	15.20	14.66	13.34	10.93	10.45	11.00	14.30	14.88	15.18	15.21	15.14
	21 - end	15.22	15.15	14.30	12.70	10.40	10.64	12.43	14.38	15.12	15.22	15.19	15.18
	Mean	15.21	15.20	14.65	13.27	11.08	10.49	11.39	14.09	14.86	15.19	15.20	15.16
1951	1 - 10	15.22	15.25	14.69	13.37	10.34	9.94	10.42	12.79	14.57	15.11	15.16	15.12
	11 - 20	15.19	15.20	14.41	12.71	9.87	10.18	10.64	13.73	14.86	15.12	15.13	15.12
	21 - end	15.22	15.03	13.95	11.65	9.84	10.36	11.45	14.37	15.09	15.15	15.12	15.14
	Mean	15.21	15.16	14.35	12.58	10.02	10.16	10.84	13.63	14.84	15.13	15.14	15.13

TEN DAYS AND MONTHLY MEANS GAUGE

No. 16

Station: DUEIM

River: White Nile

Year	Date	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1952	1 - 10	15.21	15.12	13.92	11.98	10.06	10.23	10.57	13.18	14.54	15.10	15.23	15.23
	11 - 20	15.27	14.72	13.39	10.94	10.01	10.27	10.86	13.98	14.73	15.14	15.24	15.25
	21 - end	15.27	14.42	12.72	10.19	10.06	10.42	11.79	14.52	14.98	15.23	15.23	15.27
	Mean	15.25	14.75	13.34	11.04	10.04	10.31	11.07	13.89	14.75	15.16	15.23	15.25
1953	1 - 10	15.24	14.98	14.23	12.06	10.04	10.24	10.60	13.29	14.79	15.26	15.24	15.20
	11 - 20	15.24	14.80	13.71	10.71	10.03	10.34	10.79	14.15	15.07	15.26	15.23	15.18
	21 - end	15.15	14.60	13.00	10.17	10.17	10.47	11.91	14.26	15.21	15.28	15.23	15.18
	Mean	15.21	14.79	13.65	10.98	10.08	10.35	11.10	13.90	15.02	15.27	15.23	15.19
1954	1 - 10	15.33	15.30	14.34	12.67	10.12	10.12	10.63	13.81	14.54	15.28	15.25	15.32
	11 - 20	15.36	15.08	13.94	11.65	10.08	10.32	11.12	14.52	14.88	15.25	15.31	15.32
	21 - end	15.33	14.75	13.43	10.54	9.99	10.50	12.66	14.53	15.16	15.28	15.39	15.53
	Mean	15.34	15.04	13.90	11.62	10.06	10.31	11.47	14.29	14.86	15.27	15.32	15.39

TEN DAYS AND MONTHLY MEANS GAUGE

No. 17

Station: DUEIM

River: White Nile

Year	Date	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1955	1 - 10	15.36	15.41	15.25	15.32	12.78	10.37	10.77	13.66	14.46	15.41	15.47	15.39
	11 - 20	15.37	15.38	15.08	13.87	11.99	10.47	11.13	14.29	14.85	15.35	15.39	15.38
	21 - end	15.37	15.34	14.68	13.39	10.94	10.57	12.51	14.40	15.34	15.42	15.37	15.38
	Mean	15.37	15.38	15.00	14.19	11.90	10.47	11.47	14.12	14.88	15.39	15.41	15.38
1956	1 - 10	15.40	15.42	15.42	14.44	13.15	11.23	11.17	14.58	14.47	15.39	15.43	15.41
	11 - 20	15.42	15.44	15.09	14.07	12.60	10.71	12.63	14.54	14.86	15.44	15.41	15.39
	21 - end	15.38	15.45	14.76	13.60	11.98	10.78	13.82	14.45	15.20	15.43	15.39	15.38
	Mean	15.40	15.44	15.09	14.04	12.58	10.91	12.54	14.52	14.84	15.42	15.41	15.39
1957	1 - 10	15.43	15.37	15.34	14.78	14.33	12.59	10.92	13.42	14.60	15.29	15.40	15.41
	11 - 20	15.41	15.34	15.10	14.67	13.88	11.65	11.06	14.21	14.96	15.34	15.41	15.42
	21 - end	15.41	15.38	14.91	14.58	13.34	10.97	12.12	14.38	15.03	15.36	15.41	15.44
	Mean	15.42	15.36	15.11	14.68	13.85	11.74	11.37	14.00	14.86	15.33	15.41	15.42

TEN DAYS AND MONTHLY MEANS GAUGE

No. 18

Station: DUEIM

River: White Nile

Year	Date	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1958	1 - 10	15.43	15.09	14.50	12.89	10.17	10.15	10.72	13.50	14.46	15.29	15.46	15.38
	11 - 20	15.34	14.87	14.19	11.82	10.28	10.30	11.00	14.26	14.77	15.39	15.45	15.36
	21 - end	15.25	14.67	13.64	10.58	10.18	10.48	12.40	14.37	15.26	15.43	15.43	15.38
	Mean	15.34	14.88	14.11	11.76	10.21	10.31	11.37	14.04	14.83	15.37	15.45	15.37
1959	1 - 10	15.45	15.34	14.88	13.64	11.09	10.35	10.58	13.20	14.63	15.29	15.36	15.41
	11 - 20	15.44	15.22	14.59	13.07	10.25	10.44	10.78	14.13	14.59	15.37	15.34	15.42
	21 - end	15.39	15.09	14.20	12.25	10.21	10.50	11.70	14.61	14.77	15.34	15.37	15.49
	Mean	15.43	15.22	14.56	12.99	10.52	10.43	11.02	13.98	14.66	15.33	15.36	15.44
1960	1 - 10	15.46	15.49	15.09	13.94	11.82	10.42	10.65	13.41	14.68	15.53	15.52	15.51
	11 - 20	15.51	15.43	14.76	13.39	10.69	10.41	10.89	14.14	15.23	15.52	15.52	15.55
	21 - end	15.53	15.30	14.43	12.72	10.44	10.48	12.16	14.53	15.53	15.53	15.51	15.59
	Mean	15.50	15.41	14.76	13.35	10.98	10.44	11.23	14.03	15.15	15.53	15.52	15.55

TEN DAYS AND MONTHLY MEANS GAUGE

No. 19

Station: DUEIM

River: White Nile

Year	Date	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1961	1 - 10	15.58	15.43	14.72	12.96	10.49	10.18	10.64	13.97	14.49	15.22	15.48	15.57
	11 - 20	15.57	15.25	14.33	11.85	10.46	10.22	11.41	14.48	14.58	15.44	15.48	15.62
	21 - end	15.56	15.05	13.78	10.79	10.28	10.35	12.95	14.52	14.93	15.47	15.53	15.73
	Mean	15.56	15.24	14.28	11.86	10.41	10.25	11.67	14.32	14.67	15.38	15.50	15.63
1962	1 - 10	15.74	15.79	15.80	15.52	14.52	12.73	11.00	13.79	14.80	15.53	15.72	15.73
	11 - 20	15.73	15.79	15.82	15.21	13.99	11.92	11.17	14.53	15.11	15.64	15.73	15.67
	21 - end	15.74	15.78	15.70	14.87	13.42	11.15	12.29	14.59	15.37	15.68	15.73	15.69
	Mean	15.74	15.79	15.77	15.20	13.98	11.93	11.49	14.30	15.09	15.62	15.73	15.70
1963	1 - 10	15.69	15.76	15.82	15.42	14.56	13.77	13.17	14.00	14.58	15.34	15.72	15.80
	11 - 20	15.72	15.74	15.78	15.17	14.28	13.70	12.29	14.59	14.85	15.35	15.73	15.82
	21 - end	15.76	15.75	15.65	14.87	13.90	13.53	12.61	14.55	15.22	15.41	15.73	15.85
	Mean	15.72	15.75	15.75	15.15	14.25	13.67	12.69	14.38	14.88	15.37	15.73	15.82

TEN DAYS AND MONTHLY MEANS GAUGE

No. 20

Station: DUEIM

River: White Nile

Year	Date	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1964	1 - 10	15.82	15.84	15.85	15.78	14.98	13.10	11.27	14.26	14.81	15.44	15.55	15.48
	11 - 20	15.76	15.83	15.86	15.62	14.50	11.95	11.57	14.75	15.02	15.49	15.48	15.59
	21 - end	15.77	15.85	15.84	15.30	13.86	11.27	12.82	14.78	15.23	15.50	15.43	15.59
	Mean	15.78	15.84	15.85	15.57	14.45	12.11	11.87	14.60	15.02	15.48	15.49	15.55
1965	1 - 10	15.58	15.56	15.53	15.62	15.48	13.49	11.37	13.36	15.21	15.50	15.42	15.61
	11 - 20	15.56	15.57	15.61	15.61	14.99	12.33	11.56	13.37	15.44	15.53	15.46	15.57
	21 - end	15.59	15.55	15.65	15.61	14.35	11.57	11.99	13.86	15.53	15.52	15.57	15.60
	Mean	15.58	15.56	15.60	15.61	14.94	12.46	11.64	13.53	15.39	15.52	15.48	15.59
1966	1 - 10	15.62	15.56	15.31	14.76	12.68	10.84	11.48	13.39	15.02	15.44	15.49	15.48
	11 - 20	15.60	15.45	15.33	14.25	11.45	11.02	11.58	14.40	15.45	15.42	15.48	15.49
	21 - end	15.62	15.41	15.18	13.56	10.81	11.27	11.87	14.70	15.45	15.47	15.48	15.45
	Mean	15.61	15.47	15.27	14.19	11.65	11.04	11.64	14.16	15.31	15.44	15.48	15.47

TEN DAYS AND MONTHLY MEANS GAUGE

No. 21

Station: DUEIM

River: White Nile

Year	Date	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1967	1 - 10	15.47	15.46	15.51	15.28	13.95	11.15	10.84	14.95	14.83	15.48	15.51	15.49
	11 - 20	15.53	15.49	15.52	14.77	13.34	10.57	11.08	14.68	15.09	15.55	15.47	15.50
	21 - end	15.53	15.50	15.51	14.39	12.44	10.65	12.51	14.77	15.36	15.53	15.46	15.51
	Mean	15.51	15.48	15.51	14.81	13.24	10.79	11.48	14.80	15.09	15.52	15.48	15.50
1968	1 - 10	15.53	15.55	15.53	15.05	13.92	11.26	11.01	14.28	15.26	15.38	15.35	15.37
	11 - 20	15.53	15.51	15.55	14.72	13.25	10.67	11.82	14.61	15.44	15.40	15.37	15.36
	21 - end	15.54	15.50	15.39	14.41	12.40	10.74	13.22	14.77	15.36	15.40	15.41	15.35
	Mean	15.53	15.52	15.49	14.73	13.19	10.89	12.02	14.55	15.35	15.39	15.38	15.36
1969	1 - 10	15.32	15.46	15.47	14.86	12.83	10.75	11.27	14.37	15.13	15.40	15.38	15.45
	11 - 20	15.37	15.40	15.46	14.26	11.66	10.79	11.89	14.68	15.41	15.44	15.31	15.42
	21 - end	15.42	15.48	15.30	13.91	10.83	10.92	13.16	14.81	15.41	15.45	15.36	15.44
	Mean	15.37	15.45	15.41	14.34	11.77	10.82	12.11	14.62	15.32	15.43	15.35	15.44

TEN DAYS AND MONTHLY MEANS GAUGE

No. 22

Station: DUEIM

River: White Nile

Year	Date	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1970	1 - 10	15.50	15.48	15.51	14.78	12.74	10.73	11.12	13.73	14.80	15.39	15.38	15.32
	11 - 20	15.52	15.50	15.51	14.28	11.95	10.77	11.55	14.52	15.26	15.41	15.35	15.30
	21 - end	15.49	15.50	15.31	13.59	10.93	10.88	11.71	14.58	15.42	15.43	15.33	15.34
	Mean	15.50	15.49	15.44	14.22	11.87	10.79	11.46	14.28	15.16	15.41	15.33	15.32
1971	1 - 10	15.42	15.37	15.39	14.90	12.98	10.77	11.10	14.03	15.13	15.42	15.38	15.43
	11 - 20	15.46	15331	15.45	14.44	12.07	10.77	11.67	14.81	15.28	15.40	15.37	15.41
	21 - end	15.42	15.34	15.33	13.75	11.17	10.79	12.77	15.13	15.45	15.41	15.41	15.35
	Mean	15.43	15.34	15.39	14.36	12.07	10.78	11.85	14.65	15.29	15.41	15.39	15.40
1972	1 - 10	15.38	15.39	15.44	14.58	12.46	10.67	10.93	13.79	15.18	15.38	15.34	15.40
	11 - 20	15.44	15.38	15.37	14.03	11.85	10.71	11.41	14.61	15.26	15.36	15.30	15.42
	21 - end	15.46	15.40	15.13	13.30	11.04	10.73	12.48	15.14	15.35	15.38	15.34	15.45
	Mean	15.43	15.39	15.31	14.06	11.78	10.70	11.61	14.51	15.26	15.37	15.33	15.42

TEN DAYS AND MONTHLY MEANS GAUGE

No. 23

Station: DUEIM

River: White Nile

Year	Date	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1973	1 - 10	15.41	15.39	15.30	14.70	12.92	10.73	11.24	13.63	15.04	15.46	15.41	15.43
	11 - 20	15.38	15.36	15.21	14.19	12.12	10.91	11.59	14.53	14.98	15.41	15.36	15.51
	21 - end	15.38	15.36	15.09	13.68	11.02	10.97	12.35	14.93	15.27	15.42	15.38	15.57
	Mean	15.39	15.37	15.20	14.19	12.02	10.87	11.73	14.36	15.10	15.43	15.38	15.50
1974	1 - 10	15.60	15.43	15.31	14.63	12.83	10.79	11.31	13.93	15.17	15.39	15.47	15.36
	11 - 20	15.53	15.40	15.26	14.12	11.88	10.88	11.99	14.58	15.30	15.45	15.41	15.44
	21 - end	15.46	15.39	15.04	13.59	10.84	11.04	12.51	14.69	15.36	15.46	15.38	15.54
	Mean	15.53	15.41	15.20	14.11	11.85	10.90	11.94	14.40	15.28	15.43	15.32	15.45
1975	1 - 10	15.45	15.37	15.40	14.89	12.94	10.70	11.27	13.93	15.40	15.54	15.47	15.42
	11 - 20	15.38	15.36	15.38	14.42	12.00	10.77	12.46	14.67	15.56	15.52	15.47	15.34
	21 - end	15.38	15.43	15.30	13.78	11.13	10.97	12.79	15.08	15.57	15.55	15.41	15.27
	Mean	15.40	15.39	15.36	14.36	12.02	10.81	12.17	14.56	15.51	15.54	15.45	15.34

TEN DAYS AND MONTHLY MEANS GAUGE

No. 24

Station: DUEIM

River: White Nile

Year	Date	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1976	1 - 10	15.29	15.45	15.33	15.10	13.84	11.02	11.49	14.05	15.21	15.37	15.44	15.38
	11 - 20	15.33	15.48	15.38	14.82	12.89	11.04	12.06	14.58	15.31	15.40	15.37	15.34
	21 - end	15.40	15.45	15.30	14.44	11.63	11.07	13.01	14.93	15.33	15.45	15.39	15.34
	Mean	15.34	15.46	15.34	14.79	12.79	11.04	12.19	14.52	15.28	15.41	15.40	15.35
	1 - 10												
	11 - 20												
	21 - end												
	Mean												
	1 - 10												
	11 - 20												
	21 - end												
	Mean												

III Soil Mechanic Data

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SOIL PROFILE

NAME OF SURVEY & LOCALITY

DATE JUN. 1977

LOCATION

BORE NO. 1

SURVEYED BY

GROUND ELEVATION 378.2 m

GROUND-WATER LEVEL Lower than a depth of 4.9 m

DEPTH (m)	ELEV. (m)	THICKNESS OF STRATUM (m)	LOG	CLASSIFICATION	COLOR	DESCRIPTION
0.8		0.8		C	perpl-ish gray	Wood is included; cracky.
1.7		0.9		S	yellow-ish gray	Wood is included; moist.
3.2		1.5		C	light gray in dry condi-tion	Cracky.
4.9		1.7		S	yellow-ish gray	Fine sand; moist.

SOIL PROFILE

NAME OF SURVEY & LOCATION

DATE JUN. 1977

LOCATION

BORE NO. 2

SURVEYED BY

GROUND ELEVATION 376.7 m

GROUND WATER LEVEL Lower than a depth of 1.4 m

DEPTH (m)	ELEV. (or datum) m	THICKNESS OF STRATA (m)	LOG	CLASSIFICATION AND DESCRIPTION OF MATERIAL			WATER TABLE
				CLASSIFICATION	COLOR	DESCRIPTION	
0.45		0.45		C	gray	Cracky.	
1.40		0.95		C	brown-ish gray	Cracky. See soil test data.	

SOIL PROFILE

NAME OF SURVEY & LOCALITY

DATE JUN. 1977

LOCATION 土孔 NO. 3

SURVEYED BY

GROUND ELEVATION 377.2 m

GROUND-WATER LEVEL Lower than a depth of 8.65 m

DEPTH (m)	ELEV. (Top of stratum) m	THICKNESS OF STRATUM (m)	LOG	CLASSIFICATION AND DESCRIPTION OF MATERIAL			DIAMETER OF HOLE
				CLASSIFICATION	COLOR	DESCRIPTION	
0.2		0.2		C	gray	Cracky.	
				C	gray	Moist, water content is lower than plastic limit. See soil test data.	
1.45		1.25					
				C		Supposition from a swedish sounding test.	
8.65				S		Supposition from a swedish sounding test.	

SOIL PROFILE

NAME OF SURVEY & LOCALITY

DATE JUN. 1977

LOCATION ~~HOLE~~ NO 4

SURVEYED BY

GROUND ELEVATION 376.7 m

GROUND-WATER LEVEL A depth of 1.45 m

DEPTH (m)	ELEV. (Top of stratum) m	THICKNESS OF STRATUM (m)	LOG	CLASSIFICATION AND DESCRIPTION OF MATERIAL			DIAMETER OF HOLE
				CLASSIFICATION	COLOR	DESCRIPTION	
0.15		0.15		C	gray	Somewhat sandy; cracky.	
		0.50		C	gray	Water content is higher than plastic limit.	
0.65							
1				S	brown	Worse gradation; moist. See soil test data.	
		1.15					
1.8							
2				S	yellow-ish brown	Corser than overlaid "S" layer; worse gradation; moist. See soil test data.	
2.45		0.65					
2.55		0.10		S	gray	Fine sand; worth gradation; moist.	
3							
						Supposition from a swedish sounding test	
4							
				S			
5							
6							
7							
7.25							

SOIL PROFILE

NAME OF SURVEY & LOCALITY

DATE JUN. 1977

LOCATION

HOLE NO. 5

SURVEYED BY

GROUND ELEVATION 378.2 m

GROUND-WATER LEVEL Lower than a depth of 3.3 m

DEPTH (m)	ELEVATION of bottom (m)	THICKNESS OF STRATUM (m)	LOG	CLASSIFICATION	COLOR	DESCRIPTION	WATER IN HOLE
1.3		1.3 ~2.5		C	gray	Cracky; fossil shell is included in lowermost part.	
2.6		1.3 ~0.1		S	light gray	Particle size is less than 1 mm; many laminae of sand - particle size is 1 ~2 mm - are included; dry	
3.25		0.65		S	grayish brown	Particle size is less than 2 mm; moist.	
3.30		0.05		M	yellowish gray		

SOIL PROFILE

NAME OF SURVEY & LOCALITY

DATE JUN. 1977

LOCATION

HOLE NO 6

SURVEYED BY

GROUND ELEVATION 376.2 m

GROUND-WATER LEVEL A depth of 0.5 - 1.0 m

DEPTH (m)	ELEV. (Top of stratum) m	THICKNESS OF STRATUM (m)	LOG	CLASSIFICATION AND DESCRIPTION OF MATERIAL			DIAMETER OF HOLE
				CLASSIFICATION	COLOR	DESCRIPTION	
0.1		0.1		C	gray	Cracky	
0.3		0.2		C	gray	Moist, water content is lower than plastic limit.	
1.35		1.15		C	gray	Maximum particle size is 2 mm; water content is higher than plastic limit (Wn > PL) See soil test data.	
1.7		0.35		C	brownish gray	More sandy than overlaid "C" layer; Wn PL.	
2.1		0.4		S	graynish brown	Sand with fines; Wn > PL.	
2.8		0.7		C	gray	Wn > PL. See soil test data.	
3.75		0.95		C	gray	Wn > PL. See soil test data.	
6.75		3.00		C		Supposition from a swedish sounding test.	
7.50		0.75		S		Supposition from a swedish sounding test.	

SOIL PROFILE

NAME OF SURVEY & LOCALITY — DATE JUN. 1977

LOCATION
~~HOLE~~ NO. 7 — SURVEYED BY

GROUND ELEVATION 376.2 m — GROUND-WATER LEVEL A depth of 2.4 m

DEPTH (m)	ELEV. Top of stratum	THICKNESS OF STRATUM (m)	LOG	CLASSIFICATION AND DESCRIPTION OF MATERIAL			WATER CONTENT
				CLASSIFICATION	COLOR	DESCRIPTION	
0.2		0.2		C	gray	Maximum particle size is 5 mm; cracky.	
				C	gray	Water content is higher than plastic limit; roots are included in a depth from 1.2 m to 1.6 m. See soil test data.	
2.5		2.3		C	brown-ish gray	Water content is higher than plastic limit.	
5.0		2.5		S	grayish brown	Maximum particle size is 5 mm; saturated with water.	

SOIL PROFILE

NAME OF SURVEY & LOCALITY

DATE June 1977

LOCATION

~~HOLE~~ NO. 8

SURVEYED BY

GROUND ELEVATION 375.2 m

GROUND WATER LEVEL Lower than a depth of 1.78 m

DEPTH (m)	ELEV. Top of stratum (m)	THICKNESS OF STRATUM (m)	LOG	CLASSIFICATION AND DESCRIPTION OF MATERIAL			DIAMETER OF HOLE
				CLASSIFICATION	COLOR	DESCRIPTION	
0.1		0.1		C	gray	Cracky	
				C	gray	Water content is higher than PL	
1.78		1.68					
						Supposition from a Swedish Sounding test.	
				C			
7.45							
7.51				S		Supposition from a Swedish sounding test	

SOIL PROFILE

NAME OF SURVEY & LOCALITY

DATE June 1977

LOCATION
HOLE NO 9

SURVEYED BY

GROUND ELEVATION 374.7 m

GROUND-WATER LEVEL 3.2m (supposition)

DEPTH (m)	ELEV (Top of stratum)	THICKNESS OF STRATUM (m)	LOG	CLASSIFICATION AND DESCRIPTION OF MATERIAL			DIAMETER OF HOLE
				CLASSIFICATION	COLOR	DESCRIPTION	
0.2		0.2		C	gray	Max. particle size is 2mm; cracky	
1				C	gray	Max.particle size is 2mm; water content is higher than PL (Wn > PL).	
1.5		1.3		C	brownish gray	More sandy than overlaid "C" layer; Max.particle size is 5mm; Wn PL.	
2 2.0		0.5					
3						Supposition from a swedish sounding test.	
4				C			
5							
6							
6.25				S		Supposition from a swedish sounding test	
7 7.07							

SOIL PROFILE

NAME OF SURVEY & LOCALITY

LOCATION

DATE June 1977

HOLE NO. 10

SURVEYED BY

GROUND ELEVATION 375.2 m

GROUND-WATER LEVEL a depth of 5.5 m

DEPTH (m)	ELEV. Top of stratum m	THICKNESS OF STRATUM (m)	LOG	CLASSIFICATION	COLOR	DESCRIPTION	PIEZOMETER TUBE
				C	gray	Max. particle size is 5 mm; Moist, water content is lower than PL.	
0.8		0.8					
				C	gray partly bluish gray	Max. particle size is 2 mm: water content is higher than PL. See soil test data.	
1.3		0.5					
						Supposition from a swedish sounding test	
				C			
7.25							
				S		Supposition from a swedish sounding test	
8.50							

SOIL PROFILE

NAME OF SURVEY & LOCATION
LOCATION
HOLE NO 11

DATE June 1977

SURVEYED BY

GROUND ELEVATION m

GROUND-WATER LEVEL Lower than a depth of 1.4

DEPTH (m)	ELEV. top of stratum (m)	THICKNESS OF STRATUM (m)	LOG	CLASSIFICATION	COLOR	DESCRIPTION
		0.6		C	bluish gray	Cracky in upper part, moist in lower part, water content is lower than PL. (Wn < PL).
0.6		0.4		S	light grayish brown	Fine sand; moist
1.0		0.15		C	gray	Wn < PL.
1.15		0.25		S	light grayish brown	Fine sand; moist
1.40				C	gray	Wn < PL.

1
2
3
4

SWEDISH SOUNDING TEST

FOR REPORTING

NAME OF SURVEY & LOCALITY

LOCATION 2

DATE June 1977

GROUND ELEVATION 376.7

GROUND-WATER LEVEL m

TOTAL DEPTH 1.50 m

CHECKED BY

TESTED BY

ELEVATION m	DEPTH m	ESTIMATED LOG	DESCRIPTION OF MATERIAL	NO. OF HALF ROTATION PER METER (Nsw)
				(Wsw) WEIGHT (kg) 0 5 25 50 75 100
				0 20 40 60 80 100 200 300 400 500 600 800
			Clay: cracky	
	1			
	2			
	3			
	4			
	5			
	6			
	7			
	8			
	9			
	10			
	11			
	12			
	13			
	14			
	15			
	16			
	17			
	18			

SWEDISH SOUNDING TEST

FOR REPORTING

NAME OF SURVEY & LOCALITY

LOCATION 3

DATE june 1977

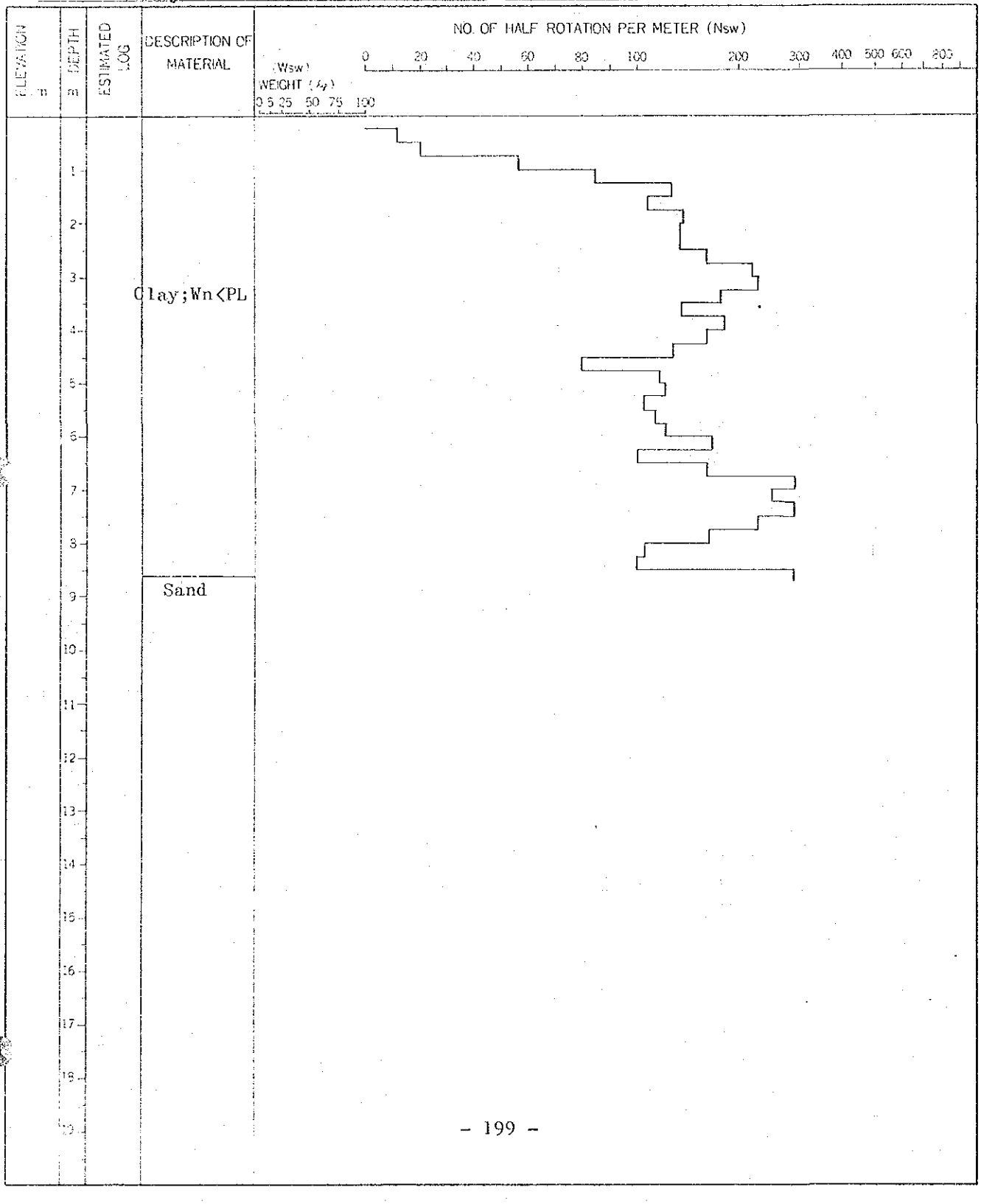
GROUND ELEVATION 377.2

GROUND-WATER LEVEL m

TOTAL DEPTH 8.67 m

CHECKED BY

TESTED BY



SWEDISH SOUNDING TEST

FOR REPORTING

NAME OF SURVEY & LOCALITY

LOCATION 4

DATE June 1977

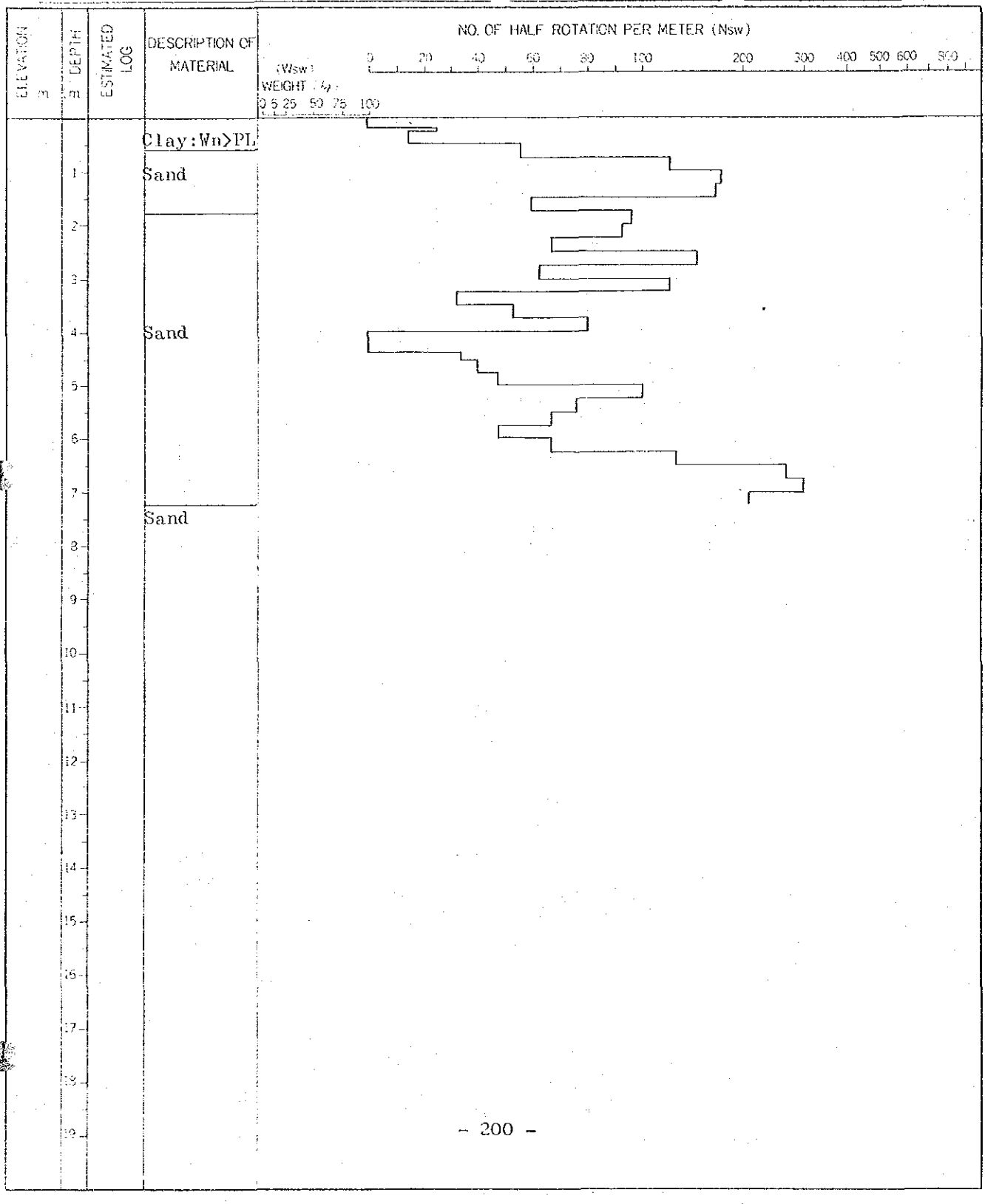
GROUND ELEVATION 376.7

GROUND-WATER LEVEL DEPTH 1.45 m

TOTAL DEPTH 7.25 m

CHECKED BY

TESTED BY



SWEDISH SOUNDING TEST

FOR REPORTING

NAME OF SURVEY & LOCALITY

LOCATION 6

DATE June 1977

GROUND ELEVATION 376.2

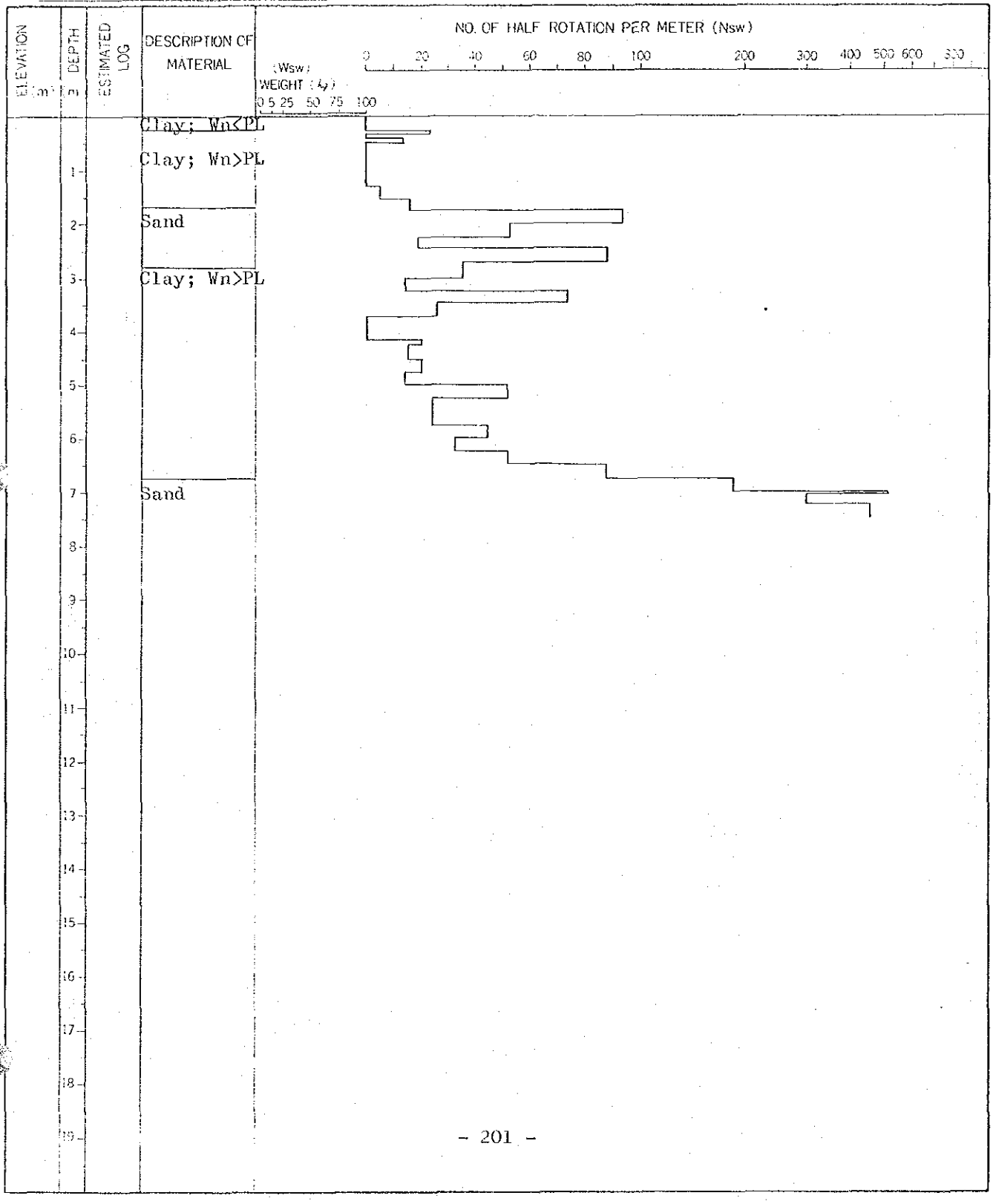
DEPTH 0.5-

GROUND-WATER ~~LEVEL~~ 1.0m

TOTAL DEPTH 7.50 m

CHECKED BY

TESTED BY



SWEDISH SOUNDING TEST

FOR REPORTING

NAME OF SURVEY & LOCALITY

LOCATION 7

DATE June 1977

GROUND ELEVATION 376.2

GROUND-WATER ~~LEVEL~~ DEPTH 2.4 m

TOTAL DEPTH 4.77 m

CHECKED BY

TESTED BY

ELEVATION (m)	DEPTH (m)	ESTIMATED LOG	DESCRIPTION OF MATERIAL	NO. OF HALF ROTATION PER METER (Nsw) (Wsw) WEIGHT (kg) 0 5 25 50 75 100 — 0 20 40 60 80 100 200 300 400 500 600 800
	1			
	2		Clay; Wn>PL	
	3			
	4			
	5		Sand	
	6			
	7			
	8			
	9			
	10			
	11			
	12			
	13			
	14			
	15			
	16			
	17			
	18			
	19			

SWEDISH SOUNDING TEST

FOR REPORTING

NAME OF SURVEY & LOCALITY

LOCATION 8

DATE June 1977

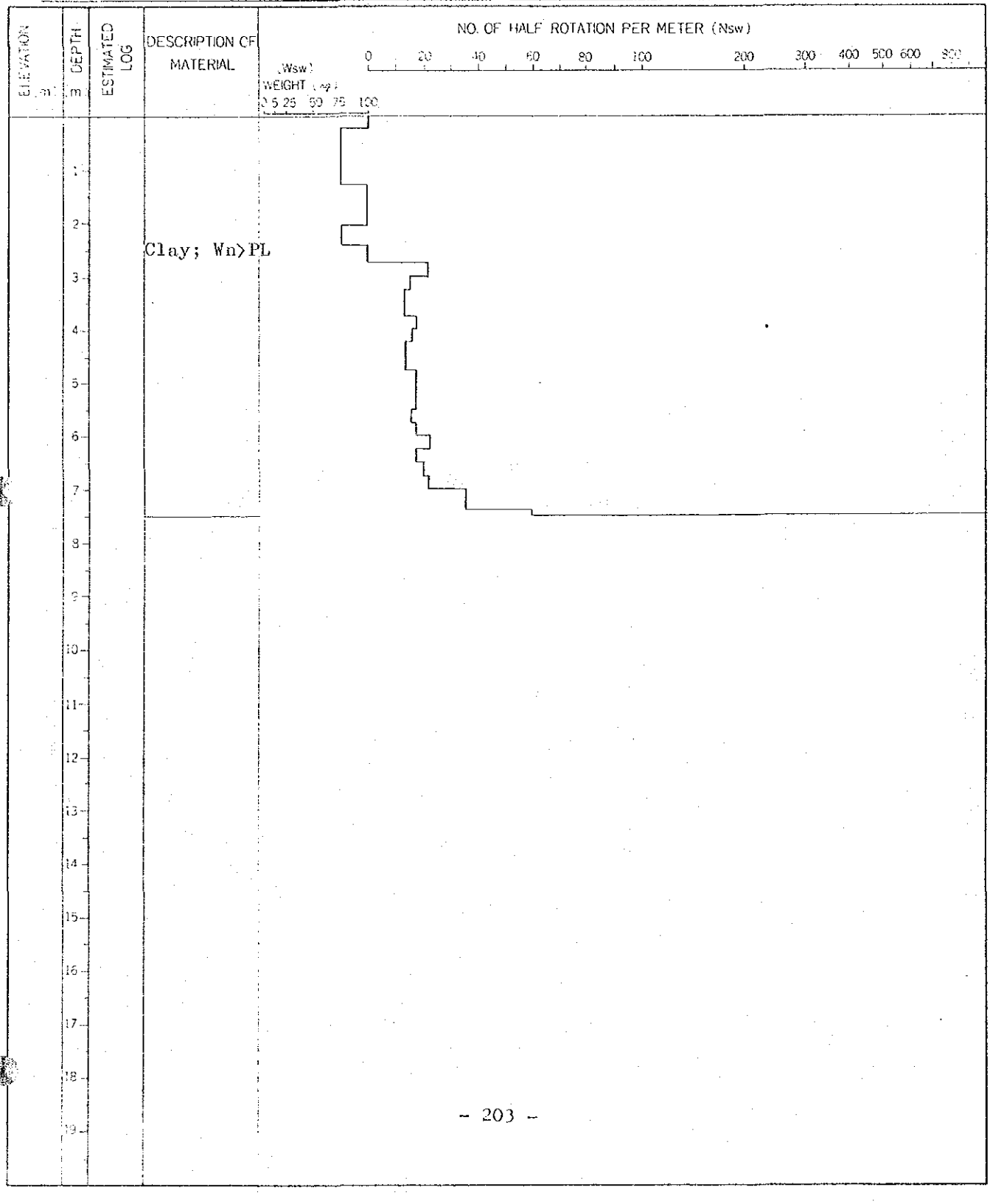
GROUND ELEVATION 375.2

GROUND-WATER LEVEL m

TOTAL DEPTH 7.51 m

CHECKED BY

TESTED BY



SWEDISH SOUNDING TEST

FOR REPORTING

NAME OF SURVEY & LOCALITY

LOCATION 9

DATE June 1977

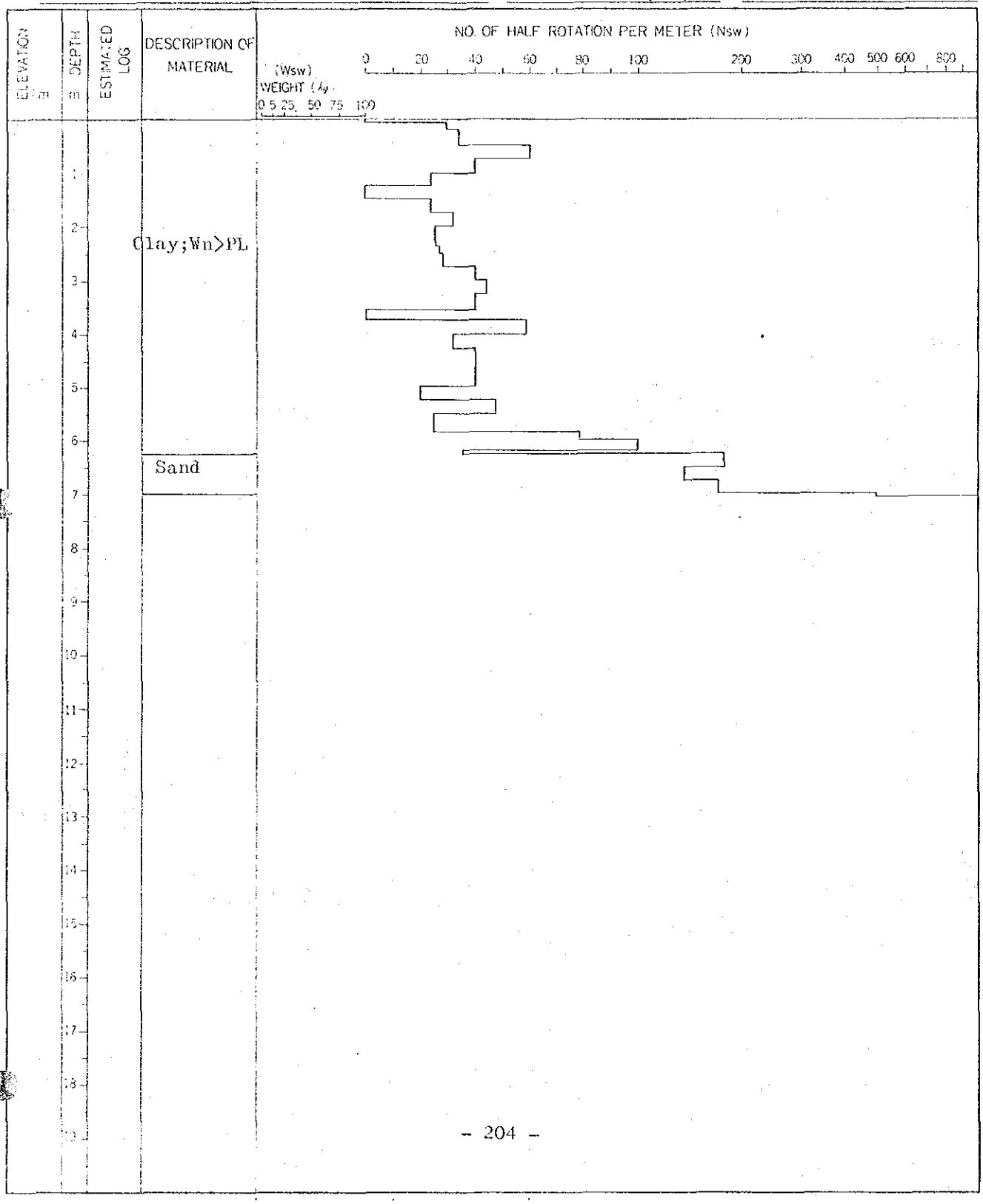
GROUND ELEVATION 374.7

GROUND-WATER LEVEL m

TOTAL DEPTH 7.07 m

CHECKED BY

TESTED BY



SWEDISH SOUNDING TEST

FOR REPORTING

NAME OF SURVEY & LOCALITY

LOCATION 10

DATE June 1977

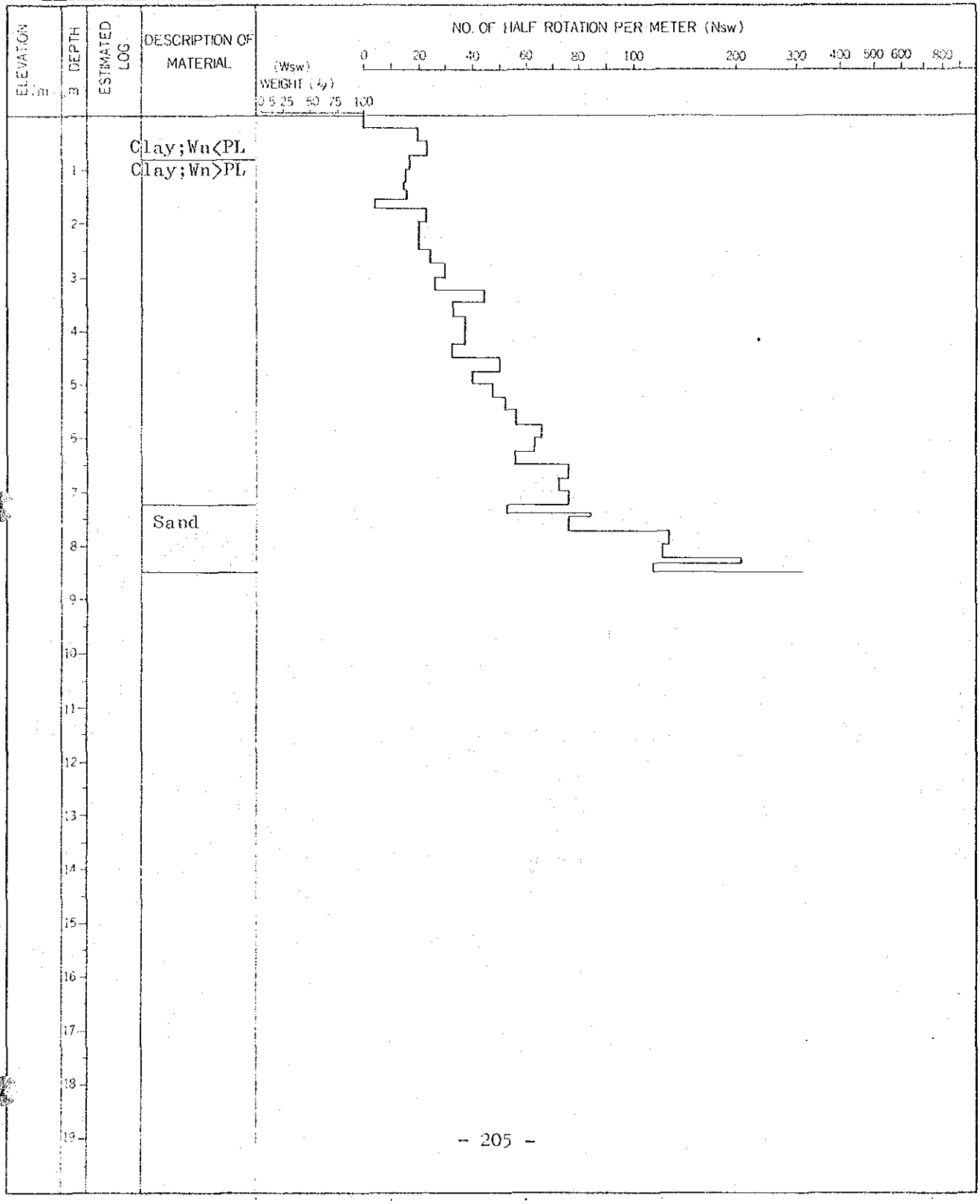
GROUND ELEVATION 375.2

GROUND-WATER ~~LEVEL~~ DEPTH 5.5 m

TOTAL DEPTH 8.50 m

CHECKED BY

TESTED BY



SUMMARY OF SOIL TEST
(RELEVÉ DES ESSAIS DES SOLS)

FOR REPORTING (POUR LE RAPPORT)

NAME OF SURVEY & LOCALITY (NOM DE L'ENQUÊTE ET LOCALITÉ): RICE DEVELOPMENT PROJECT IN ABU GASABA BASIN, SUDAN

LOCATION							
~~SAMPLE~~ NO (N° DE L'ÉCHANTILLON)				2	3	4	4	6
SAMPLE DEPTH (PROFONDEUR DE L'ÉCHANTILLON)			(m)	0.45 ~ 1.4	0.2 ~ 1.45	0.65 ~ 1.8	1.8 ~ 2.45	0.3 ~ 1.35
GRAIN SIZE (GRANULOMÉTRIE)	GRAVEL	(GRAVIER)	(%)	0	0	0	0	0
	SAND	(SABLE)	(%)	3	3	81	86	15
	SILT	(SILT)	(%)	47	56	4	6	45
	CLAY	(ARGILE)	(%)	50	41	15	8	40
	MAX. DIAMETER (DIAMÈTRE MAX.)		(mm)	2.00	2.00	4.76	4.76	2.00
	COEFFICIENT OF UNIFORMITY (COEFFICIENT D'UNIFORMITÉ)		Uc	>11	>17	>180	36	> 24
	COEFFICIENT OF CURVATURE (COEFFICIENT DE COURBURE)		Uc			> 80	7.7	> 0.042
CONSISTENCY (CONSISTANCE)	LIQUID LIMIT (LIMITE DE LIQUIDITÉ)		w_L (%)	61.0	103.3	23.2	20.1	84.1
	PLASTIC LIMIT (LIMITE DE PLASTICITÉ)		w_P (%)	24.6	28.2	12.9	11.9	22.9
	PLASTICITY INDEX (INDICE DE PLASTICITÉ)		Ip	36.4	75.1	10.3	8.2	61.2
*	JAPAN UNIFIED SOIL CLASSIFICATION			CH	CH	SC	S-C	CH
SPECIFIC GRAVITY OF SOIL (POIDS SPÉCIFIQUE DU SOL)			Gs	2.740	2.709	2.664	2.661	2.709
NATURAL STATE (ÉTAT NATURAL)	WATER CONTENT (TENEUR EN EAU)		w (%)	12.7	21.5	10.0	15.9	26.0
	WET DENSITY (DENSITÉ HUMIDE)		γ_t (g/m³)					
	VOID RATIO (INDICE DES VIDES)		e					
	DEGREE OF SATURATION (DEGRÉ DE SATURATION)		Sr (%)					
MECHANICAL PROPERTIES (PROPRIÉTÉS MÉCANIQUES)	UNCONFINED COMPRESSION (UNIAXE)	COMPRESSIVE STRENGTH (RÉSISTANCE À LA COMPRESSION)	Qu (kg/cm²)					
		MODULUS OF ELASTICITY (MODULE D'ÉLASTICITÉ)	E50 (kg/cm²)					
		SENSITIVITY RATIO (INDICE DE SENSITIVITÉ)	St					
	** (1) · (2)	TYPE OF TEST (TYPE DE L'ESSAI) ***						
		COHESION (CONÉSION)	C (kg/cm²)					
		ANGLE OF INTERNAL FRICTION (ANGLE DE FROTTEMENT INTERNE)	φ (°)					
	CONSOLIDATION (CONSOLIDATION)	YIELD STRESS OF CONSOLIDATION (LIMITE D'ÉLASTITÉ DE CONSOLIDATION)	Py (kg/cm²)					
		COMPRESSION INDEX (INDICE DE COMPRESSION)	Cc					

* CLASSIFICATION (CLASSIFICATION)

** (1) : DIRECT SHEAR (CISAILLEMENT), (2) : TRIAXIAL COMPRESSION (COMPRESSION TRIAXIAL)

*** UNCONSOLIDATED, UNDRAINED (NON CONSOLIDÉ, NON DRAINÉ) : UU ; CONSOLIDATED, UNDRAINED (CONSOLIDÉ, NON DRAINÉ) : CU ; CONSOLIDATED, DRAINED (CONSOLIDÉ DRAINÉ) : CD

(~ OVER THE SYMBOL SHOWS THE MEASUREMENT OF PORE WATER PRESSURE (LE TRAIT AU DESSUS DU SYMBOL MONTRE LA PRESSION DE L'EAU INTERSTITIELLE))

N. K. FORM NO. 015 (1975)

SUMMARY OF SOIL TEST
(RELEVÉ DES ESSAIS DES SOLS)

FOR REPORTING (POUR LE RAPPORT)

NAME OF SURVEY & LOCALITY (CAMPAGNE DE PROJET ET LOCALITÉ): RICE DEVELOPMENT PROJECT IN ABU GASABA BASIN, SUDAN

	LOCATION ~~SAMPLE NO. (N° DE L'ÉCHANTILLON)~~	6	6	7	10	
	SAMPLE DEPTH (PROFONDEUR DE L'ÉCHANTILLON) (m)	2.1~2.8	2.8~3.75	0.2~2.5	0.8~1.3	
GRADATION (GRANULOMÉTRIE)	GRAVEL (GRAVIER) (%)	0	0	1	0	
	SAND (SABLE) (%)	78	15	6	7	
	SILT (SILT) (%)	6	47	25	46	
	CLAY (ARGILE) (%)	16	38	68	47	
	MAX DIAMETER (DIAMÈTRE MAX.) (mm)	2.00	2.00	9.52	4.76	
	COEFFICIENT OF UNIFORMITY (COEFFICIENT D'UNIFORMITÉ) Uc	>260	>26	>1.6	>14	
	COEFFICIENT OF CURVATURE (COEFFICIENT DE COURBURE) U'c	> 65	> 0.12			
CONSISTENCY (CONSISTANCE)	LIQUID LIMIT (LIMITE DE LIQUIDITÉ) w_L (%)	29.3	66.1	94.2	70.4	
	PLASTIC LIMIT (LIMITE DE PLASTICITÉ) w_p (%)	12.4	22.7	29.5	21.9	
	PLASTICITY INDEX (INDICE DE PLASTICITÉ) I_p	16.9	43.4	64.7	48.5	
※	JAPAN UNIFIED SOIL CLASSIFICATION	SC	CH	CH	CH	
	SPECIFIC GRAVITY OF SOIL (POIDS SPÉCIFIQUE DU SOL) Gs	2.681	2.707	2.695	2.707	
NATURAL STATE (ÉTAT NATUREL)	WATER CONTENT (TENEUR EN EAU) w (%)	18.0	28.75	38.8	25.8	
	WET DENSITY (DENSITÉ HUMIDE) γ_t (g/m³)					
	VOID RATIO (INDICE DES VIDES) e					
	DEGREE OF SATURATION (DEGRÉ DE SATURATION) Sr (%)					
MECHANICAL PROPERTIES (PROPRIÉTÉS MÉCANIQUES) — UNCONFINED COMPRESSION (COMPRESSION UNIAXE)	COMPRESSIVE STRENGTH (RÉSISTANCE À LA COMPRESSION) qu (kg/cm²)					
	MODULUS OF ELASTICITY (MODULE D'ÉLASTICITÉ) E50 (kg/cm²)					
	SENSITIVITY RATIO (INDICE DE SENSITIVITÉ) St					
※※ (1)·(2)	TYPE OF TEST (TYPE DE L'ESSAI) ※※※					
	COHESION (COHÉSION) C (kg/cm²)					
	ANGLE OF INTERNAL FRICTION (ANGLE DE FROTTEMENT INTERNE) ϕ (°)					
CONSOLIDATION (CONSOLIDATION)	YIELD STRESS OF CONSOLIDATION (LIMITE D'ÉLASTICITÉ DE CONSOLIDATION) Py (kg/cm²)					
	COMPRESSION INDEX (INDICE DE COMPRESSION) Cc					

※ CLASSIFICATION (CLASSIFICATION)
※※ (1) : DIRECT SHEAR (CISAILLEMENT), (2) : TRIAXIAL COMPRESSION (COMPRESSION TRIAXIAL)
※※※ UNCONSOLIDATED, UNDRAINED (NON CONSOLIDÉ, NON DRAINÉ) : UU ; CONSOLIDATED, UNDRAINED (CONSOLIDÉ, NON DRAINÉ) : CU ; CONSOLIDATED, DRAINED (CONSOLIDÉ DRAINÉ) : CD ;

(BAR OVER THE SYMBOL SHOWS THE MEASUREMENT OF PORE WATER PRESSURE
(LE TRAIT AU DESSUS DU SYMBOL MONTRE LA PRESSION DE L'EAU INTERSTITIELLE))

N K FORM NO 015 (1975)

SUMMARY OF SOIL TEST				FOR REPORTING
NAME OF SURVEY & LOCALITY			PICE DEVELOPMENT PROJECT IN ABU GASABA BASIN, SUDAN	

LOCATION NO.				2	7	4
SAMPLE DEPTH (m)				0.45-1.4	0.2-2.5	0.65-1.8
CLASSIFICATION				CH	CH	SC
COMPACTION	NATURAL WATER CONTENT		ENERGY **	1 Ec	1 Ec	1 Ec
			WATER CONTENT (%)	12.7	38.8	9.5
			WET DENSITY (g/cm^3)	1.533	1.752	1.869
			DRY DENSITY (g/cm^3)	1.360	1.262	1.707
	ENERGY **			1 Ec	1 Ec	1 Ec
	OPTIMUM WATER CONTENT(%)			27.0	34.4	15.5
	MAXIMUM DRY DENSITY (g/cm^3)			1.456	1.294	1.738
CONE	NATURAL WATER CONTENT		ENERGY **	1 Ec	1 Ec	1 Ec
			CONE RESISTENCE (kg/cm^2)	>17	4.7	6.3
PERMEABILITY	NATURAL WATER CONTENT		ENERGY **	1 Ec	1 Ec	1 Ec
			COEF.OF PERMEABILITY (cm/sec)	2×10^{-7}	5×10^{-9}	6×10^{-4}
			ENERGY **			2 Ec
			COEF.OF PERMEABILITY (cm/sec)			3×10^{-4}
CONSOLIDATION	NATURAL WATER CONTENT		CONSOLIDATION PRESSURE(kg/cm^2)	1.0		
			COEF. OF VOLUME COMPRESSIBILITY (cm^2/kg)	5.8×10^{-2}		
			COEF.OF CONSOLIDATION(cm^2/min)	1.8×10^{-3}		
			COEF.OF PERMEABILITY (cm/min)	1.1×10^{-7}		
TRIAXIAL COMPRESSION	NATURAL WATER CONTENT		ENERGY **	1 Ec	1 Ec	1 Ec
			WET DENSITY (g/cm^3)	1.53	1.77	1.87
			DRY DENSITY (g/cm^3)	1.36	1.28	1.69
			WATER CONTENT (%)	12.7	38.7	10.4
			DEGREE OF SATURATION (%)	100	100	100
			TYPE OF TEST *	UU	UU	CD
			COHESION (kg/cm^2)	0.17	0.115	0.1
			ANGLE OF INTERNAL FRICTION(O)	1.0	0	32
			ENERGY **			1 Ec
			WET DENSITY (g/cm^3)			2.00
			DRY DENSITY (g/cm^3)			1.71
			WATER CONTENT (%)			17.1
			DEGREE OF SATURATION (%)			100
			TYPE OF TEST *			CD
			COHESION (kg/cm^2)			0.13
			ANGLE OF INTERNAL FRICTION(O)			30

* UU: UNCONSOLIDATED, UNDRAINED CONDITION
CD: CONSOLIDATED, DRAINED CONDITION

** 1Ec EXPRESS THE PROCTOR'S STANDARD ENERGY.

GRADATION ANALYSIS
(ANALYSE GRANULOMÉTRIQUE)

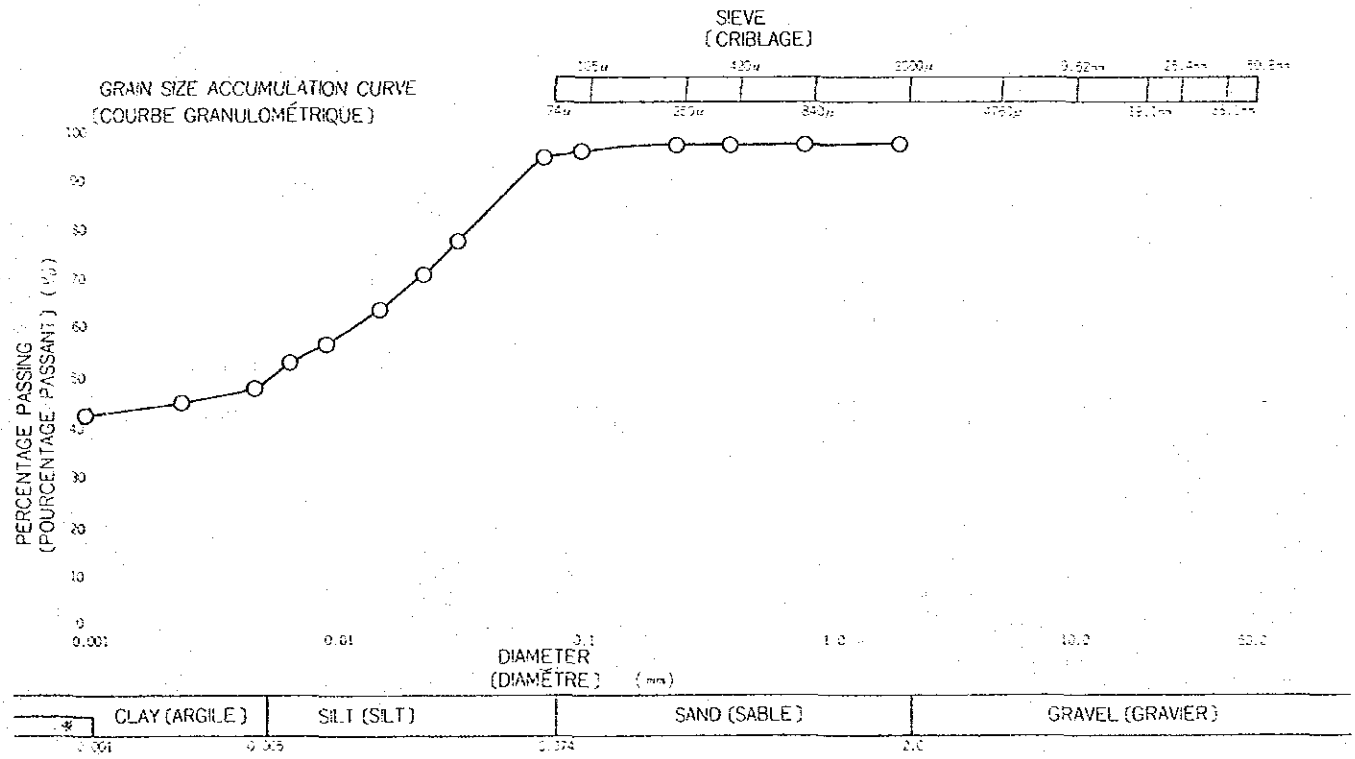
FOR REPORTING
(POUR LE RAPPORT)

NAME OF SURVEY & LOCALITY (DÉNOMINATION DE L'ENQUÊTE ET LOCALITÉ)		DATE (DATE)	Aug. 1977
LOCATION ~~SAMPLE NO & DEPTH (N°DE L'ÉCHANTILLON ET PROFONDEUR)~~	2 (0.45 m ~ 1.40 m)	TESTED BY (ESSAI PAR)	

PARTICLE SIZE & WEIGHT PERCENTAGE OF PARTICLES UNDER THE SIZE
(DIMENSION DES PARTICULES ET POURCENTAGE DE POIDS DES PARTICULES DE DIMENSION INFÉRIEURE AUX PRÉCÉDENTES)

SPECIFIC GRAVITY
(POIDS SPÉCIFIQUE) Gs 2.740

SIEVE (CRIBLAGE)	GRAIN SIZE (mm) (GRANUROMÉTRIE)	50.8	38.1	25.4	19.1	9.52	4.76	2.00	0.84	0.42	0.25	0.105	0.074
	TOTAL PASSING(%) (TOTAL PASSANT)							100	99.9	99.7	99.5	98.0	96.8
HYDROMETER (ARÉOMÉTRIE)	GRAIN SIZE(mm) (GRANULOMÉTRIE)	0.0331	0.0244	0.0160	0.0096	0.0069	0.0050	0.0025	0.0010				
	TOTAL PASSING(%) (TOTAL PASSANT)	79.8	72.9	65.9	59.0	54.7	50.3	47.4	43.9				



※ COLLOID
(COLLOÏDE)

PROPORTION (PROPORTION)	4.76mm <	0	%	MAXIMUM DIAMETER (DIAMÈTRE MAXIMUM)	2.00 mm
	4.76 ~ 2.00mm	0	%	60% DIAMETER (DIAMÈTRE 60%)	0.011 mm
	2.00 ~ 0.42mm	0	%	30% DIAMETER (DIAMÈTRE 30%)	– mm
	0.42 ~ 0.074mm	3	%	10% DIAMETER (DIAMÈTRE 10%)	– mm
	0.074 ~ 0.005mm	47	%	COEFFICIENT OF UNIFORMITY (COEFFICIENT D'UNIFORMITÉ)	More than 11
	0.005mm >	50	%	COEFFICIENT OF CURVATURE (COEFFICIENT DE COURBURE)	–

N. K. FORM NO. 002 (1975)

GRADATION ANALYSIS
(ANALYSE GRANULOMÉTRIQUE)

FOR REPORTING (POUR LE RAPPORT)

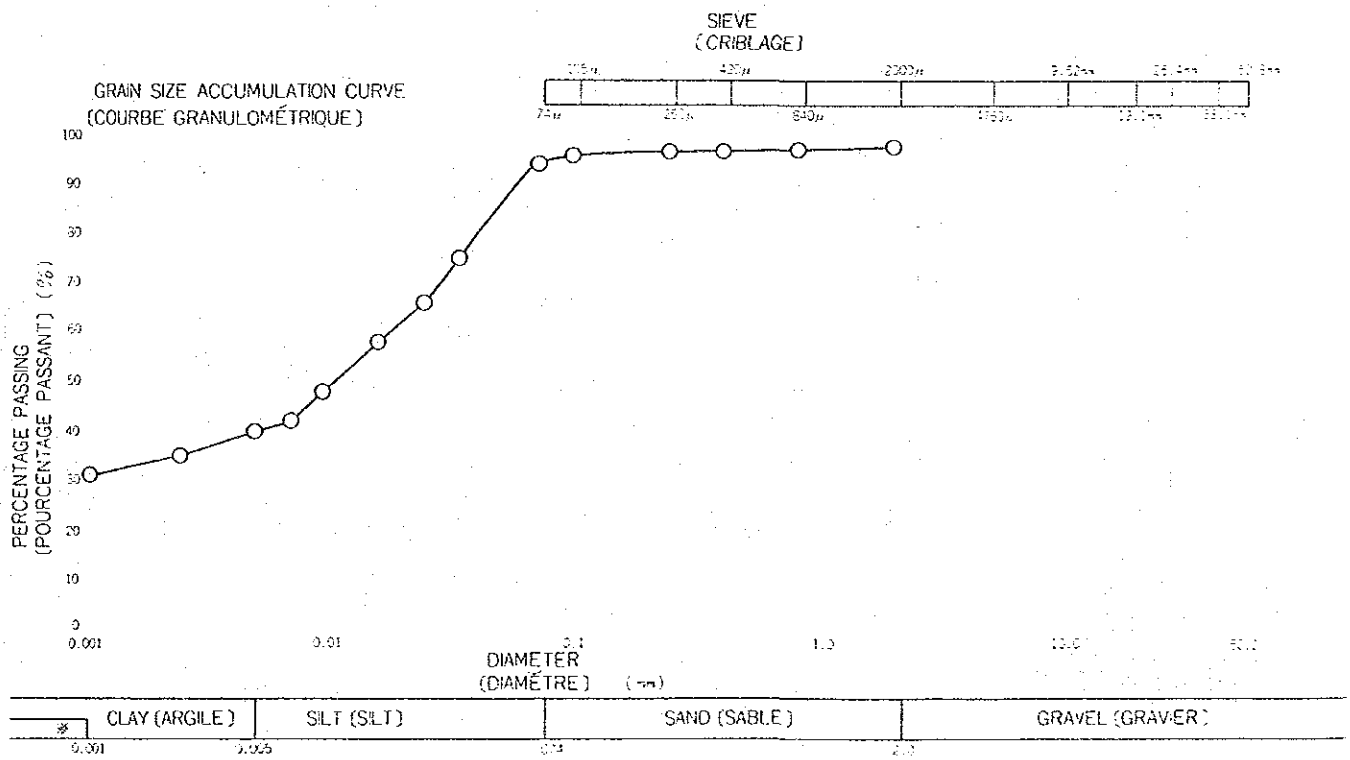
NAME OF SURVEY & LOCALITY (DÉNOMINATION DE L'ENQUÊTE ET LOCALITÉ)		DATE (DATE)	Aug. 1977
LOCATION SAMPLE NO & DEPTH (N° DE L'ÉCHANTILLON ET PROFONDEUR)	3 (0.20 m ~ 1.45 m)	TESTED BY (ESSAI PAR)	

PARTICLE SIZE & WEIGHT PERCENTAGE OF PARTICLES UNDER THE SIZE
(DIMENSION DES PARTICULES ET POURCENTAGE DE POIDS DES PARTICULES DE DIMENSION INFÉRIEURE AUX PRÉCÉDENTES)

SPECIFIC GRAVITY (POIDS SPÉCIFIQUE) Gs 2.709

SIEVE (CRIBLAGE)	GRAIN SIZE (mm) (GRANUROMÉTRIE)	50.8	38.1	25.4	19.1	9.52	4.76	2.00	0.84	0.42	0.25	0.105	0.074
	TOTAL PASSING(%) (TOTAL PASSANT)							100	99.7	99.4	99.0	97.6	96.9
HYDROMETER (ARÉOMÉTRIE)	GRAIN SIZE(mm) (GRANULOMÉTRIE)	0.0356	0.0263	0.0172	0.0103	0.0075	0.0053	0.0027	0.0011				
	TOTAL PASSING(%) (TOTAL PASSANT)	77.3	67.2	59.9	50.2	44.4	41.5	37.3	33.4				

GRAIN SIZE ACCUMULATION CURVE
(COURBE GRANULOMÉTRIQUE)



※ COLLOID
(COLLOÏDE)

PROPORTION (PROPORTION)					
4.76mm <	0	%	MAXIMUM DIAMETER (DIAMÈTRE MAXIMUM)	2.00	mm
4.76 ~ 2.00mm	0	%	60% DIAMETER (DIAMÈTRE 60%)	0.017	mm
2.00 ~ 0.42mm	1	%	30% DIAMETER (DIAMÈTRE 30%)	–	mm
0.42 ~ 0.074mm	2	%	10% DIAMETER (DIAMÈTRE 10%)	–	mm
0.074 ~ 0.005mm	56	%	COEFFICIENT OF UNIFORMITY (COEFFICIENT D'UNIFORMITÉ)	More than 17	
0.005mm >	41	%	COEFFICIENT OF CURVATURE (COEFFICIENT DE COURBURE)	–	

N. K FORM NO. 602 (1975)

GRADATION ANALYSIS
(ANALYSE GRANULOMÉTRIQUE)

FOR REPORTING
(POUR LE RAPPORT)

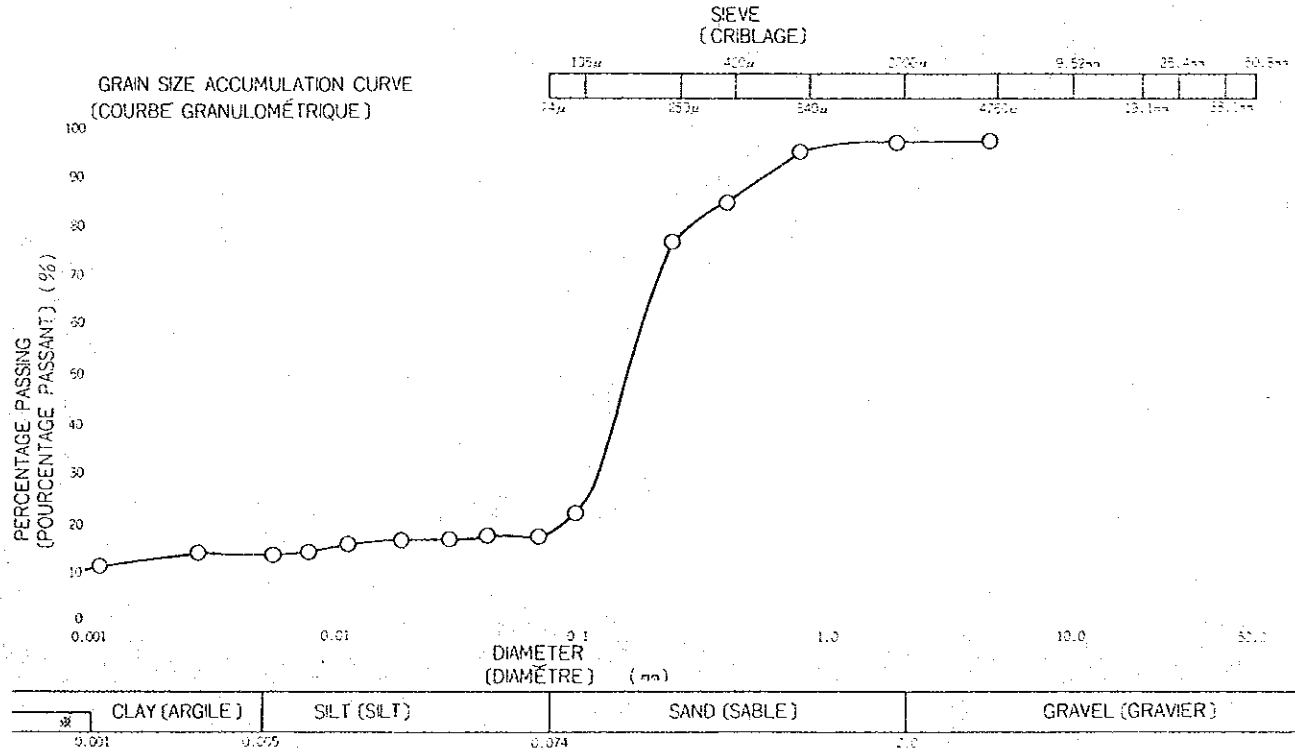
NAME OF SURVEY & LOCALITY (DÉNOMINATION DE L'ENQUÊTE ET LOCALITÉ) LOCATION		DATE (DATE)	Aug. 1977
SAMPLE NO. & DEPTH (N° DE L'ÉCHANTILLON ET PROFONDEUR)	4 (0.65 m ~ 1.80 m)	TESTED BY (ESSAI PAR)	

PARTICLE SIZE & WEIGHT PERCENTAGE OF PARTICLES UNDER THE SIZE
(DIMENSION DES PARTICULES ET POURCENTAGE DE POIDS DES PARTICULES DE DIMENSION INFÉRIEURE AUX PRÉCÉDENTES)

SPECIFIC GRAVITY
(POIDS SPÉCIFIQUE) Gs 2.664

SIEVE (CRIBLAGE)	GRAIN SIZE (mm) (GRANUROMÉTRIE)	50.8	38.1	25.4	19.1	9.52	4.76	2.00	0.84	0.42	0.25	0.105	0.074
	TOTAL PASSING(%) (TOTAL PASSANT)						100	99.9	96.5	87.3	79.3	23.6	19.2
HYDROMETER (ARÉOMÉTRIE)	GRAIN SIZE(mm) (GRANULOMÉTRIE)	0.0450	0.0320	0.0203	0.0117	0.0083	0.0059	0.0030	0.0012				
	TOTAL PASSING(%) (TOTAL PASSANT)	19.4	17.6	17.6	16.7	15.8	15.0	14.6	12.8				

GRAIN SIZE ACCUMULATION CURVE
(COURBE GRANULOMÉTRIQUE)



※ COLLOID
(COLLOÏDE)

PROPORTION (PROPORTION)					
4.76mm <	0	%	MAXMUM DIAMETER (DIAMÈTRE MAXIMUM)	4.76	mm
4.76 ~ 2.00mm	0	%	60% DIAMETER (DIAMÈTRE 60%)	0.18	mm
2.00 ~ 0.42mm	13	%	30% DIAMETER (DIAMÈTRE 30%)	0.12	mm
0.42 ~ 0.074mm	68	%	10% DIAMETER (DIAMÈTRE 10%)	–	mm
0.074 ~ 0.005mm	4	%	COEFFICIENT OF UNIFORMITY (COEFFICIENT D'UNIFORMITÉ)	More than 180	
0.005mm >	15	%	COEFFICIENT OF CURVATURE (COEFFICIENT DE COURBURE)	More than 80	

N. K. FORM NO. 002 (1975)

GRADATION ANALYSIS
(ANALYSE GRANULOMÉTRIQUE)

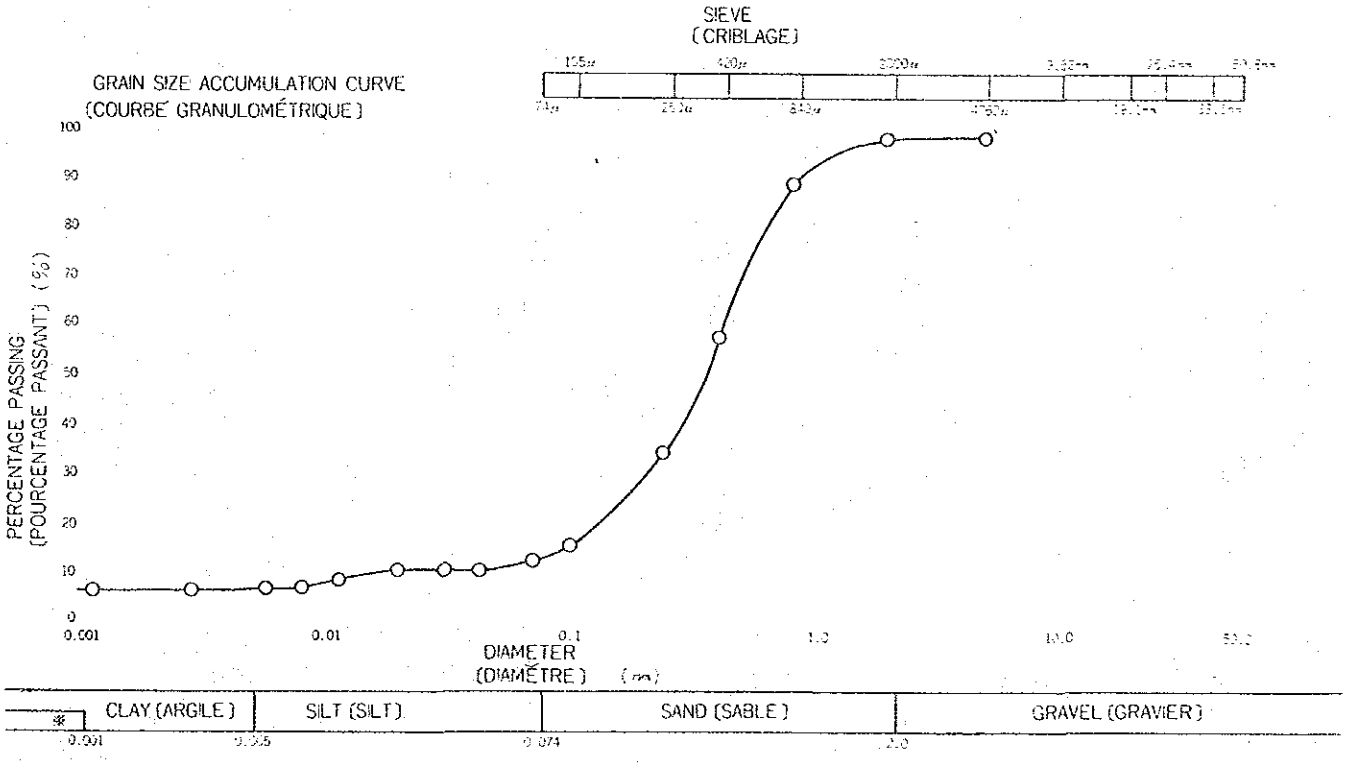
FOR REPORTING
(POUR LE RAPPORT)

NAME OF SURVEY & LOCALITY (DÉNOMINATION DE L'ENQUÊTE ET LOCALITÉ)		DATE (DATE)	Aug. 1977
LOCATION SAMPLE NO. & DEPTH (N° DE L'ÉCHANTILLON ET PROFONDEUR)	4 (1.80m ~ 2.45 m)	TESTED BY (ESSAI PAR)	

PARTICLE SIZE & WEIGHT PERCENTAGE OF PARTICLES UNDER THE SIZE
(DIMENSION DES PARTICULES ET POURCENTAGE DE POIDS DES PARTICULES DE DIMENSION INFÉRIEURE AUX PRÉCÉDENTES)

SPECIFIC GRAVITY
(POIDS SPÉCIFIQUE) Gs 2.661

SIEVE (CRIBLAGE)	GRAIN SIZE (mm) (GRANUROMÉTRIE)	50.8	38.1	25.4	19.1	9.52	4.76	2.00	0.84	0.42	0.25	0.105	0.074
	TOTAL PASSING(%) (TOTAL PASSANT)						100	99.7	90.0	59.1	35.8	16.9	13.5
HYDROMETER (AREOMÉTRIE)	GRAIN SIZE(mm) (GRANULOMÉTRIE)	0.0461	0.0326	0.0206	0.0120	0.0085	0.0060	0.0030	0.0012				
	TOTAL PASSING(%) (TOTAL PASSANT)	11.9	11.9	11.9	10.0	8.3	8.3	8.3	8.3				



※ COLLOID
(COLLOÏDE)

PROPORTION (PROPORTION)					
	4.76mm <	0	%	MAXMUM DIAMETER (DIAMÈTRE MAXIMUM)	4.76 mm
	4.76 ~ 2.00mm	0	%	60% DIAMETER (DIAMÈTRE 60%)	0.43 mm
	2.00 ~ 0.42mm	41	%	30% DIAMETER (DIAMÈTRE 30%)	0.20 mm
	0.42 ~ 0.074mm	45	%	10% DIAMETER (DIAMÈTRE 10%)	0.012 mm
	0.074 ~ 0.005mm	6	%	COEFFICIENT OF UNIFORMITY (COEFFICIENT D'UNIFORMITÉ)	36
	0.005mm >	8	%	COEFFICIENT OF CURVATURE (COEFFICIENT DE COURBURE)	7.7

N. K. FORM NO. 002 (1975)

GRADATION ANALYSIS
(ANALYSE GRANULOMÉTRIQUE)

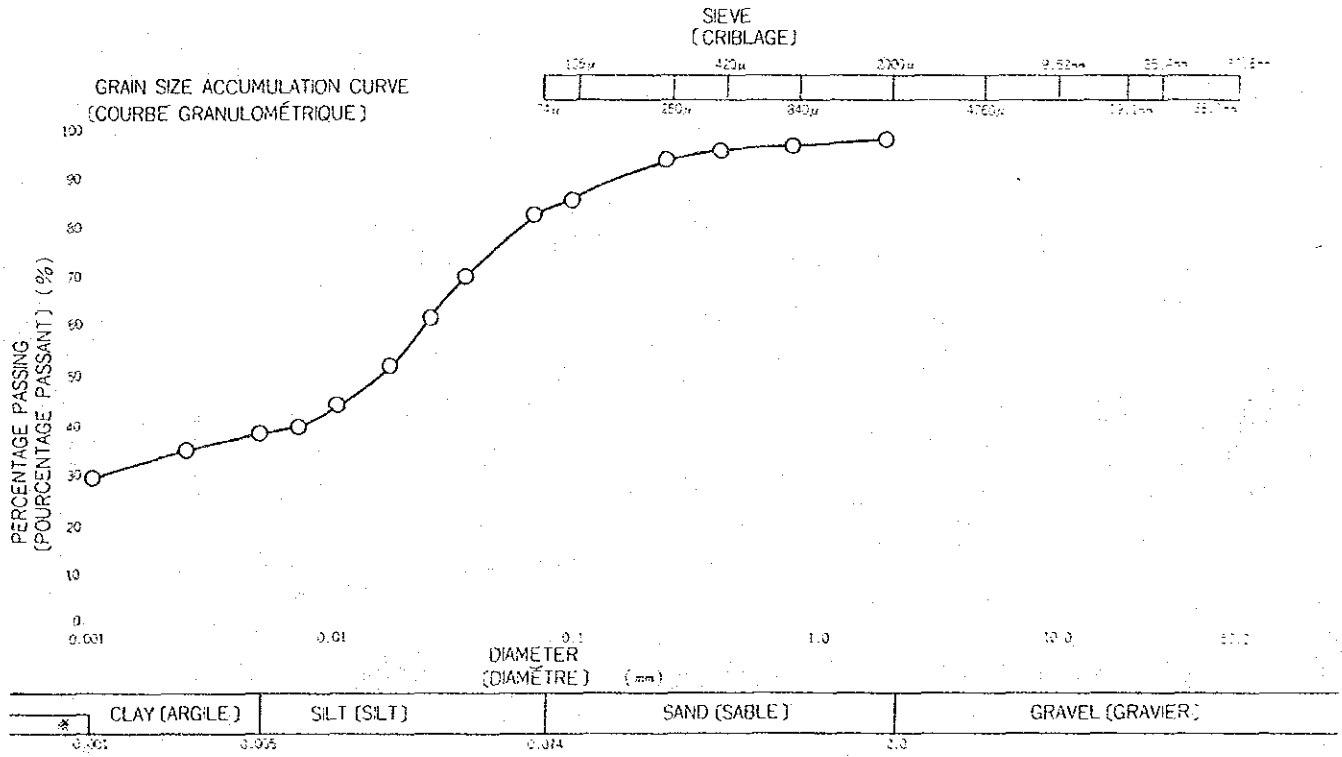
FOR REPORTING
(POUR LE RAPPORT)

NAME OF SURVEY & LOCALITY (DÉNOMINATION DE L' ENQUÊTE ET LOCALITÉ)		DATE (DATE)	Aug. 1977
LOCATION SAMPLE NO. & DEPTH (N° DE L'ÉCHANTILLON ET PROFONDEUR)	6 (0.3 m ~ 1.35 m)	TESTED BY (ESSAI PAR)	

PARTICLE SIZE & WEIGHT PERCENTAGE OF PARTICLES UNDER THE SIZE
(DIMENSION DES PARTICULES ET POURCENTAGE DE POIDS DES PARTICULES DE DIMENSION INFÉRIEURE AUX PRÉCÉDENTES)

SPECIFIC GRAVITY
(POIDS SPÉCIFIQUE) Gs 2.709

	GRAIN SIZE (mm) (GRANUROMÉTRIE)	50.8	38.1	25.4	19.1	9.52	4.76	2.00	0.84	0.42	0.25	0.105	0.074
SIEVE (CRIBLAGE)	TOTAL PASSING(%) (TOTAL PASSANT)							100	99.0	97.5	95.8	88.0	85.0
HYDROMÈTER (ARÉOMÉTRIE)	GRAIN SIZE(mm) (GRANULOMÉTRIE)	0.0369	0.0270	0.0178	0.0106	0.0076	0.0054	0.0027	0.0011				
	TOTAL PASSING(%) (TOTAL PASSANT)	72.1	64.1	54.1	46.1	42.1	40.1	36.7	30.7				



※ COLLOID
(COLLOÏDE)

PROPORTION (PROPORTION)					
4.76mm<	0	%	MAXMUM DIAMETER (DIAMÈTRE MAXIMUM)	2.00	mm
4.76~2.00mm	0	%	60% DIAMETER (DIAMÈTRE 60%)	0.024	mm
2.00~0.42mm	2	%	30% DIAMETER (DIAMÈTRE 30%)	0.001	mm
0.42~0.074mm	13	%	10% DIAMETER (DIAMÈTRE 10%)	-	mm
0.074~0.005mm	45	%	COEFFICIENT OF UNIFORMITY (COEFFICIENT D'UNIFORMITÉ)	More than 24	
0.005mm>	40	%	COEFFICIENT OF CURVATURE (COEFFICIENT DE COURBURE)	More than 0.042	

N. K. FORM NO. 002 (1975)

GRADATION ANALYSIS
(ANALYSE GRANULOMÉTRIQUE)

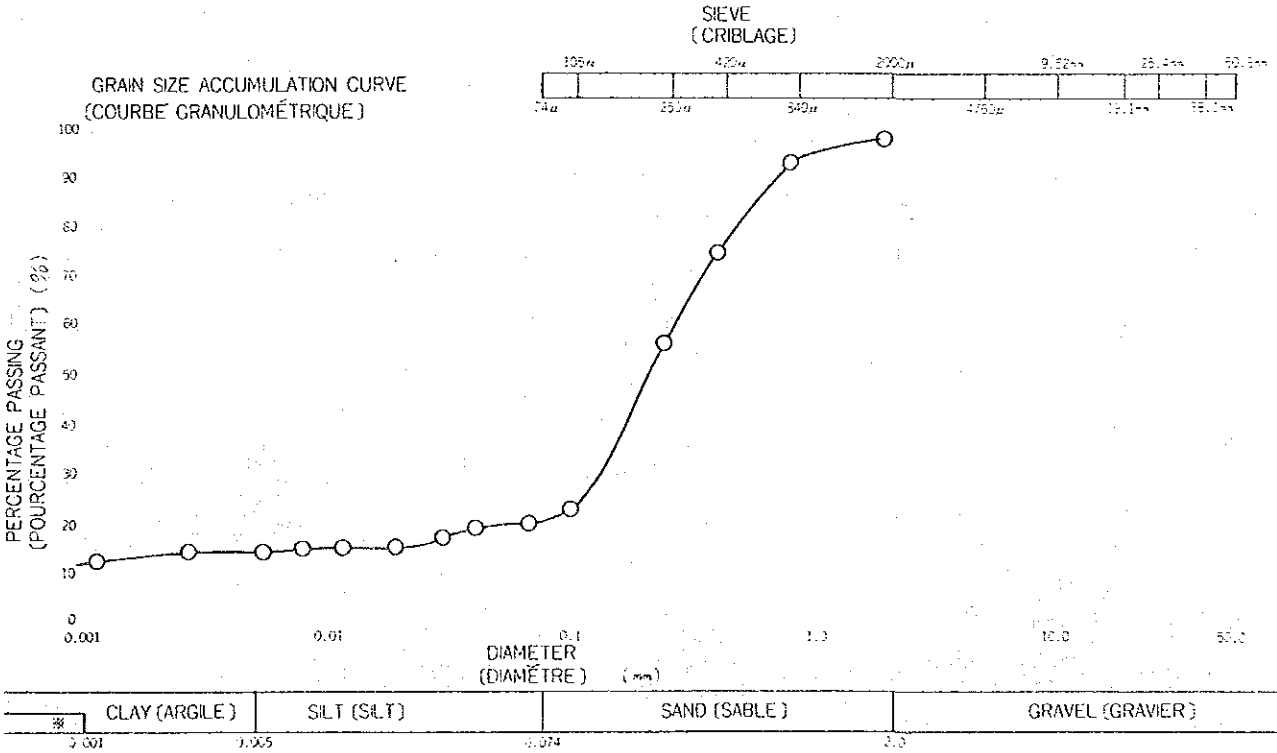
FOR REPORTING
(POUR LE RAPPORT)

NAME OF SURVEY & LOCALITY (DÉNOMINATION DE L'ENQUÊTE ET LOCALITÉ) LOCATION		DATE (DATE)	Aug. 1977
SAMPLE NO. & DEPTH (N° DE L'ÉCHANTILLON ET PROFONDEUR)	6 (2.10 m ~ 2.80 m)	TESTED BY (ESSAI PAR)	

PARTICLE SIZE & WEIGHT PERCENTAGE OF PARTICLES UNDER THE SIZE
(DIMENSION DES PARTICULES ET POURCENTAGE DE POIDS DES PARTICULES DE DIMENSION INFÉRIEURE AUX PRÉCÉDENTES)

SPECIFIC GRAVITY
(POIDS SPÉCIFIQUE) Gs 2.681

SIEVE (CRIBLAGE)	GRAIN SIZE (mm) (GRANUROMÉTRIE)	50.8	38.1	25.4	19.1	9.52	4.76	2.00	0.84	0.42	0.25	0.105	0.074
	TOTAL PASSING(%) (TOTAL PASSANT)							100	95.4	77.3	58.9	24.7	22.2
HYDROMETER (ARÉOMÉTRIE)	GRAIN SIZE(mm) (GRANULOMÉTRIE)	0.0444	0.0316	0.0201	0.0116	0.0082	0.0058	0.0029	0.0012				
	TOTAL PASSING(%) (TOTAL PASSANT)	20.6	18.8	16.9	16.9	16.9	16.0	15.6	13.7				



※ COLLOID
(COLLOÏDE)

PROPORTION (PROPORTION)					
4.76mm <	0	%	MAXMUM DIAMETER (DIAMÈTRE MAXIMUM)	2.00	mm
4.76 ~ 2.00mm	0	%	60% DIAMETER (DIAMÈTRE 60%)	0.26	mm
2.00 ~ 0.42mm	23	%	30% DIAMETER (DIAMÈTRE 30%)	0.13	mm
0.42 ~ 0.074mm	55	%	10% DIAMETER (DIAMÈTRE 10%)	-	mm
0.074 ~ 0.005mm	6	%	COEFFICIENT OF UNIFORMITY (COEFFICIENT D'UNIFORMITÉ)	More than 260	
0.005mm >	16	%	COEFFICIENT OF CURVATURE (COEFFICIENT DE COURBURE)	More than 65	

N. K. FORM NO. 002 (1975)

GRADATION ANALYSIS
(ANALYSE GRANULOMÉTRIQUE)

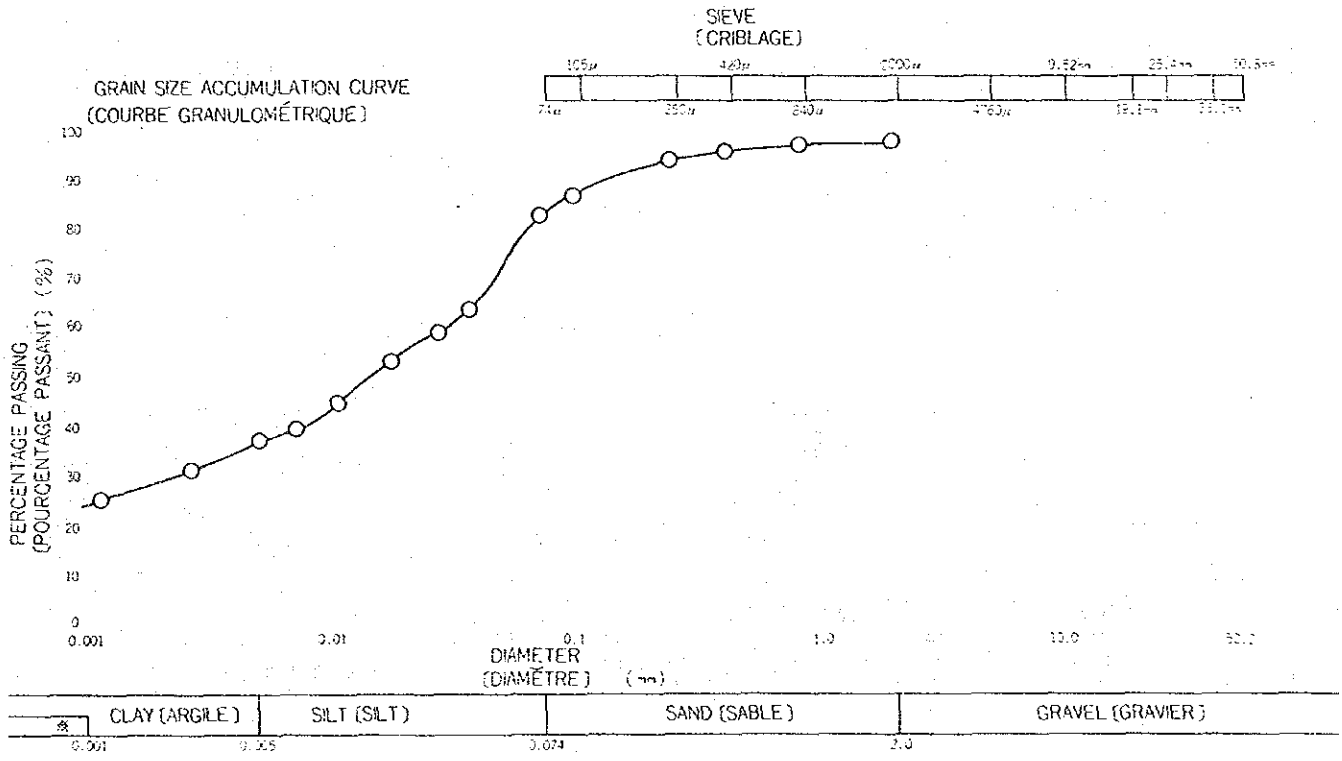
FOR REPORTING
(POUR LE RAPPORT)

NAME OF SURVEY & LOCALITY (DÉNOMINATION DE L'ENQUÊTE ET LOCALITÉ)		DATE (DATE)	Aug. 1977
LOCATION SAMPLE NO. & DEPTH (N° DE L'ÉCHANTILLON ET PROFONDEUR)	6 (2.80 m ~ 3.75 m)	TESTED BY (ESSAI PAR)	

PARTICLE SIZE & WEIGHT PERCENTAGE OF PARTICLES UNDER THE SIZE
(DIMENSION DES PARTICULES ET POURCENTAGE DE POIDS DES PARTICULES DE DIMENSION INFÉRIEURE AUX PRÉCÉDENTES)

SPECIFIC GRAVITY
(POIDS SPÉCIFIQUE) Gs 2.707

	GRAIN SIZE (mm) (GRANUROMÉTRIE)	50.8	38.1	25.4	19.1	9.52	4.76	2.00	0.84	0.42	0.25	0.105	0.074
SIEVE (CRIBLAGE)	TOTAL PASSING(%) (TOTAL PASSANT)							100	99.6	98.2	96.3	89.0	84.9
HYDROMETER (ARÉOMÉTRIE)	GRAIN SIZE(mm) (GRANULOMÉTRIE)	0.0382	0.0275	0.0178	0.0106	0.0076	0.0054	0.0028	0.0012				
	TOTAL PASSING(%) (TOTAL PASSANT)	65.5	61.4	55.3	47.1	40.9	38.9	33.4	27.2				



※ COLLOID
(COLLOÏDE)

PROPORTION (PROPORTION)					
	4.76mm <	0	%	MAXMUM DIAMETER (DIAMÈTRE MAXIMUM)	2.00 mm
	4.76 ~ 2.00mm	0	%	60% DIAMETER (DIAMÈTRE 60%)	0.026 mm
	2.00 ~ 0.42mm	2	%	30% DIAMETER (DIAMÈTRE 30%)	0.0018 mm
	0.42 ~ 0.074mm	13	%	10% DIAMETER (DIAMÈTRE 10%)	— mm
	0.074 ~ 0.005mm	47	%	COEFFICIENT OF UNIFORMITY (COEFFICIENT D'UNIFORMITÉ)	More than 26
	0.005mm >	38	%	COEFFICIENT OF CURVATURE (COEFFICIENT DE COURBURE)	More than 0.12

GRADATION ANALYSIS
(ANALYSE GRANULOMÉTRIQUE)

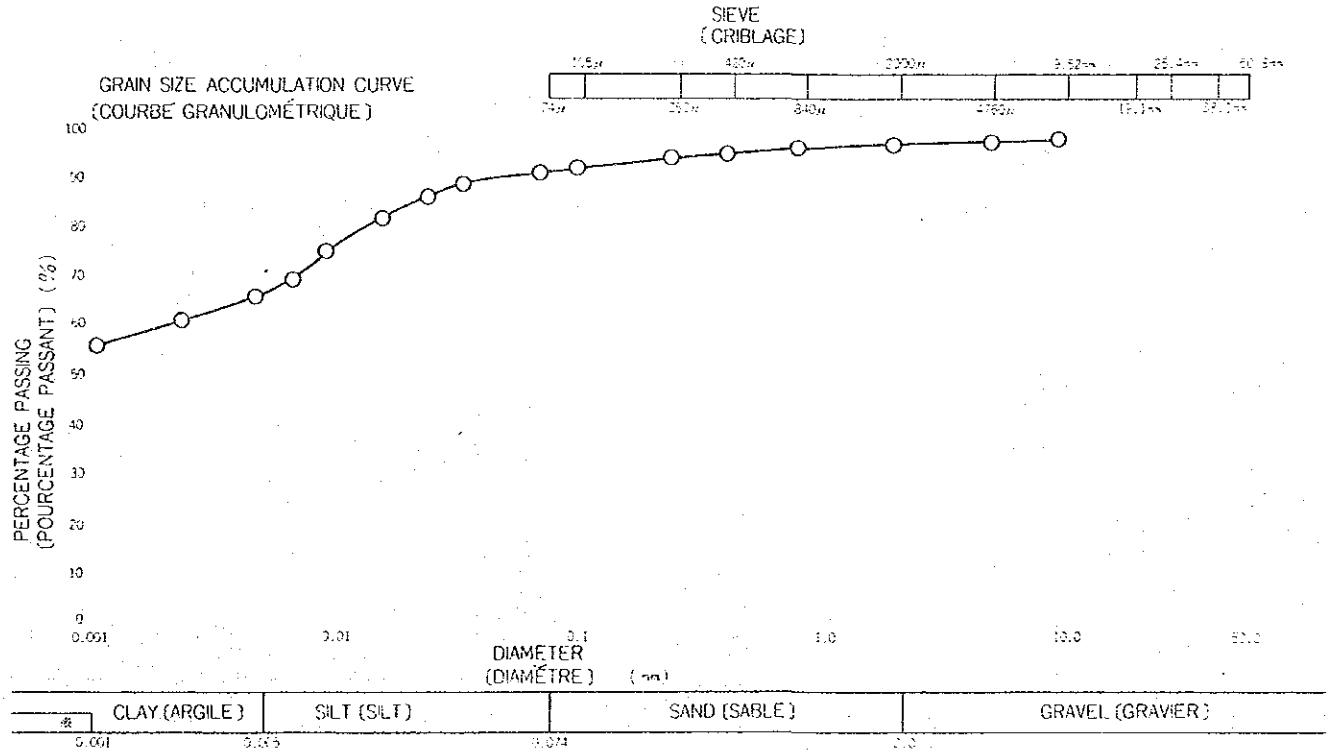
FOR REPORTING
(POUR LE RAPPORT)

NAME OF SURVEY & LOCALITY (DÉNOMINATION DE L'ENQUÊTE ET LOCALITÉ)		DATE (DATE)	Aug. 1977
LOCATION SAMPLE NO. & DEPTH (N°DE L'ÉCHANTILLON ET PROFONDEUR)	7 (0.2 m ~ 2.5 m)	TESTED BY (ESSAI PAR)	

PARTICLE SIZE & WEIGHT PERCENTAGE OF PARTICLES UNDER THE SIZE
(DIMENSION DES PARTICULES ET POURCENTAGE DE POIDS DES PARTICULES DE DIMENSION INFÉRIEURE AUX PRÉCÉDENTES)

SPECIFIC GRAVITY
(POIDS SPÉCIFIQUE) Gs 2.695

	GRAIN SIZE (mm) (GRANUROMÉTRIE)	50.8	38.1	25.4	19.1	9.52	4.76	2.00	0.84	0.42	0.25	0.105	0.074
SIEVE (CRIBLAGE)	TOTAL PASSING(%) (TOTAL PASSANT)					100	99.8	99.1	98.1	97.1	96.2	93.9	93.3
HYDROMETER (ARÉOMÉTRIE)	GRAIN SIZE(mm) (GRANULOMÉTRIE)	0.0353	0.0252	0.0162	0.0096	0.0070	0.0050	0.0025	0.0011				
	TOTAL PASSING(%) (TOTAL PASSANT)	90.5	88.3	83.9	77.2	70.6	68.4	62.5	58.0				



※ COLLOID
(COLLOÏDE)

PROPORTION (PROPORTION)					
	4.76mm<	0 %	MAXMUM DIAMETER (DIAMÈTRE MAXIMUM)	9.52	mm
	4.76~2.00mm	1 %	60% DIAMETER (DIAMÈTRE 60%)	0.0016	mm
	2.00~0.42mm	2 %	30% DIAMETER (DIAMÈTRE 30%)	–	mm
	0.42~0.074mm	4 %	10% DIAMETER (DIAMÈTRE 10%)	–	mm
	0.074~0.005mm	25 %	COEFFICIENT OF UNIFORMITY (COEFFICIENT D'UNIFORMITÉ)	More than 1.6	
	0.005mm>	68 %	COEFFICIENT OF CURVATURE (COEFFICIENT DE COURBURE)	–	

N. K. FORM NO. 002 (1975)

GRADATION ANALYSIS
(ANALYSE GRANULOMÉTRIQUE)

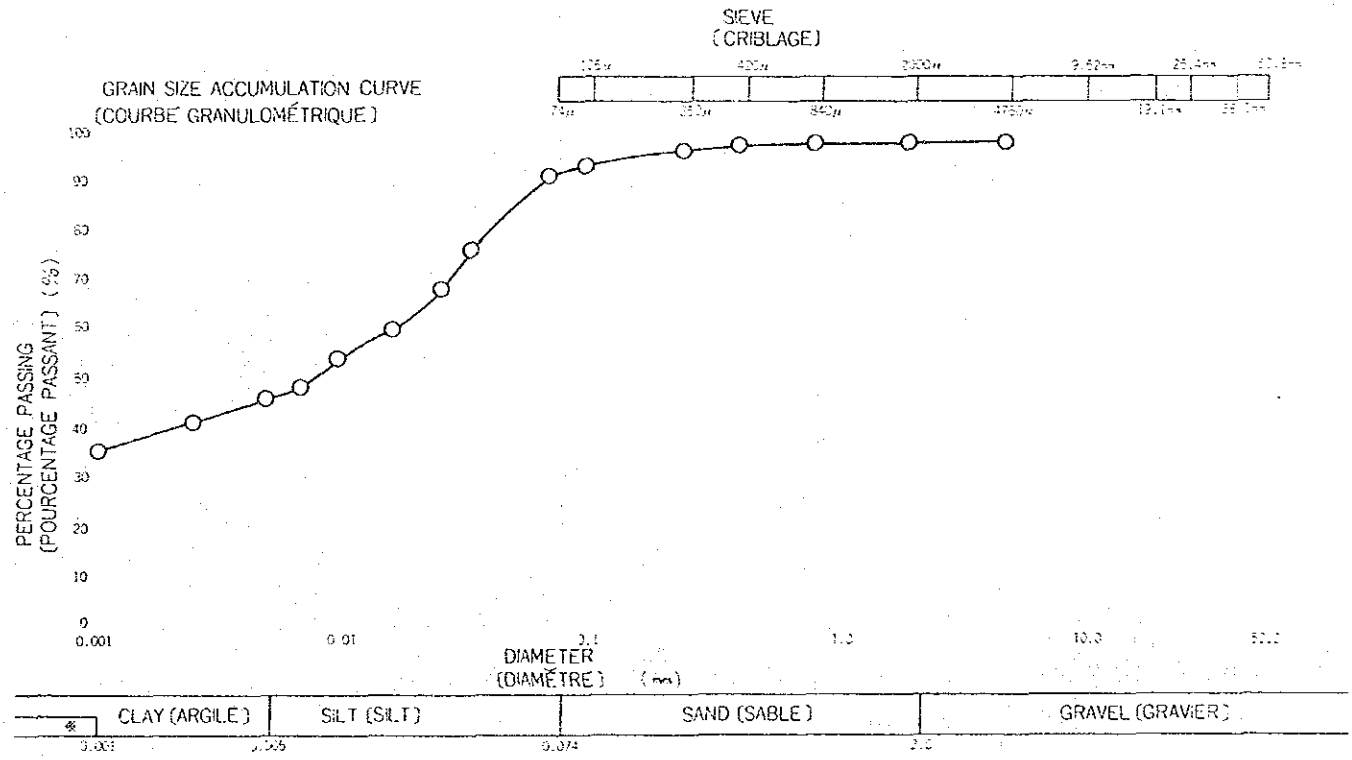
FOR REPORTING (POUR LE RAPPORT)

NAME OF SURVEY & LOCALITY (DÉNOMINATION DE L'ENQUÊTE ET LOCALITÉ)		DATE (DATE)	Aug. 1977
LOCATION SAMPLE NO & DEPTH (N° DE L'ÉCHANTILLON ET PROFONDEUR)	10 (0.8 m ~ 1.3 m)	TESTED BY (ESSAI PAR)	

PARTICLE SIZE & WEIGHT PERCENTAGE OF PARTICLES UNDER THE SIZE
(DIMENSION DES PARTICULES ET POURCENTAGE DE POIDS DES PARTICULES DE DIMENSION INFÉRIEURE AUX PRÉCÉDENTES)

SPECIFIC GRAVITY (POIDS SPÉCIFIQUE) Gs 2.707

	GRAIN SIZE (mm) (GRANUROMÉTRIE)	50.8	38.1	25.4	19.1	9.52	4.76	2.00	0.84	0.42	0.25	0.105	0.074
SIEVE (CRIBLAGE)	TOTAL PASSING(%) (TOTAL PASSANT)						100	99.9	99.5	99.1	98.4	94.8	92.6
HYDROMETER (ARÉOMÉTRIE)	GRAIN SIZE(mm) (GRANULOMÉTRIE)	0.0359	0.0263	0.0172	0.0102	0.0074	0.0052	0.0027	0.0011				
	TOTAL PASSING(%) (TOTAL PASSANT)	78.0	70.0	62.0	56.0	50.0	48.0	42.6	36.6				



※ COLLOID
(COLLOÏDE)

PROPORTION (PROPORTION)					
	4.76mm <	0	%	MAXMUM DIAMETER (DIAMÈTRE MAXIMUM)	4.76 mm
	4.76 ~ 2.00mm	0	%	60% DIAMETER (DIAMÈTRE 60%)	0.014 mm
	2.00 ~ 0.42mm	1	%	30% DIAMETER (DIAMÈTRE 30%)	– mm
	0.42 ~ 0.074mm	6	%	10% DIAMETER (DIAMÈTRE 10%)	– mm
	0.074 ~ 0.005mm	46	%	COEFFICIENT OF UNIFORMITY (COEFFICIENT D'UNIFORMITÉ)	More than 14
	0.005mm >	47	%	COEFFICIENT OF CURVATURE (COEFFICIENT DE COURBURE)	–

N. K. FORM NO. 002 (1975)

LIQUID LIMIT & PLASTIC LIMIT TEST
(ESSAI DE LIMITE DE LIQUIDITÉ ET DE LIMITE DE PLASTICITÉ)

FOR REPORTING
(POUR LE RAPPORT)

NAME OF SURVEY & LOCALITY
(DÉNOMINATION DE L'ENQUÊTE ET LOCALITÉ)

DATE (DATE): Aug. 1977

TESTED BY (ESSAI PAR):

FLOW CURVE
(COURBE DE DÉTERMINATION DE LA LIMITE DE LIQUIDITÉ)

LOCATION
SAMPLE NO. & DEPTH (N°DE L'ÉCHANTILLON ET PROFONDEUR): No. 6 (0.3m ~ 1.35m)

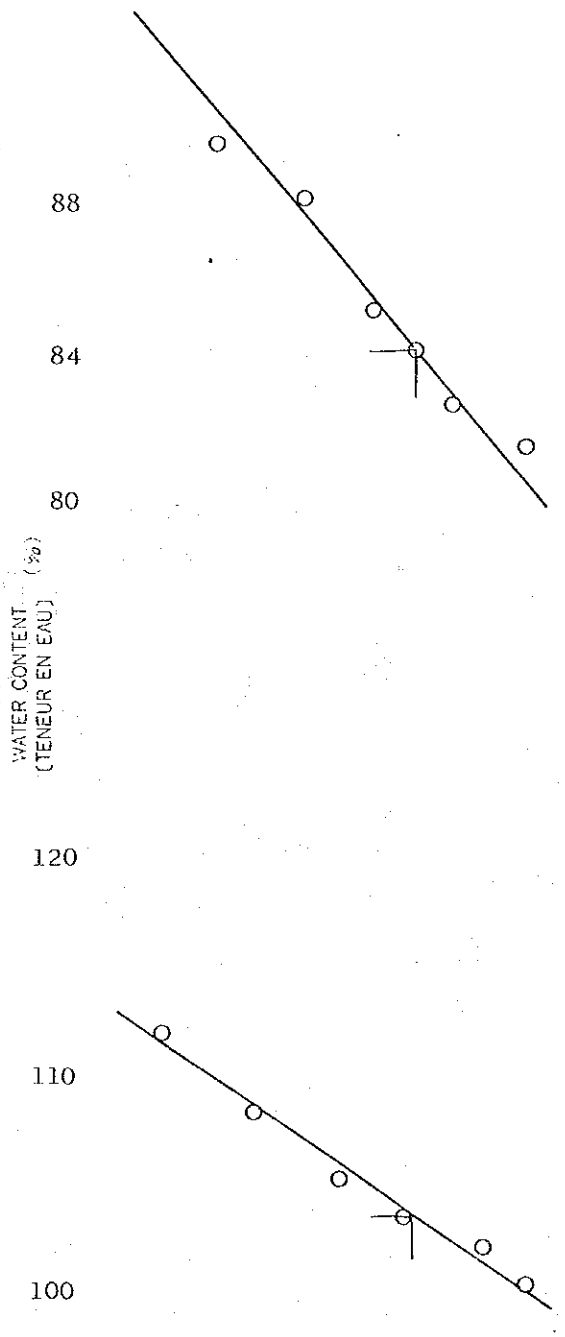
LIQUID LIMIT TEST (LIMITE DE LIQUIDITÉ)			PLASTIC LIMIT TEST (LIMITE DE PLASTICITÉ)	
TEST. NO. (N°DE L'ESSAI)	NO. OF BLOWS (NOMBRE DE COUP)	WATER CONTENT (TENEUR EN EAU)	TEST. NO. (N°DE L'ESSAI)	WATER CONTENT (TENEUR EN EAU)
1	44	81.36 %	1	23.16 %
2	30	82.55 %	2	22.58 %
3	25	84.10 %	3	22.84 %
4	20	85.15 %		
5	14	88.28 %		
6	9	89.81 %	MEAN VALUE (VALEUR MOYENNE)	22.9

LIQUID LIMIT (LIMITE DE LIQUIDITÉ)	PLASTIC LIMIT (LIMITE DE PLASTICITÉ)	PLASTICITY INDEX (INDICE DE PLASTICITÉ)
w_L 84.1 %	w_P 22.9 %	I_P 61.2

LOCATION
SAMPLE NO. & DEPTH (N°DE L'ÉCHANTILLON ET PROFONDEUR): No. 3 (0.2m ~ 1.45m)

LIQUID LIMIT TEST (LIMITE DE LIQUIDITÉ)			PLASTIC LIMIT TEST (LIMITE DE PLASTICITÉ)	
TEST. NO. (N°DE L'ESSAI)	NO. OF BLOWS (NOMBRE DE COUP)	WATER CONTENT (TENEUR EN EAU)	TEST. NO. (N°DE L'ESSAI)	WATER CONTENT (TENEUR EN EAU)
1	44	100.20 %	1	28.03 %
2	36	101.72 %	2	28.38 %
3	24	103.27 %	3	28.21 %
4	17	104.85 %		
5	11	108.23 %		
6	7	111.78 %	MEAN VALUE (VALEUR MOYENNE)	28.2

LIQUID LIMIT (LIMITE DE LIQUIDITÉ)	PLASTIC LIMIT (LIMITE DE PLASTICITÉ)	PLASTICITY INDEX (INDICE DE PLASTICITÉ)
w_L 103.3 %	w_P 28.2 %	I_P 75.1



LIQUID LIMIT & PLASTIC LIMIT TEST
(ESSAI DE LIMITE DE LIQUIDITÉ ET DE LIMITE DE PLASTICITÉ)

FOR REPORTING
(POUR LE RAPPORT)

NAME OF SURVEY & LOCALITY
(DÉNOMINATION DE L'ENQUÊTE ET LOCALITÉ)

DATE (DATE): Aug. 1977

TESTED BY (ESSAI PAR):

LOCATION — SAMPLE NO. & DEPTH (N° DE L'ÉCHANTILLON ET PROFONDEUR): No. 2 (0.45m ~ 1.40m)

LIQUID LIMIT TEST (LIMITE DE LIQUIDITÉ)			PLASTIC LIMIT TEST (LIMITE DE PLASTICITÉ)	
TEST. NO. (N° DE L'ESSAI)	NO. OF BLOWS (NOMBRE DE COUP)	WATER CONTENT (TENEUR EN EAU)	TEST NO (N° DE L'ESSAI)	WATER CONTENT (TENEUR EN EAU)
1	36	52.23 %	1	25.03 %
2	30	58.38 %	2	24.02 %
3	22	62.99 %	3	24.87 %
4	16	68.93 %		
5	10	75.36 %		
6	7	79.35 %	MEAN VALUE (VALEUR MOYENNE)	24.6

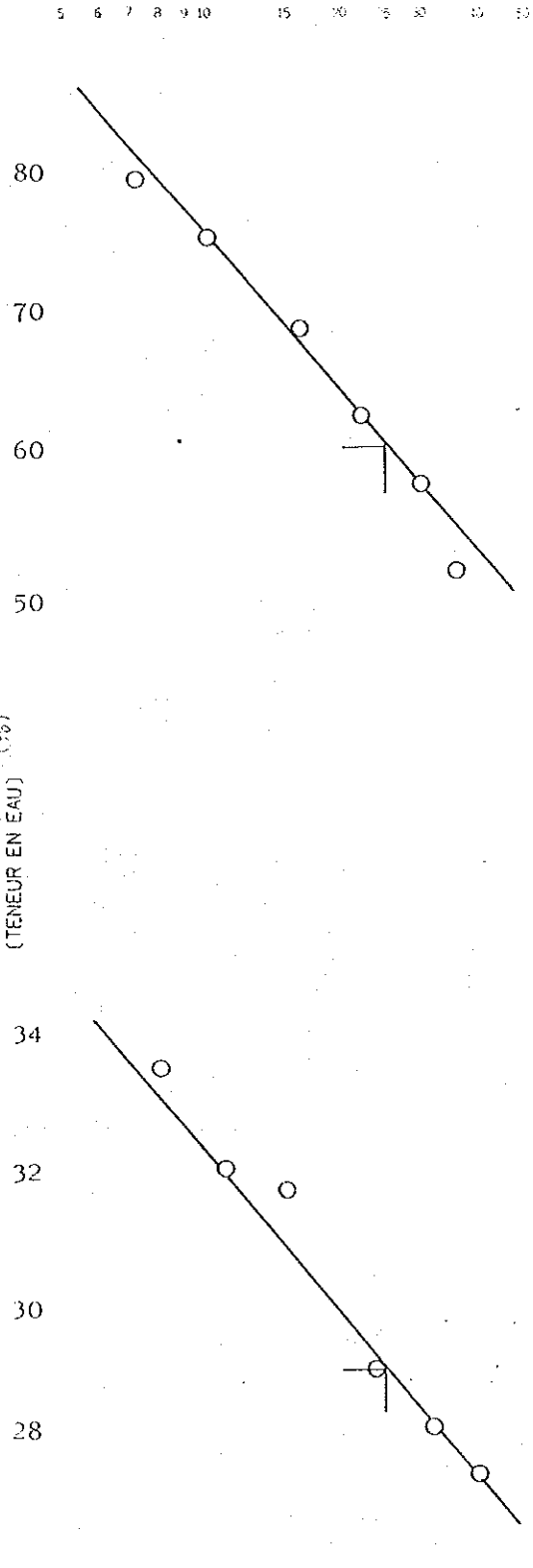
LIQUID LIMIT (LIMITE DE LIQUIDITÉ)		PLASTIC LIMIT (LIMITE DE PLASTICITÉ)		PLASTICITY INDEX (INDICE DE PLASTICITÉ)	
w_L	61.0 %	w_p	24.6 %	I_p	36.4

LOCATION — SAMPLE NO. & DEPTH (N° DE L'ÉCHANTILLON ET PROFONDEUR): No. 6 (2.10m ~ 2.80m)

LIQUID LIMIT TEST (LIMITE DE LIQUIDITÉ)			PLASTIC LIMIT TEST (LIMITE DE PLASTICITÉ)	
TEST. NO. (N° DE L'ESSAI)	NO. OF BLOWS (NOMBRE DE COUP)	WATER CONTENT (TENEUR EN EAU)	TEST NO (N° DE L'ESSAI)	WATER CONTENT (TENEUR EN EAU)
1	40	27.81 %	1	12.26 %
2	32	28.48 %	2	12.56 %
3	24	29.30 %	3	12.41 %
4	15	31.77 %		
5	11	32.11 %		
6	8	33.51 %	MEAN VALUE (VALEUR MOYENNE)	12.4

LIQUID LIMIT (LIMITE DE LIQUIDITÉ)		PLASTIC LIMIT (LIMITE DE PLASTICITÉ)		PLASTICITY INDEX (INDICE DE PLASTICITÉ)	
w_L	29.3 %	w_p	12.4 %	I_p	16.9

FLOW CURVE
(COURBE DE DÉTERMINATION DE LA LIMITE DE LIQUIDITÉ)



N. K. FORM NO. 003 (1975)

LIQUID LIMIT & PLASTIC LIMIT TEST
(ESSAI DE LIMITE DE LIQUIDITÉ ET DE LIMITE DE PLASTICITÉ)

FOR REPORTING (POUR LE RAPPORT)

NAME OF SURVEY & LOCALITY (DÉNOMINATION DE L'ENQUÊTE ET LOCALITÉ)

DATE (DATE): Aug. 1977

TESTED BY (ESSAI PAR):

SAMPLE NO. & DEPTH (NO. DE L'ÉCHANTILLON ET PROFONDEUR) LOCATION: No. 10 0.8 m ~ 1.3m)

LIQUID LIMIT TEST (LIMITE DE LIQUIDITÉ)			PLASTIC LIMIT TEST (LIMITE DE PLASTICITÉ)	
TEST NO. (N°DE L'ESSAI)	NO. OF BLOWS (NOMBRE DE COUP)	WATER CONTENT (TENEUR EN EAU)	TEST NO. (N°DE L'ESSAI)	WATER CONTENT (TENEUR EN EAU)
1	48	66.43 %	1	22.50 %
2	30	67.65 %	2	21.67 %
3	20	72.49 %	3	21.64 %
4	15	75.13 %		
5	10	77.93 %		
6	7	82.79 %	MEAN VALUE (VALEUR MOYENNE)	21.9

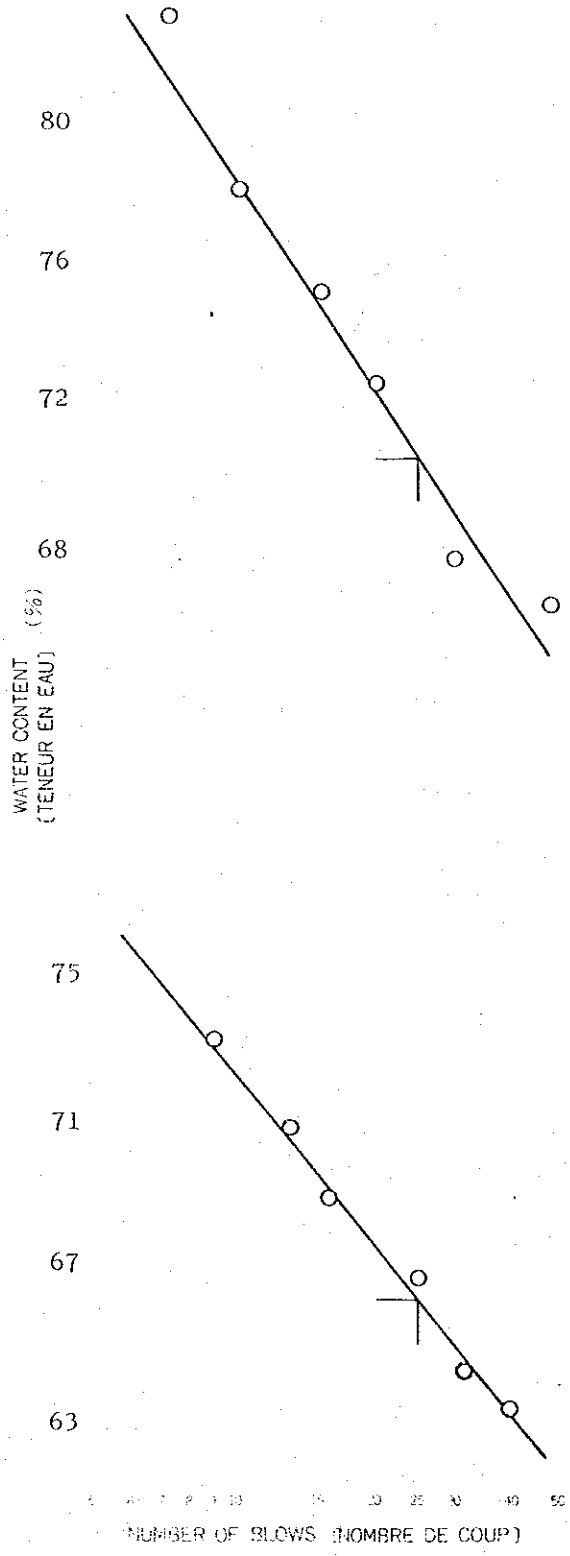
LIQUID LIMIT (LIMITE DE LIQUIDITÉ)	PLASTIC LIMIT (LIMITE DE PLASTICITÉ)	PLASTICITY INDEX (INDICE DE PLASTICITÉ)
w_L 70.4 %	w_p 21.9 %	I_p 48.5

SAMPLE NO. & DEPTH (NO. DE L'ÉCHANTILLON ET PROFONDEUR) LOCATION: No. 6 2.80 m ~3.75m)

LIQUID LIMIT TEST (LIMITE DE LIQUIDITÉ)			PLASTIC LIMIT TEST (LIMITE DE PLASTICITÉ)	
TEST NO. (N°DE L'ESSAI)	NO. OF BLOWS (NOMBRE DE COUP)	WATER CONTENT (TENEUR EN EAU)	TEST NO. (N°DE L'ESSAI)	WATER CONTENT (TENEUR EN EAU)
1	40	63.05 %	1	22.23 %
2	32	64.13 %	2	23.13 %
3	25	66.67 %	3	22.66 %
4	16	68.86 %		
5	13	70.87 %		
6	9	73.25 %	MEAN VALUE (VALEUR MOYENNE)	22.7

LIQUID LIMIT (LIMITE DE LIQUIDITÉ)	PLASTIC LIMIT (LIMITE DE PLASTICITÉ)	PLASTICITY INDEX (INDICE DE PLASTICITÉ)
w 66.1 %	w_p 22.7 %	I_p 43.4

FLOW CURVE
(COURBE DE DÉTERMINATION DE LA LIMITE DE LIQUIDITÉ)



LIQUID LIMIT & PLASTIC LIMIT TEST
(ESSAI DE LIMITE DE LIQUIDITÉ ET DE LIMITE DE PLASTICITÉ)

FOR REPORTING (POUR LE RAPPORT)

NAME OF SURVEY & LOCALITY (DÉNOMINATION DE L'ENQUÊTE ET LOCALITÉ)

DATE (DATE): Aug. 1977

TESTED BY (ESSAI PAR):

LOCATION

SAMPLE NO. & DEPTH (N° DE L'ÉCHANTILLON ET PROFONDEUR): No. 4 0.65 m ~ 1.80 m

LIQUID LIMIT TEST (LIMITE DE LIQUIDITÉ)			PLASTIC LIMIT TEST (LIMITE DE PLASTICITÉ)	
TEST NO. (N° DE L'ESSAI)	NO. OF BLOWS (NOMBRE DE COUP)	WATER CONTENT (TENEUR EN EAU)	TEST NO. (N° DE L'ESSAI)	WATER CONTENT (TENEUR EN EAU)
1	36	22.68 %	1	13.01 %
2	24	23.16 %	2	12.86 %
3	20	23.75 %	3	12.92 %
4	13	24.42 %		
5	8	25.01 %		
6		%	MEAN VALUE (VALEUR MOYENNE)	12.9

LIQUID LIMIT (LIMITE DE LIQUIDITÉ)	PLASTIC LIMIT (LIMITE DE PLASTICITÉ)	PLASTICITY INDEX (INDICE DE PLASTICITÉ)
w_L 23.2 %	w_P 12.9 %	I_P 10.3

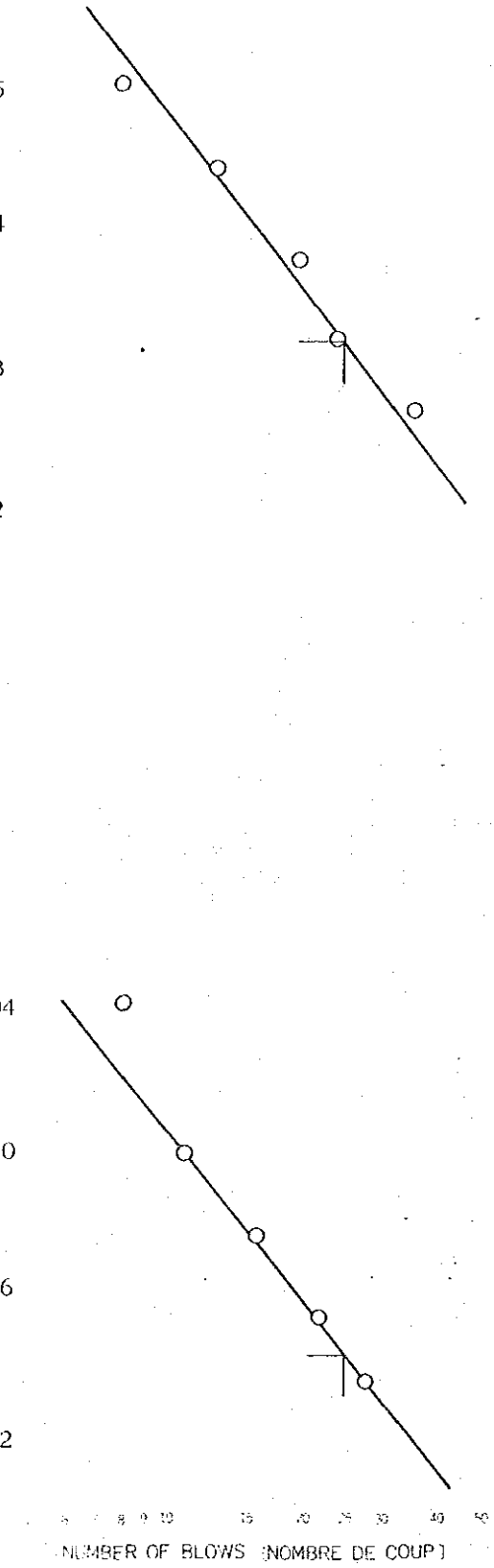
LOCATION

SAMPLE NO. & DEPTH (N° DE L'ÉCHANTILLON ET PROFONDEUR): No. 7 0.2 m ~ 2.5 m

LIQUID LIMIT TEST (LIMITE DE LIQUIDITÉ)			PLASTIC LIMIT TEST (LIMITE DE PLASTICITÉ)	
TEST NO. (N° DE L'ESSAI)	NO. OF BLOWS (NOMBRE DE COUP)	WATER CONTENT (TENEUR EN EAU)	TEST NO. (N° DE L'ESSAI)	WATER CONTENT (TENEUR EN EAU)
1	48	91.80 %	1	28.82 %
2	28	93.42 %	2	29.61 %
3	22	95.20 %	3	30.17 %
4	16	97.51 %		
5	11	99.78 %		
6	8	104.07 %	MEAN VALUE (VALEUR MOYENNE)	29.5

LIQUID LIMIT (LIMITE DE LIQUIDITÉ)	PLASTIC LIMIT (LIMITE DE PLASTICITÉ)	PLASTICITY INDEX (INDICE DE PLASTICITÉ)
w_L 94.2 %	w_P 29.5 %	I_P 64.7

FLOW CURVE
(COURBE DE DÉTERMINATION DE LA LIMITE DE LIQUIDITÉ)



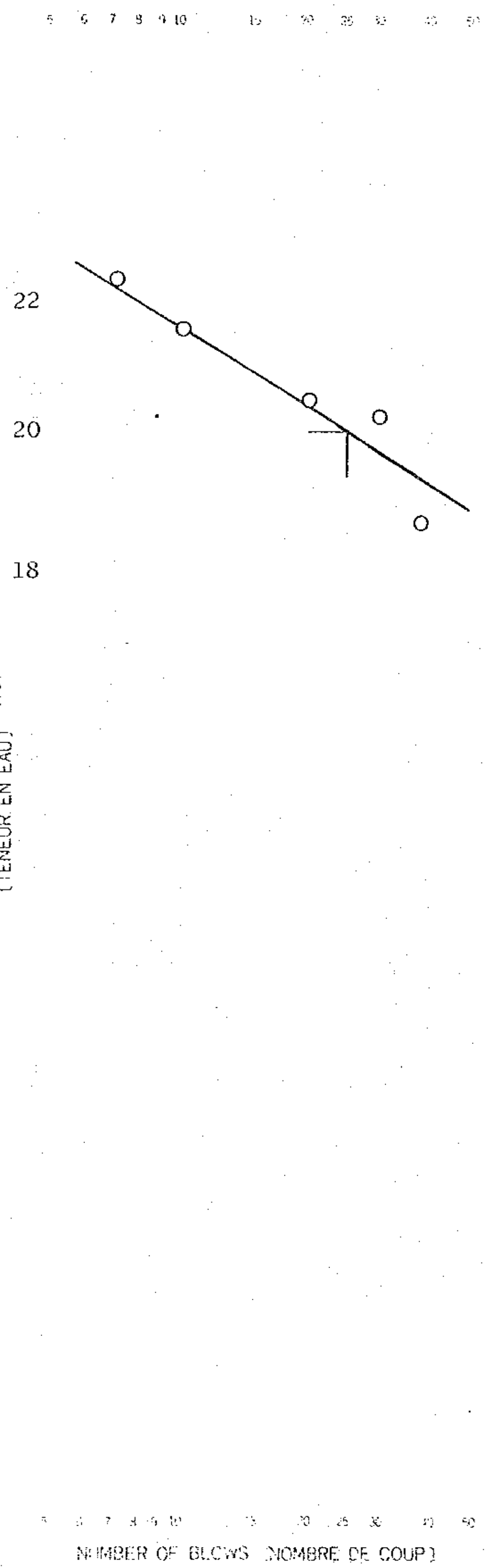
N. K. FORM NO. 003 (1975)

LIQUID LIMIT & PLASTIC LIMIT TEST
(ESSAI DE LIMITE DE LIQUIDITÉ ET DE LIMITE DE PLASTICITÉ)

FOR REPORTING (POUR LE RAPPORT)

NAME OF SURVEY & LOCALITY (DÉNOMINATION DE L'ENQUÊTE ET LOCALITÉ)			
DATE (DATE)	Aug. 1977	TESTED BY (ESSAI PAR)	

FLOW CURVE
(COURBE DE DÉTERMINATION DE LA LIMITE DE LIQUIDITÉ)



LOCATION ~~SAMPLE NO. & DEPTH (N° DE L'ÉCHANTILLON ET PROFONDEUR)~~	No. 4	1.80 m ~ 2.45 m)			
LIQUID LIMIT TEST (LIMITE DE LIQUIDITÉ)			PLASTIC LIMIT TEST (LIMITE DE PLASTICITÉ)		
TEST NO. (N° DE L'ESSAI)	NO. OF BLOWS (NOMBRE DE COUP)	WATER CONTENT (TENEUR EN EAU)	TEST NO. (N° DE L'ESSAI)	WATER CONTENT (TENEUR EN EAU)	
1	38	18.68 %	1	11.85 %	
2	30	20.33 %	2	11.90 %	
3	20	20.47 %	3	11.83 %	
4	10	21.64 %			
5	7	22.30 %			
6		%	MEAN VALUE (VALEUR MOYENNE)	11.9	
LIQUID LIMIT (LIMITE DE LIQUIDITÉ)		PLASTIC LIMIT (LIMITE DE PLASTICITÉ)		PLASTICITY INDEX (INDICE DE PLASTICITÉ)	
w_L 20.1 %		w_p 11.9 %		I_p 8.2	

LOCATION ~~SAMPLE NO. & DEPTH (N° DE L'ÉCHANTILLON ET PROFONDEUR)~~	No.	(m ~ m)			
LIQUID LIMIT TEST (LIMITE DE LIQUIDITÉ)			PLASTIC LIMIT TEST (LIMITE DE PLASTICITÉ)		
TEST NO. (N° DE L'ESSAI)	NO. OF BLOWS (NOMBRE DE COUP)	WATER CONTENT (TENEUR EN EAU)	TEST NO. (N° DE L'ESSAI)	WATER CONTENT (TENEUR EN EAU)	
1		%	1	%	
2		%	2	%	
3		%	3	%	
4		%			
5		%			
6		%	MEAN VALUE (VALEUR MOYENNE)		
LIQUID LIMIT (LIMITE DE LIQUIDITÉ)		PLASTIC LIMIT (LIMITE DE PLASTICITÉ)		PLASTICITY INDEX (INDICE DE PLASTICITÉ)	
w_L %		w_p %		I_p	

SPECIFIC GRAVITY OF SOILS
(POIDS SPÉCIFIQUE DES SOLS)

FOR REPORTING
(POUR LE RAPPORT)

NAME OF SURVEY & LOCALITY
(DÉNOMINATION DE L'ENQUÊTE ET LOCALITÉ)

DATE
(DATE) Aug. 1977

TESTED BY
(ESSAI PAR)

LOCATION ~~SAMPLE~~ NO. & DEPTH (N°DE L'ÉCHANTILLON ET PROFONDEUR)	AVERRAGE SPECIFIC GRAVITY (POIDS SPÉCIFIQUE MOYEN)	SPECIFIC GRAVITY 1 (POIDS SPÉCIFIQUE 1)	SPECIFIC GRAVITY 2 (POIDS SPÉCIFIQUE 2)	SPECIFIC GRAVITY 3 (POIDS SPÉCIFIQUE 3)
No. 2 (0.45m ~ 1.40m)	2.740	2.732	2.748	2.740
No. 6 (2.10m ~ 2.80m)	2.681	2.677	2.682	2.683
No. 10 (0.8 m ~ 1.3 m)	2.707	2.704	2.702	2.714
No. 6 (2.80m ~ 3.75m)	2.707	2.704	2.705	2.713
No. 6 (0.3 m ~ 1.35m)	2.709	2.700	2.707	2.720
No. 3 (0.20m ~ 1.45m)	2.709	2.722	2.703	2.701
No. 4 (0.65m ~ 1.80m)	2.664	2.660	2.670	2.662
No. 7 (0.2 m ~ 2.5 m)	2.695	2.713	2.687	2.685
No. 4 (1.80m ~ 2.45m)	2.661	2.660	2.665	2.657
No. (m ~ m)				
No. (m ~ m)				
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COMPACTION TEST
(ESSAI DE COMPACTAGE)

FOR REPORTING (POUR LE RAPPORT)

NAME OF SURVEY & LOCALITY

LOCATION NO & DEPTH 2 0.45 m ~ 1.40 m

DATE (DATE) Aug. 1977

TESTED BY (ESSAI PAR)

MOULD (MOULE) No. WEIGHT (POIDS) INSIDE DIAMETER (DIAMÈTRE INT.) 10.0 cm CAPACITY (CAPACITÉ) 1,000 cm³

RAMMER (PILON) WEIGHT (POIDS) 2,500 g HEIGHT OF DROP (HAUTEUR DE CHUTE) 30 cm BLOWS PER LAYER (NOMBRE DE COUPS POUR CHAQUE COUCHE) 25 NUMBER OF LAYERS (NOMBRE DE COUCHE) 3

MATERIAL USED FOR SPECIMENS (MATÉRIAU CHOISI POUR DU LES SPÉCIMENS) REPROCESSING·DIFFERENT (RECONDITIONNÉ·AUTRE) SOIL PREPARED FOR TEST (SOL PREPARÉ POUR L'ESSAI) AIR DRIED·NOT DRIED (SÉCHÉ À L'AIR LIBRE·NON SÉCHÉ)

NATURAL WATER CONTENT (TENEUR NATURELLE EN EAU) w_n 12.7

WATER CONTENT AFTER AIR-DRY (TENEUR EN EAU APRÈS SÉCHAGE À L'AIR LIBRE) ----

SPECIFIC GRAVITY (POIDS SPÉCIFIQUE) 27.40

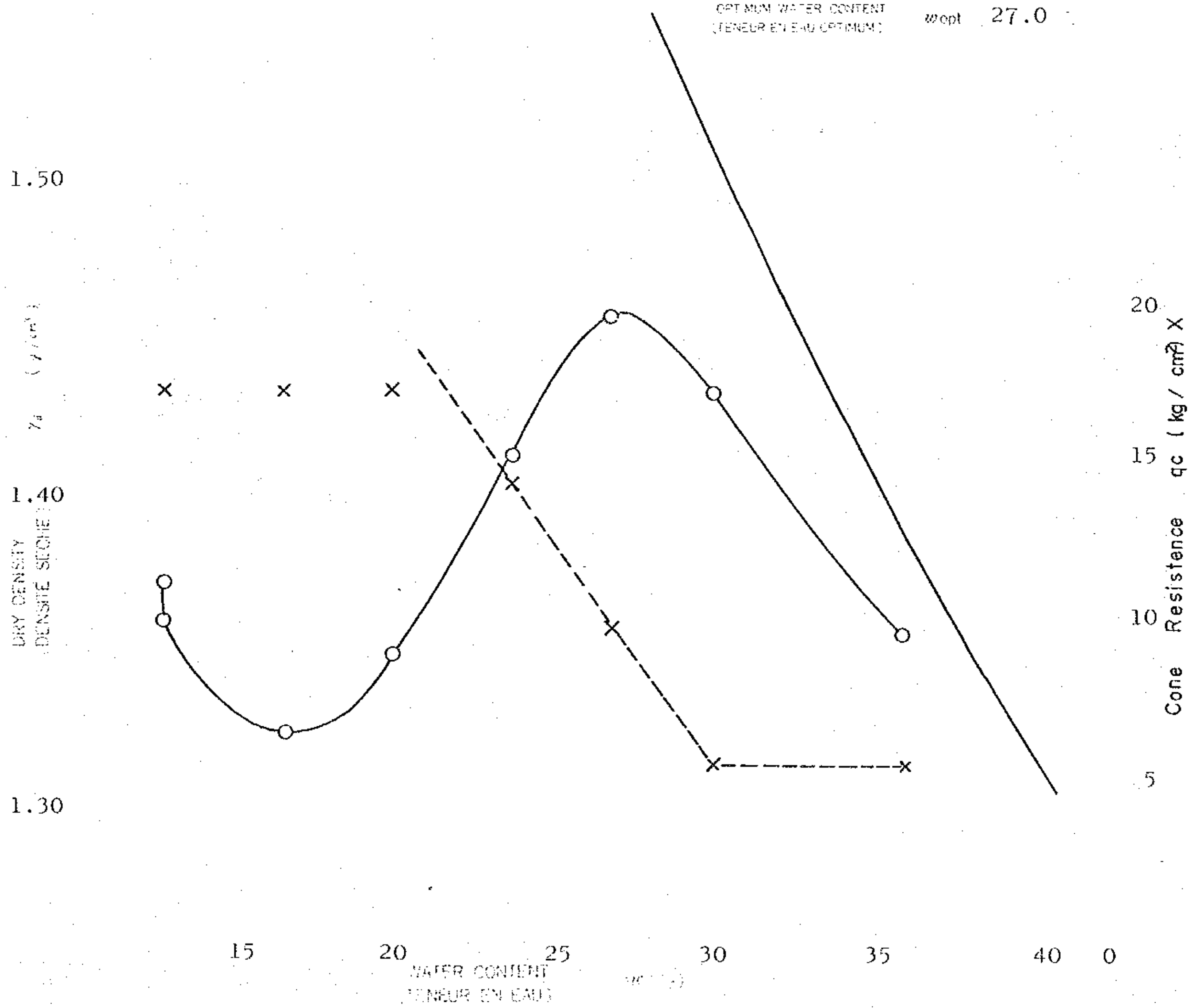
MAX GRAIN SIZE ALLOWED (GRANULOMÉTRIE MAXIMUM ADMISE) 4.76 mm

% OF MATERIAL OVER THE MAX GRAIN SIZE ALLOWED (% DE MATÉRIAU DE GRANULOMÉTRIE SUPÉRIEURE À CELLE ADMISE) 0 %

TEST NO (N DE L'ESSAI)	1	2	3	4	5	6	7	8
DRY DENSITY (DENSITÉ SÈCHE) γ_d g/cm³	1.372	1.325	1.349	1.411	1.454	1.430	1.360	
MEAN WATER CONTENT (TENEUR MOYENNE EN EAU) w (%)	12.7	16.5	19.8	23.5	26.6	29.7	12.7	

MAXIMUM DRY DENSITY (DENSITÉ SÈCHE MAXIMUM) $\gamma_{d max}$ 1,450 g/cm³

OPTIMUM WATER CONTENT (TENEUR EN EAU OPTIMUM) w_{opt} 27.0 %



N.K.FORM NO 016(1975)

COMPACTION TEST
(ESSAI DE COMPACTAGE)

FOR REPORTING
(POUR LE RAPPORT)

NAME OF SURVEY & LOCALITY
(NOM DU LEVÉ ET LOCALITÉ)

DATE
(DATE) Aug. 3, 1977

SAMPLE NO. & DEPTH
(N° DE L'ÉCHANTILLON ET PROFONDEUR) 7 0.2 m - 2.5 m

TESTED BY
(ESSAI PAR)

MOULD (MOULE)	No.	WEIGHT (POIDS)	g	INSIDE DIAMETER (DIAMÈTRE INT.)	10.0 cm	CAPACITY (CAPACITÉ)	1000 cm³
RAMMER (PILON)	WEIGHT (POIDS) 2500 g	HEIGHT OF DROP (HAUTEUR DE CHUTE)	30 cm	BLOWS PER LAYER (NOMBRE DE COUPS POUR CHAQUE COUCHE)	25	NUMBER OF LAYERS (NOMBRE DE COUCHES)	3

MATERIAL USED FOR SPECIMENS (MATÉRIAU CHOISI POUR DU LES SPÉCIMENS) REPROCESSING (RETRAITÉ) (RECONDITIONNÉ-AUTRE)

SOIL PREPARED FOR TEST (SOL PRÉPARÉ POUR L'ESSAI) AIR DRIED (SÉCHÉ À L'AIR LIBRE) NON SÉCHÉ

NATURAL WATER CONTENT (TENEUR NATURELLE EN EAU) w_n 38.8 %

WATER CONTENT AFTER AIR-DRY (TENEUR EN EAU APRÈS SÉCHAGE À L'AIR LIBRE) ..... %

SPECIFIC GRAVITY (POIDS SPÉCIFIQUE) 2.695

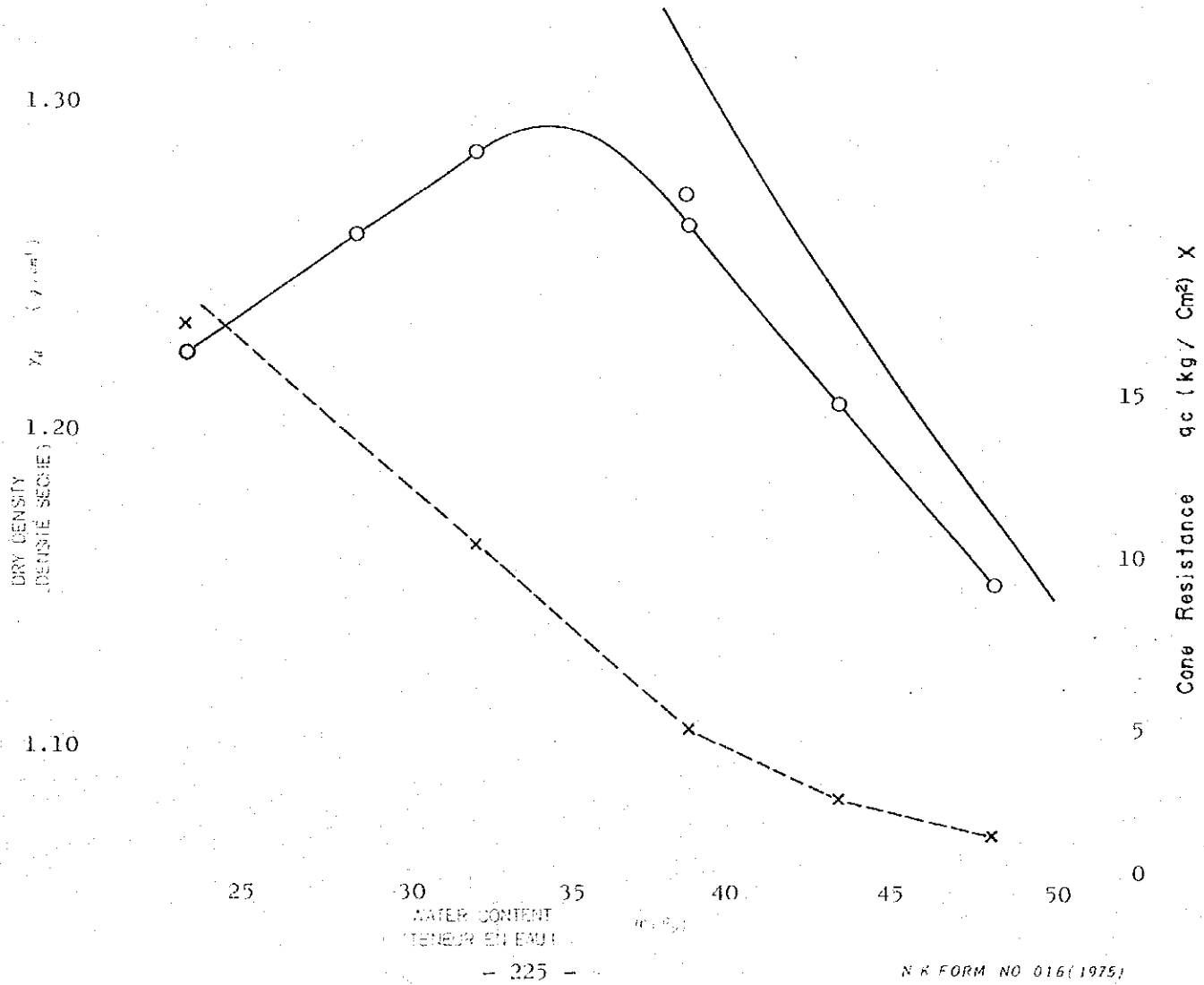
MAX. GRAIN SIZE ALLOWED (GRANULOMÉTRIE MAXIMUM ADMISE) 4.76 mm

% OF MATERIAL OVER THE MAX. GRAIN SIZE ALLOWED (% DE MATÉRIAU DE GRANULOMÉTRIE SUPÉRIEURE À CELLE ADMISE) 0 %

TEST NO. (N° DE L'ESSAI)	1	2	3	4	5	6	7	8
DRY DENSITY (DENSITÉ SÈCHE) γ_d g/cm³	1.224	1.259	1.285	1.262	1.207	1.154	1.272	
MEAN WATER CONTENT (TENEUR MOYENNE EN EAU) w %	23.3	28.6	32.2	38.8	43.4	48.1	38.8	

MAXIMUM DRY DENSITY (DENSITÉ SÈCHE MAXIMUM) $\gamma_{d\,max.}$ 1.298 g/cm³

OPTIMUM WATER CONTENT (TENEUR EN EAU OPTIMUM) w_{opt} 34.4 %



COMPACTION TEST (ESSAI DE COMPACTAGE)

FOR REPORTING (POUR LE RAPPORT)

NAME OF SURVEY & LOCALITY — DATE (DATE): Aug. 1977

LOCATION — SAMPLE NO. & DEPTH: 4 0.65 m - 1.80 m — TESTED BY (ESSAI PAR):

MOULD (MOULE) No.	WEIGHT (POIDS)	INSIDE DIAMETER (DIAMÈTRE INT.) 10.0 cm	CAPACITY (CAPACITÉ) 1000 cm³
RAMMER (PILON) WEIGHT (POIDS) 2500 g	HEIGHT OF DROP (HAUTEUR DE CHUTE) 30 cm	BLOWS PER LAYER (NOMBRE DE COUPS POUR CHAQUE COUCHE) 25	NUMBER OF LAYERS (NOMBRE DE COUCHES) 3
MATERIAL USED FOR SPECIMENS (MATÉRIAU CHOISI POUR DU ... SPÉCIMENS)	REPROCESSING (DIFFERENT) (RECONDITIONNÉ AUTRE)	SOIL PREPARED FOR TEST (SOL PRÉPARÉ POUR L'ESSAI)	AIR-DRIED (NOT DRIED) (SÉCHÉ À L'AIR ...)

NATURAL WATER CONTENT (TENEUR NATURELLE EN EAU) w_n: 9.5 % — WATER CONTENT AFTER AIR-DRY (TENEUR EN EAU APRÈS SÉCHAGE À L'AIR LIBRE): — SPECIFIC GRAVITY (POIDS SPÉCIFIQUE): 2.664

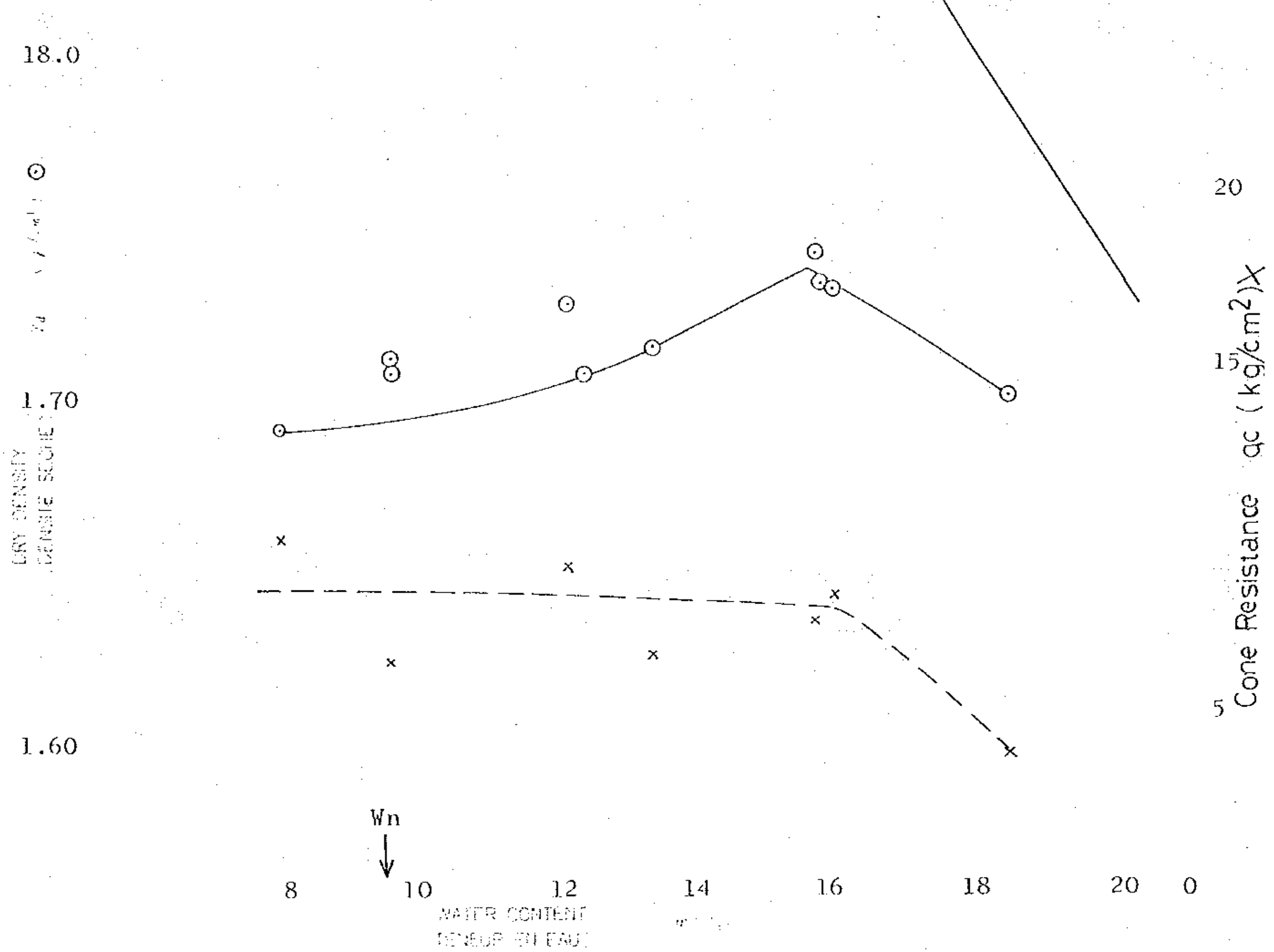
MAX GRAIN SIZE ALLOWED (GRANULOMÉTRIE MAXIMUM ADMISE): 4.76 mm — % OF MATERIAL OVER THE MAX GRAIN SIZE ALLOWED (DE MATÉRIAU DE GRANULOMÉTRIE SUPÉRIEURE À CELLE ADMISE): 0 %

TEST NO. (N° DE L'ESSAI)	1	2	3	4	5	6	7	8
DRY DENSITY (DENSITÉ SÈCHE) γ_d g/cm³	1.691	1.711	1.727	1.715	1.732	1.707	1.743	1.734
MEAN WATER CONTENT (TENEUR MOYENNE EN EAU) w %	7.9	9.5	12.1	13.3	15.9	12.3	15.6	15.7

TEST NO.	9	10
DRY DENSITY γ_d (g/cm^3)	1.704	1.707
MEAN WATER CONTENT W(%)	18.4	9.5

MAXIMUM DRY DENSITY (DENSITÉ SÈCHE MAXIMUM) γ_{dmax} 1,738 g/cm³

OPTIMUM WATER CONTENT (TENEUR EN EAU OPTIMUM) w_{opt} 15.5 %



N.K.FORM NO 016(1975)

PERMEABILITY TEST
(ESSAI DE PERMÉABILITÉ)

NAME OF SURVEY & LOCALITY (DÉNOMINATION DE L'ENQUÊTE ET LOCALITÉ)		DATE (DATE)	Aug. 1977
LOCATION (EMPLACEMENT)			
SAMPLE NO & DEPTH (N° DE L'ÉCHANTILLON ET PROFONDEUR)	2 0.45 – 1.40 m	TESTED BY (ESSAI PAR)	

APPARATUS NO (N° DE L'APPAREIL)	P-29	CONTAINER NO (N° DU RÉCIPIENT)		SAMPLE (ÉCHANTILLON)	UNDISTURBED · (DISTURBED) (INTACT · REMANIÉ)

			CONDITIONS OF SPECIMEN (CONDITIONS DU SPÉCIMEN)	BEFORE TEST (AVANT ESSAI)	AFTER TEST (APRÈS ESSAI)
BURETTE (BURETTE)	DIAMETER (DIAMÈTRE)	1.05 cm			
	CROSS SECTIONAL AREA (SURF. DE LA SECTION)	0.866 cm²			
SPECIMEN (SPÉCIMEN)	DIAMETER (DIAMÈTRE)	10.0 cm			
	CROSS SECTIONAL AREA (SURF. DE LA SECTION) A	78.5 cm²			
	LENGTH (LONGUEUR) L	12.7 cm			
	VOLUME (VOLUME) V=AL	1000 cm³			
WEIGHT OF CONTAINER (POIDS DU RÉCIPIENT)	W_c g	1903	WEIGHT (CONTAINER + SPECIMEN) (POIDS (RÉCIPIENT + SPÉCIMEN)) W' g	3436	3807
			WEIGHT OF SPECIMEN (POIDS DU SPÉCIMEN) $W_s = W' - W_c$ g	1533	1904
			WET DENSITY (DENSITÉ HUMIDE) $\gamma_t = W_s / V$ g/cm³	1.533	1.904
			DEGREE OF SATURATION (DEGRÉ DE SATURATION) S_r %	34.9	106.6
			WATER CONTENT (TENEUR EN EAU) w %	12.7	38.8
SPECIFIC GRAVITY (POIDS SPÉCIFIQUE)	G_s	2.740	DRY DENSITY (DENSITÉ SÈCHE) $\gamma_d = \gamma_t / (1 + \frac{w}{100})$ g/cm³	1.372	1.372
			VOID RATIO (INDICE DES VIDES) e	0.997	0.997

	TEST NO (N° DE L'ESSAI)	1	2	3
	TIME OF INITIAL OBSERVATION (MOMENT OÙ L'OBSERVATION COMMENCE) t_1	$10^h:45^m$	$9^h:10^m$	$16^h:45^m$
	TIME OF FINAL OBSERVATION (MOMENT OÙ L'OBSERVATION FINIT) t_2	$16^h:45^m$	$16^h:45^m$	$9^h:00^m$
	ELAPSED TIME (TEMPS ÉCOULÉ) $t_2 - t_1$ sec	21600	27300	58500
CONSTANT HEAD METHOD (MÉTHODE DES NIVEAUX CONSTANTS)	* HEAD (DIFFÉRENCE DE NIVEAU) h cm			
	$A \cdot (t_2 - t_1)$			
	L/h			
	VOLUME OF DISCHARGE IN $t_2 - t_1$ (VOLUME D'ÉPANCHEMENT EN $t_2 - t_1$) Q cm³			
	$Q/A \cdot (t_2 - t_1)$			
	$k_T = \frac{L}{h} \cdot \frac{Q}{A \cdot (t_2 - t_1)}$ cm/sec			
FALLING HEAD METHOD (MÉTHODE DES NIVEAUX VARIABLES)	* HEAD AT t_1 (DIFF. DE NIVEAU À t_1) h_1 cm	89.8	89.8	89.8
	* HEAD AT t_2 (DIFF. DE NIVEAU À t_2) h_2 cm	86.6	86.1	81.1
	h_1/h_2	1.0370	1.0430	1.1073
	$\log_{10} h_1/h_2$	0.0158	0.0183	0.0443
	$a \cdot L$	10.9982	10.9982	10.9982
	aL/A	0.1401	0.1401	0.1401
	$2.3/(t_2 - t_1)$	1.06×10^{-4}	8.42×10^{-5}	3.93×10^{-5}
	** $k_T = \frac{aL}{A} \cdot \frac{2.3}{(t_2 - t_1)} \log \frac{h_1}{h_2}$ cm/sec	2.35×10^{-7}	2.16×10^{-7}	2.44×10^{-7}
	WATER TEMPERATURE (TEMPÉRATURE DE L'EAU) T °C	24	25	24
	*** μ_T / μ_{15}	0.80	0.782	0.80
	** $k_{15} = k_T \frac{\mu_T}{\mu_{15}}$	1.88×10^{-7}	1.69×10^{-7}	1.95×10^{-7}
	MEAN VALUE OF k_{15} (VALEUR MOYENNE DE k_{15})	1.84×10^{-7} cm/sec		

WATER CONTENT BEFOR TEST (TENEUR EN EAU AVANT ESSAI)

	No. 256		
W_a 275.4	W_b 256.5		
W_b 256.5	W_c 107.7		
W_s 18.9	W_w 148.8		
w = 12.7 %			
	No.		
W_a	W_b		
W_b	W_c		
W_w	W_s		
w = %			

MEAN WATER CONTENT (TENEUR MOYENNE EN EAU)

w = 12.7 %

WATER CONTENT AFTER TEST (TENEUR EN EAU APRÈS ESSAI)

	No.		
W_a	W_b		
W_b	W_c		
W_w	W_s		
w = %			
	No.		
W_a	W_b		
W_b	W_c		
W_w	W_s		
w = %			

MEAN WATER CONTENT (TENEUR MOYENNE EN EAU)

w = %

* DIFFERENCE BETWEEN HEAD WATER AND TAILWATER (DIFFERENCE ENTRE LE NIVEAU D'EAU EN TÊTE DE COLONNE ET LE NIVEAU D'ÉPANCHEMENT)

** μ_T IS THE COEFFICIENT OF VISCOSITY OF THE WATER AT T °C. (μ_T EST LE COEFFICIENT DE VISCOSITÉ DE L'EAU À T °C.)

*** COEFFICIENT OF PERMEABILITY AT T °C OR 15°C (COEFFICIENT DE PERMÉABILITÉ À T °C OU 15°C)

N. K. FORM NO. 017(1975)

PERMEABILITY TEST
(ESSAI DE PERMÉABILITÉ)

NAME OF SURVEY & LOCALITY (DÉNOMINATION DE L'ENQUÊTE ET LOCALITÉ) LOCATION		DATE (DATE)	Aug. 1977
SAMPLE NO. & DEPTH (NUMÉRO ET PROFONDEUR DE L'ÉCHANTILLON)	7 0.2 – 2.5 m	TESTED BY (ESSAI PAR)	

APPARATUS NO. (N° DE L'APPAREIL)	P-13	CONTAINER NO. (N° DU RÉCIPIENT)		SAMPLE (ÉCHANTILLON)	UNDISTURBED · (DISTURBED) (INTACT · REMANIÉ)

			CONDITIONS OF SPECIMEN (CONDITIONS DU SPÉCIMEN)	BEFORE TEST (AVANT ESSAI)	AFTER TEST (APRÈS ESSAI)
BURETTE (BURETTE)	DIAMETER (DIAMÈTRE)	1.014 cm	WEIGHT (CONTAINER+SPECIMEN) (POIDS (RÉCIPIENT + SPÉCIMEN)) W' (g)	361.2	367.4
	CROSS SECTIONAL AREA (SURF. DE LA SECTION) a (cm²)	0.849	WEIGHT OF SPECIMEN (POIDS DU SPÉCIMEN) $W_s = W' - W_c$ (g)	176.5	182.7
SPECIMEN (SPÉCIMEN)	DIAMETER (DIAMÈTRE)	10.0 cm	WET DENSITY (DENSITÉ HUMIDE) $\gamma_t = W_t/V$ (g/cm³)	1.765	1.827
	CROSS SECTIONAL AREA (SURF. DE LA SECTION) A (cm²)	78.5	DEGREE OF SATURATION (DEGRÉ DE SATURATION) S_r (%)	93.4	105.0
	LENGTH (LONGUEUR) L (cm)	12.7	WATER CONTENT (TENEUR EN EAU) w (%)	38.8	43.6
	VOLUME (VOLUME) V=AL (cm³)	1000	DRY DENSITY (DENSITÉ SÈCHE) $\gamma_d = \gamma_t/(1+\frac{w}{100})$ (g/cm³)	1.272	1.272
WEIGHT OF CONTAINER (POIDS DU RÉCIPIENT) W_c (g)		1847	VOID RATIO (INDICE DES VIDES) e	1.119	1.119
SPECIFIC GRAVITY (POIDS SPÉCIFIQUE) G_s		2.695			

TEST NO. (N° DE L'ESSAI)		1	2	3
TIME OF INITIAL OBSERVATION (MOMENT OÙ L'OBSERVATION COMMENCE) t_1		27th 9 o'clock		
TIME OF FINAL OBSERVATION (MOMENT OÙ L'OBSERVATION FINIT) t_2		29th10 o'clock		
ELAPSED TIME (TEMPS ÉCOULÉ) t_2-t_1 (sec)		176400		
CONSTANT HEAD METHOD (MÉTHODE DES NIVEAUX CONSTANTS)	※ HEAD (DIFFÉRENCE DE NIVEAU) h (cm)			
	$A\cdot(t_2-t_1)$			
	L/h			
	VOLUME OF DISCHARGE IN t_2-t_1 (VOLUME D'ÉPANCHEMENT EN t_2-t_1) Q (cm³)			
	$Q/A\cdot(t_2-t_1)$			
	$k_T = \frac{L}{h}\cdot\frac{Q}{A(t_2-t_1)}$ (cm/sec)			
FALLING HEAD METHOD (MÉTHODE DES NIVEAUX VARIABLES)	※ HEAD AT t_1 (DIFF. DE NIVEAU À t_1) h_1 (cm)	88.6		
	※ HEAD AT t_2 (DIFF. DE NIVEAU À t_2) h_2 (cm)	87.9		
	h_1/h_2	1.008		
	$\log_{10}(h_1/h_2)$	0.0035		
	$a\cdot L$	10.782		
	aL/A	0.137		
	$2.3/(t_2-t_1)$	1.30×10^{-5}		
	※※ $k_T = \frac{aL}{A}\frac{2.3}{(t_2-t_1)}\log\frac{h_1}{h_2}$ (cm/sec)	6.23×10^{-9}		
WATER TEMPERATURE (TEMPÉRATURE DE L'EAU) T (°C)		24		
※※※ μ_T/μ_{15}		0.80		
※※ $k_{15} = k_T\frac{\mu_T}{\mu_{15}}$		4.98×10^{-9}		
MEAN VALUE OF k_{15} (VALEUR MOYENNE DE k_{15})		4.98×10^{-9} cm/sec		

WATER CONTENT BEFOR TEST (TENEUR EN EAU AVANT ESSAI)

No.			
W_a	W_b		
W_b	W_c		
W_w	W_s		
$w =$	%		

No.			
W_a	W_b		
W_b	W_c		
W_w	W_s		
$w =$	%		

MEAN WATER CONTENT (TENEUR MOYENNE EN EAU)

$w =$ %

WATER CONTENT AFTER TEST (TENEUR EN EAU APRÈS ESSAI)

No.			
W_a	W_b		
W_b	W_c		
W_w	W_s		
$w =$	%		

No.			
W_a	W_b		
W_b	W_c		
W_w	W_s		
$w =$	%		

MEAN WATER CONTENT (TENEUR MOYENNE EN EAU)

$w =$ %

※ DIFFERENCE BETWEEN HEAD WATER AND TAILWATER (DIFFÉRENCE ENTRE LE NIVEAU D'EAU EN TÊTE DE COLONNE ET LE NIVEAU D'ÉPANCHEMENT)

※※ COEFFICIENT OF PERMEABILITY AT T°C OR 15°C (COEFFICIENT DE PERMÉABILITÉ À T °C OU 15°C)

※※※ μT IS THE COEFFICIENT OF VISCOSITY OF THE WATER AT T °C. (μT EST LE COEFFICIENT DE VISCOSITÉ DE L'EAU À T °C.)

N. K. FORM NO. 017(1975)

PERMEABILITY TEST
(ESSAI DE PERMÉABILITÉ)

NAME OF SURVEY & LOCALITY (DÉNOMINATION DE L'ENQUÊTE ET LOCALITÉ)		DATE (DATE)	Aug., 1977
LOCATION No. & DEPTH (N° D'ÉCHANTILLON ET PROFONDEUR)	4 0.65 ~ 1.8 m IEC	TESTED BY (ESSAI PAR)	

APPARATUS NO. (N° DE L'APPAREIL)	P-28	CONTAINER NO (N° DU RÉCIPIENT)		SAMPLE (ÉCHANTILLON)	UNDISTURBED · (DISTURBED) (INTACT · REMANIÉ)

BURETTE (BURETTE)	DIAMETER (DIAMÈTRE)	cm	1.03
	CROSS SECTIONAL AREA (SURF. DE LA SECTION)	a cm²	0.833
SPECIMEN (SPÉCIMEN)	DIAMETER (DIAMÈTRE)	cm	10.0
	CROSS SECTIONAL AREA (SURF. DE LA SECTION)	A cm²	78.5
	LENGTH (LONGUEUR)	L cm	12.7
	VOLUME (VOLUME)	$V=AL$ cm³	1000
WEIGHT OF CONTAINER (POIDS DU RÉCIPIENT)		W_c g	1896
SPECIFIC GRAVITY (POIDS SPÉCIFIQUE)		G_s	2.664

CONDITIONS OF SPECIMEN (CONDITIONS DU SPÉCIMEN)		BEFORE TEST (AVANT ESSAI)	AFTER TEST (APRÈS ESSAI)
WEIGHT CONTAINER+SPECIMEN (POIDS RÉCIPIENT + SPÉCIMEN)	W' g	3766	3977
WEIGHT OF SPECIMEN (POIDS DU SPÉCIMEN)	$W_s=W'-W_c$ g	1870	2081
WET DENSITY (DENSITÉ HUMIDE)	$\gamma_t=W_s/V$ g/cm³	1.870	2.081
DEGREE OF SATURATION (DEGRÉ DE SATURATION)	S_r %	45.5	103.4
WATER CONTENT (TENEUR EN EAU)	w %	9.5	21.6
DRY DENSITY (DENSITÉ SÈCHE)	$\gamma_d=\gamma_t/(1+\frac{w}{100})$ g/cm³	1.711	1.711
VOID RATIO (INDICE DES VIDES)	e	0.557	0.557

TEST NO. (N° DE L'ESSAI)		1	2	3
TIME OF INITIAL OBSERVATION (MOMENT OÙ L'OBSERVATION COMMENCE)	t_1	0	0	0
TIME OF FINAL OBSERVATON (MOMENT OÙ L'OBSERVATION FINIT)	t_2	41.4 sec	41.6 sec	42.0 sec
ELAPSED TIME (TEMPS ÉCOULÉ)	t_2-t_1 sec	41.4	41.6	42.0
CONSTANT HEAD METHOD (MÉTHODE DES NIVEAUX CONSTANTS)	* HEAD (DIFFÉRENCE DE NIVEAU)	cm		
	$A\cdot(t_2-t_1)$			
	L/h			
	VOLUME OF DISCHARGE (t_2-t_1) (VOLUME D'ÉPANCHEMENT EN (t_2-t_1))	Q cm³		
	$Q/A\cdot(t_2-t_1)$			
	$k_T=\frac{L}{h}\cdot\frac{Q}{A(t_2-t_1)}$	(cm/sec)		
FALLING HEAD METHOD (MÉTHODE DES NIVEAUX VARIABLES)	* HEAD AT t_1 (DIFF. DE NIVEAU À t_1)	h_1 cm	90.3	90.3	90.3
	* HEAD AT t_2 (DIFF. DE NIVEAU À t_2)	h_2 cm	70.3	70.3	70.3
	h_1/h_2		1.284	1.284	1.284
	$\log_{10}(h_1/h_2)$		0.109	0.109	0.109
	$a\cdot L$		10.58	10.58	10.58
	aL/A		0.135	0.135	0.135
	$2.3/(t_2-t_1)$		0.0556	0.0553	0.0548
	** $k_T=\frac{aL}{A}\cdot\frac{2.3}{(t_2-t_1)}\log_{10}\frac{h_1}{h_2}$	cm/sec	8.18×10^{-4}	8.14×10^{-4}	8.06×10^{-4}
WATER TEMPERATURE (TEMPÉRATURE DE L'EAU)		T °C	25	25	25
***	μ_T/μ_{15}		0.782	0.782	0.782
**	$k_{15}=k_T\frac{\mu_T}{\mu_{15}}$		6.40×10^{-4}	6.37×10^{-4}	6.30×10^{-4}
MEAN VALUE OF k_{15} (VALEUR MOYENNE DE k_{15})			6.36×10^{-4}		cm/sec

WATER CONTENT BEFOR TEST (TENEUR EN EAU AVANT ESSAI)			
		No.	226
W_a	223.4	W_b	213.7
W_b	213.7	W_c	111.9
W_a	9.7	W_s	101.8
	$w=$		9.5 %
		No	
W_a		W_b	
W_b		W_c	
W_a		W_s	
	$w=$		%
MEAN WATER CONTENT (TENEUR MOYENNE EN EAU)			
	$w=$		9.5 %

WATER CONTENT AFTER TEST (TENEUR EN EAU APRÈS ESSAI)			
		No.	
W_a		W_b	
W_b		W_c	
W_a		W_s	
	$w=$		%
		No	
W_a		W_b	
W_b		W_c	
W_a		W_s	
	$w=$		%
MEAN WATER CONTENT (TENEUR MOYENNE EN EAU)			
	$w=$		%

* DIFFERENCE BETWEEN HEAD WATER AND TAILWATER
(DIFFÉRENCE ENTRE LE NIVEAU D'EAU EN TÊTE DE COLONNE ET LE NIVEAU D'ÉPANCHEMENT)

** COEFFICIENT OF PERMEABILITY AT T °C OR 15°C
(COEFFICIENT DE PERMÉABILITÉ À T °C OU 15°C)

*** μT IS THE COEFFICIENT OF VISCOSITY OF THE WATER AT T °C.
(μT EST LE COEFFICIENT DE VISCOSITÉ DE L'EAU À T °C).

N. K. FORM NO. 017(1975)

PERMEABILITY TEST
(ESSAI DE PERMÉABILITÉ)

NAME OF SURVEY & LOCALITY (DÉNOMINATION DE L'ENQUÊTE ET LOCALITÉ)		DATE (DATE)	Aug., 1977
LOCATION NO. & DEPTH (N° DE L'EMPLACEMENT ET PROFONDEUR)	4 0.65 - 1.8 m IEC	TESTED BY (ESSAI PAR)	

APPARATUS NO. (N° DE L'APPAREIL)	P-24	CONTAINER NO. (N° DU RÉCIPIENT)		SAMPLE (ÉCHANTILLON)	UNDISTURBED · (DISTURBED) (INTACT · REMANIÉ)

			CONDITIONS OF SPECIMEN (CONDITIONS DU SPÉCIMEN)		BEFORE TEST (AVANT ESSAI)	AFTER TEST (APRÈS ESSAI)
BURETTE (BURETTE)	DIAMETER (DIAMÈTRE)	cm 1.03	WEIGHT (CONTAINER+SPECIMEN) (POIDS RÉCIPIENT + SPÉCIMEN)	W' (g)	3775	3896
	CROSS SECTIONAL AREA (SURF. DE LA SECTION)	a (cm²) 0.833	WEIGHT OF SPECIMEN (POIDS DU SPÉCIMEN)	$W_s = W' - W_c$ (g)	1917	2038
SPECIMEN (SPÉCIMEN)	DIAMETER (DIAMÈTRE)	cm 10.0	WET DENSITY (DENSITÉ HUMIDE)	$\gamma_t = W_s/V$ (g/cm³)	1.971	2.038
	CROSS SECTIONAL AREA (SURF. DE LA SECTION)	A (cm²) 78.5	DEGREE OF SATURATION (DEGRÉ DE SATURATION)	S_r (%)	58.3	92.1
	LENGTH (LONGUEUR)	L cm 12.7	WATER CONTENT (TENEUR EN EAU)	w (%)	12.3	19.4
	VOLUME (VOLUME)	$V = AL$ (cm³) 1000	DRY DENSITY (DENSITÉ SÈCHE)	$\gamma_d = \gamma_t/(1+\frac{w}{100})$ (g/cm³)	1.707	1.707
WEIGHT OF CONTAINER (POIDS DU RÉCIPIENT)		W_c (g) 1858	VOID RATIO (INDICE DES VIDES)	e	0.561	0.561
SPECIFIC GRAVITY (POIDS SPÉCIFIQUE)		G_s 2.664				

TEST NO. (N° DE L'ESSAI)			1	2	3
TIME OF INITIAL OBSERVATION (MOMENT OÙ L'OBSERVATION COMMENCE)		t_1	0	0	0
TIME OF FINAL OBSERVATION (MOMENT OÙ L'OBSERVATION FINNIT)		t_2	47.2 sec	47.8 sec	46.8 sec
ELAPSED TIME (TEMPS ÉCOULÉ)		$t_2 - t_1$ sec	47.2	47.8	46.8
CONSTANT HEAD METHOD (MÉTHODE DES NIVEAUX CONSTANTS)	※ HEAD (DIFFÉRENCE DE NIVEAU)	h (cm)			
	$A \cdot (t_2 - t_1)$				
	L/h				
	VOLUME OF DISCHARGE IN $t_2 - t_1$ (VOLUME D'ÉPANCHEMENT EN $t_2 - t_1$)	Q (cm³)			
	$Q/A \cdot (t_2 - t_1)$				
	$k_T = \frac{L}{h} \cdot \frac{Q}{A(t_2 - t_1)}$	(cm/sec)			
FALLING HEAD METHOD (MÉTHODE DES NIVEAUX VARIABLES)	※ HEAD AT t_1 (DIFF. DE NIVEAU À t_1)	h_1 (cm)	89.0	89.0	89.0
	※ HEAD AT t_2 (DIFF. DE NIVEAU À t_2)	h_2 (cm)	79.0	79.0	79.0
	h_1/h_2		1.1266	1.1266	1.1266
	$\log_{10}(h_1/h_2)$		0.0518	0.0518	0.0518
	$a \cdot L$		10.579	10.579	10.579
	aL/A		0.1347	0.1347	0.1347
	$2.3/(t_2 - t_1)$		0.0487	0.0481	0.0491
	※※ $k_T = \frac{aL}{A} \cdot \frac{2.3}{(t_2 - t_1)} \log_{10} \frac{h_1}{h_2}$	(cm/sec)	3.4×10^{-4}	3.4×10^{-4}	3.4×10^{-4}
WATER TEMPERATURE (TEMPÉRATURE DE L'EAU)		T (°C)	26	26	26
※※※	μ_T/μ_{15}		0.764	0.764	0.764
※※	$k_{15} = k_T \frac{\mu_T}{\mu_{15}}$		2.6×10^{-4}	2.6×10^{-4}	2.6×10^{-4}
MEAN VALUE OF k_{15} (VALEUR MOYENNE DE k_{15})			2.6×10^{-4} cm/sec		

WATER CONTENT BEFOR TEST (TENEUR EN EAU AVANT ESSAI)

	No. 165		
W_a	234.2	W_b	221.4
W_b	221.4	W_c	119.4
W_w	12.8	W_s	102.0
	w = 12.6 %		
	No. 260		
W_a	232.3	W_b	219.5
W_b	219.5	W_c	112.7
W_w	12.8	W_s	106.8
	w = 12.0 %		

MEAN WATER CONTENT (TENEUR MOYENNE EN EAU)

w = 12.3 %

WATER CONTENT AFTER TEST (TENEUR EN EAU APRÈS ESSAI)

	No.		
W_a		W_b	
W_b		W_c	
W_w		W_s	
	w = %		
	No.		
W_a		W_b	
W_b		W_c	
W_w		W_s	
	w = %		

MEAN WATER CONTENT (TENEUR MOYENNE EN EAU)

w = %

※ DIFFERENCE BETWEEN HEAD WATER AND TAILWATER (DIFFÉRENCE ENTRE LE NIVEAU D'EAU EN TÊTE DE COLONNE ET LE NIVEAU D'ÉPANCHEMENT)

※※※ μT IS THE COEFFICIENT OF VISCOSITY OF THE WATER AT T °C. (μT EST LE COEFFICIENT DE VISCOSITÉ DE L'EAU À T °C.)

※※ COEFFICIENT OF PERMEABILITY AT T °C OR 15°C (COEFFICIENT DE PERMÉABILITÉ À T °C OU 15°C)

N. K. FORM NO. 017(1975)

PERMEABILITY TEST
(ESSAI DE PERMÉABILITÉ)

NAME OF SURVEY & LOCALITY (DÉNOMINATION DE L'ENQUÊTE ET LOCALITÉ)		DATE (DATE)	Aug., 1977
LOCATION & DEPTH (EMPLACEMENT ET PROFONDEUR)	4 0.65 – 1.8 m IEC	TESTED BY (ESSAI PAR)	

APPARATUS NO. (N° DE L'APPAREIL)	P-21	CONTAINER NO. (N° DU RÉCIPIENT)		SAMPLE (ÉCHANTILLON)	UNDISTURBED - (DISTURBED) (INTACT - REMANIÉ)

			CONDITIONS OF SPECIMEN (CONDITIONS DU SPÉCIMEN)	BEFORE TEST (AVANT ESSAI)	AFTER TEST (APRÈS ESSAI)
BURETTE (BURETTE)	DIAMETER (DIAMÈTRE)	1.51			
	CROSS SECTIONAL AREA (SURF. DE LA SECTION) a cm²	1.79			
SPECIMEN (SPÉCIMEN)	DIAMETER (DIAMÈTRE)	10.0			
	CROSS SECTIONAL AREA (SURF. DE LA SECTION) A cm²	78.5			
	LENGTH (LONGUEUR) L cm	12.7			
	VOLUME (VOLUME) $V=AL$ cm³	1000			
WEIGHT OF CONTAINER (POIDS DU RÉCIPIENT) W_c g		1908	WEIGHT CONTAINER + SPECIMEN (POIDS RÉCIPIENT + SPÉCIMEN) W' g	3914	3966
SPECIFIC GRAVITY (POIDS SPÉCIFIQUE) G_s		2.664	WEIGHT OF SPECIMEN (POIDS DU SPÉCIMEN) $W_s=W'-W_c$ g	2006	2058
			WET DENSITY (DENSITÉ HUMIDE) $\gamma_t=W_s/V$ g/cm³	2.006	2.058
			DEGREE OF SATURATION (DEGRÉ DE SATURATION) S_r %	77.9	92.8
			WATER CONTENT (TENEUR EN EAU) w %	15.7	18.7
			DRY DENSITY (DENSITÉ SÈCHE) $\gamma_d=\gamma_t/(1+\frac{w}{100})$ g/cm³	1.734	1.734
			VOID RATIO (INDICE DES VIDES) e	0.536	0.536

TEST NO. (N° DE L'ESSAI)		1	2	3
TIME OF INITIAL OBSERVATION (MOMENT OÙ L'OBSERVATION COMMENCE) t_1		0	0	0
TIME OF FINAL OBSERVATION (MOMENT OÙ L'OBSERVATION FINIT) t_2		1800 sec	1800 sec	1800 sec
ELAPSED TIME (TEMPS ÉCOULÉ) t_2-t_1 sec		1800	1800	1800
CONSTANT HEAD METHOD (MÉTHODE DES NIVEAUX CONSTANTS)	※ HEAD (DIFFÉRENCE DE NIVEAU) h cm			
	$A\cdot(t_2-t_1)$			
	L/h			
	VOLUME OF DISCHARGE IN t_2-t_1 (VOLUME D'ÉPANCHEMENT EN t_2-t_1) Q cm³			
	$Q/A\cdot(t_2-t_1)$			
	$k_T=\frac{L}{h}\cdot\frac{Q}{A\cdot(t_2-t_1)}$ cm/sec			
FALLING HEAD METHOD (MÉTHODE DES NIVEAUX VARIABLES)	※ HEAD AT t_1 (DIFF. DE NIVEAU À t_1) h_1 cm	88.5	88.5	88.5
	※ HEAD AT t_2 (DIFF. DE NIVEAU À t_2) h_2 cm	86.3	86.4	86.45
	h_1/h_2	1.0255	1.0243	1.0237
	$\log_{10}(h_1/h_2)$	0.0109	0.0104	0.0102
	$a\cdot L$	22.733	22.733	22.733
	aL/A	0.2896	0.2896	0.2896
	$2.3/(t_2-t_1)$	1.28×10^{-3}	1.28×10^{-3}	1.28×10^{-3}
	※※ $k_T=\frac{aL}{A}\cdot\frac{2.3}{t_2-t_1}\cdot\log\frac{h_1}{h_2}$ cm/sec	4.0×10^{-6}	3.8×10^{-6}	3.7×10^{-6}
WATER TEMPERATURE (TEMPÉRATURE DE L'EAU) T °C		22	22	22
※※※ μ_T/μ_{15}		0.839	0.839	0.839
※※ $k_{15}=k_T\frac{\mu_T}{\mu_{15}}$		3.3×10^{-6}	3.1×10^{-6}	3.3×10^{-6}
MEAN VALUE OF k_{15} (VALEUR MOYENNE DE k_{15})		3.2×10^{-6} cm/sec		

WATER CONTENT BEFOR TEST (TENEUR EN EAU AVANT ESSAI)

	No. 205		
W_a	338.2	W_b	309.2
W_b	309.2	W_s	124.6
W_w	29.0	W_s	184.6
	$w=$	15.7	%

	No.		
W_a		W_b	
W_b		W_c	
W_w		W_s	
	$w=$		%

MEAN WATER CONTENT (TENEUR MOYENNE EN EAU)

$w=$ 15.7 %

WATER CONTENT AFTER TEST (TENEUR EN EAU APRÈS ESSAI)

	No.		
W_a		W_b	
W_b		W_c	
W_w		W_s	
	$w=$		%

	No.		
W_a		W_b	
W_b		W_c	
W_w		W_s	
	$w=$		%

MEAN WATER CONTENT (TENEUR MOYENNE EN EAU)

$w=$ %

※ DIFFERENCE BETWEEN HEAD WATER AND TAILWATER (DIFFÉRENCE ENTRE LE NIVEAU D'EAU EN TÊTE DE COLONNE ET LE NIVEAU D'ÉPANCHEMENT)

※※※ μ_T IS THE COEFFICIENT OF VISCOSITY OF THE WATER AT T °C. (μ_T EST LE COEFFICIENT DE VISCOSITÉ DE L'EAU À T °C.)

※※ COEFFICIENT OF PERMEABILITY AT T °C OR 15°C (COEFFICIENT DE PERMÉABILITÉ À T °C OU 15°C)

N. K. FORM NO. 017(1975)

PERMEABILITY TEST
(ESSAI DE PERMÉABILITÉ)

NAME OF SURVEY & LOCALITY (DÉNOMINATION DE L'ENQUÊTE ET LOCALITÉ)		DATE (DATE)	Aug., 1977
LOCATION NO. & DEPTH (N° DE L'EMPLACEMENT ET PROFONDEUR)	4 0.65 - 1.8 m 2EC	TESTED BY (ESSAI PAR)	

APPARATUS NO. (N° DE L'APPAREIL)		CONTAINER NO. (N° DU RECIPIENT)		SAMPLE (ÉCHANTILLON)	UNDISTURBED (DISTURBED) (INTACT · REMANIÉ)

				BEFORE TEST (AVANT ESSAI)	AFTER TEST (APRÈS ESSAI)
BURETTE (BURETTE)	DIAMETER (DIAMÈTRE)		1.04		
	CROSS SECTIONAL AREA (SURF. DE LA SECTION)	a (cm²)	0.849		
SPECIMEN (SPÉCIMEN)	DIAMETER (DIAMÈTRE)		10.0		
	CROSS SECTIONAL AREA (SURF. DE LA SECTION)	A (cm²)	78.5		
	LENGTH (LONGUEUR)	L (cm)	12.7		
	VOLUME (VOLUME)	$V=AL$ (cm³)	1000		
WEIGHT OF CONTAINER (POIDS DU RÉCIPIENT)		W_c (g)	2044		
SPECIFIC GRAVITY (POIDS SPÉCIFIQUE)		G_s	2.664		

CONDITIONS OF SPECIMEN (CONDITIONS DU SPÉCIMEN)		BEFORE TEST (AVANT ESSAI)	AFTER TEST (APRÈS ESSAI)
WEIGHT (CONTAINER + SPECIMEN) (POIDS (RÉCIPIENT + SPÉCIMEN))	W (g)	3981	4110
WEIGHT OF SPECIMEN (POIDS DU SPÉCIMEN)	$W_s=W-W_c$ (g)	1937	2066
WET DENSITY (DENSITÉ HUMIDE)	$\gamma_t=W_s/V$ (g/cm³)	1.937	2.066
DEGREE OF SATURATION (DEGRÉ DE SATURATION)	S_r (%)	53.4	91.1
WATER CONTENT (TENEUR EN EAU)	w (%)	10.4	17.7
DRY DENSITY (DENSITÉ SÈCHE)	$\gamma_d=\gamma_t/(1+\frac{w}{100})$ (g/cm³)	1.755	1.755
VOID RATIO (INDICE DES VIDES)	e	0.518	0.518

TEST NO. (N° DE L'ESSAI)		1	2	3
TIME OF INITIAL OBSERVATION (MOMENT OÙ L'OBSERVATION COMMENCE)	t_1	0	0	0
TIME OF FINAL OBSERVATION (MOMENT OÙ L'OBSERVATION FINIT)	t_2	82.0 sec	83.0 sec	72.9 sec
ELAPSED TIME (TEMPS ÉCOULÉ)	t_2-t_1 (sec)	82.0	83.0	72.9
CONSTANT HEAD METHOD (MÉTHODE DES NIVEAUX CONSTANTS)	* HEAD (DIFFÉRENCE DE NIVEAU) h (cm)			
	$A\cdot(t_2-t_1)$			
	L/h			
	VOLUME OF DISCHARGE IN (t_2-t_1) (VOLUME D'ÉPANCHEMENT EN t_2-t_1) Q (cm³)			
	$Q/A\cdot(t_2-t_1)$			
	$k_T=\frac{L}{h}\cdot\frac{Q}{A\cdot(t_2-t_1)}$ (cm/sec)			
FALLING HEAD METHOD (MÉTHODE DES NIVEAUX VARIABLES)	* HEAD AT t_1 (DIFF. DE NIVEAU À t_1) h_1 (cm)	90.3	90.3	90.3
	* HEAD AT t_2 (DIFF. DE NIVEAU À t_2) h_2 (cm)	70.3	70.3	70.3
	h_1/h_2	1.284	1.284	1.284
	$\log_{10}(h_1/h_2)$	0.109	0.109	0.109
	$a\cdot L$	10.782	10.782	10.782
	aL/A	0.137	0.137	0.137
	$2.3/(t_2-t_1)$	0.0280	0.0277	0.0316
	** $k_T=\frac{aL}{A}\cdot\frac{2.3}{(t_2-t_1)}\cdot\log\frac{h_1}{h_2}$ (cm/sec)	4.8×10^{-4}	4.14×10^{-4}	4.71×10^{-4}
WATER TEMPERATURE (TEMPÉRATURE DE L'EAU)	T (°C)	25	25	24
***	μ_T/μ_{15}	0.782	0.782	0.800
**	$k_{15}=k_T\frac{\mu_T}{\mu_{15}}$	3.27×10^{-4}	3.24×10^{-4}	3.77×10^{-4}
MEAN VALUE OF k_{15} (VALEUR MOYENNE DE k_{15})		3.43×10^{-4} cm/sec		

WATER CONTENT BEFOR TEST (TENEUR EN EAU AVANT ESSAI)

	No.	165	
W_a	219.3	W_b	209.9
W_b	209.9	W_c	119.5
W_a	9.4	W_s	90.4
	$w=$	10.4	%

	No.		
W_a		W_b	
W_a		W_c	
W_a		W_s	
	$w=$		%

MEAN WATER CONTENT (TENEUR MOYENNE EN EAU)

$w=$ 10.4 %

WATER CONTENT AFTER TEST (TENEUR EN EAU APRÈS ESSAI)

	No.		
W_a		W_b	
W_b		W_c	
W_a		W_s	
	$w=$		%

	No.		
W_a		W_b	
W_b		W_c	
W_a		W_s	
	$w=$		%

MEAN WATER CONTENT (TENEUR MOYENNE EN EAU)

$w=$ %

* DIFFERENCE BETWEEN HEAD WATER AND TAILWATER (DIFFÉRENCE ENTRE LE NIVEAU D'EAU EN TÊTE DE COLONNE ET LE NIVEAU D'ÉPANCHEMENT)

** COEFFICIENT OF PERMEABILITY AT T °C OR 15°C (COEFFICIENT DE PERMÉABILITÉ À T °C OU 15°C)

*** μT IS THE COEFFICIENT OF VISCOSITY OF THE WATER AT T °C. (μT EST LE COEFFICIENT DE VISCOSITÉ DE L'EAU À T °C.)

N. K. FORM NO. 017(1975)

PERMEABILITY TEST
(ESSAI DE PERMÉABILITÉ)

NAME OF SURVEY & LOCALITY (DÉNOMINATION DE L' ENQUÊTE ET LOCALITÉ)		DATE (DATE)	Aug., 1977
LOCATION NO. & DEPTH (N° DE L' ÉCHANTILLON ET PROFONDEUR)	4 0.65 - 1.8 m 2EC	TESTED BY (ESSAI PAR)	

APPARATUS NO. (N° DE L' APPAREIL)		CONTAINER NO. (N° DU RÉCIPIENT)		SAMPLE (ÉCHANTILLON)	UNDISTURBED · (DISTURBED) (INTACT · REMANIÉ)

BURETTE (BURETTE)	DIAMETER (DIAMÈTRE) (cm)		0.88
	CROSS SECTIONAL AREA (SURF. DE LA SECTION) a (cm²)		0.61
SPECIMEN (SPÉCIMEN)	DIAMETER (DIAMÈTRE) (cm)		10.0
	CROSS SECTIONAL AREA (SURF. DE LA SECTION) A (cm²)		78.5
	LENGTH (LONGUEUR) L (cm)		12.7
	VOLUME (VOLUME) $V=AL$ (cm³)		1000
WEIGHT OF CONTAINER (POIDS DU RÉCIPIENT) W_c (g)			1986
SPECIFIC GRAVITY (POIDS SPÉCIFIQUE) G_s			2.664

CONDITIONS OF SPECIMEN (CONDITIONS DU SPÉCIMEN)		BEFORE TEST (AVANT ESSAI)	AFTER TEST (APRÈS ESSAI)
WEIGHT (CONTAINER+SPECIMEN) (POIDS (RÉCIPIENT + SPÉCIMEN) W' (g)		3995	4058
WEIGHT OF SPECIMEN (POIDS DU SPÉCIMEN) $W_s=W'-W_c$ (g)		2009	2072
WET DENSITY (DENSITÉ HUMIDE) $\gamma_t=W_s/V$ (g/cm³)		2.009	2.072
DEGREE OF SATURATION (DEGRÉ DE SATURATION) S_r (%)		70.9	89.7
WATER CONTENT (TENEUR EN EAU) w (%)		13.4	16.9
DRY DENSITY (DENSITÉ SÈCHE) $\gamma_d=\gamma_t/(1+\frac{w}{100})$ (g/cm³)		1.772	1.772
VOID RATIO (INDICE DES VIDES) e		0.503	0.503

TEST NO. (N° DE L' ESSAI)		1	2	3
TIME OF INITIAL OBSERVATION (MOMENT OÙ L'OBSERVATION COMMENCE) t_1		0	0	0
TIME OF FINAL OBSERVATION (MOMENT OÙ L'OBSERVATION FINNIT) t_2		600 sec	600 sec	600 sec
ELAPSED TIME (TEMPS ÉCOULÉ) t_2-t_1 (sec)		600	600	600
CONSTANT HEAD METHOD (MÉTHODE DES NIVEAUX CONSTANTS)	* HEAD (DIFFÉRENCE DE NIVEAU) h (cm)			
	$A\cdot(t_2-t_1)$			
	L/h			
	VOLUME OF DISCHARGE IN t_2-t_1 (VOLUME D'ÉPANCHEMENT EN t_2-t_1) Q (cm³)			
	$Q/A\cdot(t_2-t_1)$			
	$k_T=\frac{L}{h}\cdot\frac{Q}{A(t_2-t_1)}$ (cm/sec)			
FALLING HEAD METHOD (MÉTHODE DES NIVEAUX VARIABLES)	* HEAD AT t_1 (DIFF. DE NIVEAU À t_1) h_1 (cm)	101.7	101.7	101.7
	* HEAD AT t_2 (DIFF. DE NIVEAU À t_2) h_2 (cm)	82.0	82.8	83.0
	h_1/h_2	1.240	1.228	1.225
	$\log_{10}(h_1/h_2)$	0.0935	0.0893	0.0882
	$a\cdot L$	7.7216	7.7216	7.7216
	aL/A	0.0983	0.0983	0.0983
	$2.3/(t_2-t_1)$	0.00383	0.00383	0.00383
	** $k_T=\frac{aL}{A}\cdot\frac{2.3}{(t_2-t_1)}\times\log_{10}\frac{h_1}{h_2}$ (cm/sec)	3.52×10^{-5}	3.36×10^{-5}	3.32×10^{-5}
WATER TEMPERATURE (TEMPÉRATURE DE L' EAU) T (°C)		24	24	24
*** μ_T/μ_{15}		0.80	0.80	0.80
** $k_{15}=k_T\frac{\mu_T}{\mu_{15}}$		2.81×10^{-5}	2.68×10^{-5}	2.65×10^{-5}
MEAN VALUE OF k_{15} (VALEUR MOYENNE DE k_{15})		2.71×10^{-5} cm/sec		

WATER CONTENT BEFOR TEST (TENEUR EN EAU AVANT ESSAI)

	No. 180		
W_a 267.8	W_b 251.0		
W_b 251.0	W_c 125.4		
W_w 16.8	W_s 125.6		
w = 13.4 %			

	No.		
W_a	W_b		
W_b	W_c		
W_w	W_s		
w = %			

MEAN WATER CONTENT (TENEUR MOYENNE EN EAU)

w = 13.4 %

WATER CONTENT AFTER TEST (TENEUR EN EAU APRÈS ESSAI)

	No.		
W_a	W_b		
W_b	W_c		
W_w	W_s		
w = %			

	No.		
W_a	W_b		
W_b	W_c		
W_w	W_s		
w = %			

MEAN WATER CONTENT (TENEUR MOYENNE EN EAU)

w = %

* DIFFERENCE BETWEEN HEAD WATER AND TAILWATER (DIFFÉRENCE ENTRE LE NIVEAU D' EAU EN TÊTE DE COLONNE ET LE NIVEAU D' ÉPANCHEMENT)

** COEFFICIENT OF PERMEABILITY AT T °C OR 15°C (COEFFICIENT DE PERMÉABILITÉ À T °C OU 15°C)

*** μT IS THE COEFFICIENT OF VISCOSITY OF THE WATER AT T °C. (μT EST LE COEFFICIENT DE VISCOSITÉ DE L' EAU À T °C.

N. K. FORM NO. 017(1975)

CONSOLIDATION TEST (CALCULATION)
(ESSAI DE CONSOLIDATION (CALCUL))

NAME OF SURVEY & LOCALITY (DÉNOMINATION DE L'ENQUÊTE ET LOCALITÉ)		DATE (DATE)	Aug., 1977
LOCATION NO. & DEPTH (N° DE L'ÉCHANTILLON ET PROFONDEUR)	7 (0.2 m ~ 2.5 m)	TESTED BY (ESSAI PAR)	

SAMPLE (ÉCHANTILLON)	UNDISTURBED (DISTURBED) (INTACT · REMANIÉ)	ROOM TEMPERATURE (TEMPERATURE DU LOCAL)	(°C ~ °C)	APPARATUS NO. (N° DE L'APPAREIL)	

PROPERTIES (PROPRIÉTÉS)		SPECIMEN (SPÉCIMEN)			
CLASSIFICATION (CLASSIFICATION)	CH	CROSS SECTIONAL AREA (SURFACE DE LA SECTION) A	28.27 cm²	INITIAL WATER CONTENT (TENEUR EN EAU INITIALE) w_o	36.13 %
SPECIFIC GRAVITY (POIDS SPÉCIFIQUE) G_s	2.695	HEIGHT OF SPECIMEN (HAUT. DU SPÉCIMEN) h_o	2.000 cm	INITIAL VOLUME RATIO (INDICE DE VOLUME INITIAL) f_o	2.144
LIQUID LIMIT (LIMITE DE LIQUIDITÉ) w_L	94.2 %	DRY WEIGHT (POIDS SÉCHÉ) W_d	71.1 g	INITIAL VOID RATIO (INDICE DES VIDES INITIAL) e_o	1.144
PLASTIC LIMIT (LIMITE DE PLASTICITÉ) w_P	21.9 %	SUBSTANCE HEIGHT (HAUTEUR DE SUBSTANCE) h_s	0.933 cm	DEGREE OF INITIAL SATURATION (DEGRÉ DE SATURATION INITIALE) S_{ro}	85.1 %

LOADING STEP	PRESSURE (PRESSION) p (kg/cm²)	Δp (kg/cm²)	Δd (10^{-3} cm)	h (cm)	$\bar{h}$ (cm)	Δε (%)	m_v (cm²/kg)	VOLUME RATIO (INDICE DE VOLUME) f	VOID RATIO (INDICE DES VIDES) e
0	0			2.000				2.144	1.144
		0.2	21.0		1.990	1.055	5.28×10^{-2}		
1	0.2			1.979				2.121	1.121
		0.2	30.4		1.964	1.548	7.74×10^{-2}		
2	0.4			1.949				2.089	1.089
		0.4	55.4		1.921	2.884	7.21×10^{-2}		
3	0.8			1.893				2.029	1.029
		0.8	80.7		1.853	4.355	5.44×10^{-2}		
4	1.6			1.813				1.943	0.943
		1.6	99.0		1.764	5.612	3.51×10^{-2}		
5	3.2			1.714				1.837	0.837
		3.2	104.0		1.662	6.258	1.96×10^{-2}		
6	6.4			1.610				1.726	0.726
		6.4	110.3		1.555	7.093	1.11×10^{-2}		
7	12.8			1.499				1.607	0.607
		-12.6	-191.7		1.595				
8	0.2			1.691				1.710	0.710
9									

LOADING STEP	PRESSURE (PRESSION) p (kg/cm²)	$\bar{p}$ (kg/cm²)	$0.848(\bar{h}/2)^2$ / $0.197(\bar{h}/2)^2$	t (min)	C'_v (cm²/min)	Δd' (10^{-3} cm)	Δd'/Δd	C_v (cm²/min)	k (cm/min)
0	0								
		0.1	0.195	9.5	0.021	14.0	0.475	9.75×10^{-3}	5.15×10^{-7}
1	0.2								
		0.28	0.190	12.5	0.015	15.0	0.493	7.49×10^{-3}	5.80×10^{-7}
2	0.4								
		0.57	0.182	10.5	0.017	17.5	0.316	5.47×10^{-3}	3.94×10^{-7}
3	0.8								
		1.13	0.169	67	0.0025	45	0.558	1.41×10^{-3}	7.67×10^{-8}
4	1.6								
		2.26	0.153	110	0.0014	71	0.717	9.99×10^{-4}	3.51×10^{-8}
5	3.2								
		4.53	0.136	125	0.0011	90	0.865	9.41×10^{-4}	1.84×10^{-8}
6	6.4								
		9.05	0.119	115	0.0010	95	0.861	8.92×10^{-4}	9.90×10^{-9}
7	12.8								
8									
9									

FORMULAE (FORMULE)

$h_s = \frac{W_d}{G_s \cdot \gamma_w \cdot A}$

$\Delta\varepsilon = \frac{\Delta d}{\bar{h}}$

$m_v = \frac{\Delta\varepsilon(\%)}{\Delta p} \cdot \frac{1}{100}$

$f = \frac{h}{h_s}$

$e = f - 1$

$S_{ro} = \frac{G_s \cdot w_o}{e_o}$

$\bar{p} = \sqrt{p_n \cdot p_{n+1}}$

$\sqrt{t}$ METHOD (MÉTHODE $\sqrt{t}$)

$C'_v = \frac{0.848(\bar{h}/2)^2}{t_{90}}$

CURVE RULE METHOD (MÉTHODE PAR COURBE COMPARÉE)

$C'_v = \frac{0.197(\bar{h}/2)^2}{t_{50}}$

$C_v = \frac{\Delta d'}{\Delta d} \cdot C'_v$

$k = \frac{C_v \cdot m_v \cdot \gamma_w}{1,000}$

Δd CONSOLIDATION SETTLEMENT (TASSEMENT APRÈS CONSOLIDATION)

h HEIGHT OF SPECIMEN (HAUTEUR DU SPÉCIMEN)

$\bar{h}$ MEAN HEIGHT OF SPECIMEN (HAUTEUR MOYENNE DU SPÉCIMEN)

Δε COMPRESSIVE STRAIN (DÉFORMATION DE COMPRESSION)

m_v COEFFICIENT OF VOLUME COMPRESSIBILITY (COEFFICIENT DE COMPRESSIBILITÉ VOLUMÉTRIQUE)

Δd' PRIMARY CONSOLIDATION (CONSOLIDATION PRIMAIRE)

C_v COEFFICIENT OF CONSOLIDATION (COEFFICIENT DE CONSOLIDATION)

k COEFFICIENT OF PERMEABILITY (COEFFICIENT DE PERMÉABILITÉ)

N.K. FORM NO. 012(1975)

CONSOLIDATION TEST
(ESSAI DE CONSOLIDATION)

(e − log P CURVE / ~~l − log P~~ (COURBE)) | FOR REPORTING (POUR LE RAPPORT)

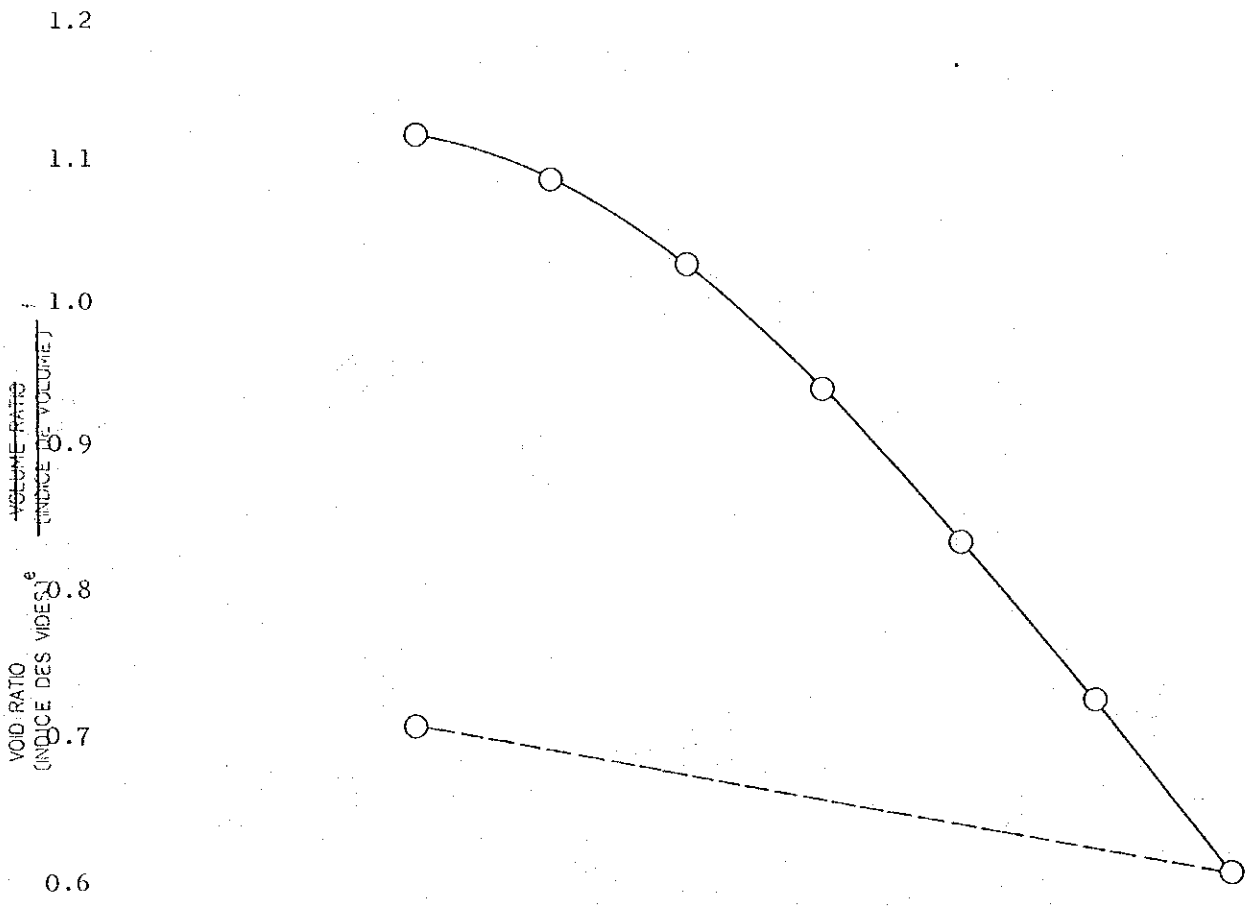
NAME OF SURVEY & LOCALITY (DÉNOMINATION DE L' ENQUÊTE ET LOCALITÉ)		DATE (DATE)	Aug. 1977
~~BORING NO.~~ LOCATION & DEPTH (N° DE L'ÉCHANTILLON ET PROFONDEUR)	7 0.2 m ~ 2.5 m	TESTED BY (ESSAI PAR)	

※UNDISTURBED OR DISTURBED (INTACT OU REMANIÉ)	※CLASSIFICATION (CLASSIFICATION)	※SPECIFIC GRAVITY Gs (POIDS SPÉCIFIQUE)	※LIQUID LIMIT w_L (%) (LIMIT DE LIQUIDITÉ)	※INITIAL DIMENSION OF SPECIMEN (DIMENSION INITIALE DU SPÉCIMEN) HEIGHT (HAUTEUR) (cm)	DIAMETER (DIAMÈTRE) (cm)
DISTURBED					

※INITIAL WATER CONTENT w_o (%) (TENEUR EN EAU INITIALE)	※INITIAL VOLUME RATIO v_o (INDICE DE VOLUME INITIAL)	※INITIAL VOID RATIO e_o (INDICE DES VIDES INITIAL)	※DEGREE OF INITIAL SATURATION Sr (%) (DEGRÉ DE SATURATURATION INITIALE)	COMPRESSION INDEX C_c (INDICE DE COMPRESSION)	YIELD STRESS OF CONSOLIDATION P_y kg/cm² (LIMITE D'ÉLASTICITÉ DE CONSOLIDATION)

※ THE RECORDING IS NOT NECESSARY IN THE CASE THAT CALCULATION DATA SHEET IS APPENDED.
(LES CHIFFRES NE FIGURENT PAS ICIQUAND LA FEUILLE DES CALCULS DÉTAILLÉS EST ANNEXÉE)

e − log p CURVE
~~l − log p~~ (COURBE)



0.1 0.2 0.3 0.4 0.5 0.6 0.8 1.0 2 3 4 5 6 7 8 10 15

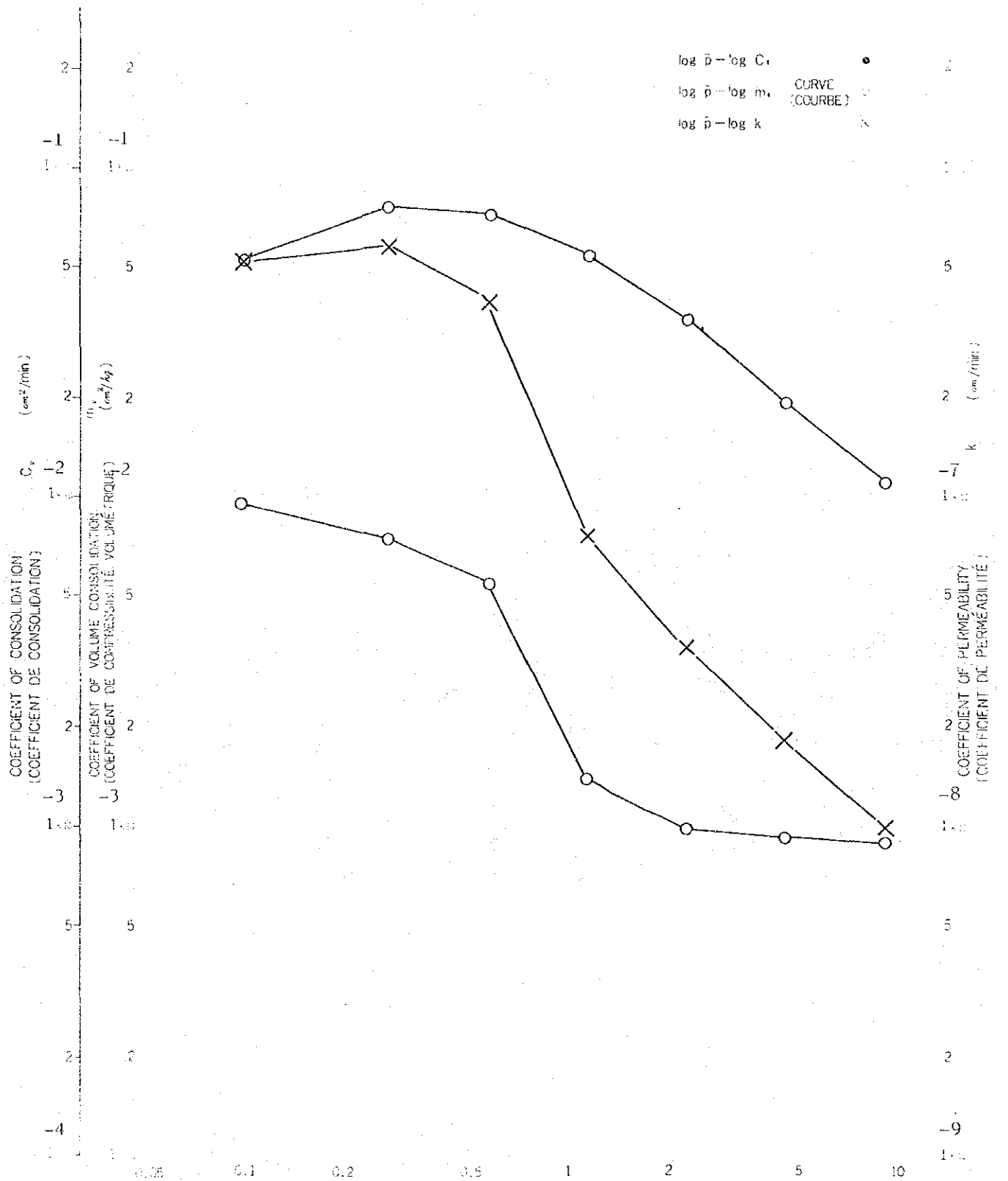
CONSOLIDATION PRESSURE (PRESSION DE CONSOLIDATION) P (kg/cm²)

N. K FORM NO. 013 (1975)

CONSOLIDATION TEST
(ESSAI DE CONSOLIDATION)

(P – C_v, m_v, k CURVE (COURBE)) | FOR REPORTING (POUR LE RAPPORT)

NAME OF SURVEY & LOCALITY (DÉNOMINATION DE L'ENQUÊTE ET LOCALITÉ)		DATE (DATE)	Aug., 1977
SAMPLE NO. & DEPTH (N° DE L'ÉCHANTILLON ET PROFONDEUR)	7 (0.2 m ~ 2.5m)	TESTED BY (ESSAI PAR)	



N. K. FORM NO. 014 (1975)