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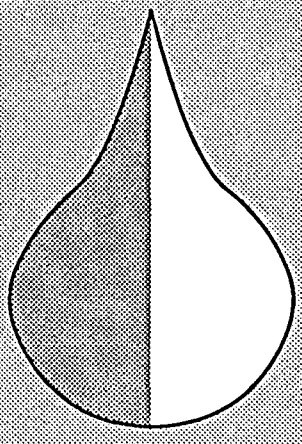

EXPLOITATION POTENTIAL OF KAROO AQUIFERS

APPENDIX

by

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CONTENTS

DEWETSDORP

DE AAR

COMPUTER CODE

SOIL PROFILE DESCRIPTIONS AND ANALYTICAL DATA

Profile No. 1: Valsrivier form, Lindley series. Horizon sequence: Orthic A on pedocutanic B on alluvium.

The A1-horizon is 0 to 25 cm deep with a strong crumb structure, a hard consistency when dry and a gradual transition into the B21-horizon. The B-horizon is 25 to 40 cm deep with a strong, angular block structure, has a greyish brown colour and gradual transition into the B3-horizon. This horizon is 40 to 55 cm deep with a weakly developed block structure and is calcareous. Roots penetrate to an effective depth of 50 cm.

	A1	B21	B3	C
Sand (%)	46,6	42,3	47,6	74,6
Silt (%)	11,0	9,4	10,6	6,2
Clay (%)	42,6	48,0	41,4	18,4
Depth(cm)	- 35	- 40	- 55	-130 +

The clay percentage varies, because the soil is of alluvial origin.

Profile No. 2: Valsrivier form, Lindley series. Horizon sequence: Orthic A on pedocutanic B on alluvium.

The orthic A1-horizon is 0 to 55 cm deep with a moderate crumb structure and a distinct transition into the B2-horizon. The B-horizon is 35 to 50 cm deep with a strong, angular block structure and distinct transition into the C-horizon. This horizon is 50 to 150 cm deep, has a massive structure and is calcareous. Roots penetrate to a depth of 120 cm.

	A	B	C
Sand (%)	75,2	53,9	66,3
Silt (%)	10,2	9,8	8,4
Clay (%)	16,0	37,0	26,4
Depth (cm)	- 35	- 50	-150 +

Profile No. 3: Bonheim form, Bonheim series. Horizon sequence: Melanic A1 on pedocutanic B on alluvium or saprolite.

The melanic A1-horizon is 30 cm deep with a strong crumb structure, has a dark colour and a distinct transition into the B2-horizon. This horizon is 30 to 50 cm deep with a strong, angular block structure. It is calcareous and there are slickensides. The transition into the 50 to 70 cm deep II B2-horizon is gradual. It is also calcareous and displays a strong, angular block structure. It changes into a II B3-horizon which is 75 to 110 cm + deep, is calcareous and displays a strong, angular block structure. There is a transition to a II B3-horizon, which is 50 to 110 cm + deep with a strong, angular block structure and free lime.

	A1	B2	II B2	II B3
Sand (%)	35,9	32,6	51,5	27,4
Silt (%)	12,0	14,8	13.0	15,6
Clay (%)	51,6	53,8	35,8	54,6
Depth (cm)	- 30	- 50	- 75	-110 +

Profile No. 4: Sterkspruit form, Sterkspruit series. Horizon sequence: Orthic A1 on prismacutanic B on saprolite.

The A1-horizon is 0 to 20 cm deep, contains 24 % clay, is unstructured, dark-coloured and a distinct transition into the B-horizon. This horizon is 30 cm deep with moderately developed calcareous prisms and rests on weathered shale. The saprolite is 20 cm thick.

DRY- AND WET BULK DENSITIES IN DEWETSDORP AREA.

SITE	DEPTH	WATER%	NEU C.R.	WBD	GAM CPM.	DBD
DEW - 2	/0.10 :	20.67 +/- 1.20	0.542	1.68 +/- 0.02	8750	1.48 +/- 0.03
DEW - 2	/0.20 :	9.95 +/- 0.37	0.436	1.69 +/- 0.02	10042	1.59 +/- 0.02
DEW - 2	/0.40 :	21.81 +/- 0.49	0.398	2.07 +/- 0.01	12024	1.85 +/- 0.01
DEW - 2	/0.70 :	17.16 +/- 0.17	0.341	2.05 +/- 0.01	10912	1.88 +/- 0.01

SITE	DEPTH	WATER%	NEU C.R.	WBD	GAM CPM.	DBD
DEW - 1	/0.10 :	17.30 +/- 0.20	0.361	1.70 +/- 0.01	8920	1.53 +/- 0.01
DEW - 1	/0.20 :	17.17 +/- 0.59	0.394	1.63 +/- 0.02	10180	1.46 +/- 0.02
DEW - 1	/0.40 :	22.89 +/- 0.25	0.393	2.08 +/- 0.03	11400	1.85 +/- 0.03
DEW - 1	/0.70 :	17.74 +/- 1.05	0.322	2.02 +/- 0.02	10640	1.84 +/- 0.02

SITE	DEPTH	WATER%	NEU C.R.	WBD	GAM C.R.	DBD
DEW - 3	/0.10 :	9.46 +/- 0.23	0.311	1.66 +/- 0.01	1.645	1.57 +/- 0.00
DEW - 3	/0.20 :	16.45 +/- 0.57	0.405	1.92 +/- 0.03	2.364	1.75 +/- 0.03
DEW - 3	/0.30 :	20.54 +/- 0.87	0.392	2.14 +/- 0.07	2.375	1.94 +/- 0.07
DEW - 3	/0.40 :	17.31 +/- 0.92	0.370	2.10 +/- 0.03	2.241	1.93 +/- 0.03
DEW - 3	/0.70 :	13.00 +/- 0.02	0.328	1.93 +/- 0.03	2.371	1.80 +/- 0.03
DEW - 3	/0.90 :	9.48 +/- 0.29	0.350	1.95 +/- 0.04	2.383	1.85 +/- 0.04

SITE	DEPTH	WATER%	NEU C.R.	WBD	GAM CPM.	DBD
DEW - 4	/0.10 :	20.05 +/- 1.27	0.281	1.69 +/- 0.02	7475	1.49 +/- 0.01
DEW - 4	/0.20 :	10.98 +/- 0.64	0.281	1.67 +/- 0.03	75	1.56 +/- 0.02
DEW - 4	/0.40 :	14.35 +/- 0.80	0.358	1.82 +/- 0.03	8967	1.68 +/- 0.02
DEW - 4	/0.70 :	14.77 +/- 0.38	0.289	2.08 +/- 0.04	10275	1.93 +/- 0.04

SITE	DEPTH	WATER%	NEU C.R.	WBD	GAM CPM.	DBD
DEW - 5	/0.10 :	32.26 +/- 2.73	0.465	1.85 +/- 0.01	8367	1.53 +/- 0.02
DEW - 5	/0.20 :	34.65 +/- 3.02	0.441	2.06 +/- 0.07	9900	1.72 +/- 0.05
DEW - 5	/0.40 :	35.31 +/- 1.97	0.647	2.14 +/- 0.06	9267	1.79 +/- 0.04
DEW - 5	/0.70 :	34.57 +/- 1.47	0.683	2.12 +/- 0.03	9667	1.77 +/- 0.01

SITE	DEPTH	WATER%	NEU C.R.	WBD	GAM CPM.	DBD
DEW - 6	/0.10 :	24.73 +/- 0.08	0.438	1.73 +/- 0.00	8133	1.48 +/- 0.00
DEW - 6	/0.20 :	11.86 +/- 1.51	0.533	1.63 +/- 0.05	9933	1.51 +/- 0.04
DEW - 6	/0.40 :	33.53 +/- 2.87	0.540	2.05 +/- 0.01	10400	1.71 +/- 0.02
DEW - 6	/0.70 :	31.22 +/- 2.08	0.550	2.16 +/- 0.06	10100	1.85 +/- 0.04

SITE	DEPTH	WATER%	NEU C.R.	WBD	GAM CPM.	DBD
DEW - 7	/0.10 :	22.66 +/- 0.20	0.369	1.70 +/- 0.03	7375	1.47 +/- 0.03
DEW - 7	/0.20 :	33.12 +/- 0.64	0.512	2.03 +/- 0.03	12900	1.70 +/- 0.03
DEW - 7	/0.40 :	31.00 +/- 0.35	0.491	2.11 +/- 0.05	11467	1.80 +/- 0.05
DEW - 7	/0.70 :	31.53 +/- 0.71	0.557	2.12 +/- 0.02	8833	1.81 +/- 0.02

SITE : ACCESS TUBE NUMBER(-).
DEPTH : DEPTH BELOW SURFACE (m).
WATER% : VOLUME MOISTURE CONTENTS(%).
NEU C.R : NEUTRON COUNT RATIO(-).
GAM C.R : GAMMA-GAMMA COUNT RATIO(-).
GAM CPM. : GAMMA-GAMMA COUNTS PER MINUTE(-).
WBD : WET BULK DENSITY (Mg/m^3).
DBD : DRY BULK DENSITY (Mg/m^3).

DRY- AND WET BULK DENSITIES IN DEWETSDORP AREA.

SITE	DEPTH	WATER%	NEU C.R.	WBD	GAM C.R.	DBD
DEW - 8	/0.10 :	20.36 +/- 0.29	0.436	2.04 +/- 0.01	2.083	1.83 +/- 0.00
DEW - 8	/0.20 :	20.29 +/- 0.42	0.480	2.03 +/- 0.02	2.164	1.82 +/- 0.02
DEW - 8	/0.30 :	20.92 +/- 0.86	0.495	2.04 +/- 0.03	2.265	1.83 +/- 0.02
DEW - 8	/0.40 :	23.44 +/- 1.93	0.500	2.08 +/- 0.04	2.140	1.85 +/- 0.05
DEW - 8	/0.70 :	27.79 +/- 0.76	0.417	2.15 +/- 0.03	1.957	1.87 +/- 0.04
DEW - 8	/0.90 :	15.66 +/- 0.51	0.357	2.09 +/- 0.02	1.971	1.94 +/- 0.02

SITE	DEPTH	WATER%	NEU C.R.	WBD	GAM C.R.	DBD
DEW - 9	/0.10 :	7.78 +/- 0.54	0.344	1.67 +/- 0.01	2.037	1.59 +/- 0.00
DEW - 9	/0.20 :	10.22 +/- 0.08	0.542	1.75 +/- 0.02	2.260	1.64 +/- 0.02
DEW - 9	/0.30 :	24.55 +/- 0.82	0.600	2.05 +/- 0.02	2.375	1.80 +/- 0.01
DEW - 9	/0.40 :	26.85 +/- 0.23	0.586	2.10 +/- 0.01	2.217	1.83 +/- 0.01
DEW - 9	/0.70 :	25.98 +/- 0.29	0.531	2.15 +/- 0.03	2.017	1.89 +/- 0.03
DEW - 9	/0.90 :	24.75 +/- 0.54	0.527	2.16 +/- 0.02	1.998	1.91 +/- 0.02

SITE	DEPTH	WATER%	NEU C.R.	WBD	GAM C.R.	DBD
DEW - 11	/0.10 :	14.18 +/- 0.41	0.331	1.77 +/- 0.02	2.162	1.63 +/- 0.01
DEW - 11	/0.20 :	30.11 +/- 0.71	0.472	2.11 +/- 0.01	2.493	1.81 +/- 0.01
DEW - 11	/0.30 :	29.96 +/- 0.63	0.495	2.10 +/- 0.04	2.658	1.80 +/- 0.04
DEW - 11	/0.40 :	25.90 +/- 1.00	0.486	2.15 +/- 0.00	2.752	1.89 +/- 0.01
DEW - 11	/0.70 :	23.84 +/- 0.17	0.539	2.17 +/- 0.00	2.372	1.93 +/- 0.00
DEW - 11	/0.90 :	19.56 +/- 0.65	0.529	2.11 +/- 0.02	2.092	1.91 +/- 0.01

SITE	DEPTH	WATER%	NEU C.R.	WBD	GAM C.R.	DBD
DEW - 12	/0.10 :	7.95 +/- 0.31	0.406	1.61 +/- 0.01	2.256	1.53 +/- 0.01
DEW - 12	/0.20 :	18.64 +/- 1.26	0.504	1.93 +/- 0.07	2.325	1.74 +/- 0.06
DEW - 12	/0.30 :	21.90 +/- 0.64	0.468	2.04 +/- 0.02	2.523	1.82 +/- 0.02
DEW - 12	/0.40 :	20.74 +/- 0.55	0.436	2.08 +/- 0.02	2.537	1.87 +/- 0.02
DEW - 12	/0.80 :	14.31 +/- 0.81	0.363	1.94 +/- 0.02	2.289	1.79 +/- 0.03
DEW - 12	/1.00 :	16.02 +/- 0.97	0.378	1.92 +/- 0.04	2.373	1.76 +/- 0.03

SITE	DEPTH	WATER%	NEU C.R.	WBD	GAM CPM.	DBD
DEW - 13	/0.10 :	28.33 +/- 1.07	0.828	1.77 +/- 0.04	9440	1.49 +/- 0.03
DEW - 13	/0.20 :	43.47 +/- 0.47	0.857	1.83 +/- 0.01	10025	1.40 +/- 0.01
DEW - 13	/0.40 :	39.33 +/- 0.35	0.759	2.16 +/- 0.09	10600	1.76 +/- 0.09
DEW - 13	/0.70 :	35.44 +/- 0.54	0.642	2.16 +/- 0.09	9425	1.80 +/- 0.08

SITE	DEPTH	WATER%	NEU C.R.	WBD	GAM CPM.	DBD
DEW - 14	/0.10 :	22.07 +/- 0.57	0.341	1.70 +/- 0.01	10100	1.48 +/- 0.02
DEW - 14	/0.20 :	24.43 +/- 1.27	0.422	1.74 +/- 0.06	11120	1.49 +/- 0.05
DEW - 14	/0.40 :	32.21 +/- 3.23	0.502	2.04 +/- 0.11	11475	1.71 +/- 0.08
DEW - 14	/0.70 :	25.50 +/- 0.90	0.441	2.08 +/- 0.06	10475	1.83 +/- 0.05

SITE : ACCESS TUBE NUMBER(-).
WATER% : VOLUME MOISTURE CONTENTS(%).
GAM C.R. : GAMMA-GAMMA COUNT RATIO(-).
WBD : WET BULK DENSITY (Mg/m^3).
DEPTH : DEPTH BELOW SURFACE (m).
NEU C.R. : NEUTRON COUNT RATIO(-).
GAM CPM. : GAMMA-GAMMA COUNTS PER MINUTE(-).
DBD : DRY BULK DENSITY (Mg/m^3).

DRY- AND WET BULK DENSITIES IN DEWETSDORP AREA.

SITE	DEPTH	WATER%	NEU C.R.	WBD	GAM CPM.	DBD
DEW - 15/0.10 :		29.50 +/- 0.42	0.658	1.76 +/- 0.09	9883	1.46 +/- 0.09
DEW - 15/0.20 :		38.37 +/- 0.66	0.746	1.89 +/- 0.02	10050	1.50 +/- 0.02
DEW - 15/0.40 :		20.56 +/- 1.79	0.520	2.07 +/- 0.01	9700	1.86 +/- 0.01
DEW - 15/0.70 :		19.11 +/- 0.84	0.448	2.04 +/- 0.02	9325	1.85 +/- 0.03

SITE	DEPTH	WATER%	NEU C.R.	WBD	GAM CPM.	DBD
DEW - 16/0.10 :		22.60 +/- 0.99	0.513	1.70 +/- 0.08	9450	1.48 +/- 0.07
DEW - 16/0.20 :		26.80 +/- 0.81	0.486	1.82 +/- 0.04	10275	1.55 +/- 0.03
DEW - 16/0.40 :		16.61 +/- 0.93	0.336	2.01 +/- 0.03	10075	1.84 +/- 0.02
DEW - 16/0.70 :		15.41 +/- 0.14	0.309	2.05 +/- 0.00	9800	1.90 +/- 0.00

SITE	DEPTH	WATER%	NEU C.R.	WBD	GAM CPM.	DBD
DEW - 17/0.10 :		21.03 +/- 1.68	0.702	1.69 +/- 0.06	9200	1.48 +/- 0.05
DEW - 17/0.20 :		37.27 +/- 0.50	0.674	2.07 +/- 0.03	10100	1.70 +/- 0.02
DEW - 17/0.40 :		26.18 +/- 0.84	0.465	2.10 +/- 0.04	10950	1.84 +/- 0.03
DEW - 17/0.70 :		25.44 +/- 0.63	0.468	2.06 +/- 0.05	10325	1.81 +/- 0.04

SITE	DEPTH	WATER%	NEU C.R.	WBD	GAM CPM.	DBD
DEW - 18/0.10 :		27.07 +/- 0.70	0.760	1.75 +/- 0.00	9600	1.48 +/- 0.01
DEW - 18/0.20 :		57.53 +/- 0.43	0.858	2.27 +/- 0.03	10050	1.69 +/- 0.03
DEW - 18/0.40 :		32.42 +/- 0.45	0.722	2.11 +/- 0.07	10750	1.78 +/- 0.06
DEW - 18/0.70 :		32.81 +/- 1.33	0.585	2.16 +/- 0.00	10000	1.84 +/- 0.01

SITE	DEPTH	WATER%	NEU C.R.	WBD	GAM C.R.	DBD
DEW - 19/0.10 :		14.14 +/- 0.58	0.327	1.79 +/- 0.02	2.464	1.65 +/- 0.01
DEW - 19/0.20 :		18.37 +/- 0.17	0.511	1.85 +/- 0.00	2.477	1.67 +/- 0.00
DEW - 19/0.30 :		32.59 +/- 1.14	0.624	2.17 +/- 0.02	2.579	1.84 +/- 0.01
DEW - 19/0.40 :		33.99 +/- 0.54	0.700	2.20 +/- 0.01	2.494	1.86 +/- 0.01
DEW - 19/0.70 :		37.52 +/- 2.64	0.678	2.31 +/- 0.05	2.025	1.94 +/- 0.03
DEW - 19/0.90 :		35.11 +/- 1.50	0.639	2.26 +/- 0.02	1.891	1.91 +/- 0.02

SITE : ACCESS TUBE NUMBER(-).
DEPTH : DEPTH BELOW SURFACE (m).
WATER% : VOLUME MOISTURE CONTENTS(%).
NEU C.R. : NEUTRON COUNT RATIO(-).
GAM C.R. : GAMMA-GAMMA COUNT RATIO(-).
GAM CPM. : GAMMA-GAMMA COUNTS PER MINUTE(-).
WBD : WET BULK DENSITY (Mg/m^3).
DBD : DRY BULK DENSITY (Mg/m^3).

TEXTURE ANALYSIS IN DEWETSDORP AREA.

SITE /DEPTH	F1	F2	F3	F4	F5	F6	F7	FT
DEW - 1/0.1 :	.62	.72	3.34	69.46	5.80	9.80	10.00	99.82
DEW - 1/0.2 :	.28	.34	2.36	60.02	6.02	10.10	20.00	99.12
DEW - 1/0.4 :	.58	.76	2.06	41.56	6.10	10.20	37.00	98.34
DEW - 1/0.7 :	.26	.56	1.80	50.64	5.06	11.00	26.90	97.10

SITE /DEPTH	F1	F2	F3	F4	F5	F6	F7	FT
DEW - 2/0.4 :	.30	.20	1.94	32.08	6.42	14.10	42.00	97.04
DEW - 2/.15 :	.42	.40	2.58	51.62	9.56	16.20	17.10	97.88
DEW - 2/0.7 :	.96	1.02	2.99	35.18	8.92	18.80	32.03	99.89

SITE /DEPTH	F1	F2	F3	F4	F5	F6	F7	FT
DEW - 3/0.1 :	1.16	2.50	7.37	48.82	10.30	14.60	15.90	100.65
DEW - 3/0.2 :	1.52	3.37	6.99	39.10	8.78	12.80	26.40	98.96
DEW - 3/0.3 :	1.04	3.28	8.62	43.06	6.54	12.90	24.20	99.64
DEW - 3/0.4 :	.26	2.10	7.62	46.62	8.50	12.80	22.40	100.30
DEW - 3/0.7 :	.62	2.48	8.06	48.34	10.36	11.50	18.60	99.96
DEW - 3/0.9 :	.10	1.26	4.82	37.32	10.56	17.00	28.00	99.06

SITE /DEPTH	F1	F2	F3	F4	F5	F6	F7	FT
DEW - 4/0.1 :	.60	2.44	7.84	63.50	8.00	9.00	8.90	100.28
DEW - 4/0.2 :	1.40	3.54	7.47	49.15	7.28	15.30	14.33	98.47
DEW - 4/.45 :	1.82	4.12	7.48	39.92	8.26	14.70	23.23	99.53
DEW - 4/.75 :	2.58	5.58	9.53	45.11	5.36	17.50	16.23	101.89

SITE /DEPTH	F1	F2	F3	F4	F5	F6	F7	FT
DEW - 5/0.1 :	2.28	1.36	3.02	40.07	2.40	21.60	26.53	97.25
DEW - 5/0.2 :	.76	.34	1.18	33.44	5.53	12.40	45.83	99.47
DEW - 5/0.7 :	.14	.42	.92	23.98	7.26	13.70	53.10	99.52

SITE /DEPTH	F1	F2	F3	F4	F5	F6	F7	FT
DEW - 6/.15 :	.64	.72	2.20	54.50	9.94	17.40	16.50	101.90
DEW - 6/0.4 :	1.12	.48	1.14	24.38	2.56	8.60	59.53	97.81
DEW - 6/0.7 :	.10	.26	1.12	25.84	5.24	8.80	58.90	100.26

SITE /DEPTH	F1	F2	F3	F4	F5	F6	F7	FT
DEW - 7/0.1 :	1.18	.80	2.09	55.10	7.45	14.20	18.00	98.82
DEW - 7/0.2 :	1.10	.30	.88	25.10	5.18	9.40	55.90	97.86
DEW - 7/0.4 :	2.04	.38	1.06	26.29	4.66	9.80	56.43	100.65
DEW - 7/0.7 :	.32	.30	1.06	29.46	4.58	10.10	53.63	99.45

SITE :ACCESS TUBE NUMBER(-).
DEPTH :DEPTH BELOW SURFACE(m).
F1 :FRACTION <2.000 >1.000
F2 :FRACTION <1.000 >0.500
F3 :FRACTION <0.500 >0.250
F4 :FRACTION <0.250 >0.045
F5 :GROVE SILT FRACTION
F6 :FINE SILT FRACTION
F7 :CLAY FRACTION
FT :TOTAL (MUST BE ≈ 100%)

TEXTURE ANALYSIS IN DEWETSDORP AREA.

SITE /DEPTH	F1	F2	F3	F4	F5	F6	F7	FT
DEW - 8/0.1 :	.50	.34	1.90	38.41	7.80	14.20	35.90	99.06
DEW - 8/0.2 :	.44	.36	1.88	41.71	8.28	13.10	33.90	99.66
DEW - 8/0.4 :	.36	.38	1.30	34.52	7.90	14.40	42.83	101.69
DEW - 8/0.7 :	.22	.22	1.22	34.25	5.96	12.40	43.33	97.59
DEW - 8/0.9 :	1.26	1.00	1.90	52.25	4.44	8.80	28.33	97.97

SITE /DEPTH	F1	F2	F3	F4	F5	F6	F7	FT
DEW - 9/0.1 :	.48	.28	1.00	48.58	8.14	21.10	17.50	97.08
DEW - 9/0.2 :	.08	.24	.98	42.32	10.04	17.10	28.80	99.56
DEW - 9/0.3 :	.68	.24	.92	34.38	10.18	13.20	41.93	101.53
DEW - 9/0.4 :	.36	.12	.64	29.16	6.72	13.90	48.60	99.50
DEW - 9/0.7 :	.22	.14	.48	26.82	7.24	11.00	53.30	99.20
DEW - 9/0.9 :	.14	.36	.82	25.52	4.00	18.20	48.10	97.14

SITE /DEPTH	F1	F2	F3	F4	F5	F6	F7	FT
DEW - 11/0.1 :	.54	.30	.84	28.60	10.06	15.20	41.50	97.04
DEW - 11/0.2 :	.78	.28	.70	23.31	3.74	12.80	55.40	97.00
DEW - 11/0.3 :	.70	.56	.72	19.50	5.90	14.40	55.50	97.28
DEW - 11/0.4 :	.44	.75	1.35	22.38	7.27	15.20	49.70	97.08
DEW - 11/0.7 :	2.48	1.88	1.96	23.85	8.64	17.80	43.63	100.23
DEW - 11/0.9 :	1.74	1.70	2.20	40.35	8.86	13.20	32.50	100.54

SITE /DEPTH	F1	F2	F3	F4	F5	F6	F7	FT
DEW - 12/0.1 :	.18	.30	1.90	57.96	3.60	19.50	15.70	99.14
DEW - 12/0.2 :	.14	.14	1.54	44.84	8.50	11.40	32.00	98.56
DEW - 12/0.3 :	.14	.34	1.93	43.39	6.44	11.70	36.90	100.84
DEW - 12/0.4 :	.14	.34	2.02	43.78	6.68	11.50	36.93	101.39
DEW - 12/0.8 :	1.26	1.68	9.28	52.10	5.56	8.60	23.13	101.61

SITE /DEPTH	F1	F2	F3	F4	F5	F6	F7	FT
DEW - 13/0.1 :	.88	.78	1.38	40.46	10.82	25.40	17.50	97.22
DEW - 13/0.2 :	1.16	.50	1.20	26.57	5.38	12.70	50.20	97.72
DEW - 13/0.4 :	.16	.28	1.01	24.22	4.55	8.50	61.40	100.12
DEW - 13/0.7 :	.58	.88	1.22	15.13	5.80	16.60	56.80	97.00

SITE /DEPTH	F1	F2	F3	F4	F5	F6	F7	FT
DEW - 14/.15 :	.44	.54	.80	45.36	10.08	27.00	15.13	99.35
DEW - 14/0.4 :	.44	.66	.92	22.44	8.30	17.80	50.20	100.76
DEW - 14/0.7 :	.60	.94	1.14	19.54	9.50	15.90	53.63	101.25

SITE /DEPTH	F1	F2	F3	F4	F5	F6	F7	FT
DEW - 15/.15 :	.46	.44	1.46	53.46	8.70	15.30	18.83	98.65
DEW - 15/0.4 :	.50	.29	1.26	32.83	5.69	17.40	42.73	100.69

SITE	:ACCESS TUBE NUMBER(-).	DEPTH	:DEPTH BELOW SURFACE(m).
F1	:FRACTION <2.000 >1.000	F2	:FRACTION <1.000 >0.500
F3	:FRACTION <0.500 >0.250	F4	:FRACTION <0.250 >0.045
F5	:GROVE SILT FRACTION	F6	:FINE SILT FRACTION
F7	:CLAY FRACTION	FT	:TOTAL (MUST BE ≈ 100%)

TEXTURE ANALYSIS IN DEWETSDORP AREA.

SITE /DEPTH	F1	F2	F3	F4	F5	F6	F7	FT
DEW - 16/0.2 :	.20	.20	2.30	56.62	8.82	12.80	16.60	97.70
DEW - 16/0.4 :	.24	.32	2.54	52.02	8.84	8.70	25.70	98.36
DEW - 16/0.7 :	.58	.98	2.60	43.58	4.30	12.30	33.13	97.55

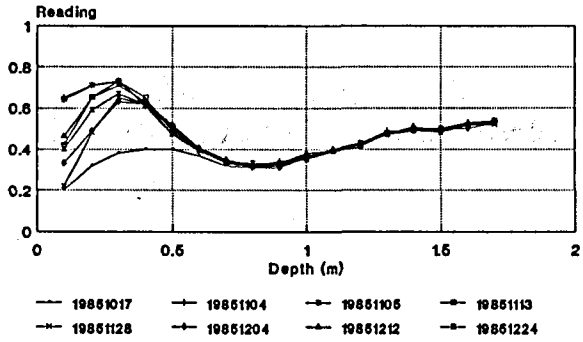
SITE /DEPTH	F1	F2	F3	F4	F5	F6	F7	FT
DEW - 17/0.2 :	.40	.12	.46	21.16	7.44	11.30	58.70	99.58
DEW - 17/0.4 :	.38	.12	.54	22.08	3.66	19.50	50.80	97.08
DEW - 17/0.7 :	.12	.54	.97	20.93	14.24	15.40	47.90	100.10

SITE /DEPTH	F1	F2	F3	F4	F5	F6	F7	FT
DEW - 18/0.1 :	.76	.60	2.10	52.78	8.48	15.70	19.30	99.72
DEW - 18/0.2 :	2.02	.48	1.46	25.12	2.76	10.70	55.03	97.57
DEW - 18/0.7 :	.42	.68	1.44	25.42	5.08	15.50	51.80	100.34

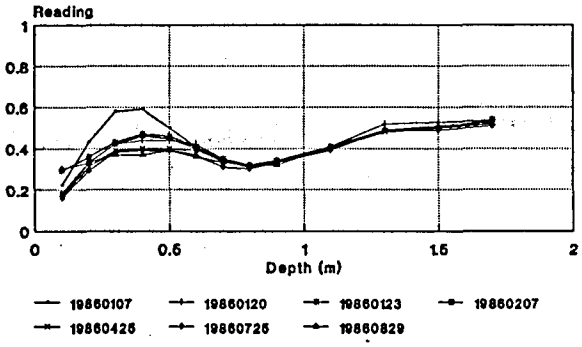
SITE /DEPTH	F1	F2	F3	F4	F5	F6	F7	FT
DEW - 19/0.1 :	.52	1.02	4.28	52.48	8.14	13.20	19.70	100.14
DEW - 19/0.2 :	.58	1.66	3.57	41.24	6.42	14.20	31.90	99.56
DEW - 19/0.3 :	1.64	1.24	2.79	34.67	2.50	10.70	47.33	100.87
DEW - 19/0.4 :	.18	.56	1.80	30.30	5.34	12.80	50.50	101.48
DEW - 19/0.9 :	1.32	1.16	2.04	31.87	6.44	14.90	42.00	99.72

SITE :ACCESS TUBE NUMBER(-).
DEPTH :DEPTH BELOW SURFACE(m).
F1 :FRACTION <2.000 >1.000
F2 :FRACTION <1.000 >0.500
F3 :FRACTION <0.500 >0.250
F4 :FRACTION <0.250 >0.045
F5 :GROVE SILT FRACTION
F6 :FINE SILT FRACTION
F7 :CLAY FRACTION
FT :TOTAL (MUST BE ≈ 100%)

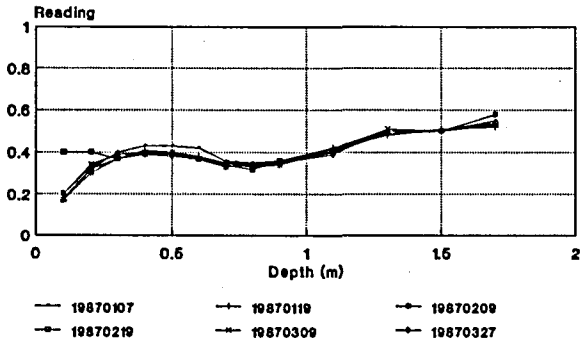
DEWETSDORP : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 1 *)
1985



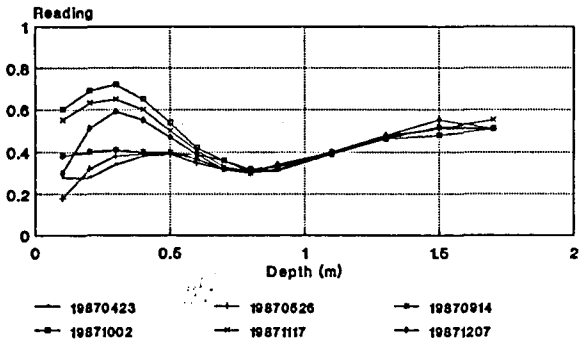
DEWETSDORP : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 1
1986



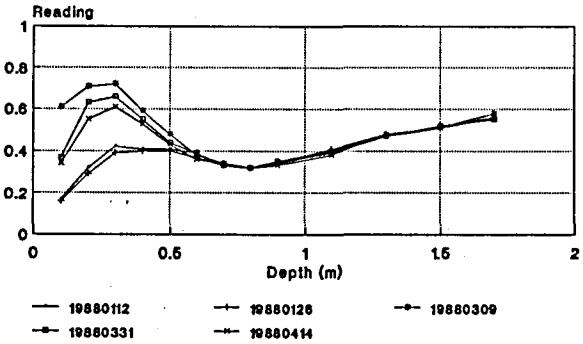
DEWETSDORP : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 1
January - March 1987



DEWETSDORP : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 1
April - December 1987

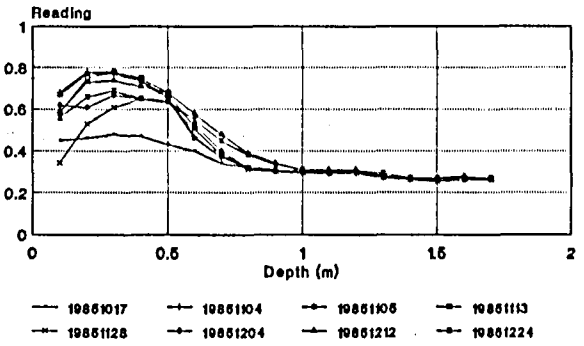


DEWETSDORP : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 1
1988

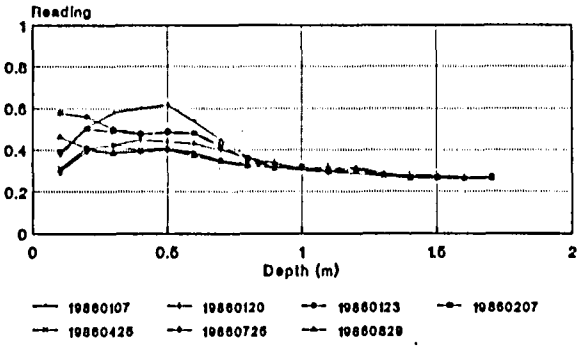


* N.B.: During the course of the project the terminology has changed. "Soil moisture tube" should read "Neutron probe access tube".

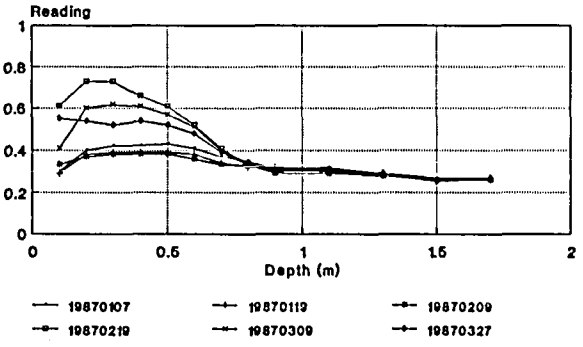
DEWETSDORP : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 2
1985



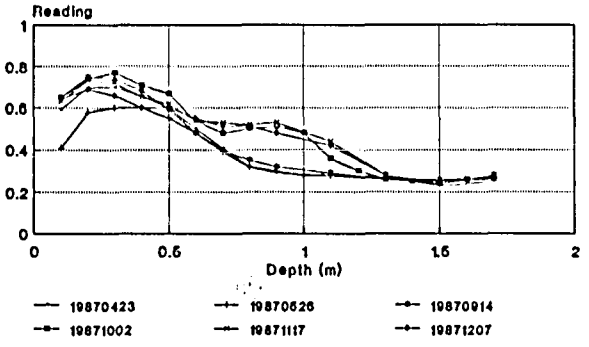
DEWETSDORP : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 2
1986



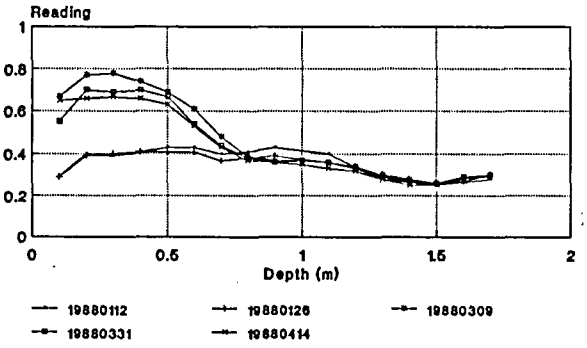
DEWETSDORP : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 2
January - March 1987



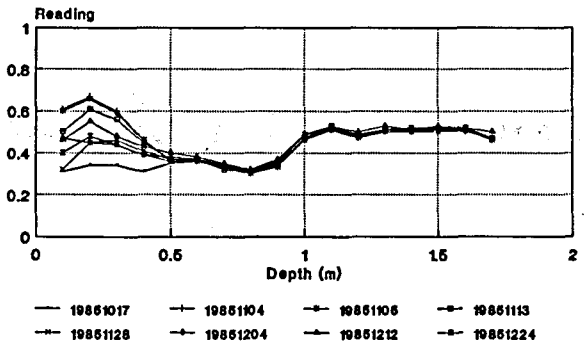
DEWETSDORP : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 2
April - December 1987



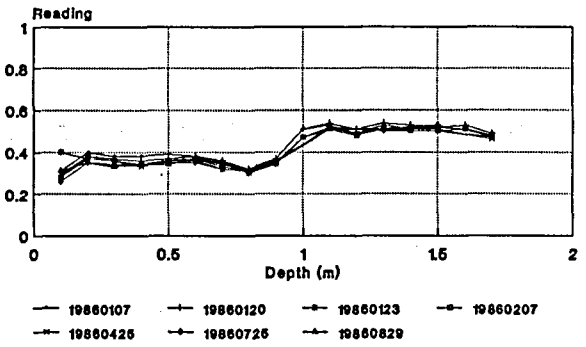
DEWETSDORP : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 2
1988



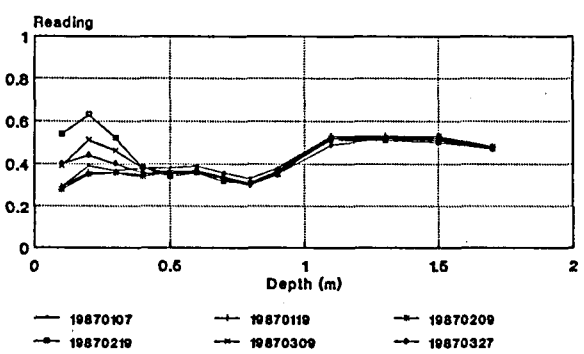
DEWETSDORP : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 3
1985



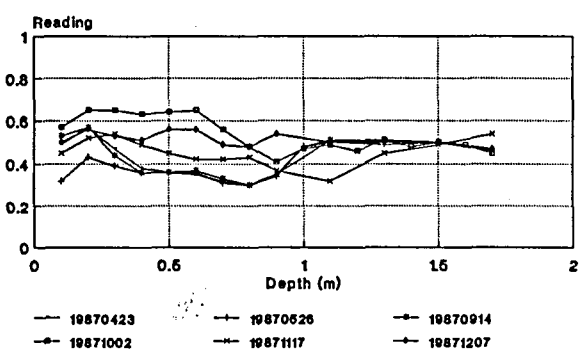
DEWETSDORP : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 3
1986



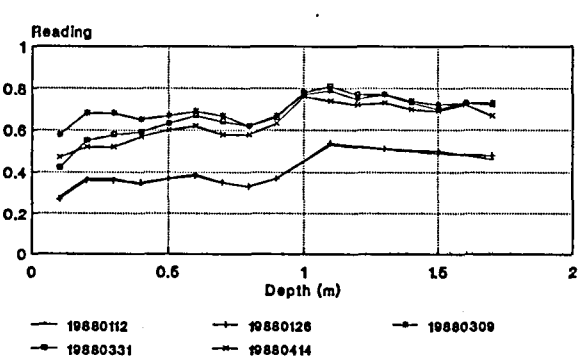
DEWETSDORP : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 3
January - March 1987



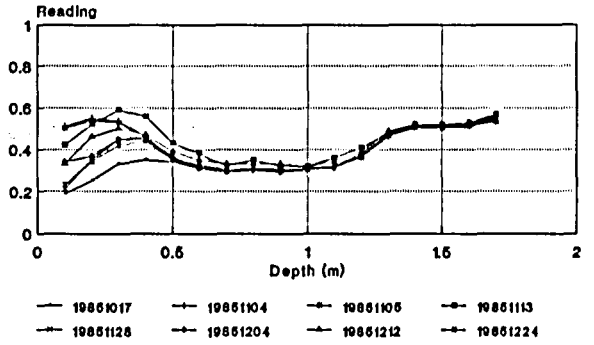
DEWETSDORP : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 3
April - December 1987



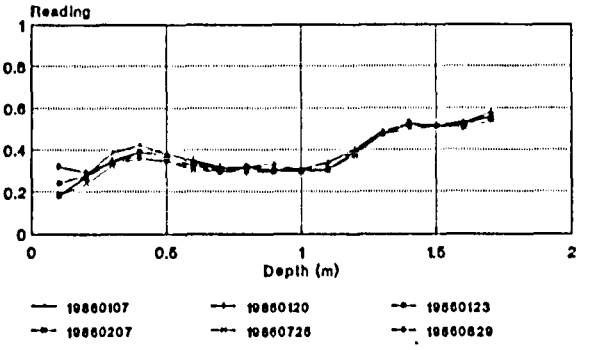
DEWETSDORP : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 3
1988



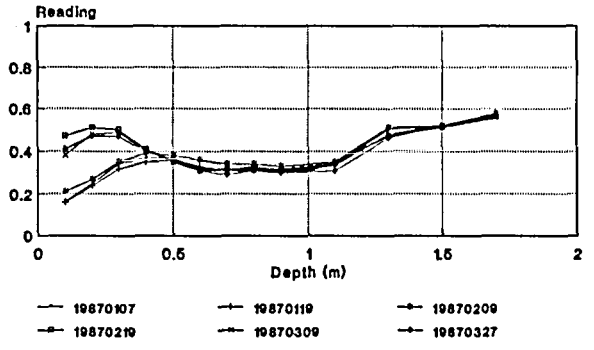
DEWETSDORP : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 4
1985



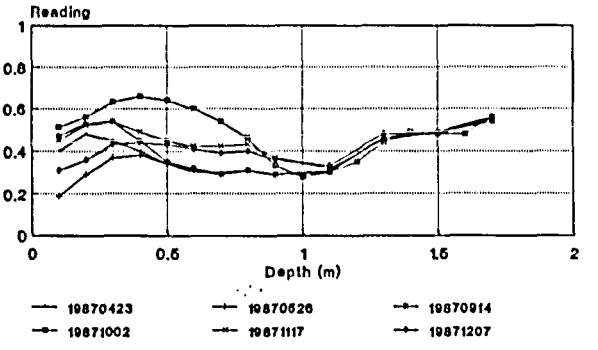
DEWETSDORP : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 4
1986



DEWETSDORP : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 4
January - March 1987



DEWETSDORP : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 4
April - December 1987



DEWETSDORP : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 4
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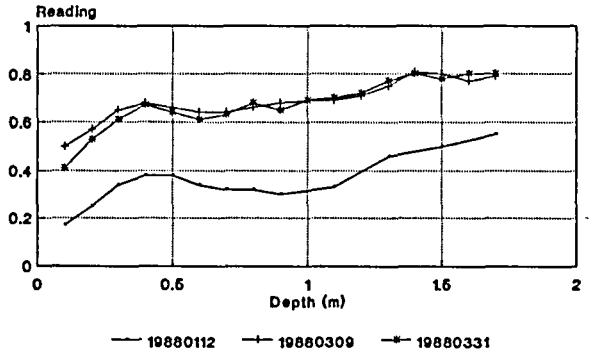
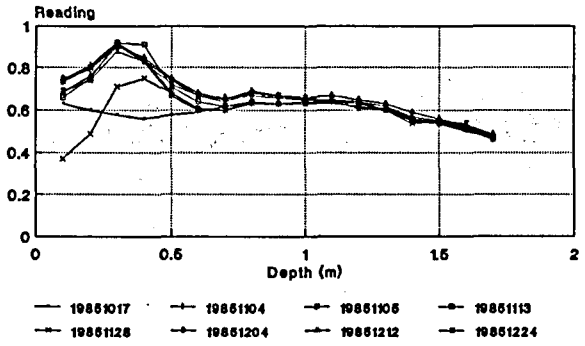


DEWETSDORP : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 5
1985



DEWETSDORP : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 5
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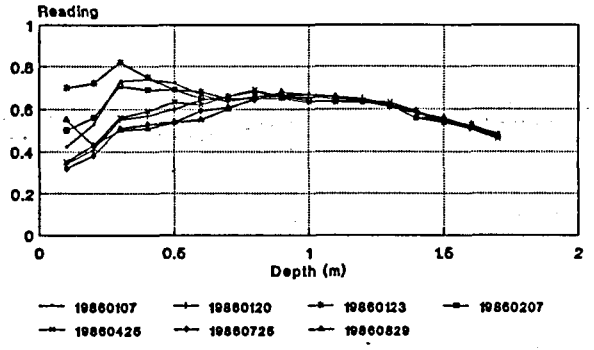
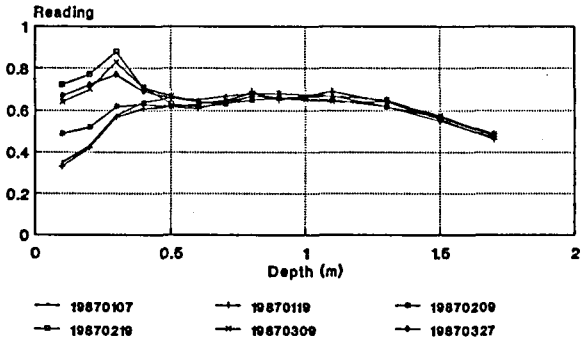
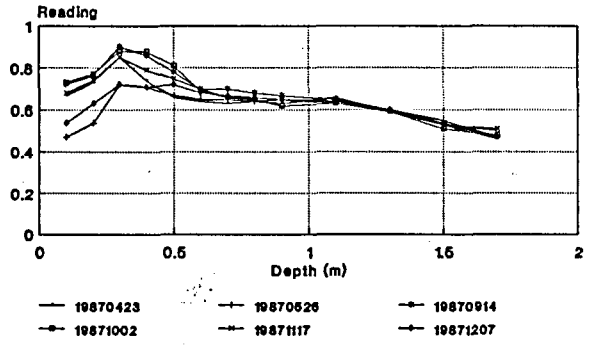


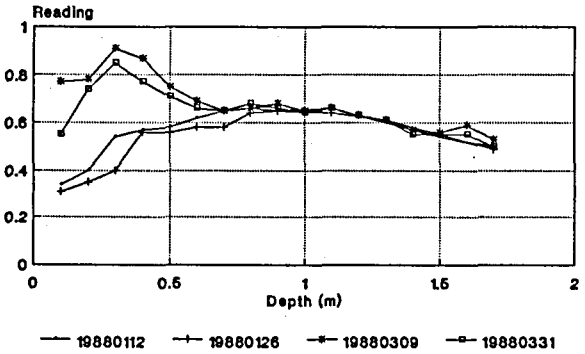
DEWETSDORP : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 5
January - March 1987



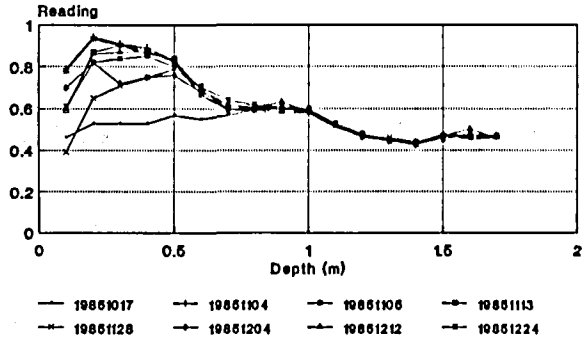
DEWETSDORP : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 5
April - December 1987



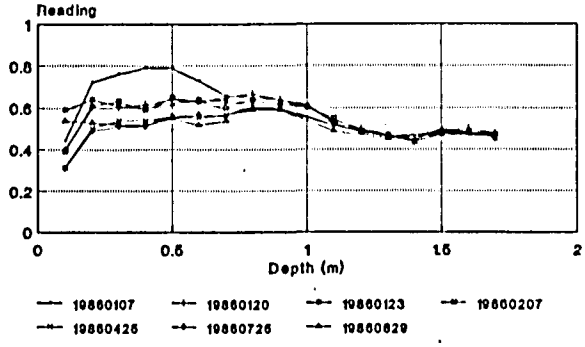
DEWETSDORP : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 5
1988



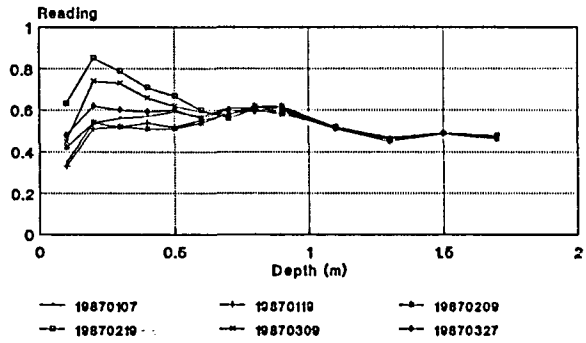
DEWETSDORP : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 6
1985



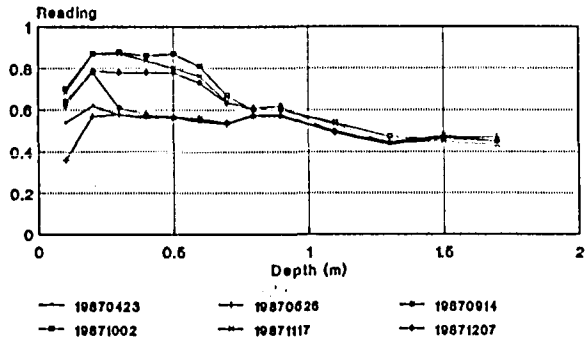
DEWETSDORP : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 6
1986



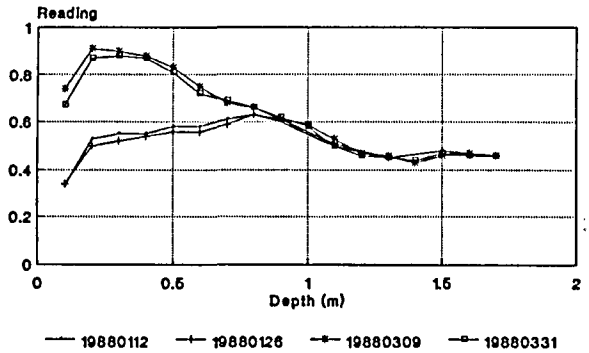
DEWETSDORP : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 6
January - March 1987



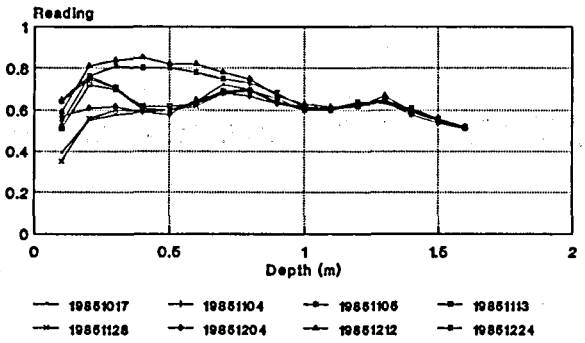
DEWETSDORP : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 6
April - December 1987



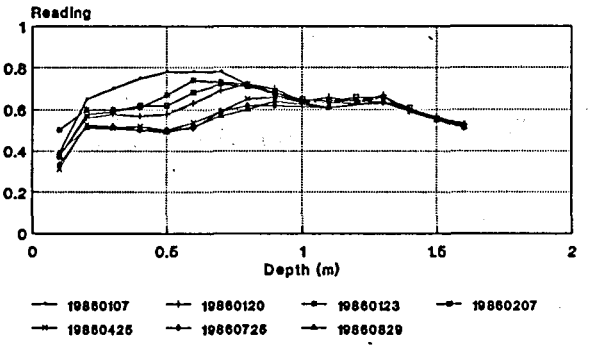
DEWETSDORP : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 6
1988



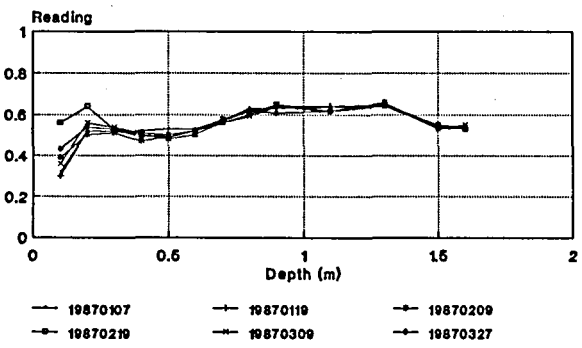
DEWETSDORP : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 7
1985



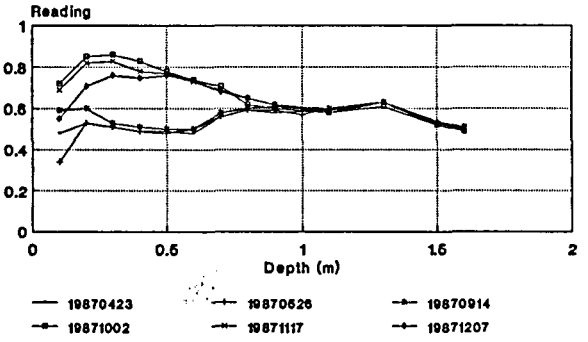
DEWETSDORP : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 7
1986



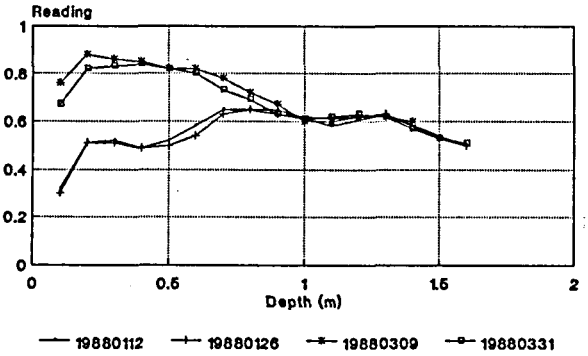
DEWETSDORP : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 7
January - March 1987



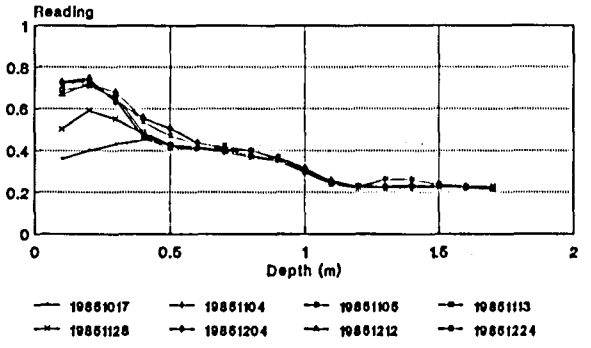
DEWETSDORP : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 7
April - December 1987



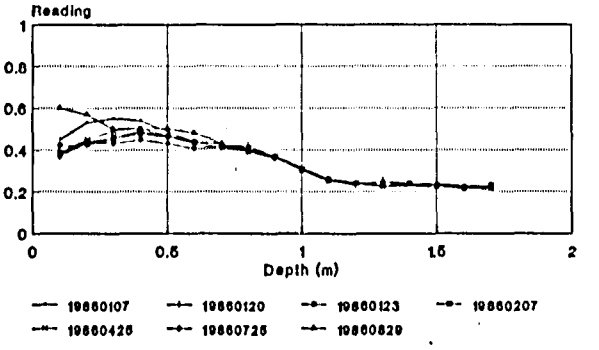
DEWETSDORP : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 7
1988



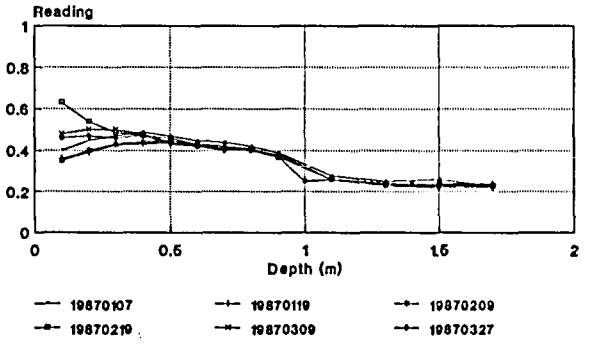
DEWETSDORP : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 8
1985



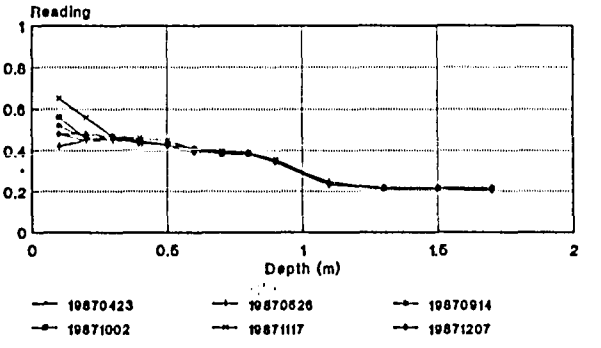
DEWETSDORP : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 8
1986



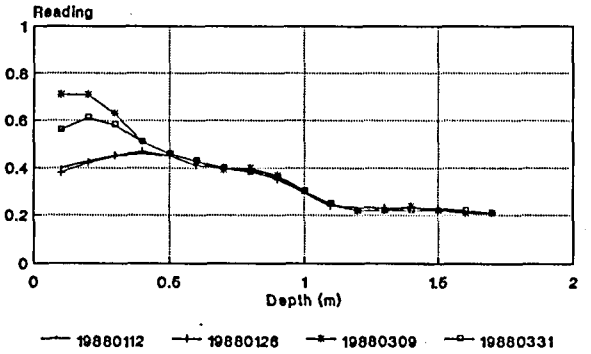
DEWETSDORP : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 8
January - March 1987



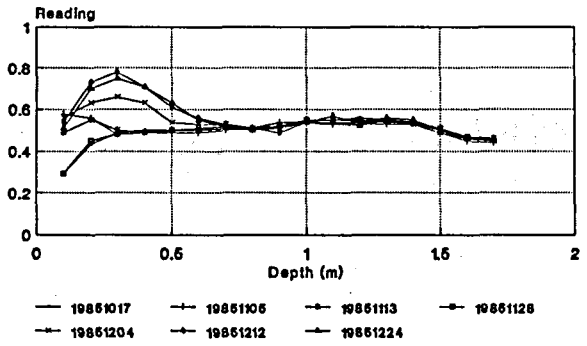
DEWETSDORP : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 8
April - December 1987



DEWETSDORP : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 8
1988



DEWETSDORP : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 9
1985



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SOIL MOISTURE TUBE 9
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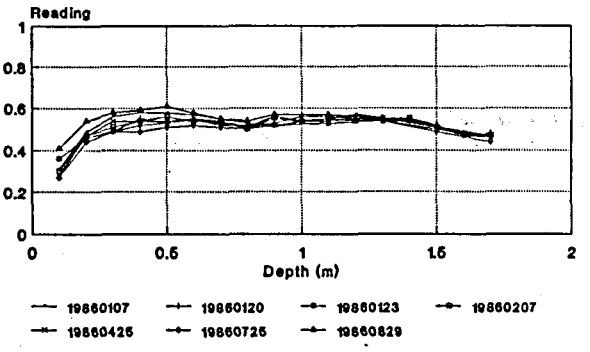

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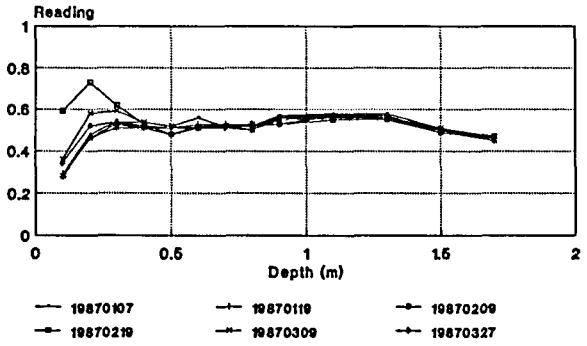
SOIL MOISTURE TUBE 9
January - March 1987



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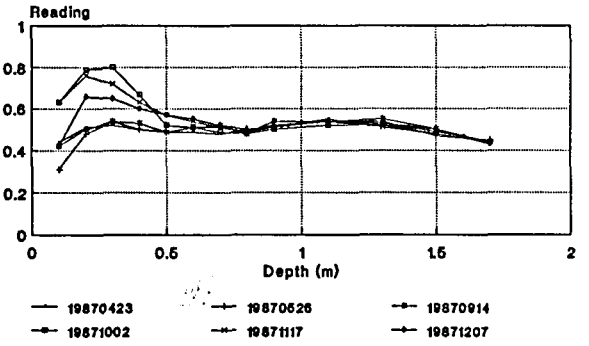
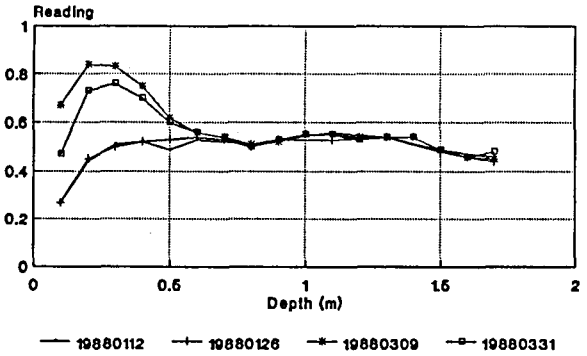
SOIL MOISTURE TUBE 9
April - December 1987



DEWETSDORP : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 9
1988



DEWETSDORP : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 10
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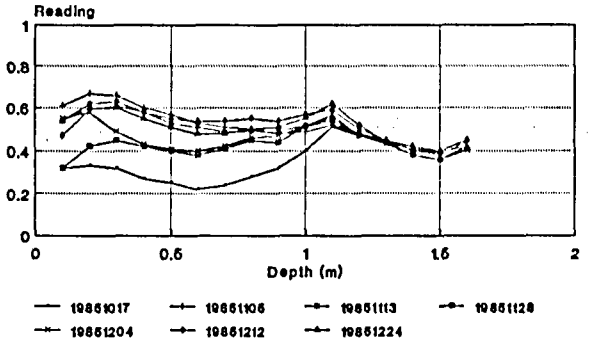

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SOIL MOISTURE TUBE 10
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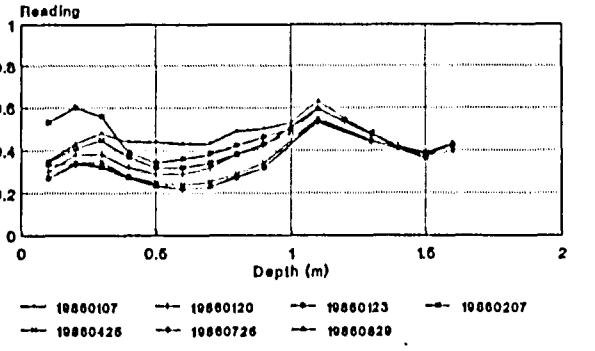

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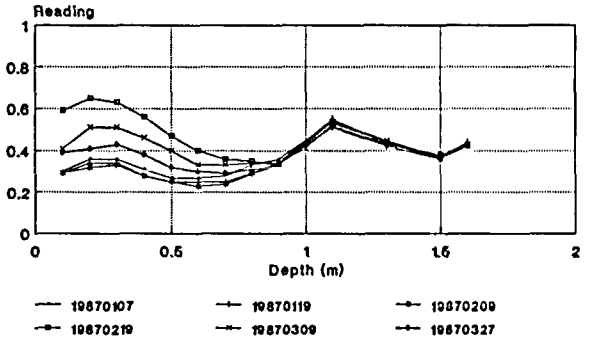
SOIL MOISTURE TUBE 10
January - March 1987



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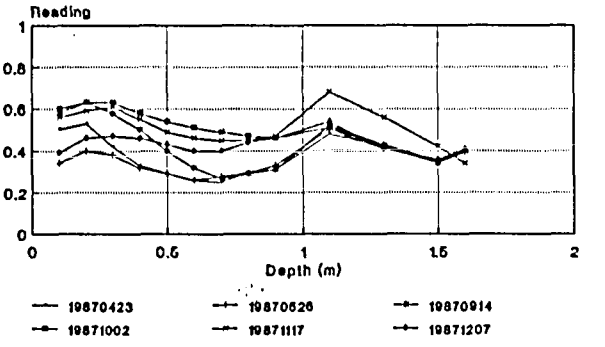
SOIL MOISTURE TUBE 10
April - December 1987



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SOIL MOISTURE TUBE 10
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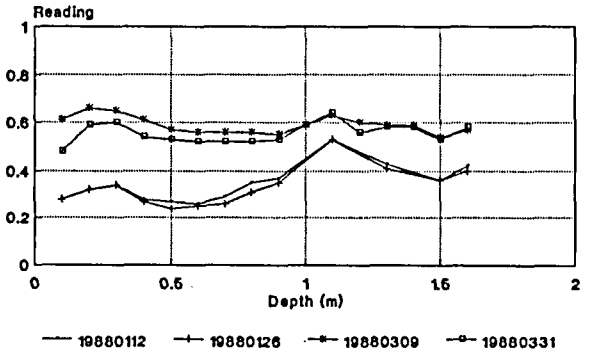
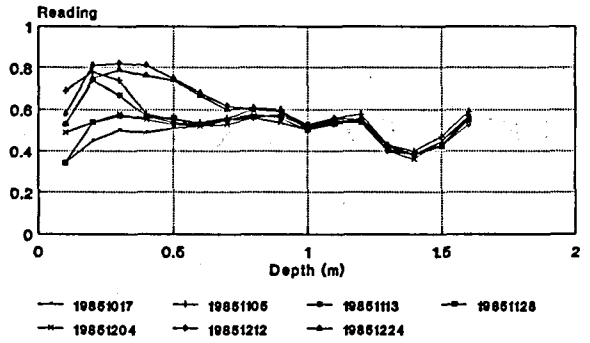


DEWETSDORP : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 11
1985



DEWETSDORP : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 11
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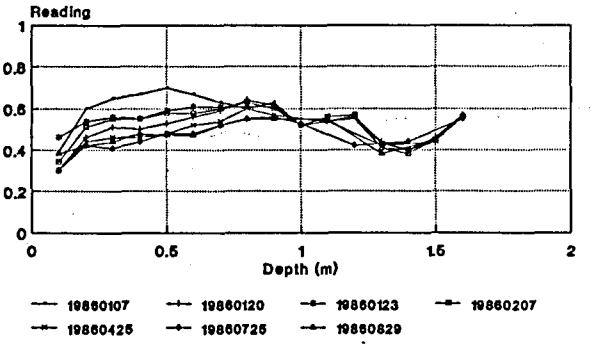

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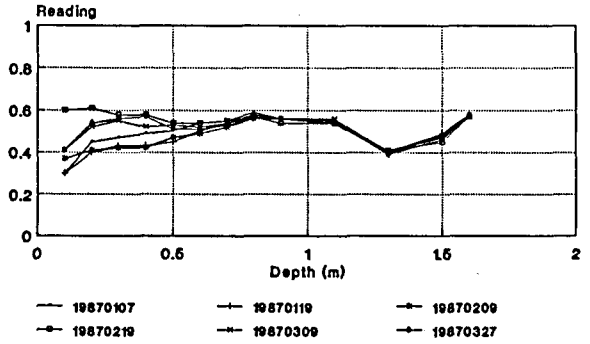
SOIL MOISTURE TUBE 11
January - March 1987



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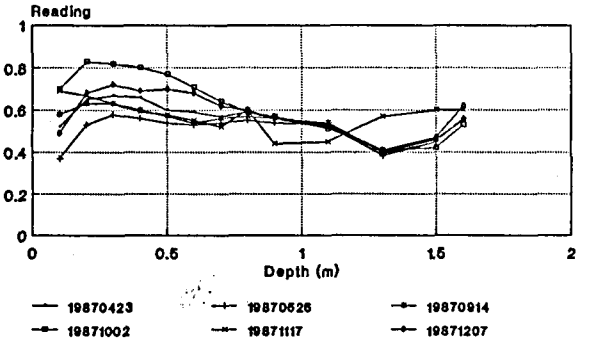
SOIL MOISTURE TUBE 11
April - December 1987



DEWETSDORP : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 11
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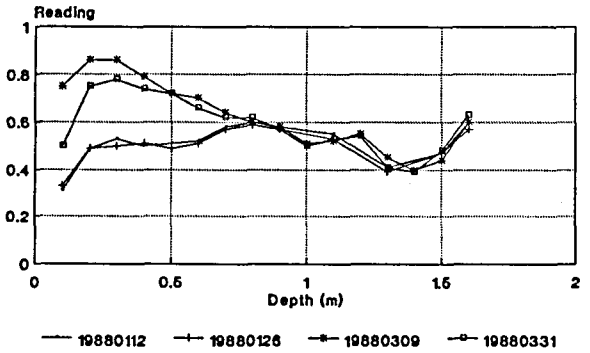

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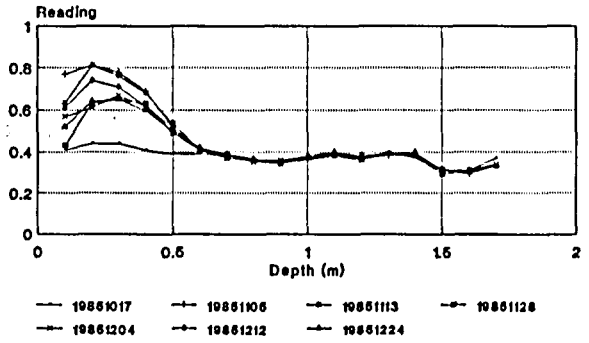

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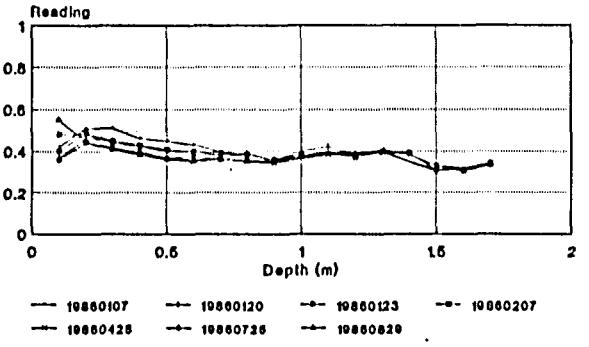

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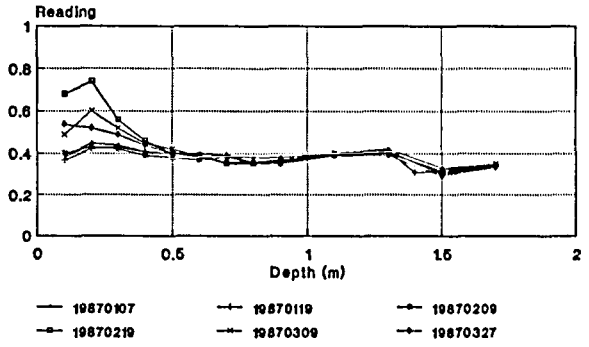
SOIL MOISTURE TUBE 12
January - March 1987



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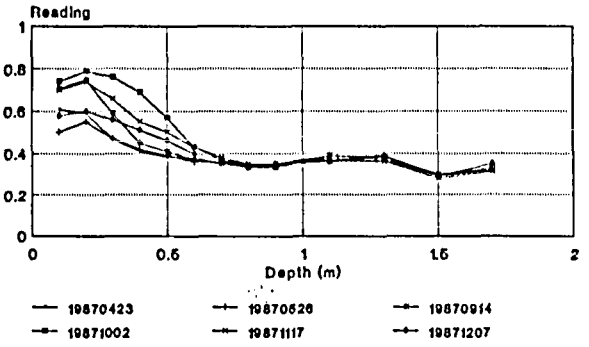
SOIL MOISTURE TUBE 12
April - December 1987



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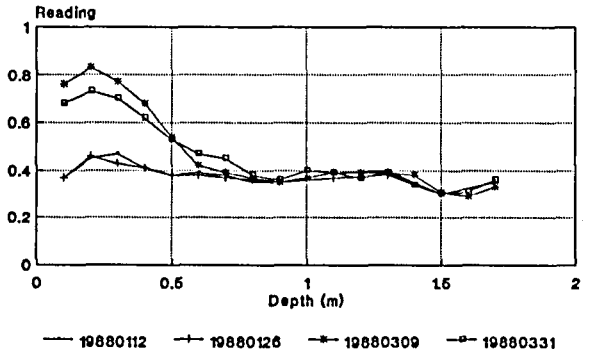
SOIL MOISTURE TUBE 12
1988



DEWETSDORP : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 13
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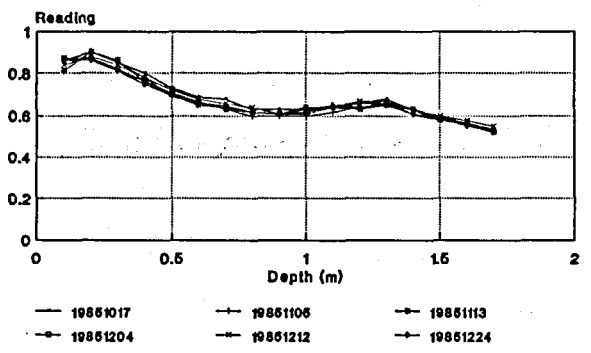

DEWETSDORP : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 13
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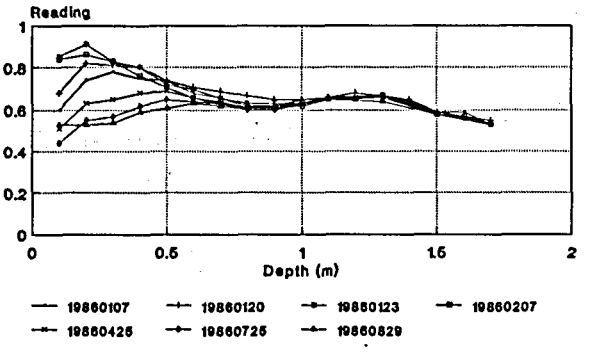

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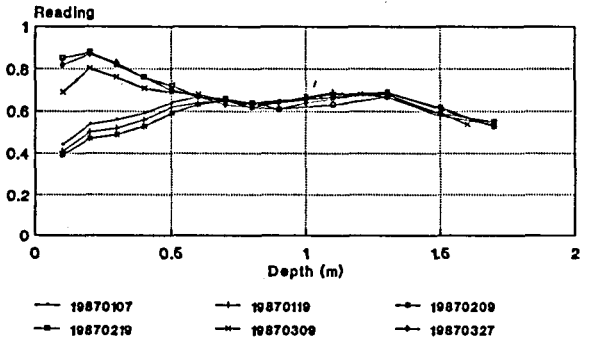
SOIL MOISTURE TUBE 13
January - March 1987



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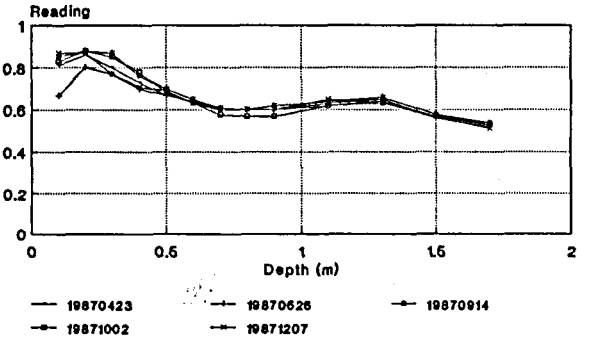
SOIL MOISTURE TUBE 13
April - December 1987



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SOIL MOISTURE TUBE 13
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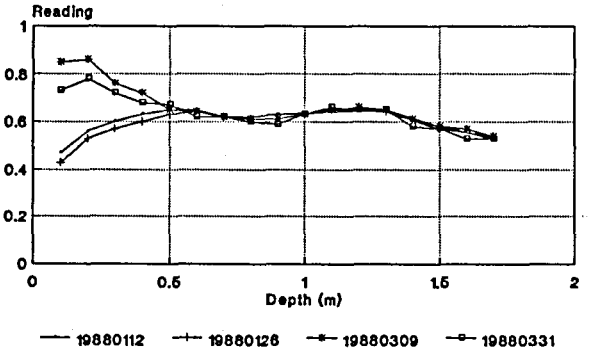
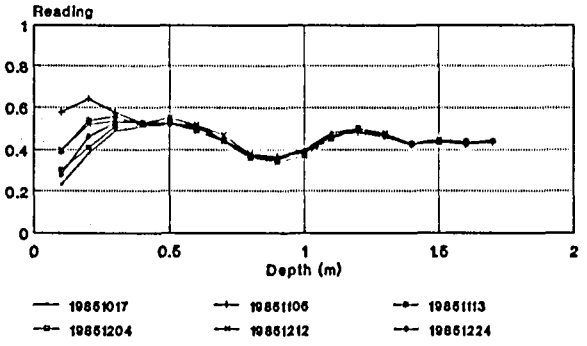


DEWETSDORP : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 14
1985



DEWETSDORP : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 14
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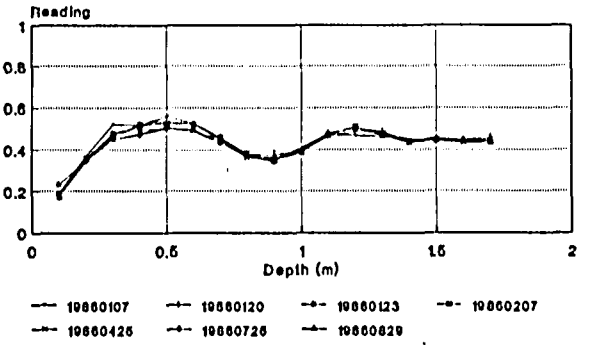

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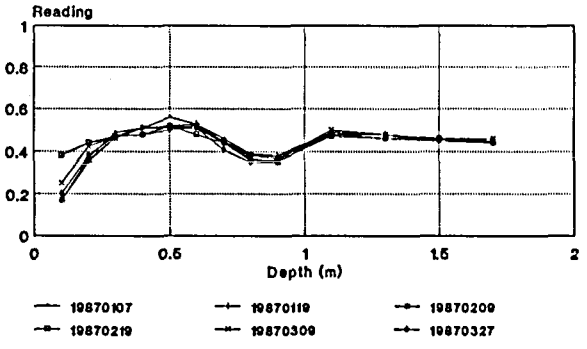
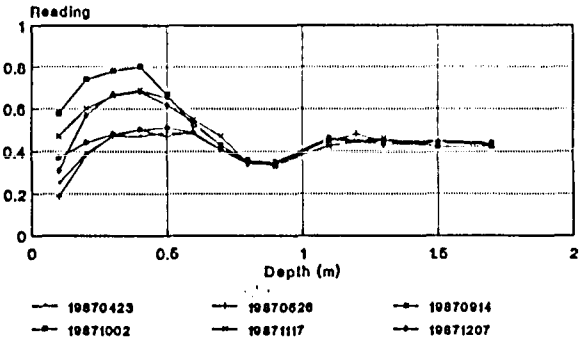
SOIL MOISTURE TUBE 14
January - March 1987



DEWETSDORP : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 14
April - December 1987



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SOIL MOISTURE TUBE 14
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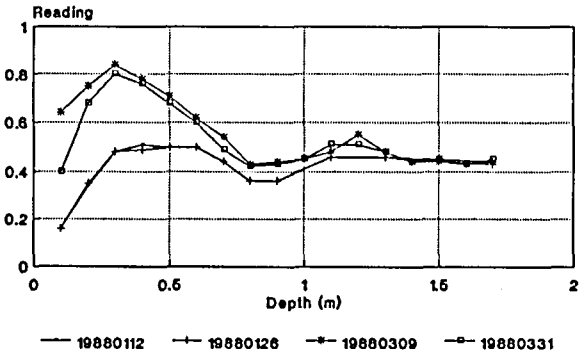
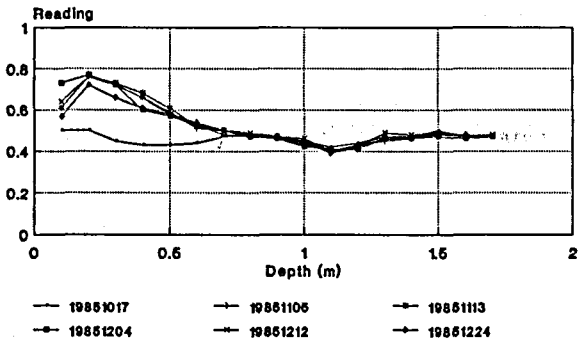


DEWETSDORP : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 15
1985



DEWETSDORP : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 15
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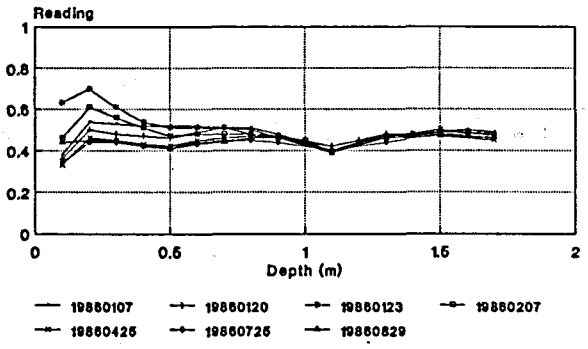
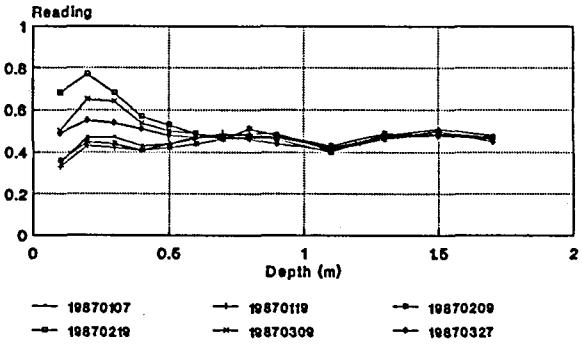
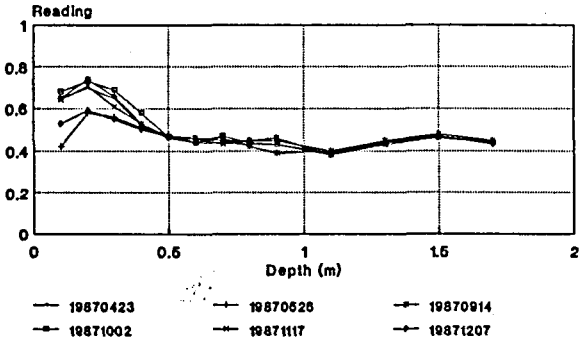


DEWETSDORP : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 15
January - March 1987



DEWETSDORP : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 15
April - December 1987



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SOIL MOISTURE TUBE 15
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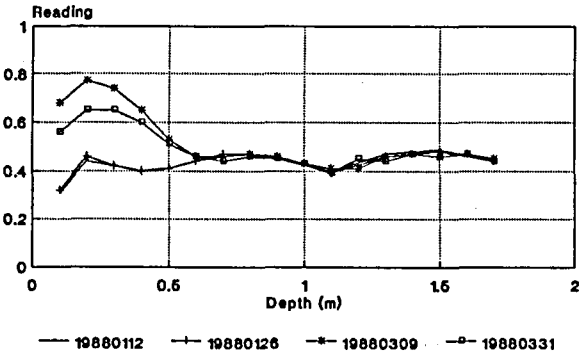
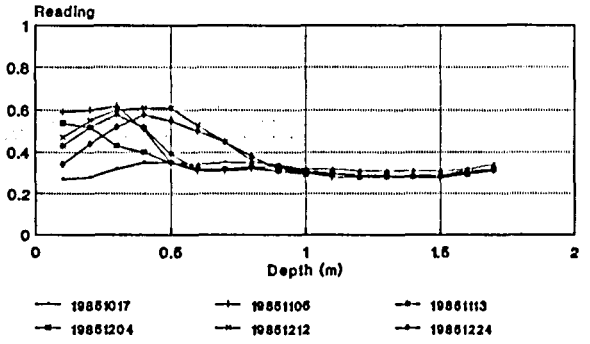


DEWETSDORP : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 16
1985



DEWETSDORP : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 16
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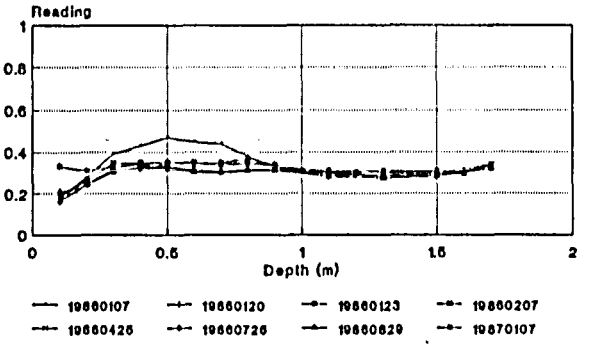

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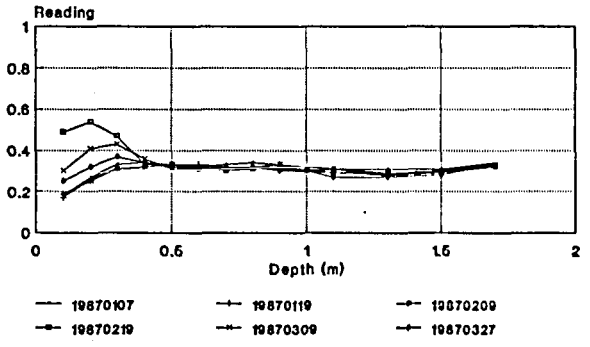
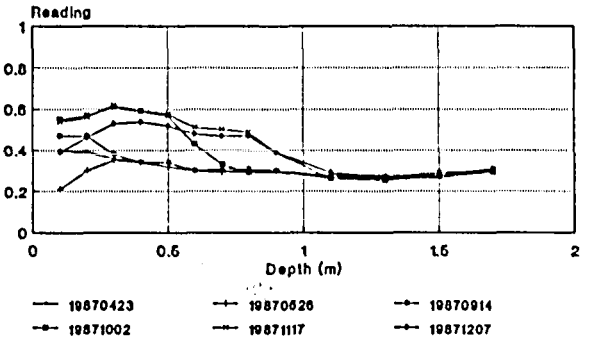
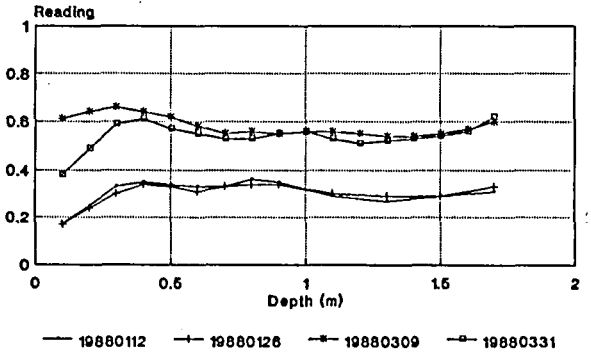
SOIL MOISTURE TUBE 16
January - March 1987



DEWETSDORP : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 16
April - December 1987



DEWETSDORP : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 16
1988



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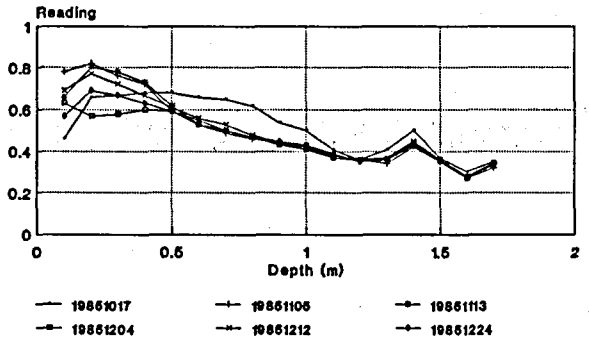

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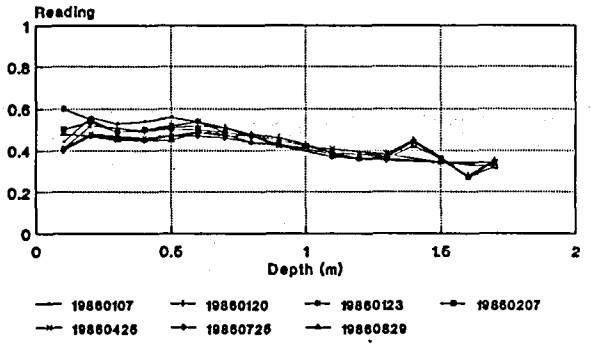
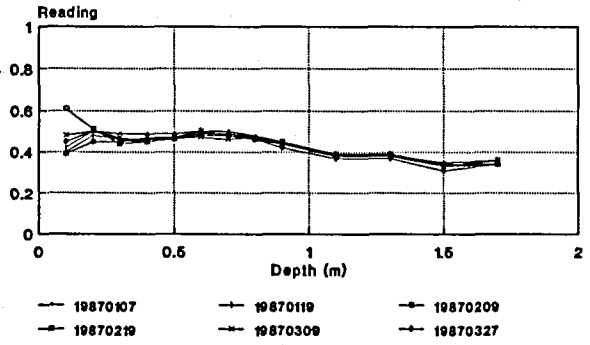
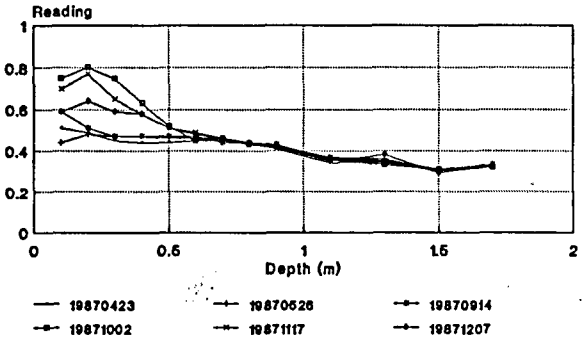


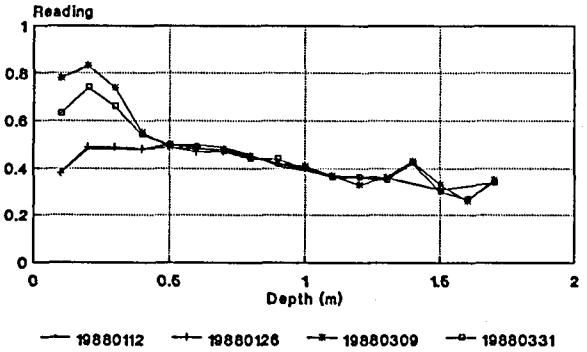
DEWETSDORP : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 17
January - March 1987



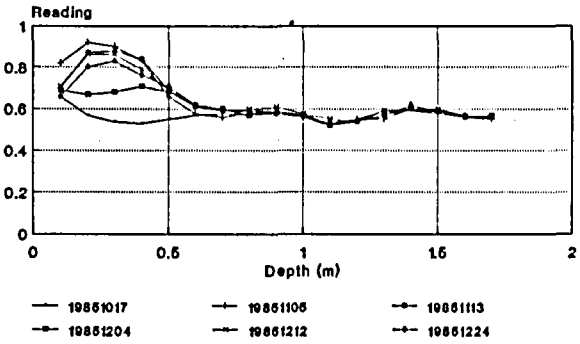
DEWETSDORP : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 17
April - December 1987



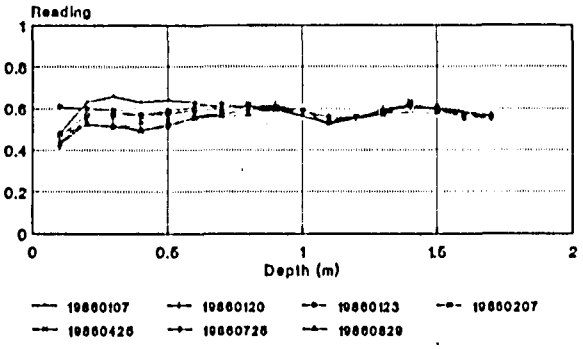
DEWETSDORP : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 17
1988



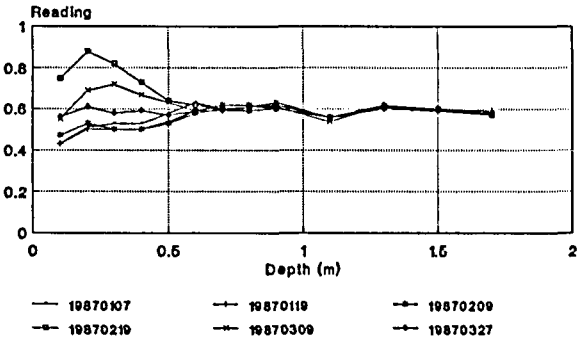
DEWETSDORP : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 18
1985



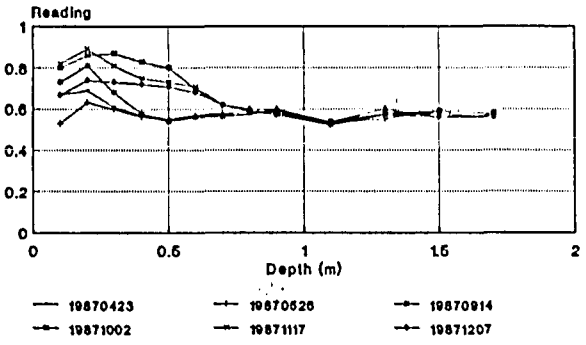
DEWETSDORP : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 18
1986



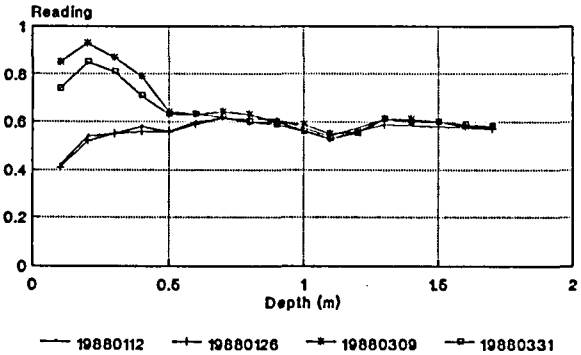
DEWETSDORP : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 18
January - March 1987



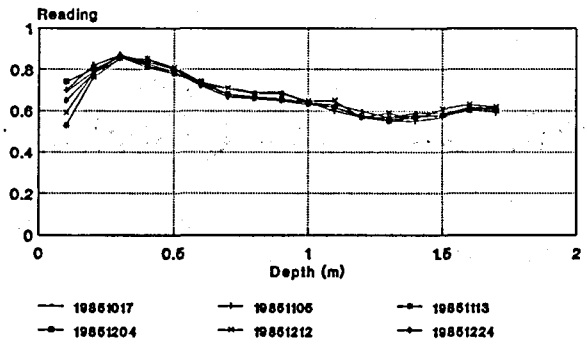
DEWETSDORP : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 18
April - December 1987



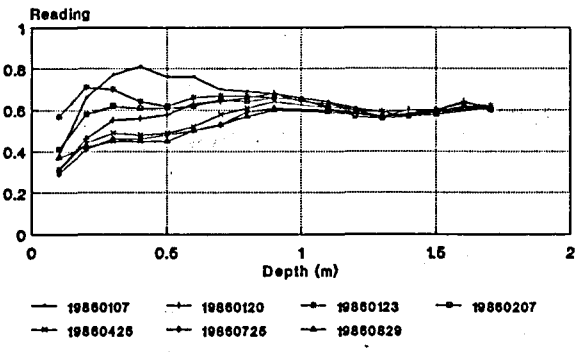
DEWETSDORP : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 18
1988



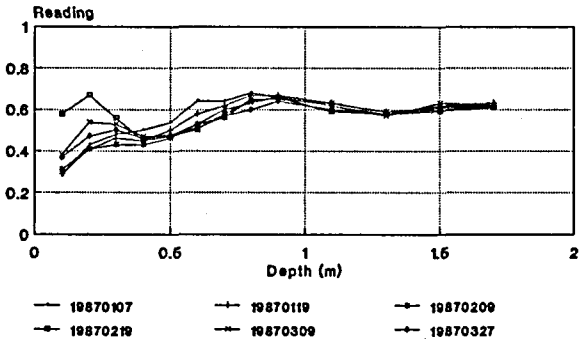
DEWETSDORP : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 19
1985



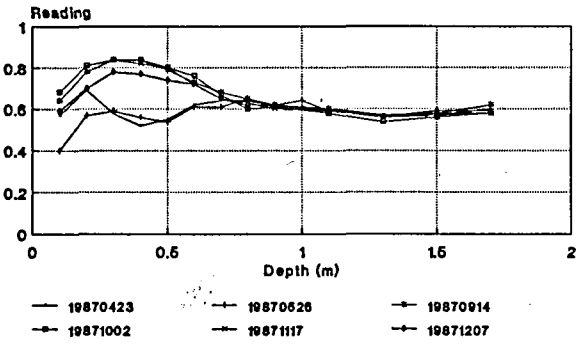
DEWETSDORP : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 19
1986



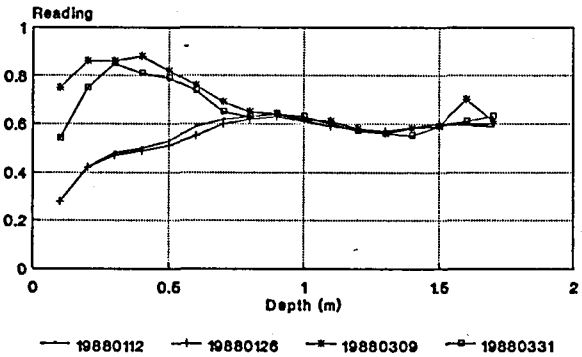
DEWETSDORP : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 19
January - March 1987



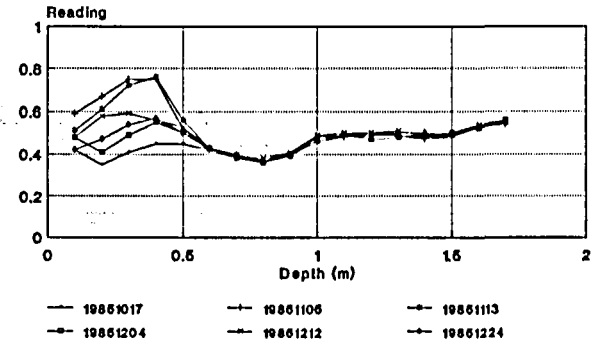
DEWETSDORP : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 19
April - December 1987



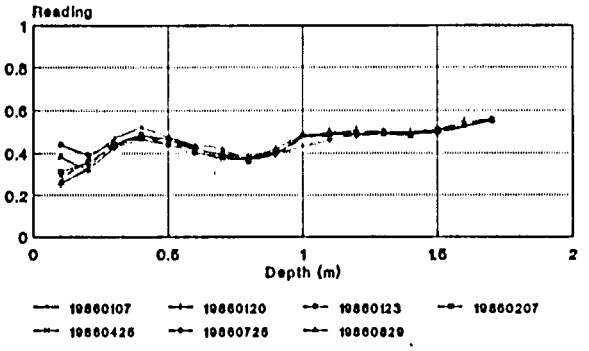
DEWETSDORP : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 19
1988



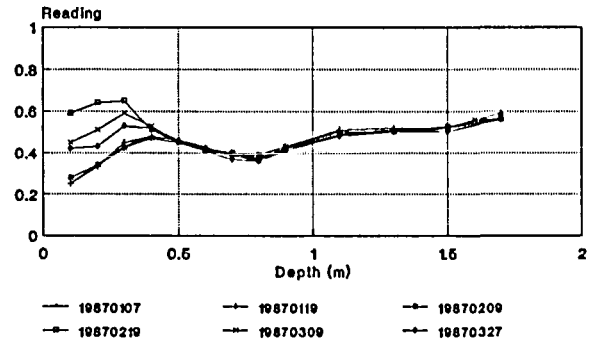
DEWETSDORP : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 20
1985



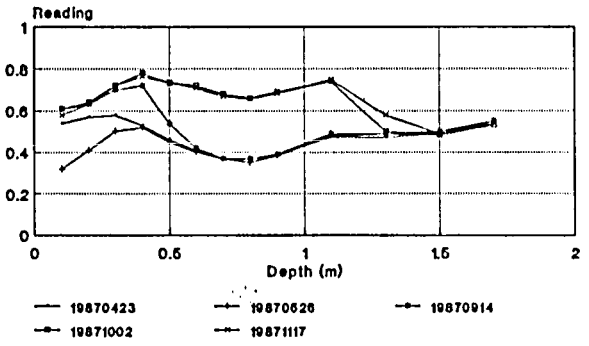
DEWETSDORP : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 20
1986



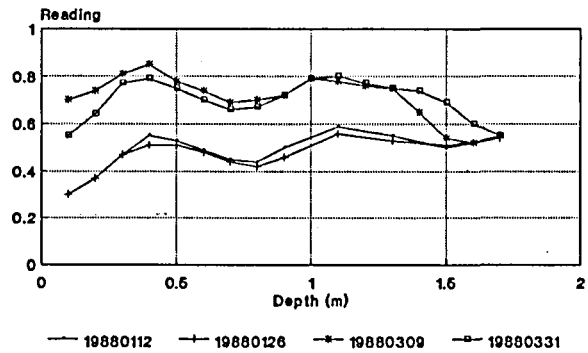
DEWETSDORP : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 20
January - March 1987



DEWETSDORP : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 20
April - December 1987



DEWETSDORP : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 20
1988



* G-BASE * S I T E R E P O R T DATE: 20 March 1988
Generated for : DEWETSDORP - IGS/WRC RESEARCH PROJECT

Site name : KAREEFONTEIN
Site purpose : RECORDER NEXT TO GATE IN MIDDLE CAMP.

Site ID: 2926DA36429 Number on map: G36429

Y-Coordinate: 31929.55 X-Coordinate: 3271343.14
Ground Elevation: 1516.17 mamsl Collar Height: 0.00 m
Depth of Casing: 12.00 m Diameter of Hole: 165 mm
Logged by: IGS Date Drilled: 19850122

Depth (m) From	To	Thickness (m)	Description
Geology			
0.00	3.00	3.00	SOIL : 46RCNT clayey.
3.00	5.00	2.00	SANDSTONE : 39BFRT green; weathered.
5.00	16.00	11.00	SHALE : 39BFRT light green; slightly weathered.
16.00	23.00	7.00	SHALE : 39BFRT grey; sandy.
23.00	29.00	6.00	SANDSTONE : 39BFRT fine grained; light grey.
29.00	36.00	7.00	SHALE : 39BFRT sandy.
36.00	42.00	6.00	SHALE : 39BFRT grey.
42.00	44.00	2.00	SANDSTONE : 39BFRT
44.00	45.00	1.00	SHALE : 39BFRT
45.00	49.00	4.00	SANDSTONE : 39BFRT
49.00	68.00	19.00	SANDSTONE AND SHALE : 39BFRT
68.00	74.00	6.00	SANDSTONE AND SHALE : 39BFRT fine grained.
74.00	81.00	7.00	SANDSTONE : 39BFRT light grey; hard.
81.00	82.00	1.00	SHALE : 39BFRT baked; sandy.
82.00	100.00	18.00	DOLERITE : 40KRDL
Geohydrology			
77.00			360 litres/hour yield

* G-BASE * S I T E R E P O R T DATE: 20 March 1988
Generated for : DEWETSDORP - IGS/WRC RESEARCH PROJECT

Site name : KAREEFONTEIN
Site purpose : RECORDER FURTHEST IN VELD IN MIDDLE CAMP

Site ID: 2926DA36430 Number on map: G36430

Y-Coordinate: 31262.94 X-Coordinate: 3271191.42
Ground Elevation: 1501.61 mamsl Collar Height: 0.00 m
Depth of Casing: 15.00 m Diameter of Hole: 165 mm
Logged by: IGS Date Drilled: 19850123

Geology

Depth (m) From	To	Thickness (m)	Description
0.00	5.00	5.00	SOIL : 45RCNT clayey.
5.00	13.00	8.00	SANDSTONE AND SHALE : 39BFRT yellowish green; very jointed; weathered.
13.00	30.00	17.00	MUDSTONE : 39BFRT purple brown.
30.00	36.00	6.00	SILTSTONE : 39BFRT light grey.
36.00	39.00	3.00	MUDSTONE : 39BFRT pink.
39.00	44.80	5.80	SILTSTONE : 39BFRT light grey.
44.80	45.00	0.20	SILTSTONE : 39BFRT baked.
45.00	50.00	5.00	DOLERITE : 40KRDL
50.00	51.00	1.00	SILTSTONE : 39BFRT dark grey; baked.
51.00	53.00	2.00	SANDSTONE : 39BFRT fine grained.
53.00	54.00	1.00	SHALE : 39BFRT sandy.
54.00	74.00	20.00	SANDSTONE : 39BFRT
74.00	76.00	2.00	SHALE : 39BFRT sandy.
76.00	83.00	7.00	MUDSTONE : 39BFRT purple.
83.00	89.00	6.00	MUDSTONE : 39BFRT
89.00	93.00	4.00	SHALE : 39BFRT greyish green.
93.00	97.00	4.00	SANDSTONE : 39BFRT light green.
97.00	100.00	3.00	MUDSTONE : 39BFRT purple.

Geohydrology

18.50	0 litres/hour yield
44.50	9720 litres/hour yield

* G-BASE * S I T E R E P O R T DATE: 20 March 1988
Generated for : DEWETSDORP - IGS/WRC RESEARCH PROJECT

Site name : KAREEFONTEIN
Site purpose : PRODUCTIONHOLE NEAR ROAD CAMP

Site ID: 2926DA36431 Number on map: G35431

Y-Coordinate: 32603.58 X-Coordinate: 3270940.44
Ground Elevation: 1529.40 mamsl Collar Height: 0.00 m
Depth of Casing: 5.00 m Diameter of Hole: 165 mm
Logged by: IGS Date Drilled: 19850123

Depth (m) From	To	Thickness (m)	Description
Geology			
0.00	5.00	5.00	SOIL : 45RCNT clayey.
5.00	17.00	12.00	SHALE : 39BFRT green.
17.00	27.00	10.00	MUDSTONE : 39BFRT purple.
27.00	30.00	3.00	SHALE : 39BFRT
30.00	34.00	4.00	SANDSTONE : 39BFRT massive.
34.00	36.00	2.00	SANDSTONE AND SHALE : 39BFRT
36.00	41.00	5.00	SANDSTONE : 39BFRT light grey.
41.00	49.00	8.00	SANDSTONE AND SHALE : 39BFRT
49.00	50.00	1.00	MUDSTONE : 39BFRT purple.
50.00	51.00	1.00	SANDSTONE : 39BFRT
51.00	57.00	6.00	SHALE : 39BFRT sandy.
57.00	60.00	3.00	SANDSTONE : 39BFRT fine grained.
60.00	62.00	2.00	SANDSTONE AND SHALE : 39BFRT
62.00	64.00	2.00	MUDSTONE : 39BFRT purple.
64.00	65.00	1.00	MUDSTONE : 39BFRT
65.00	68.00	3.00	SILTSTONE : 39BFRT light green.
68.00	77.00	9.00	SANDSTONE : 39BFRT fine to medium grained.
77.00	96.00	19.00	SANDSTONE AND SHALE : 39BFRT
96.00	100.00	4.00	DOLERITE : 40KRDL
Geohydrology			
23.00			2160 litres/hour yield

* G-BASE * S I T E R E P O R T DATE: 20 March 1988
Generated for : DEWETSDORP - IGS/WRC RESEARCH PROJECT

Site name : KAREEFONTEIN
Site purpose : WELLCAP UPSTREAM DAM

Site ID: 2926DA36432 Number on map: G36432

Y-Coordinate: 32353.49 X-Coordinate: 3270962.91
Ground Elevation: 1521.50 mamsl Collar Height: 0.00 m
Depth of Casing: 6.00 m Diameter of Hole: 165 mm
Logged by: IGS Date Drilled: 19850123

Depth (m) From	To	Thickness (m)	Description
Geology			
0.00	2.00	2.00	SOIL : 45RCNT brown; clayey.
2.00	5.00	3.00	CLAY : 45RCNT brown; sandy.
5.00	7.00	2.00	SHALE : 39BFRT light green; weathered.
7.00	10.00	3.00	SANDSTONE : 39BFRT weathered.
10.00	14.00	4.00	SANDSTONE AND SHALE : 39BFRT very fine grained; light green; solid.
14.00	16.00	2.00	MUDSTONE : 39BFRT
16.00	21.00	5.00	MUDSTONE : 39BFRT light green; solid.
21.00	23.00	2.00	SHALE : 39BFRT bluish grey.
23.00	34.00	11.00	SANDSTONE : 39BFRT light grey.
34.00	35.00	1.00	SANDSTONE : 39BFRT light grey.
35.00	38.00	3.00	SHALE : 39BFRT bluish grey; sandy.
38.00	40.00	2.00	SANDSTONE : 39BFRT light grey.
Geohydrology			
23.00			360 litres/hour yield

* G-BASE * S I T E R E P O R T DATE: 20 March 1988
Generated for : DEWETSDORP - IGS/WRC RESEARCH PROJECT

Site name : KAREEFONTEIN
Site purpose : WELLCAP FURTHEST IN MIDDLE CAMP

Site ID: 2926DA36433 Number on map: G36433

Y-Coordinate: 31049.15 X-Coordinate: 3271184.47
Ground Elevation: 1498.12 mamsl Collar Height: 0.00 m
Depth of Casing: 6.00 m Diameter of Hole: 165 mm
Logged by: IGS Date Drilled: 19850124

Geology

Depth (m) From	To	Thickness (m)	Description
0.00	5.00	5.00	SOIL : 45RCNT brown; sandy.
5.00	6.00	1.00	MUDSTONE : 39BFRT weathered.
6.00	13.00	7.00	SANDSTONE AND SHALE : 39BFRT yellowish green; jointed; weathered.
13.00	15.00	2.00	MUDSTONE : 39BFRT purple.
15.00	18.00	3.00	SHALE : 39BFRT bluish grey; sandy.
18.00	22.00	4.00	SANDSTONE : 39BFRT fine grained; slightly jointed.
22.00	24.00	2.00	SHALE : 39BFRT sandy.
24.00	30.00	6.00	MUDSTONE : 39BFRT purple.
30.00	32.00	2.00	SHALE : 39BFRT light grey; sandy.
32.00	33.00	1.00	DOLERITE : 40KRDL dark grey; fresh.
33.00	38.00	5.00	SANDSTONE : 39BFRT fine grained; light grey.
38.00	45.00	7.00	MUDSTONE : 39BFRT bluish grey.
45.00	48.00	3.00	SANDSTONE : 39BFRT fine grained; light grey.
48.00	48.80	0.80	MUDSTONE : 39BFRT

Geohydrology

19.20	360 litres/hour yield
34.00	1080 litres/hour yield

* G-BASE * S I T E R E P O R T DATE: 20 March 1988
Generated for : DEWETSDORP - IGS/WRC RESEARCH PROJECT

Site name : KAREEFONTEIN
Site purpose : 2ND HOLE IN MIDDLE CAMP

Site ID: 2926DA36434 Number on map: G36434

Y-Coordinate: 30000.00 X-Coordinate: 3300000.00
Ground Elevation: 1506.00 mamsl Collar Height: 0.00 m
Depth of Casing: 6.00 m Diameter of Hole: 165 mm
Logged by: IGS Date Drilled: 19850125

Depth (m) From	To	Thickness (m)	Description
Geology			
0.00	1.00	1.00	SOIL : 45RCNT brown; clayey.
1.00	2.00	1.00	SANDSTONE : 39BFRT weathered.
2.00	13.00	11.00	SANDSTONE AND SHALE : 39BFRT light green; jointed; weathered.
13.00	17.00	4.00	SANDSTONE : 39BFRT light grey.
17.00	20.00	3.00	SHALE : 39BFRT grey; sandy.
20.00	24.00	4.00	SANDSTONE : 39BFRT light grey.
24.00	29.00	5.00	SHALE : 39BFRT light grey; sandy.
29.00	35.00	6.00	MUDSTONE : 39BFRT purple.
35.00	39.00	4.00	MUDSTONE : 39BFRT light grey; sandy.
39.00	42.00	3.00	SANDSTONE : 30BFRT fine grained; light grey.
42.00	55.00	13.00	MUDSTONE : 39BFRT
55.00	60.00	5.00	SHALE : 39BFRT grey.
60.00	68.00	8.00	SANDSTONE : 39BFRT fine grained; light grey.
68.00	81.00	13.00	SANDSTONE AND SHALE : 39BFRT grey.
81.00	86.00	5.00	SANDSTONE : 39BFRT fine grained; light grey.
86.00	90.00	4.00	MUDSTONE : 39BFRT grey.
Geohydrology			
34.00	42.00	8.00	720 litres/hour yield

* G-BASE * S I T E R E P O R T DATE: 20 March 1988
Generated for : DEWETSDORP - IGS/WRC RESEARCH PROJECT

Site name : KAREEFONTEIN
Site purpose : WELLCAP, 1ST HOLE IN MIDDLE CAMP

Site ID: 2926DA36435 Number on map: G36435

Y-Coordinate: 31558.07 X-Coordinate: 3271310.50
Ground Elevation: 1508.28 mamsl Collar Height: 0.00 m
Depth of Casing: 2.00 m Diameter of Hole: 165 mm
Logged by: IGS Date Drilled: 19850125

Depth (m) From	To	Thickness (m)	Description
Geology			
0.00	3.00	3.00	SOIL : 46RCNT brown; sandy; clayey.
3.00	15.00	12.00	SANDSTONE : 39BFRT very fine grained; light green; jointed.
15.00	22.00	7.00	SANDSTONE : 39BFRT fine grained; light grey.
22.00	25.00	3.00	SHALE : 39BFRT grey; sandy.
25.00	27.00	2.00	SANDSTONE : 39BFRT light grey.
27.00	28.00	1.00	SHALE : 39BFRT grey; sandy.
28.00	33.00	5.00	MUDSTONE : 39BFRT purple.
33.00	37.00	4.00	SHALE : 39BFRT sandy.
37.00	41.00	4.00	SANDSTONE : 39BFRT fine grained.
Geohydrology			
19.00			360 litres/hour yield

* G-BASE * S I T E R E P O R T DATE: 20 March 1988
Generated for : DEWETSDORP - IGS/WRC RESEARCH PROJECT

Site name : KAREEFONTEIN
Site purpose : FURTHEST HOLE IN MIDDLE CAMP

Site ID: 2926DA36436	Number on map: G36436
Y-Coordinate: 31089.44	X-Coordinate: 3271090.75
Ground Elevation: 1499.67 mamsl	Collar Height: 0.00 m
Depth of Casing: 7.00 m	Diameter of Hole: 165 mm
Logged by: IGS	Date Drilled: 19850125

Depth (m) From	To	Thickness (m)	Description
Geology			
0.00	2.00	2.00	CLAY : 46RCNT dark blue.
2.00	6.00	4.00	CLAY : 46RCNT brown; sandy.
6.00	13.00	7.00	SHALE : 39BFRT light green; sandy.
13.00	16.00	3.00	MUDSTONE : 39BFRT purple.
16.00	20.00	4.00	SANDSTONE : 39BFRT fine grained; dark grey.
20.00	21.00	1.00	DOLERITE : 40KRDL fine crystalline; dark grey.
21.00	22.00	1.00	SANDSTONE : 39BFRT baked.
22.00	30.00	8.00	MUDSTONE : 39BFRT purple.
30.00	32.00	2.00	SHALE : 39BFRT grey; baked.
32.00	33.00	1.00	DOLERITE : 40KRDL dark grey.
33.00	36.00	3.00	MUDSTONE : 39BFRT light grey.
36.00	40.00	4.00	SILTSTONE : 39BFRT grey.
Geohydrology			
16.00	19.00	3.00	0 litres/hour yield
31.00			1080 litres/hour yield TOTAL YIELD

* G-BASE * S I T E R E P O R T DATE: 20 March 1988
Generated for : DEWETSDORP - IGS/WRC RESEARCH PROJECT

Site name : KAREEFONTEIN
Site purpose : W OF ROAD AT TURN-OFF TO DEWETSDORP

Site ID: 2926DA36437 Number on map: G36437

Y-Coordinate: 32340.41 X-Coordinate: 3271433.17
Ground Elevation: 1532.79 mamsl Collar Height: 0.00 m
Depth of Casing: 12.00 m Diameter of Hole: 165 mm
Logged by: IGS Date Drilled: 19850128

Depth (m) From	To	Thickness (m)	Description
Geology			
0.00	4.00	4.00	SOIL : 46RCNT light brown; clayey.
4.00	8.00	4.00	SANDSTONE : 39BFRT light green; weathered.
8.00	10.00	2.00	MUDSTONE : 39BFRT purple.
10.00	13.00	3.00	SHALE : 39BFRT light green; weathered.
13.00	14.00	1.00	MUDSTONE : 39BFRT purple.
14.00	15.00	1.00	SANDSTONE : 39BFRT fine grained.
15.00	18.00	3.00	MUDSTONE : 39BFRT purple.
18.00	24.00	6.00	SHALE : 39BFRT greyish green; sandy.
24.00	27.00	3.00	SANDSTONE : 39BFRT fine grained; light grey.
27.00	32.00	5.00	SILTSTONE : 39BFRT light grey.
32.00	41.00	9.00	SANDSTONE : 39BFRT fine grained; light grey.
41.00	43.00	2.00	SHALE : 39BFRT dark grey.
43.00	51.00	8.00	SANDSTONE AND SHALE : 39BFRT green.
51.00	61.00	10.00	MUDSTONE : 39BFRT purple.
61.00	63.00	2.00	SHALE : 39BFRT greenish grey; sandy.
63.00	64.00	1.00	SANDSTONE : 39BFRT light grey.
64.00	71.00	7.00	SHALE : 39BFRT greenish grey.
71.00	72.00	1.00	SHALE : 39BFRT sandy; baked.
72.00	74.00	2.00	DOLERITE : 40KRDL dark grey.
74.00	75.00	1.00	SHALE : 39BFRT dark grey; baked.
75.00	78.00	3.00	SANDSTONE : 39BFRT fine grained; light grey.
78.00	90.00	12.00	SHALE : 39BFRT grey; sandy.
90.00	91.00	1.00	SANDSTONE : 39bfrt fine grained; light grey.
91.00	98.00	7.00	SHALE : 39BFRT light grey.
98.00	100.00	2.00	DOLERITE : 40KRDL dark grey.
Geohydrology			
22.00			0.02 litres/hour yield

* G-BASE * S I T E R E P O R T DATE: 20 March 1988
Generated for : DEWETSDORP - IGS/WRC RESEARCH PROJECT

Site name : KAREEFONTEIN
Site purpose : UPSTREAM OF DAM IN NORTH CAMP

Site ID: 2926DA36438 Number on map: G36438

Y-Coordinate: 32387.72 X-Coordinate: 3270813.71
Ground Elevation: 1521.36 mamsl Collar Height: 0.00 m
Depth of Casing: 6.00 m Diameter of Hole: 165 mm
Logged by: IGS Date Drilled: 19850129

Depth (m) From	To	Thickness (m)	Description
Geology			
0.00	2.00	2.00	SANDSTONE : 46RCNT brown; clayey.
2.00	7.00	5.00	CLAY : 46RCNT light brown; sandy.
7.00	9.00	2.00	SHALE : 39BFRT green; weathered.
9.00	14.00	5.00	SILTSTONE AND SHALE : 39BFRT green.
14.00	18.00	4.00	MUDSTONE : 39BFRT purple.
18.00	24.00	6.00	SANDSTONE : 39BFRT light grey.
24.00	26.00	2.00	SHALE : 39BFRT fine grained; dark grey.
26.00	33.00	7.00	SHALE : 39BFRT dark grey.
33.00	42.00	9.00	SANDSTONE AND SHALE : 39BFRT
42.00	43.00	1.00	SHALE : 39BFRT dark grey.
Geohydrology			
25.00			< 0.02 litres/hour yield

* G-BASE * S I T E R E P O R T DATE: 20 March 1988
Generated for : DEWETSDORP - IGS/WRC RESEARCH PROJECT

Site name : KAREEFONTEIN
Site purpose : RECORDER BELOW QUARRY

Site ID: 2926DA36439 Number on map: G36439

Y-Coordinate: 32522.79 X-Coordinate: 3271545.45
Ground Elevation: 1542.70 mamsl Collar Height: 0.00 m
Depth of Casing: 2.00 m Diameter of Hole: 165 mm
Logged by: IGS Date Drilled: 19850129

Depth (m) From	To	Thickness (m)	Description
Geology			
0.00	5.00	5.00	SOIL : 46RCNT brown; sandy.
5.00	8.00	3.00	SANDSTONE AND SHALE : 39BFRT very weathered.
8.00	11.00	3.00	SANDSTONE : 39BFRT light green; jointed.
11.00	16.00	5.00	SANDSTONE AND SHALE : 39BFRT medium grained.
16.00	17.00	1.00	SHALE AND SILTSTONE : 39BFRT greyish blue.
17.00	20.00	3.00	SANDSTONE : 39BFRT medium grained; grey.
20.00	22.00	2.00	MUDSTONE : 39BFRT purple.
22.00	23.00	1.00	SANDSTONE : 39BFRT light grey.
23.00	28.00	5.00	MUDSTONE : 39BFRT purple.
28.00	37.00	9.00	SILTSTONE AND SHALE : 39BFRT
37.00	40.00	3.00	SANDSTONE : 39BFRT fine grained; light grey.
Geohydrology			
			0.015 litres/hour yield. Interception uncertain.

* G-BASE * S I T E R E P O R T DATE: 20 March 1988
Generated for : DEWETSDORP - IGS/WRC RESEARCH PROJECT

Site name : KAREEFONTEIN
Site purpose : WELLCAP NEAR V3

Site ID: 2926DA36440 Number on map: G36440

Y-Coordinate: 32547.32 X-Coordinate: 3271413.98
Ground Elevation: 1538.50 mamsl Collar Height: 0.00 m
Depth of Casing: 2.00 m Diameter of Hole: 165 mm
Logged by: IGS Date Drilled: 19850128

Geology

Depth (m) From	To	Thickness (m)	Description
0.00	2.00	2.00	SOIL : 46RCNT brown; sandy.
2.00	3.00	1.00	SOIL : 46RCNT light brown; clayey.
3.00	6.00	3.00	SOIL : 46RCNT dark brown; clayey.
6.00	14.00	8.00	SANDSTONE : 39BFRT greyish green; weathered.
14.00	17.00	3.00	SILTSTONE AND SHALE : 39BFRT purple.
17.00	19.00	2.00	SHALE : 39BFRT grey; sandy.
19.00	20.00	1.00	SANDSTONE : 39BFRT grey.
20.00	21.00	1.00	SHALE : 39BFRT grey; sandy.
21.00	23.00	2.00	MUDSTONE : 39BFRT purple.
23.00	26.00	3.00	SILTSTONE AND SHALE : 39BFRT
26.00	30.00	4.00	SHALE : 39BFRT grey; sandy.
30.00	34.00	4.00	SANDSTONE : 39BFRT fine grained; light grey.
34.00	38.00	4.00	SHALE : 39BFRT grey; sandy.
38.00	40.00	2.00	SANDSTONE : 39BFRT light grey.

Geohydrology

0.015 litres/hour yield. Interception uncertain.

* G-BASE * S I T E R E P O R T DATE: 20 March 1988
Generated for : DEWETSDORP - IGS/WRC RESEARCH PROJECT

Site name : KAREEFONTEIN
Site purpose : COORDINATEN FOUT

Site ID: 2926DA36441 Number on map: G36441

Y-Coordinate: 34064.00 X-Coordinate: 3272905.40
Ground Elevation: 1500.00 mamsl Collar Height: 0.00 m
Depth of Casing: 2.00 m Diameter of Hole: 165 mm
Logged by: IGS Date Drilled: 19850128

Depth (m) From	To	Thickness (m)	Description
Geology			
0.00	3.00	3.00	SAND : 46RCNT medium to coarse grained; reddish brown; clayey.
3.00	9.00	6.00	SANDSTONE AND SHALE : 39BFRT light green; weathered.
9.00	14.00	5.00	SANDSTONE : 39BFRT fine grained; light grey; slightly weathered.
14.00	19.00	5.00	MUDSTONE : 39BFRT purple.
19.00	20.00	1.00	SANDSTONE : 39BFRT fine grained; light grey.
20.00	28.00	8.00	MUDSTONE : 39BFRT purple.
28.00	31.00	3.00	SHALE AND SILTSTONE : 39BFRT grey; sandy.
31.00	36.00	5.00	SANDSTONE : 39BFRT light grey.
36.00	40.00	4.00	SHALE : 39BFRT bluish grey; sandy.
Geohydrology			
31.00			0,07 litres/hour estimated yield

* G-BASE * S I T E R E P O R T DATE: 20 March 1988
Generated for : DEWETSDORP - IGS/WRC RESEARCH PROJECT

Site name : KAREEFONTEIN
Site purpose : WELLCAP NEAR THABA NCHU TURNOFF

Site ID: 2926DA36442 Number on map: G36442

Y-Coordinate: 32756.18 X-Coordinate: 3270974.79
Ground Elevation: 1500.00 mamsl Collar Height: 0.00 m
Depth of Casing: 6.00 m Diameter of Hole: 165 mm
Logged by: IGS Date Drilled: 19850129

Depth (m) From	To	Thickness (m)	Description
Geology			
0.00	0.00	0.00	:
0.00	3.00	3.00	CLAY : 46RCNT reddish brown; sandy.
3.00	6.00	3.00	SHALE : 39BFRT light green; sandy; weathered.
6.00	9.00	3.00	SANDSTONE : 39BFRT light green; weathered.
9.00	10.00	1.00	SANDSTONE : 39BFRT light grey; soft.
10.00	11.00	1.00	MUDSTONE : 39BFRT purple.
11.00	15.00	4.00	SILTSTONE AND SHALE : 39BFRT purple.
15.00	16.00	1.00	SANDSTONE : 39BFRT very fine grained.
16.00	17.00	1.00	MUDSTONE : 39BFRT purple.
17.00	22.00	5.00	SILTSTONE AND SHALE : 39BFRT purple.
22.00	24.00	2.00	MUDSTONE : 39BFRT purple.
24.00	26.00	2.00	SILTSTONE AND SHALE : 39BFRT
26.00	28.00	2.00	SHALE : 39BFRT greyish green; sandy.
28.00	31.00	3.00	SANDSTONE : 39BFRT fine grained; light grey.
31.00	35.00	4.00	SHALE : 39BFRT grey; sandy.
35.00	39.00	4.00	SANDSTONE : 39BFRT light grey.
39.00	40.00	1.00	SANDSTONE AND SHALE : 39BFRT
Geohydrology			
39.00			0 litres/hour yield

* G-BASE * S I T E R E P O R T DATE: 20 March 1988
Generated for : DEWETSDORP - IGS/WRC RESEARCH PROJECT

Site name : KAREEFONTEIN
Site purpose : RECORDER GOLF COURSE

Site ID: 2926DA36443 Number on map: G36443

Y-Coordinate: 32284.42 X-Coordinate: 3272579.41
Ground Elevation: 1534.94 mamsl Collar Height: 0.00 m
Depth of Casing: 5.00 m Diameter of Hole: 165 mm
Logged by: IGS Date Drilled: 19850130

Geology

Depth (m) From	To	Thickness (m)	Description
0.00	3.00	3.00	SOIL : 46RCNT brown; clayey.
3.00	5.00	2.00	MUDSTONE : 39BFRT very weathered.
5.00	12.00	7.00	SHALE : 39BFRT light green; weathered; sandy.
12.00	15.00	3.00	SHALE : 39BFRT light green; sandy.
15.00	18.00	3.00	MUDSTONE : 39BFRT purple.
18.00	22.00	4.00	SHALE : 39BFRT light green; sandy.
22.00	24.00	2.00	MUDSTONE : 39BFRT purple.
24.00	27.00	3.00	SANDSTONE : 39BFRT fine grained; light grey.
27.00	28.00	1.00	SILTSTONE : 39BFRT grey.
28.00	30.00	2.00	MUDSTONE : 39BFRT purple.
30.00	32.00	2.00	SANDSTONE : 39BFRT fine grained; light grey.
32.00	37.00	5.00	SHALE : 39BFRT grey; sandy.
37.00	38.00	1.00	SANDSTONE : 39BFRT fine grained; grey.
38.00	40.00	2.00	SHALE : 39BFRT sandy.
40.00	45.00	5.00	SANDSTONE : 39BFRT fine to medium grained; grey.
45.00	50.00	5.00	SHALE : 39BFRT grey; sandy.
50.00	56.00	6.00	SANDSTONE : 39BFRT fine grained; grey.
56.00	62.00	6.00	SILTSTONE : 39BFRT
62.00	65.00	3.00	SANDSTONE : 39BFRT fine to medium grained; grey.
65.00	67.00	2.00	SHALE : 39BFRT grey; sandy.
67.00	71.00	4.00	MUDSTONE : 39BFRT purple.
71.00	73.00	2.00	SHALE : 39BFRT grey.
73.00	77.00	4.00	MUDSTONE : 39BFRT purple.
77.00	79.00	2.00	SILTSTONE : 39BFRT grey.
79.00	84.00	5.00	MUDSTONE : 39BFRT purple.
84.00	87.00	3.00	SILTSTONE AND SHALE : 39BFRT grey.
87.00	90.00	3.00	MUDSTONE : 39BFRT purple.
90.00	91.00	1.00	SILTSTONE : 39BFRT grey.
91.00	95.00	4.00	MUDSTONE : 39BFRT purple.
95.00	99.00	4.00	SILTSTONE : 39BFRT grey.
99.00	101.00	2.00	SANDSTONE : 39BFRT fine grained.

Geohydrology

53.00	54.00	1.00	0 litres/hour yield
79.00			1440 litres/hour yield TOTAL YIELD 0,49 l/s AFTER 30 MIN BLOW TEST.

* G-BASE * S I T E R E P O R T DATE: 20 March 1988
Generated for : DEWETSDORP - IGS/WRC RESEARCH PROJECT

Site name : KAREEFONTEIN
Site purpose : CHECK COORDINATES, WELLCAP NEAR MIDDLE CAMP GATE

Site ID: 2926DA36444 Number on map: G36444

Y-Coordinate: 32143.40 X-Coordinate: 3271319.75
Ground Elevation: 1522.90 mamsl Collar Height: 0.00 m
Depth of Casing: 6.00 m Diameter of Hole: 165 mm
Logged by: IGS Date Drilled: 19850130

Geology

Depth (m) From	To	Thickness (m)	Description
0.00	3.00	3.00	CLAY : 46RCNT reddish brown.
3.00	4.00	1.00	SHALE : 39BFRT weathered.
4.00	7.00	3.00	SHALE AND SILTSTONE : 39BFRT greyish green.
7.00	10.00	3.00	SANDSTONE : 39BFRT fine grained; greyish green.
10.00	11.00	1.00	SHALE : 39BFRT red.
11.00	13.00	2.00	SILTSTONE : 39BFRT bluish grey.
13.00	15.00	2.00	SANDSTONE : 39BFRT fine grained; bluish grey.
15.00	20.00	5.00	SILTSTONE AND SHALE : 39BFRT greyish blue.
20.00	22.00	2.00	SILTSTONE : 39BFRT
22.00	29.00	7.00	SILTSTONE : 39BFRT
29.00	30.00	1.00	SHALE : 39BFRT black.
30.00	34.00	4.00	SANDSTONE : 39BFRT fine grained.
34.00	37.00	3.00	SILTSTONE AND SHALE : 39BFRT
37.00	41.00	4.00	SANDSTONE AND SHALE : 39BFRT

Geohydrology

25.00	0 litres/hour yield MINIMAL WATER STRUCK.

* G-BASE * S I T E R E P O R T * DATE : 12 January 1990
Generated for : DEWETSDORP - IGS/WRC PROJECT

Site name : KAREEFONTEIN, next gate in Middle Camp
Remarks : Dry when drilled.

Site ID: 2926DA36445	Number on map: G36445
Y-Coordinate: 32118.59	X-Coordinate: 3271520.02
Ground Elevation: 1526.10 mamsl	Collar Height: 0.15 m
Depth of Casing: 6.00 m	Diameter of Hole: 165 mm
Logged by: ****	Date Drilled: 19850130

Geology

Depth (m) From	To	Thickness (m)	Description
0.00	4.00	4.00	CLAY : 46RCNT light brown.
4.00	7.00	3.00	SHALE : 39BFRT red; weathered.
7.00	9.00	2.00	SHALE : 39BFRT greyish green; slightly weathered.
9.00	11.00	2.00	SANDSTONE : 39BFRT fine grained; bluish grey.
11.00	14.00	3.00	SILTSTONE : 39BFRT greyish blue. LOCALLY SANDY.
14.00	15.00	1.00	SHALE : 39BFRT dark grey.
15.00	18.50	3.50	SILTSTONE : 39BFRT
18.50	20.50	2.00	SHALE : 39BFRT
20.50	28.00	7.50	SANDSTONE : 39BFRT light blue.
28.00	29.00	1.00	SHALE : 39BFRT dark grey.
29.00	36.00	7.00	SANDSTONE : 39BFRT ALTERNATING WITH SILTSTONE.
36.00	38.00	2.00	SILTSTONE AND SHALE : 39BFRT BLACK SHALE.
38.00	41.00	3.00	SANDSTONE : 39BFRT ALTERNATING WITH SILTSTONE.

Geohydrology

(no information.)

* G-BASE * S I T E R E P O R T * DATE : 12 January 1990
Generated for : DEWETSDORP - IGS/WRC PROJECT

Site name : KAREEFONTEIN, well cap on Golf Course
Remarks :

Site ID: 2926DA36446	Number on map: G36446
Y-Coordinate: 32198.41	X-Coordinate: 3272722.35
Ground Elevation: 1523.52 mamsl	Collar Height: 0.45 m
Depth of Casing: 6.00 m	Diameter of Hole: 165 mm
Logged by: IGS	Date Drilled: 19850130

Depth (m) From	To	Thickness (m)	Description

Geology

0.00	5.00	5.00	CLAY : 46RCNT brown.
5.00	17.00	12.00	SILTSTONE AND SHALE : 39BFRT red. RED SHALE ALTERNATING WITH GREYISH GREEN SHALE/MUDSTONE.
17.00	19.00	2.00	SHALE AND SILTSTONE : 39BFRT bluish grey.
19.00	20.00	1.00	SHALE AND SILTSTONE : 39BFRT red. AS AT 5 - 17 M.
20.00	23.00	3.00	SILTSTONE : 39BFRT bluish grey. WITH SHALE, GRADING DOWNWARDS INTO FINE SANDY FACIES.
23.00	25.00	2.00	SANDSTONE : 39BFRT fine grained. WITH THIN DARK GREY SHALE BANDS.
25.00	29.00	4.00	SANDSTONE : 39BFRT fine grained. THIN-LAYERED WITH INTERCALATED SHALE BANDS.
29.00	31.00	2.00	SANDSTONE : 39BFRT
31.00	34.00	3.00	SANDSTONE AND SHALE : 39BFRT dark grey. WITH DARK GREY SHALE; DOWNWARDS MORE MUDDY.
34.00	39.00	5.00	MUDSTONE : 39BFRT WITH INTERCALATED SHALE BANDS.
39.00	42.00	3.00	MUDSTONE : 39BFRT sandy. DOWNWARDS SANDY
42.00	48.00	6.00	SHALE AND SILTSTONE : 39BFRT red.
48.00	54.00	6.00	SANDSTONE AND SHALE : 39BFRT SANDSTONE WITH A FEW THIN SHALE LAYERS.

Geohydrology

41.00	0.00	1080 litres/hour yield YIELD 0,333 l/s DURING BLOW TEST AFTER COMPL.

* G-BASE * S I T E R E P O R T * DATE : 12 January 1990
Generated for : DEWETSDORP - IGS/WRC PROJECT

Site name : KAREEFONTEIN, at Golf course near brickfield
Remarks :

Site ID: 2926DA36447	Number on map: G36447
Y-Coordinate: 32143.62	X-Coordinate: 3272571.44
Ground Elevation: 1525.34 mamsl	Collar Height: 0.34 m
Depth of Casing: 3.00 m	Diameter of Hole: 165 mm
Logged by: ****	Date Drilled: 19850130

Depth (m) From	To	Thickness (m)	Description

Geology

0.00	2.00	2.00	CLAY : 46RCNT brown.
2.00	4.00	2.00	MUDSTONE : 39BFRT weathered.
4.00	6.00	2.00	SHALE : 39BFRT red; slightly weathered.
6.00	9.00	3.00	MUDSTONE : 39BFRT yellowish green.
9.00	16.00	7.00	SILTSTONE AND SHALE : 39BFRT red. RED SHALE ALTERNATING WITH PALE GREEN MUDSTONE.
16.00	17.00	1.00	MUDSTONE : 39BFRT
17.00	18.00	1.00	SHALE AND SILTSTONE : 39BFRT red.
18.00	22.00	4.00	MUDSTONE : 39BFRT bluish grey.
22.00	23.00	1.00	SHALE : 39BFRT red.
23.00	25.00	2.00	MUDSTONE : 39BFRT greyish blue.
25.00	30.00	5.00	SANDSTONE : 39BFRT slightly silty. WITH FEW MUDSTONE LAYERS.
30.00	35.00	5.00	SANDSTONE : 39BFRT fine grained.
35.00	36.00	1.00	SILTSTONE AND SHALE : 39BFRT BLACK SHALE BANDS.
36.00	37.00	1.00	SANDSTONE : 39BFRT With siltstone layers.
37.00	39.00	2.00	SILTSTONE AND SHALE : 39BFRT Dark grey shale intercalated.
39.00	40.00	1.00	SANDSTONE : 39BFRT fine grained.

Geohydrology

(no information.)

* G-BASE * S I T E R E P O R T * DATE : 12 January 1990
Generated for : DEWETSDORP - IGS/WRC PROJECT

Site name : KAREEFONTEIN, furthest in Pump Camp
Remarks : On dolerite dyke. Dry when drilled.

Site ID: 2926DA36448	Number on map: G36448
Y-Coordinate: 30550.00	X-Coordinate: 3270925.00
Ground Elevation: 1492.00 mamsl	Collar Height: 0.26 m
Depth of Casing: 7.00 m	Diameter of Hole: 165 mm
Logged by: ****	Date Drilled: 19850131

Depth (m) From	To	Thickness (m)	Description

Geology

0.00	6.00	6.00	CLAY : 46RCNT sandy. WITH SANDY TOP SOIL.
6.00	9.00	3.00	MUDSTONE : 39BFRT reddish yellow.
9.00	15.00	6.00	MUDSTONE : 39BFRT red. RED AND GREYISH GREEN MUDSTONE.
15.00	19.00	4.00	SHALE : 39BFRT greyish blue.
19.00	30.00	11.00	SILTSTONE AND SHALE : 39BFRT greyish blue. INTERCALATED GREY-GREEN SHALE.
30.00	31.00	1.00	SHALE : 39BFRT
31.00	33.00	2.00	MUDSTONE : 39BFRT greyish blue.
33.00	37.00	4.00	SANDSTONE : 39BFRT greyish blue.
37.00	41.00	4.00	SILTSTONE AND SHALE : 39BFRT greyish blue. SILTSTONE WITH SHALE/MUDSTONE GREYISH BLUE/GREEN.

Geohydrology

(no information.)

* HydroBase * S I T E R E P O R T * DATE : 23 March 1990
Generated for : Dewetsdorp - IGS/WRC Research project

Site name : FRANKFÜRT, recorder in SW corner of farm
Site purpose :

Site ID: 2926DA36449	Number on map: G36449
E-W coordinate : 30493.69	N-S coordinate : 3270601.34
Ground Elevation: 1489.22 mamsl	Collar Height: 0.38 m
Depth of Casing: 12.00 m	Diameter of Hole: 165 mm
Logged by: IGS	Date Drilled: 19850131

Depth (m) from	to	Thickness (m)	Description
Geology			
0.00	6.00	6.00	SAND AND CLAY : 46RCNT reddish brown. Reddish brown clay
6.00	10.00	4.00	SANDSTONE AND SHALE : 39BFRT yellow.
10.00	16.00	6.00	SHALE : 39BFRT red.
16.00	20.00	4.00	SANDSTONE : 39BFRT greyish blue. Coarse fragments; fine sandy facies.
20.00	23.00	3.00	MUDSTONE : 39BFRT greyish green.
23.00	24.00	1.00	SHALE : 39BFRT red.
24.00	29.00	5.00	SANDSTONE : 39BFRT greyish blue. Shaley sandstone.
29.00	34.00	5.00	SANDSTONE : 39BFRT fine grained; greyish blue. With intercalated mudstone and greyish green shale
34.00	35.00	1.00	SANDSTONE : 39BFRT Big fragments; calcite filled joints +/- 0.5 cm. No water.
35.00	38.00	3.00	SILTSTONE : 39BFRT greyish blue.
38.00	43.00	5.00	SHALE : 39BFRT greyish green.
43.00	48.00	5.00	SHALE AND SILTSTONE : 39BFRT red. with greyish blue shale.
48.00	56.00	8.00	SILTSTONE AND SHALE : 39BFRT greyish blue.
56.00	57.00	1.00	SANDSTONE : 39BFRT fine grained.
57.00	66.00	9.00	SILTSTONE AND SHALE : 39BFRT greyish blue. with intercalated red shale.
66.00	67.00	1.00	SANDSTONE : 39BFRT
67.00	77.00	10.00	SILTSTONE AND SHALE : 39BFRT in places sandy.
77.00	83.00	6.00	SHALE : 39BFRT greyish red.
83.00	91.00	8.00	SANDSTONE : 39BFRT coarse grained; blue. with a few red/black shale layers near the bottom.
91.00	95.00	4.00	SANDSTONE : 39BFRT fine grained. interbedded with shale.
95.00	101.00	6.00	SHALE AND SILTSTONE : 39BFRT greyish red.
Geohydrology			
18.00	0.00		2520 litres/hour yield

* G-BASE * S I T E R E P O R T * DATE : 12 January 1990
Generated for : DEWETSDORP - IGS/WRC PROJECT

Site name : ELIM (JOUBERTS RUST), near railway crossing
Remarks :

Site ID: 2926DA36450 Number on map: G36450
Y-Coordinate: 30200.00 X-Coordinate: 3270575.00
Ground Elevation: 1488.00 mamsl Collar Height: 0.28 m
Depth of Casing: 12.00 m Diameter of Hole: 165 mm
Logged by: IGS Date Drilled: 19850131

Depth (m) From	To	Thickness (m)	Description
Geology			
0.00	4.00	4.00	CLAY : 46RCNT yellowish brown.
4.00	8.00	4.00	CLAY : 46RCNT reddish brown.
8.00	11.00	3.00	SHALE : 39BFRT red; weathered.
11.00	15.00	4.00	MUDSTONE : 39BFRT greyish green. sandy facies at bottom.
15.00	18.00	3.00	SHALE : 39BFRT red.
18.00	22.00	4.00	SHALE AND SILTSTONE : 39BFRT alternating greyish blue siltstone and red shale.
22.00	25.00	3.00	SANDSTONE : 39BFRT fine grained; blue.
25.00	28.00	3.00	SILTSTONE AND SHALE : 39BFRT greyish blue. few thin, red shale layers.
28.00	31.00	3.00	SHALE : 39BFRT red.
31.00	35.00	4.00	SANDSTONE : 39BFRT fine grained; blue.
35.00	36.00	1.00	SILTSTONE : 39BFRT
36.00	37.00	1.00	SANDSTONE : 39BFRT
37.00	41.00	4.00	SILTSTONE : 39BFRT sandy. predominantly siltstone alternating with more sandy facies and a few thin dark red shale layers.
Geohydrology			
20.00	0.00		3960 litres/hour yield

* G-BASE * S I T E R E P O R T * DATE : 12 January 1990
Generated for : DEWETSDORP - IGS/WRC PROJECT

Site name : FRANKFÜRT, recorder site 300 m SE FRT 1
Remarks : Dry when drilled. Depth on 30-5-1988 6.92 m

Site ID: 2926DA36451 Number on map: G36451

Y-Coordinate: 30750.00 X-Coordinate: 3270550.00
Ground Elevation: 1490.00 mamsl Collar Height: 0.10 m
Depth of Casing: 2.00 m Diameter of Hole: 165 mm
Logged by: **** Date Drilled: 19850201

Geology

Depth (m) From	To	Thickness (m)	Description
0.00	6.00	6.00	CLAY : 46RCNT bluish red.
6.00	8.00	2.00	SHALE : 39BFRT red; weathered.
8.00	13.00	5.00	SHALE : 39BFRT red; slightly weathered. with green mudstone.
13.00	16.00	3.00	SHALE : 39BFRT red. with subordinate greenish grey mudstone.
16.00	19.00	3.00	SHALE : 39BFRT red. with green mudstone.
19.00	21.00	2.00	SHALE AND SILTSTONE : 39BFRT red. with greyish blue fine-grained sandstone.
21.00	22.00	1.00	SANDSTONE : 39BFRT fine grained; greyish blue.
22.00	25.00	3.00	MUDSTONE : 39BFRT greyish blue.
25.00	28.00	3.00	SANDSTONE : 39BFRT fine grained; greyish blue.
28.00	30.00	2.00	SANDSTONE : 39BFRT fine grained; greyish blue. alternating with siltstone.

Geohydrology

(no information.)

* G-BASE * S I T E R E P O R T * DATE : 12 January 1990
Generated for : DEWETSDORP - IGS/WRC PROJECT

Site name : FRANKFÜRT, along road near Kareefonteinspruit
Remarks :

Site ID: 2926DA36452	Number on map: G36452
Y-Coordinate: 30564.23	X-Coordinate: 3270426.68
Ground Elevation: 1488.78 mamsl	Collar Height: 0.35 m
Depth of Casing: 12.00 m	Diameter of Hole: 165 mm
Logged by: IGS	Date Drilled: 19850201

Depth (m) From	To	Thickness (m)	Description
Geology			
0.00	11.00	11.00	CLAY : 46RCNT reddish brown.
11.00	13.00	2.00	MUDSTONE : 39BFRT green.
13.00	16.00	3.00	SILTSTONE : 39BFRT in places sandy; with darker shale bands.
16.00	19.00	3.00	SANDSTONE : 39BFRT greyish blue. with coarse fragments; rust stained.
19.00	30.00	11.00	SANDSTONE : 39BFRT fine grained. with intercalated siltstone and shale.
Geohydrology			
17.00	0.00		1080 litres/hour yield

* G-BASE * S I T E R E P O R T * DATE : 12 January 1990
Generated for : DEWETSDORP - IGS/WRC PROJECT

Site name : ELIM (JOUBERTS RUST)
Remarks : In SW corner of farm near concrete reservoir. Dry when drilled. Collapsed since 3-12-1985 (1 m deep).

Site ID: 2926DA36453 Number on map: G36453

Y-Coordinate: 30155.00 X-Coordinate: 3270780.00
Ground Elevation: 1492.00 mamsl Collar Height: 0.00 m
Depth of Casing: 2.00 m Diameter of Hole: 165 mm
Logged by: **** Date Drilled: 19850201

Depth (m) From	To	Thickness (m)	Description

Geology

0.00	1.00	1.00	CLAY : 46RCNT
1.00	2.00	1.00	MUDSTONE : 39BFRT greenish yellow.
2.00	8.00	6.00	MUDSTONE : 39BFRT bluish grey.
8.00	17.00	9.00	SHALE : 39BFRT red. with interclated bluish grey shale.
17.00	21.00	4.00	SILTSTONE : 39BFRT greyish blue.
21.00	25.00	4.00	SHALE : 39BFRT red.
25.00	29.00	4.00	SILTSTONE : 39BFRT greyish blue.
29.00	31.00	2.00	SANDSTONE : 39BFRT fine grained. with siltstone.
31.00	32.00	1.00	SHALE : 39BFRT grey; dark.
32.00	35.00	3.00	SANDSTONE : 39BFRT red. with intercalated fine-grained blue sandstone.
35.00	39.00	4.00	SILTSTONE : 39BFRT greyish blue. in places sandy.
39.00	41.00	2.00	SILTSTONE AND SHALE : 39BFRT red.

Geohydrology

(no information.)

* G-BASE * S I T E R E P O R T * DATE : 12 January 1990
Generated for : DEWETSDORP - IGS/WRC PROJECT

Site name : KAREEFONTEIN, recorder W road to Elim
Remarks : AFFECTED BY PUMPING OF MUNICIPAL WELL FIELD.

Site ID: 2926DA36454	Number on map: G36454
Y-Coordinate: 30190.00	X-Coordinate: 3271230.00
Ground Elevation: 1501.00 mamsl	Collar Height: 0.09 m
Depth of Casing: 2.00 m	Diameter of Hole: 165 mm
Logged by: ****	Date Drilled: 19850204

Depth (m) From	To	Thickness (m)	Description

Geology

0.00	3.00	3.00	SHALE : 46RCNT red. with greyish green mudstone.
3.00	6.00	3.00	SHALE : 46RCNT red.
6.00	7.00	1.00	MUDSTONE : 39BFRT greyish green.
7.00	9.00	2.00	SHALE : 39BFRT red.
9.00	10.00	1.00	MUDSTONE : 39BFRT greyish green.
10.00	11.00	1.00	SHALE : 39BFRT red.
11.00	13.00	2.00	MUDSTONE : 39BFRT greyish green. with dark grey shale.
13.00	18.00	5.00	SANDSTONE AND SHALE : 39BFRT fine grained; yellowish green. with siltstone and dark grey mudstone and few red shale bands.
18.00	21.00	3.00	SILTSTONE AND SHALE : 39BFRT bluish grey. thin black shale layer at 20 m.
21.00	24.00	3.00	SHALE AND SILTSTONE : 39BFRT red. with greyish blue shale/siltstone.
24.00	25.00	1.00	SILTSTONE : 39BFRT greyish blue.
25.00	27.00	2.00	SHALE : 39BFRT red.
27.00	33.00	6.00	SHALE : 39BFRT red. with dark greyish blue mudstone/siltstone.
33.00	35.00	2.00	SILTSTONE AND SHALE : 39BFRT greyish blue.
35.00	36.00	1.00	SANDSTONE : 39BFRT greyish blue.
36.00	39.00	3.00	SILTSTONE : 39BFRT greyish blue. in places sandy; red shale near the bottom.
39.00	41.00	2.00	SILTSTONE : 39BFRT bluish grey. with red shale.

Geohydrology

(no information.)

* G-BASE * S I T E R E P O R T * DATE : 12 January 1990
Generated for : DEWETSDORP - IGS/WRC PROJECT

Site name : FRANKFÜRT, next gate on road to Frankfürt
Remarks :

Site ID: 2926DA36455 Number on map: G36455

Y-Coordinate: 32172.45 X-Coordinate: 3270261.06
Ground Elevation: 1525.12 mamsl Collar Height: 0.12 m
Depth of Casing: 6.00 m Diameter of Hole: 165 mm
Logged by: IGS Date Drilled: 19850204

Depth (m) From	To	Thickness (m)	Description
Geology			
0.00	5.00	5.00	CLAY : 46RCNT reddish brown.
5.00	11.00	6.00	SHALE : 39BFRT red. alternating with light green mudstone/shale.
11.00	15.00	4.00	MUDSTONE : 39BFRT greyish green. with intercalated red and dark grey shale.
15.00	20.00	5.00	SILTSTONE : 39BFRT bluish grey.
20.00	24.00	4.00	SHALE AND SILTSTONE : 39BFRT red. bluish grey intercalated siltstone.
24.00	27.00	3.00	SILTSTONE : 39BFRT bluish grey.
27.00	35.00	8.00	SANDSTONE : 39BFRT fine grained; bluish grey. in places grading into siltstone.
Geohydrology			
35.00	0.00		0 litres/hour yield

* G-BASE * S I T E R E P O R T * DATE : 12 January 1990
Generated for : DEWETSDORP - IGS/WRC PROJECT

Site name : KAREEFONTEIN, along Frankfürt fence
Remarks :

Site ID: 2926DA36456 Number on map: G36456
Y-Coordinate: 31701.96 X-Coordinate: 3271351.36
Ground Elevation: 1512.75 mamsl Collar Height: 0.12 m
Depth of Casing: 2.00 m Diameter of Hole: 165 mm
Logged by: IGS Date Drilled: 19850204

Depth (m) From	To	Thickness (m)	Description
Geology			
0.00	0.50	0.50	SOIL : 46RCNT
0.50	8.00	7.50	SANDSTONE : 39BFRT greenish yellow.
8.00	9.00	1.00	SILTSTONE : 39BFRT green.
9.00	11.00	2.00	SILTSTONE : 39BFRT bluish grey.
11.00	15.00	4.00	SANDSTONE : 39BFRT fine grained; bluish grey. with alternating siltstone layers.
15.00	16.00	1.00	SILTSTONE : 39BFRT
16.00	20.00	4.00	SANDSTONE : 39BFRT fine grained; blue.
20.00	24.00	4.00	SILTSTONE AND SHALE : 39BFRT blue. (red shale layers).
24.00	25.00	1.00	SANDSTONE : 39BFRT fine grained.
25.00	30.00	5.00	SILTSTONE AND SHALE : 39BFRT bluish grey; sandy. (red shale layers); in places sandy.
Geohydrology			
18.00	0.00		1000 litres/hour yield

* HydroBase * S I T E R E P O R T * DATE : 23 March 1990
Generated for : Dewetsdorp - IGS/WRC Research project

Site name : KAREEFONTEIN, well cap N of Cemetery
Site purpose : Dry when drilled.

Site ID: 2926DA36457 Number on map: G36457

E-W coordinate : 32517.44 N-S coordinate : 3273466.28
Ground Elevation: 1565.84 mamsl Collar Height: 0.48 m
Depth of Casing: 5.00 m Diameter of Hole: 165 mm
Logged by: **** Date Drilled: 19850205

Depth (m) from	to	Thickness (m)	Description
Geology			
0.00	5.00	5.00	CLAY : 46RCNT blue. with fragments of red shale; yellowish green shale; and dolerite.
5.00	6.00	1.00	CLAY : 46RCNT with dolerite gravel.
6.00	16.00	10.00	MUDSTONE : 39BFRT light yellow. sandy at the base.
16.00	21.00	5.00	SILTSTONE : 39BFRT very fine to fine grained.
21.00	29.00	8.00	SANDSTONE : 39BFRT fine grained; silty. Gritty silty sandstone
29.00	31.00	2.00	SILTSTONE AND SHALE : 39BFRT red.
31.00	34.00	3.00	SHALE : 39BFRT red.
34.00	39.00	5.00	SILTSTONE AND SHALE : 39BFRT red.
39.00	41.00	2.00	SHALE : 39BFRT red.
41.00	44.00	3.00	SILTSTONE : 39BFRT
44.00	45.00	1.00	SHALE : 39BFRT red.
45.00	49.00	4.00	SILTSTONE : 39BFRT

Geohydrology

(no information.)

* HydroBase * S I T E R E P O R T * DATE : 23 March 1990
Generated for : Dewetsdorp - IGS/WRC Research project

Site name : KAREEFONTEIN, recorder N of Cemetery
Site purpose : DRY WHEN DRILLED. LOT OF VARIATIONS BEFORE MARCH 1987.

Site ID: 2926DA36458 | Number on map: G36458
E-W coordinate : 32635.66 | N-S coordinate : 3272671.10
Ground Elevation: 1545.21 mamsl | Collar Height: 0.21 m
Depth of Casing: 2.00 m | Diameter of Hole: 165 mm
Logged by: **** | Date Drilled: 19850205

Depth (m) from	to	Thickness (m)	Description

Geology

0.00	1.00	1.00	SOIL : 46RCNT sandy.
1.00	2.00	1.00	CLAY : 46RCNT
2.00	5.00	3.00	CLAY : 46RCNT with small pieces of dolerite.
5.00	8.00	3.00	DOLERITE : 40KRDL
8.00	12.00	4.00	SILTSTONE : 39BFRT very fine grained; light grey. Light grey siltstone/mudstone, fine powder
12.00	14.00	2.00	SHALE : 39BFRT red.
14.00	17.00	3.00	SILTSTONE : 39BFRT bluish grey.
17.00	19.00	2.00	SANDSTONE : 39BFRT fine grained; light blue.
19.00	22.00	3.00	SHALE AND SILTSTONE : 39BFRT red. alternating; (greyish blue siltstone).
22.00	23.00	1.00	SILTSTONE : 39BFRT with rust spots.
23.00	24.00	1.00	SANDSTONE : 39BFRT fine grained; light blue. with rust spots.
24.00	27.00	3.00	SILTSTONE AND SHALE : 39BFRT
27.00	31.00	4.00	SHALE : 39BFRT red. with few dark greyish green layers.
31.00	35.00	4.00	SILTSTONE AND SHALE : 39BFRT (red shale); in places sandy.
35.00	37.00	2.00	SILTSTONE AND SHALE : 39BFRT (red and dark grey shale).
37.00	38.00	1.00	SANDSTONE : 39BFRT light blue.
38.00	41.00	3.00	SILTSTONE AND SHALE : 39BFRT greyish blue. (red shale).

Geohydrology

(no information.)

* G-BASE * S I T E R E P O R T * DATE : 12 January 1990
Generated for : DEWETSDORP - IGS/WRC PROJECT

Site name : KAREEFONTEIN, near gate opposite Pump Camp
Remarks :

Site ID: 2926DA36459	Number on map: G36459
Y-Coordinate: 31294.16	X-Coordinate: 3272166.84
Ground Elevation: 1508.03 mamsl	Collar Height: 0.21 m
Depth of Casing: 2.00 m	Diameter of Hole: 165 mm
Logged by: ****	Date Drilled: 19850204

Depth (m) From	To	Thickness (m)	Description
Geology			
0.00	1.00	1.00	CLAY : 46RCNT brown.
1.00	5.00	4.00	SANDSTONE : 39BFRT yellowish green.
5.00	9.00	4.00	SANDSTONE : 39BFRT bluish grey. alternating with bluish green siltstone.
9.00	17.00	8.00	SANDSTONE : 39BFRT fine grained; blue. downwards slightly coarser (fine-grained) facies.
17.00	18.00	1.00	SILTSTONE : 39BFRT
18.00	19.00	1.00	SANDSTONE : 39BFRT
19.00	22.00	3.00	SILTSTONE : 39BFRT blue.
22.00	24.00	2.00	SANDSTONE : 39BFRT fine grained.
24.00	26.00	2.00	SILTSTONE : 39BFRT
26.00	30.00	4.00	SANDSTONE : 39BFRT fine grained.
Geohydrology			
			30 litres/hour yield. Moist at 15 m.

* G-BASE * S I T E R E P O R T * DATE : 12 January 1990
Generated for : DEWETSDORP - IGS/WRC PROJECT

Site name : KAREEFONTEIN, NE Wepener Road near junction
Remarks : Dry when drilled.

Site ID: 2926DA36460 Number on map: G36460

Y-Coordinate: 30376.68 X-Coordinate: 3272688.35
Ground Elevation: 1518.00 mamsl Collar Height: 0.31 m
Depth of Casing: 2.00 m Diameter of Hole: 165 mm
Logged by: **** Date Drilled: 19850204

Depth (m) From	To	Thickness (m)	Description
Geology			
0.00	3.00	3.00	SHALE : 39BFRT red; weathered.
3.00	5.00	2.00	SHALE : 39BFRT red. with greyish green mudstone in places.
5.00	10.00	5.00	MUDSTONE : 39BFRT greyish green.
10.00	14.00	4.00	SHALE : 39BFRT red. with greyish green mudstone.
14.00	15.00	1.00	SILTSTONE : 39BFRT greenish grey.
15.00	18.00	3.00	SANDSTONE : 39BFRT fine grained; bluish grey.
18.00	26.00	8.00	SILTSTONE AND SHALE : 39BFRT bluish grey. (red shale intercalated).
26.00	28.00	2.00	SANDSTONE : 39BFRT grading into siltstone.
28.00	30.00	2.00	SILTSTONE : 39BFRT
Geohydrology			
(no information.)			

* HydroBase * S I T E R E P O R T * DATE : 23 March 1990
Generated for : Dewetsdorp - IGS/WRC Research project

Site name : KAREEFONTEIN, Wepener Road 2km from junction
Site purpose :

Site ID: 2926DA36461 Number on map: G36461

E-W coordinate : 29714.73 N-S coordinate : 3273201.82
Ground Elevation: 1506.45 mamsl Collar Height: 0.31 m
Depth of Casing: 2.00 m Diameter of Hole: 165 mm
Logged by: IGS Date Drilled: 19850204

Depth (m) from	to	Thickness (m)	Description
Geology			
0.00	2.00	2.00	CLAY : 39BFRT sandy.
2.00	4.00	2.00	SANDSTONE AND SHALE : 39BFRT brownish yellow; weathered.
4.00	14.00	10.00	SHALE AND SILTSTONE : 39BFRT greyish blue. (alternating red shale).
14.00	17.00	3.00	SILTSTONE : 39BFRT greyish blue. Bluegrey/green siltstone
17.00	18.00	1.00	SANDSTONE : 39BFRT fine grained; blue.
18.00	24.00	6.00	DOLERITE : 40KRDL coarse crystalline. coarse fragments in upper 2 m; rust stained.
24.00	25.00	1.00	SANDSTONE : 39BFRT blue.
25.00	30.00	5.00	SILTSTONE AND SHALE : 39BFRT bluish grey. with dark greyish blue shale layers.
Geohydrology			
19.00	0.00		280 litres/hour yield

* G-BASE * S I T E R E P O R T * DATE : 12 January 1990
Generated for : DEWETSDORP - IGS/WRC PROJECT

Site name : KAREEFONTEIN, in Stadion
Remarks : Partly collapsed 27-4-1987. Depth 1,20 m (16-5-88)

Site ID: 2926DA36462	Number on map: G36462
Y-Coordinate: 31162.18	X-Coordinate: 3273304.84
Ground Elevation: 1500.00 mamsl	Collar Height: 0.13 m
Depth of Casing: 2.00 m	Diameter of Hole: 165 mm
Logged by: ****	Date Drilled: 19850205

Depth (m) From	To	Thickness (m)	Description

Geology

0.00	5.00	5.00	LOAM : 46RCNT brown; sandy.
5.00	8.00	3.00	SILTSTONE : 39BFRT yellow.
8.00	10.00	2.00	SHALE : 39BFRT red.
10.00	14.00	4.00	SANDSTONE : 39BFRT fine grained; bluish grey. grading into siltstone.
14.00	18.00	4.00	SHALE : 39BFRT red.
18.00	21.00	3.00	SILTSTONE AND SHALE : 39BFRT blue.
21.00	24.00	3.00	SILTSTONE : 39BFRT greyish blue.
24.00	25.00	1.00	SANDSTONE : 39BFRT fine grained.
25.00	29.00	4.00	SILTSTONE : 39BFRT blue. subordinate intercalated sandy facies; few thin shale bands.
29.00	30.00	1.00	SANDSTONE : 39BFRT fine grained.

Geohydrology

30 litres/hour yield.

* HydroBase * S I T E R E P O R T * DATE : 23 March 1990
Generated for : Dewetsdorp - IGS/WRC Research project

Site name : KAREEFONTEIN, recorder upstream of Location
Site purpose :

Site ID: 2926DA36463	Number on map: G36463
E-W coordinate : 31268.98	N-S coordinate : 3274592.01
Ground Elevation: 1555.00 mamsl	Collar Height: 0.13 m
Depth of Casing: 2.00 m	Diameter of Hole: 165 mm
Logged by: ****	Date Drilled: 19850205

Depth (m) from	to	Thickness (m)	Description
Geology			
0.00	2.00	2.00	SANDSTONE AND SHALE : 39BFRT yellow. Mudstone and sandstone
2.00	11.00	9.00	SANDSTONE : 39BFRT fine grained; light green.
11.00	21.00	10.00	SHALE AND SILTSTONE : 39BFRT red. (alternating greyish blue siltstone in places).
21.00	23.00	2.00	SILTSTONE : 39BFRT bluish grey.
23.00	30.00	7.00	SANDSTONE : 39BFRT fine grained; blue. alternating with greyish blue siltstone.
Geohydrology			
			30 litres/hour yield. Moist at 17 m.

* G-BASE * S I T E R E P O R T * DATE : 12 January 1990
Generated for : DEWETSDORP - IGS/WRC PROJECT

Site name : KAREEFONTEIN, in Middle Camp SW of recorder
Remarks :

Site ID: 2926DA36464	Number on map: G36464
Y-Coordinate: 31291.83	X-Coordinate: 3271197.83
Ground Elevation: 1502.52 mamsl	Collar Height: 0.33 m
Depth of Casing: 6.00 m	Diameter of Hole: 165 mm
Logged by: ****	Date Drilled: 19850207

Depth (m) From	To	Thickness (m)	Description
Geology			
0.00	5.00	5.00	LOAM : 46RCNT fine grained; brown; slightly sandy.
5.00	6.00	1.00	MUDSTONE : 39BFRT weathered.
6.00	10.00	4.00	MUDSTONE : 39BFRT yellowish grey.
10.00	11.00	1.00	SILTSTONE : 39BFRT greyish yellow; jointed. rust stained.
11.00	13.00	2.00	SANDSTONE : 39BFRT greenish yellow; jointed. with heavy rust stains.
13.00	16.00	3.00	SILTSTONE : 39BFRT slightly jointed.
16.00	18.00	2.00	SILTSTONE : 39BFRT grading into sandstone; with few thin shale bands.
18.00	19.00	1.00	SANDSTONE : 39BFRT fine grained; blue.
19.00	22.00	3.00	SHALE AND SILTSTONE : 39BFRT red. (intercalated siltstone).
22.00	24.00	2.00	SILTSTONE : 39BFRT
24.00	31.00	7.00	SHALE AND SILTSTONE : 39BFRT red. (intercalated blue siltstone).
31.00	35.00	4.00	SILTSTONE : 39BFRT
35.00	37.00	2.00	SANDSTONE : 39BFRT fine grained.
37.00	40.00	3.00	SHALE AND SILTSTONE : 39BFRT red. (alternating siltstone).
Geohydrology			
			30 litres/hour yield.

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* G-BASE *  S I T E   R E P O R T  *            DATE : 12 January 1990
Generated for : DEWETSDORP - IGS/WRC PROJECT
==========================================================================

Site name : KAREEFONTEIN, E of Road Camp (S of G 36431)
Remarks :
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Site ID: 2926DA36465            Number on map: G36465
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Y-Coordinate:  32615.66         X-Coordinate: 3270954.83
Ground Elevation: 1528.41 mamsl Collar Height: 0.17 m
Depth of Casing:  2.00 m        Diameter of Hole:  165 mm
Logged by: IGS                  Date Drilled: 19850207
--------------------------------------------------------------------------
  Depth (m)  Thickness
  From   To    (m)              Description
--------------------------------------------------------------------------
Geology

  0.00   5.00  5.00 CLAY : 46RCNT brown.
  5.00   8.00  3.00 SILTSTONE : 39BFRT greyish yellow.
  8.00   9.00  1.00 SHALE : 39BFRT red.
  9.00  10.00  1.00 MUDSTONE : 39BFRT greyish green.
 10.00  11.00  1.00 SHALE : 39BFRT red.
 11.00  15.00  4.00 SILTSTONE AND SHALE : 39BFRT red. (alternating).
 15.00  16.00  1.00 SHALE : 39BFRT red.
 16.00  19.00  3.00 SHALE : 39BFRT bluish grey. alternating with red
                    shale.
 19.00  29.00 10.00 SILTSTONE : 39BFRT  with intercalated red shale
                    bands; prominent rust stains between 27 and 29 m.
 29.00  34.00  5.00 SANDSTONE : 39BFRT fine grained; blue.
 34.00  36.00  2.00 SILTSTONE : 39BFRT
 36.00  39.00  3.00 SANDSTONE : 39BFRT fine grained.
 39.00  41.00  2.00 SILTSTONE : 39BFRT

Geohydrology

 29.00    0.00      280 litres/hour  yield.

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* G-BASE * S I T E R E P O R T * DATE : 12 January 1990
Generated for : DEWETSDORP - IGS/WRC PROJECT

Site name : KAREEFONTEIN, E of Road Camp (W of G 36431)
Remarks : Dry when drilled.

Site ID: 2926DA36466	Number on map: G36466
Y-Coordinate: 32622.99	X-Coordinate: 3270946.69
Ground Elevation: 1528.54 mamsl	Collar Height: 0.21 m
Depth of Casing: 3.00 m	Diameter of Hole: 165 mm
Logged by: ****	Date Drilled: 19850207

Depth (m) From	To	Thickness (m)	Description
Geology			
0.00	3.00	3.00	CLAY : 46RCNT brown.
3.00	5.00	2.00	LOAM : 46RCNT
5.00	8.00	3.00	MUDSTONE : 39BFRT yellowish grey.
8.00	17.00	9.00	SHALE : 39BFRT red. alternating with greyish green mudstone.
17.00	28.00	11.00	SILTSTONE AND SHALE : 39BFRT bluish grey. (red shale intercalated); rust stains at 21 m.
28.00	29.00	1.00	SILTSTONE : 39BFRT
29.00	34.00	5.00	SANDSTONE : 39BFRT fine grained. alternating with siltstone; rust-stained.
34.00	35.00	1.00	SILTSTONE : 39BFRT
35.00	41.00	6.00	SANDSTONE : 39BFRT fine grained. alternating with siltstone and few thin dark grey shale bands; rust-stained at 36 m.

Geohydrology

(no information.)

* G-BASE * S I T E R E P O R T * DATE : 12 January 1990
Generated for : DEWETSDORP - IGS/WRC PROJECT

Site name : KAREEFONTEIN, E of Road Camp (E of G 36431)
Remarks :

Site ID: 2926DA36467	Number on map: G36467
Y-Coordinate: 32599.78	X-Coordinate: 3270937.84
Ground Elevation: 1527.64 mamsl	Collar Height: 0.27 m
Depth of Casing: 4.00 m	Diameter of Hole: 165 mm
Logged by: IGS	Date Drilled: 19850208

Depth (m) From	To	Thickness (m)	Description
Geology			
0.00	4.00	4.00	GRAVEL AND CLAY : 46RCNT brown. (of sandstone and dolerite origin).
4.00	6.00	2.00	LOAM : 46RCNT brown; slightly sandy. with fragments of black shale and dolerite.
6.00	7.00	1.00	LOAM : 46RCNT brown; slightly sandy. with mudstone fragments.
7.00	8.00	1.00	MUDSTONE : 39BFRT weathered.
8.00	11.00	3.00	SHALE : 39BFRT red; weathered.
11.00	16.00	5.00	MUDSTONE : 39BFRT greyish green. alternating with red shale.
16.00	18.00	2.00	SILTSTONE AND SHALE : 39BFRT greyish green. (red shale layers).
18.00	20.00	2.00	SHALE : 39BFRT bluish grey. with thin red shale bands.
20.00	24.00	4.00	SILTSTONE : 39BFRT very jointed. heavily stained; dendrites on joint planes; coarse fragments.
24.00	26.00	2.00	SILTSTONE AND SHALE : 39BFRT (red shale intercalated).
26.00	29.00	3.00	SILTSTONE : 39BFRT slightly weathered. with fine-grained sandstone and pale green fragments of siltstone.
29.00	32.00	3.00	SANDSTONE : 39BFRT fine grained.
32.00	38.00	6.00	SANDSTONE : 39BFRT fine grained. alternating with siltstone; few slightly weathered pale green siltstone fragments.
38.00	41.00	3.00	SANDSTONE : 39BFRT with few interbedded siltstone layers.
Geohydrology			
21.00	0.00		4320 litres/hour yield

* G-BASE * S I T E R E P O R T * DATE : 12 January 1990
Generated for : DEWETSDORP - IGS/WRC PROJECT

Site name : KAREEFONTEIN, E of Road Camp (N of G36431)
Remarks : Dry when drilled.

Site ID: 2926DA36468	Number on map: G36468
Y-Coordinate: 32630.51	X-Coordinate: 3270906.79
Ground Elevation: 1527.85 mamsl	Collar Height: 0.36 m
Depth of Casing: 6.00 m	Diameter of Hole: 165 mm
Logged by: ****	Date Drilled: 19850208

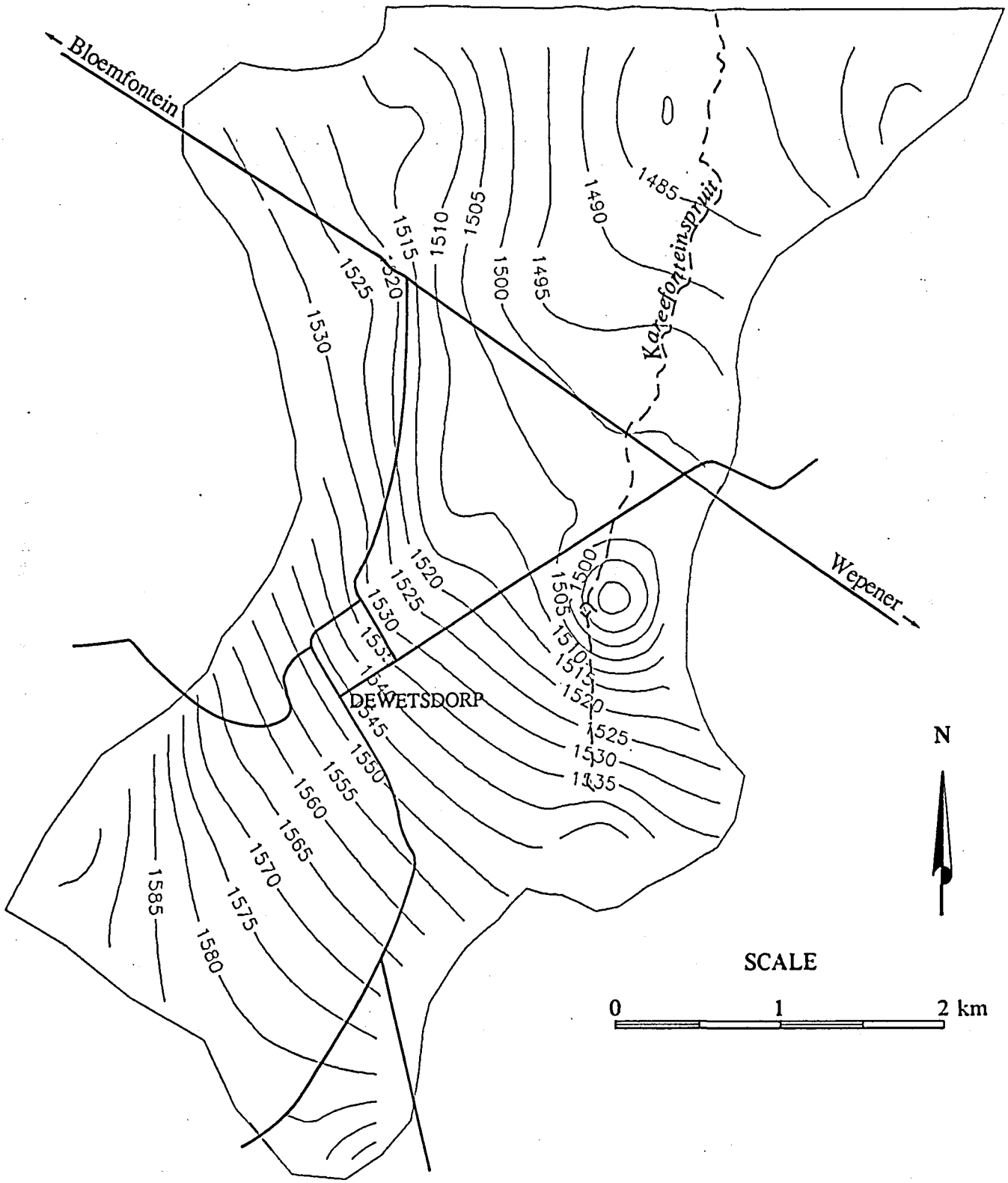
Depth (m) From	To	Thickness (m)	Description

Geology

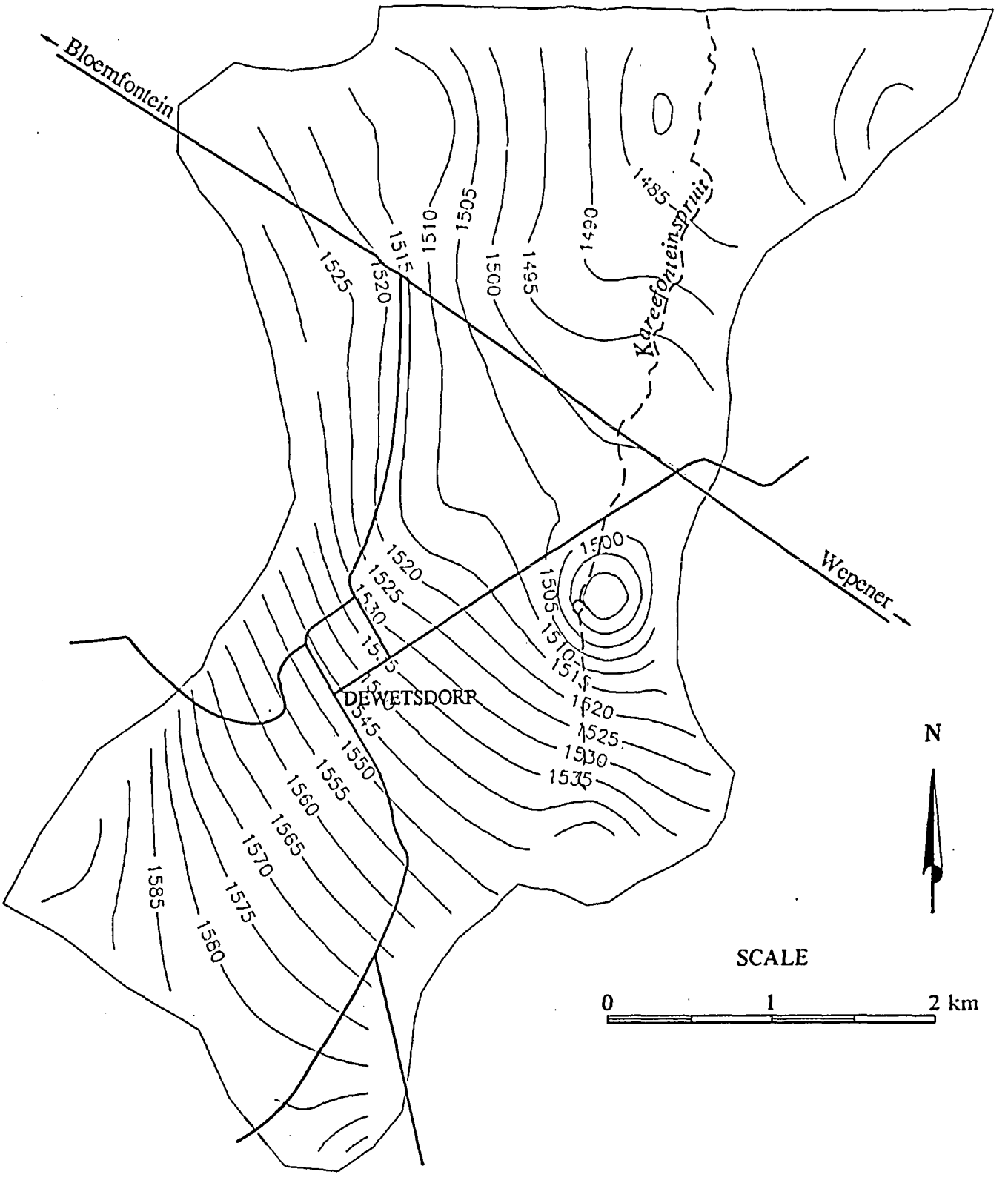
0.00	5.00	5.00	CLAY : 46RCNT brown.
5.00	8.00	3.00	SHALE AND SILTSTONE : 39BFRT red; weathered. (pale green siltstone).
8.00	13.00	5.00	SHALE : 39BFRT red; slightly weathered. with pale green siltstone fragments.
13.00	14.00	1.00	SILTSTONE AND SHALE : 39BFRT slightly weathered. (red shale).
14.00	15.00	1.00	SHALE : 39BFRT red; slightly weathered.
15.00	17.00	2.00	SHALE AND SILTSTONE : 39BFRT red. alternating.
17.00	21.00	4.00	SILTSTONE AND SHALE : 39BFRT (few red shale bands).
21.00	23.00	2.00	SANDSTONE : 39BFRT alternating with siltstone; rust stained.
23.00	25.00	2.00	SANDSTONE : 39BFRT with red shale.
25.00	28.00	3.00	SILTSTONE : 39BFRT
28.00	30.00	2.00	SANDSTONE : 39BFRT alternating with siltstone; near bottom interbedded red shale.
30.00	33.00	3.00	SANDSTONE : 39BFRT
33.00	37.00	4.00	SILTSTONE : 39BFRT alternating with sandstone, in places rust-stained.
37.00	40.00	3.00	SANDSTONE : 39BFRT subordinate siltstone intercalated.

Geohydrology

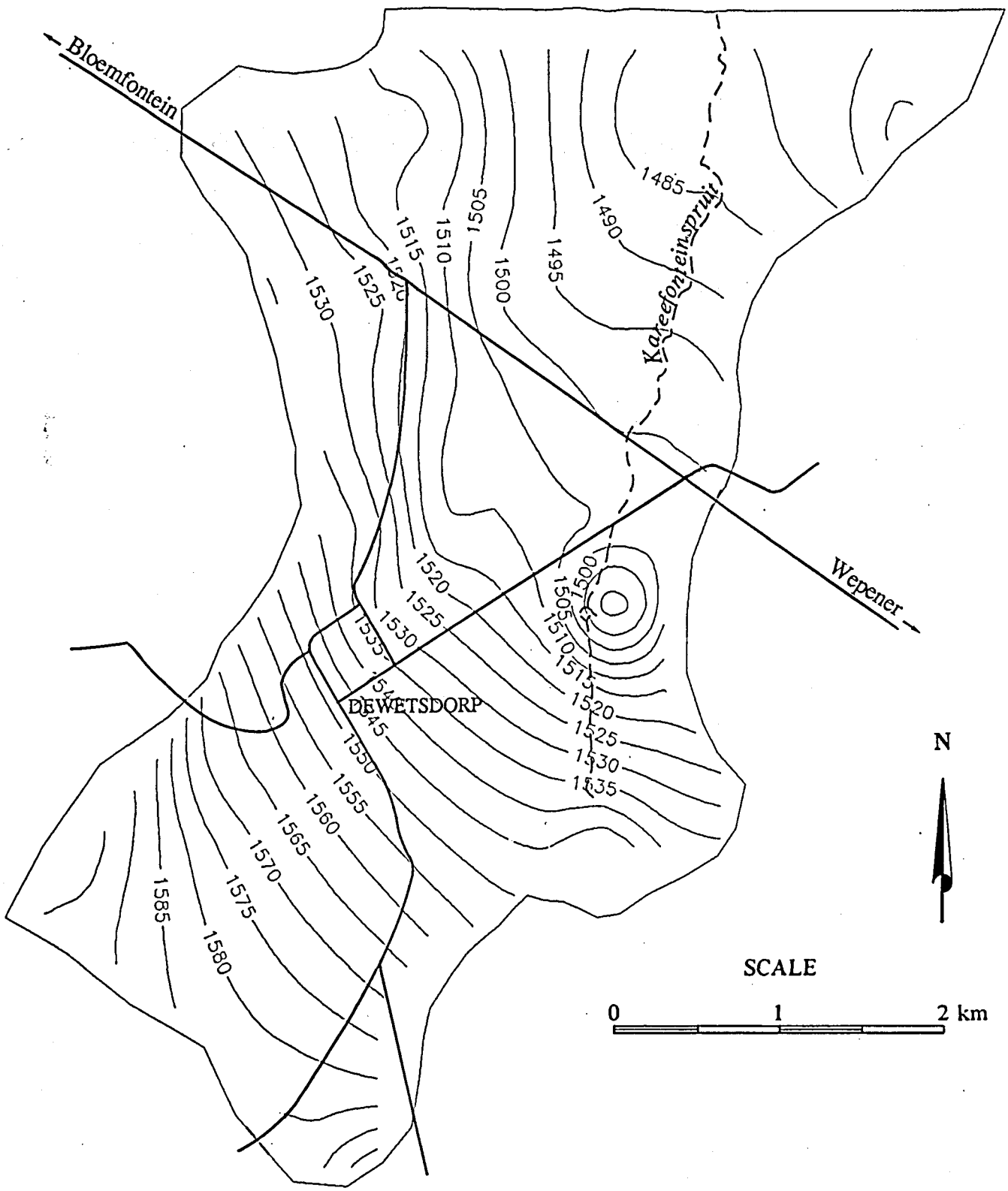
(no information.)



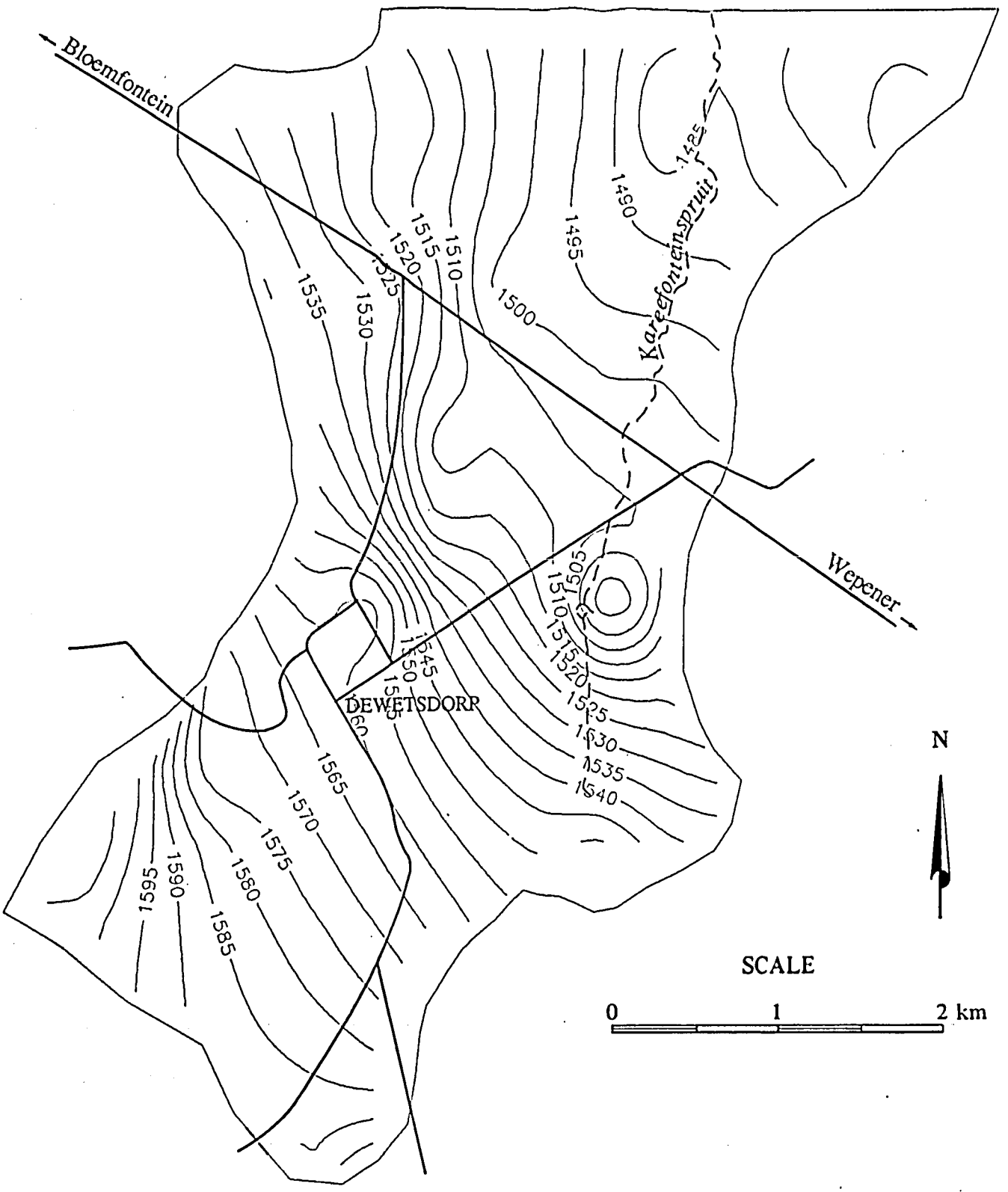
Boundaries of the Dewetsdorp aquifer showing the ground-water contours for October 1986. The western, southern and eastern boundaries are ground-water divides.



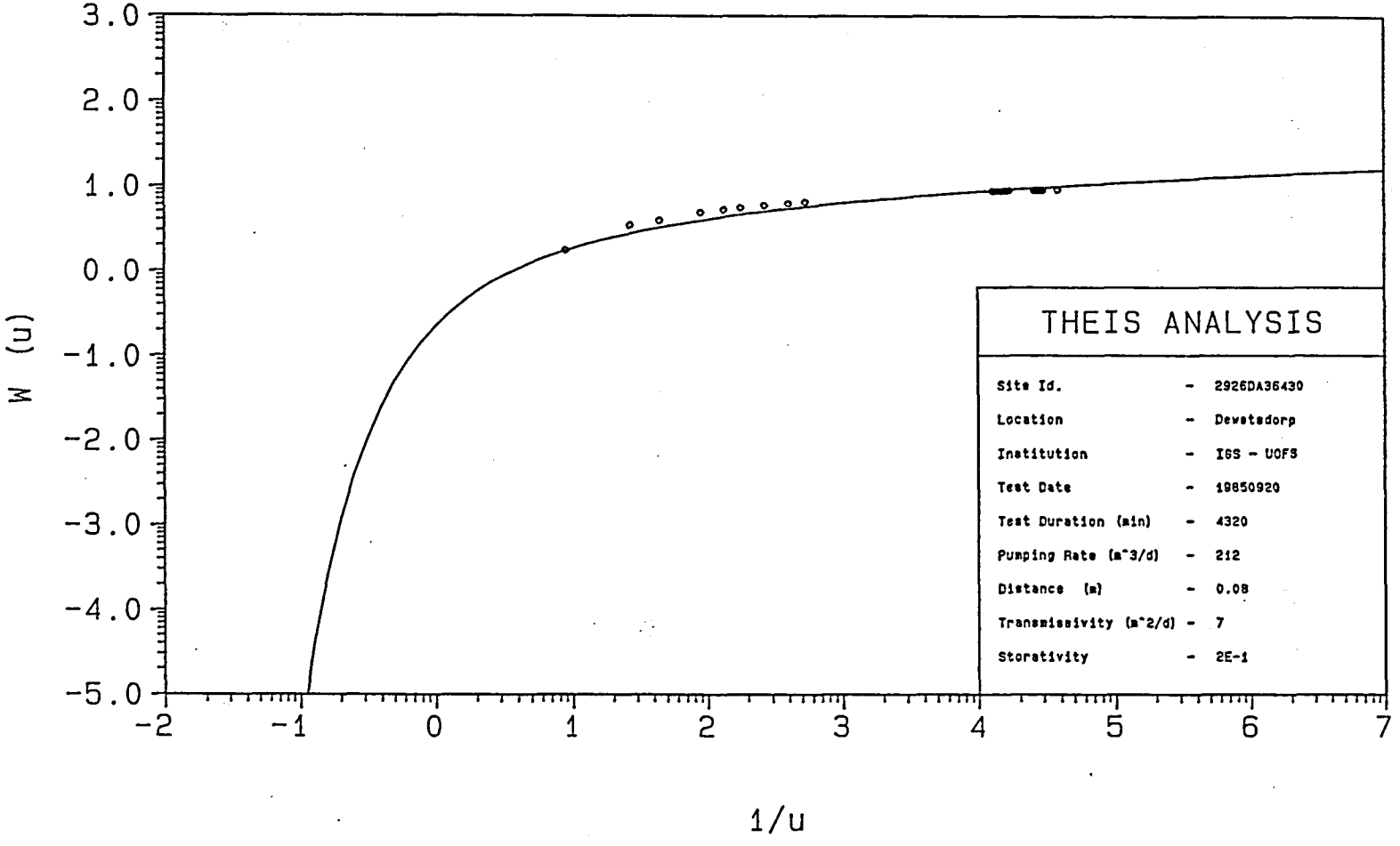
Boundaries of the Dewetsdorp aquifer showing the ground-water contours for October 1987. The western, southern and eastern boundaries are ground-water divides.

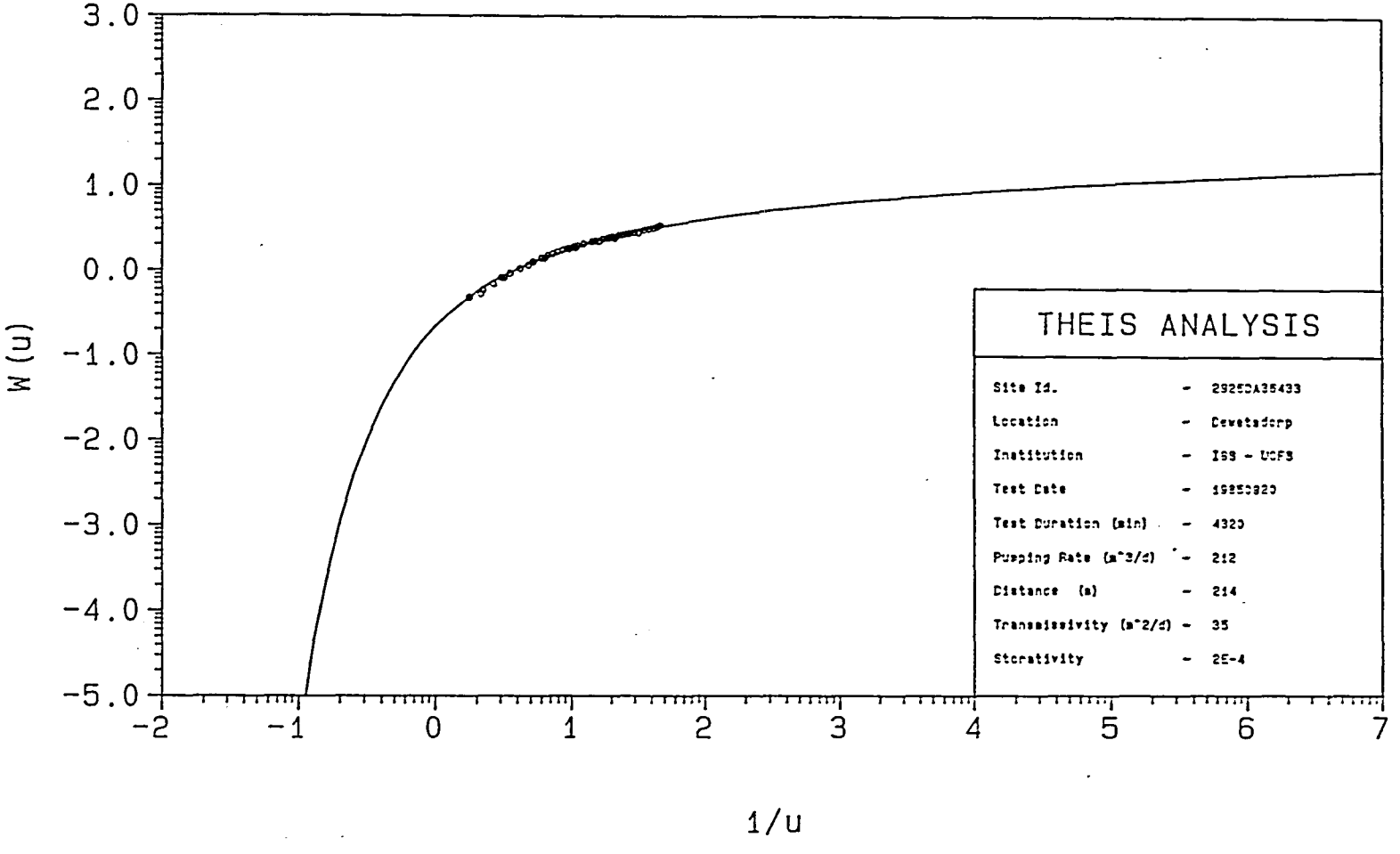


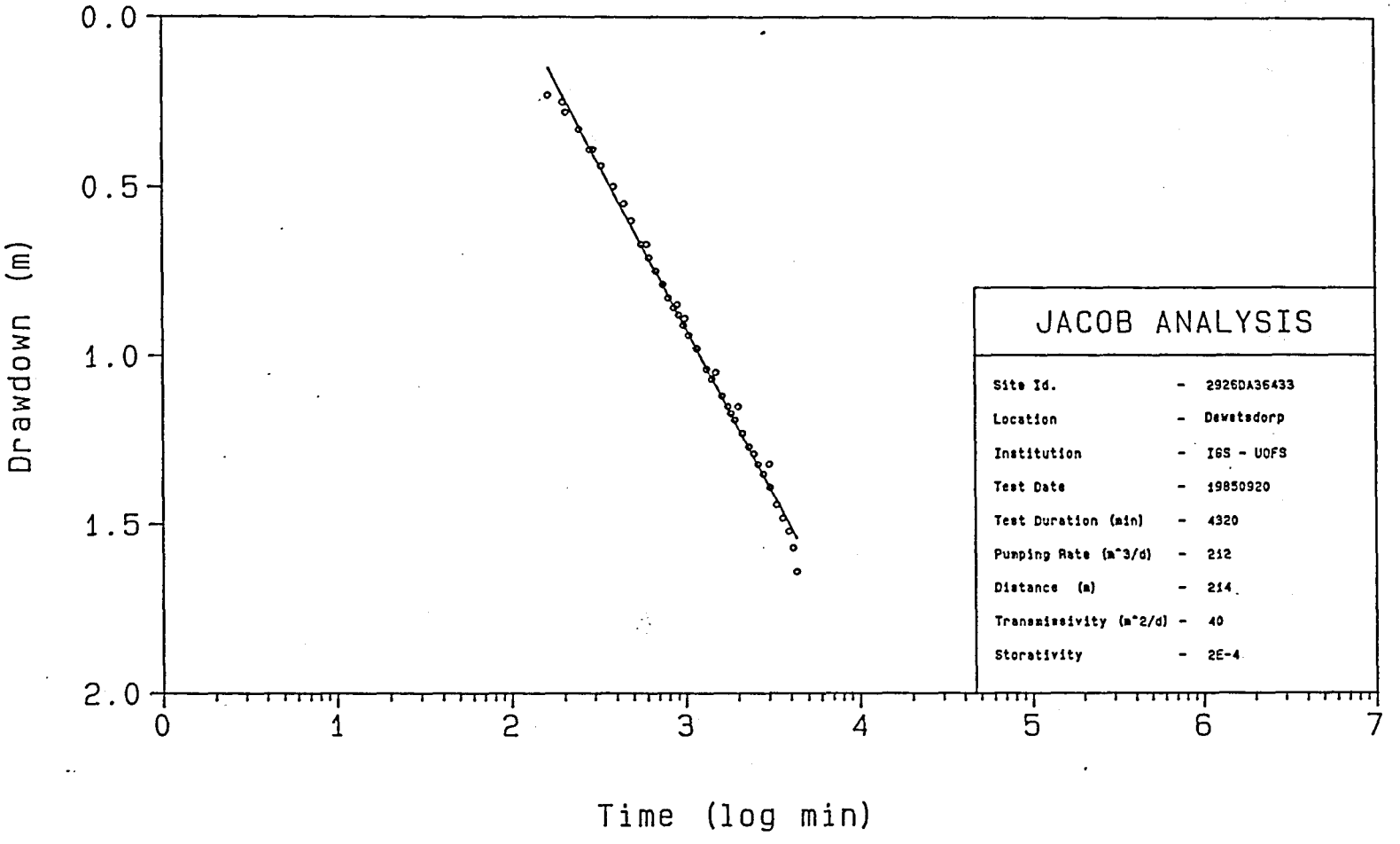
Boundaries of the Dewetsdorp aquifer showing the ground-water contours for January 1988. The western, southern and eastern boundaries are ground-water divides.

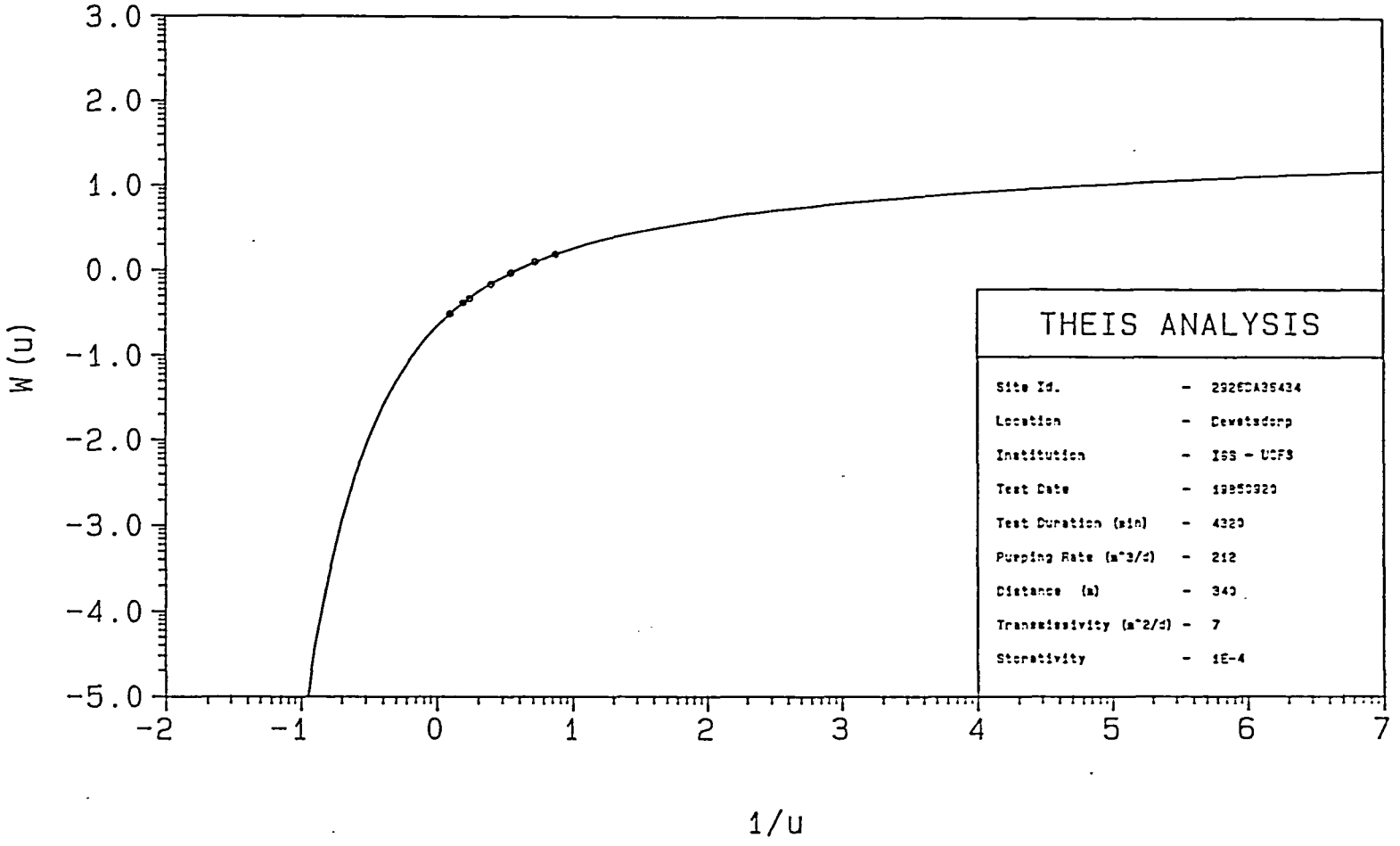


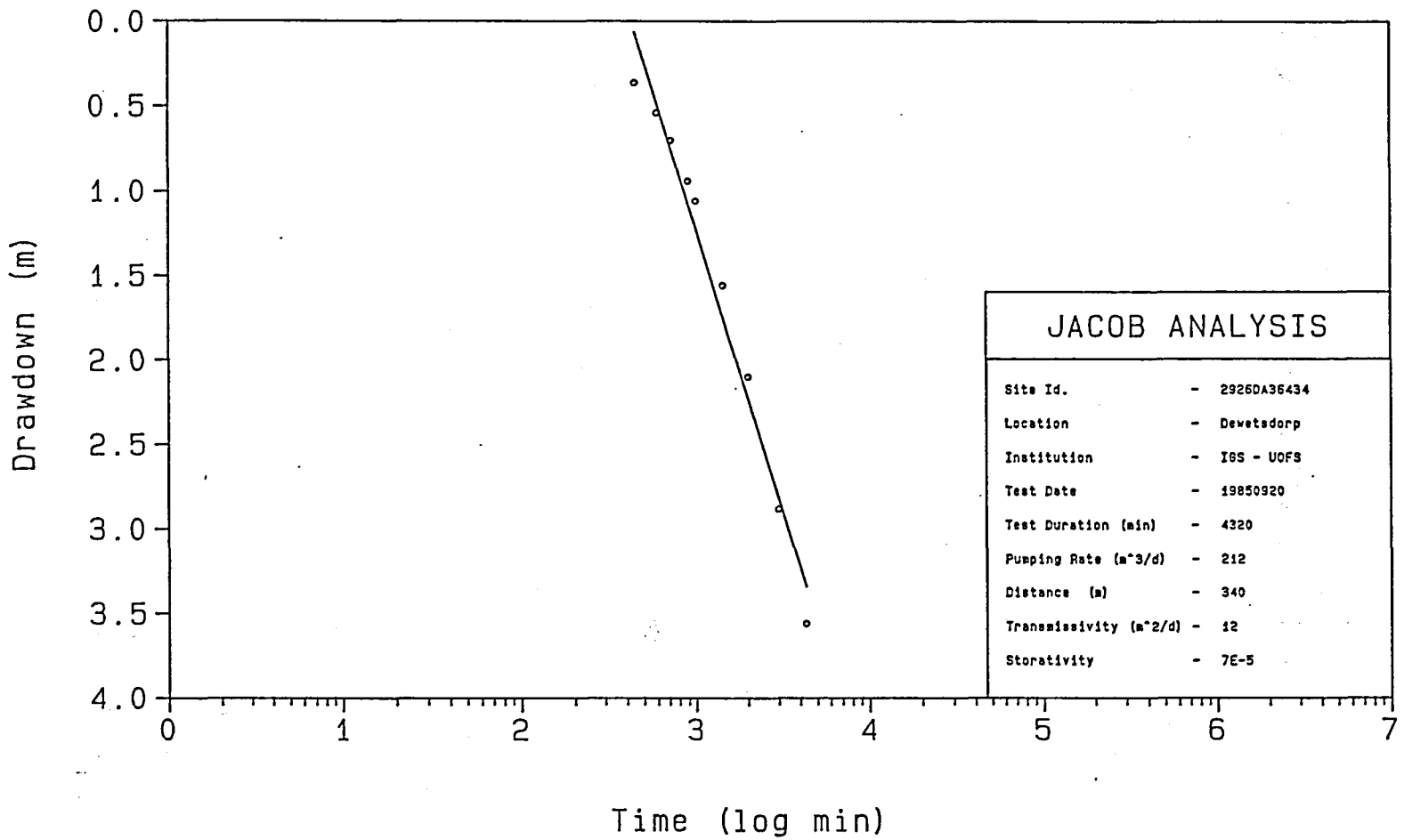
Boundaries of the Dewetsdorp aquifer showing the ground-water contours for April 1988. The western, southern and eastern boundaries are ground-water divides.

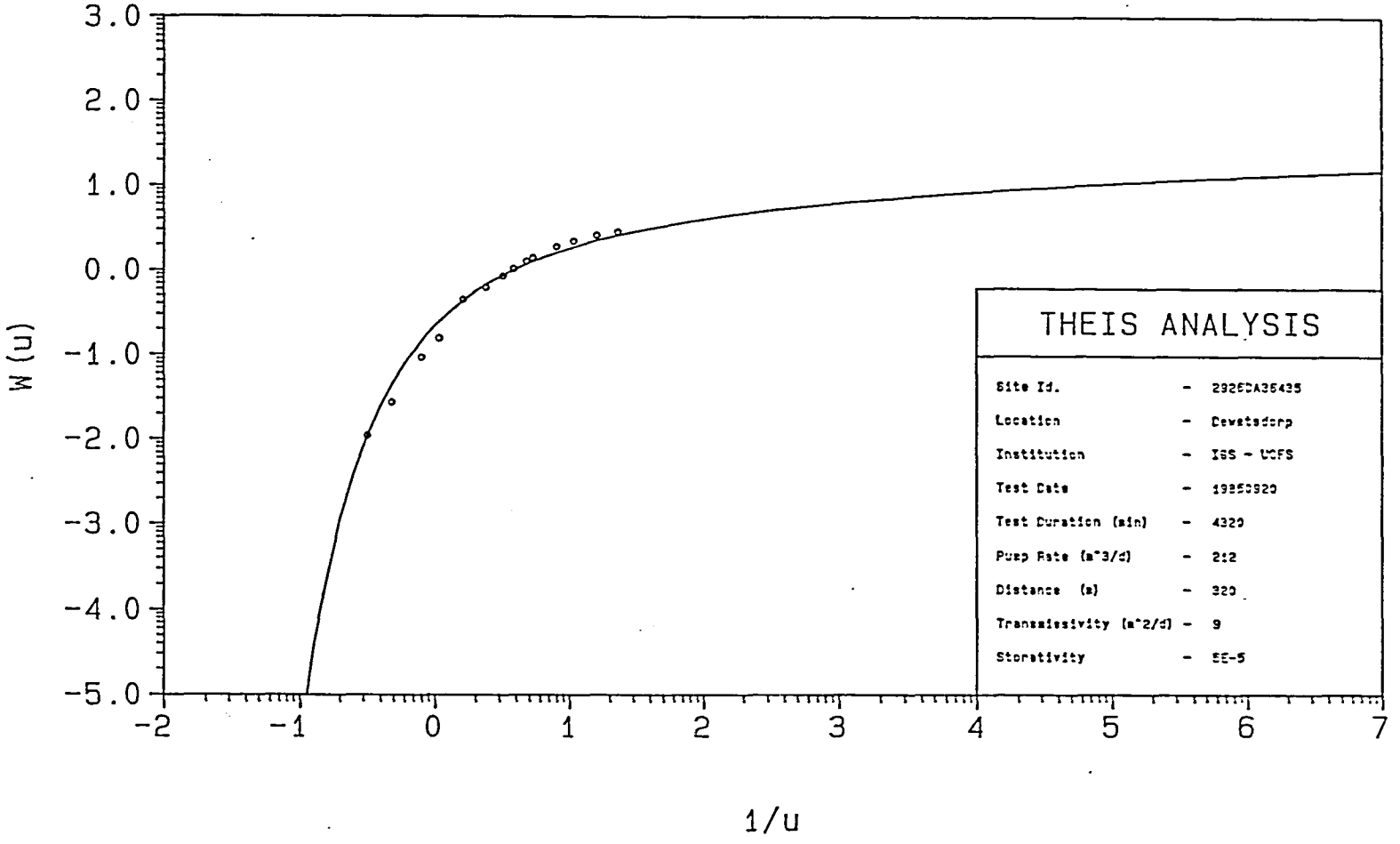

3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
W (u)
-2
-1
0
1
2
3
4
5
6
7
1/u
THEIS ANALYSIS
Site Id. - 2926DA36430
Location - Dewetsdorp
Institution - IGS - UOFS
Test Date - 19850920
Test Duration (min) - 4320
Pumping Rate (m^3/d) - 212
Distance (m) - 0.08
Transmissivity (m^2/d) - 7
Storativity - 2E-1

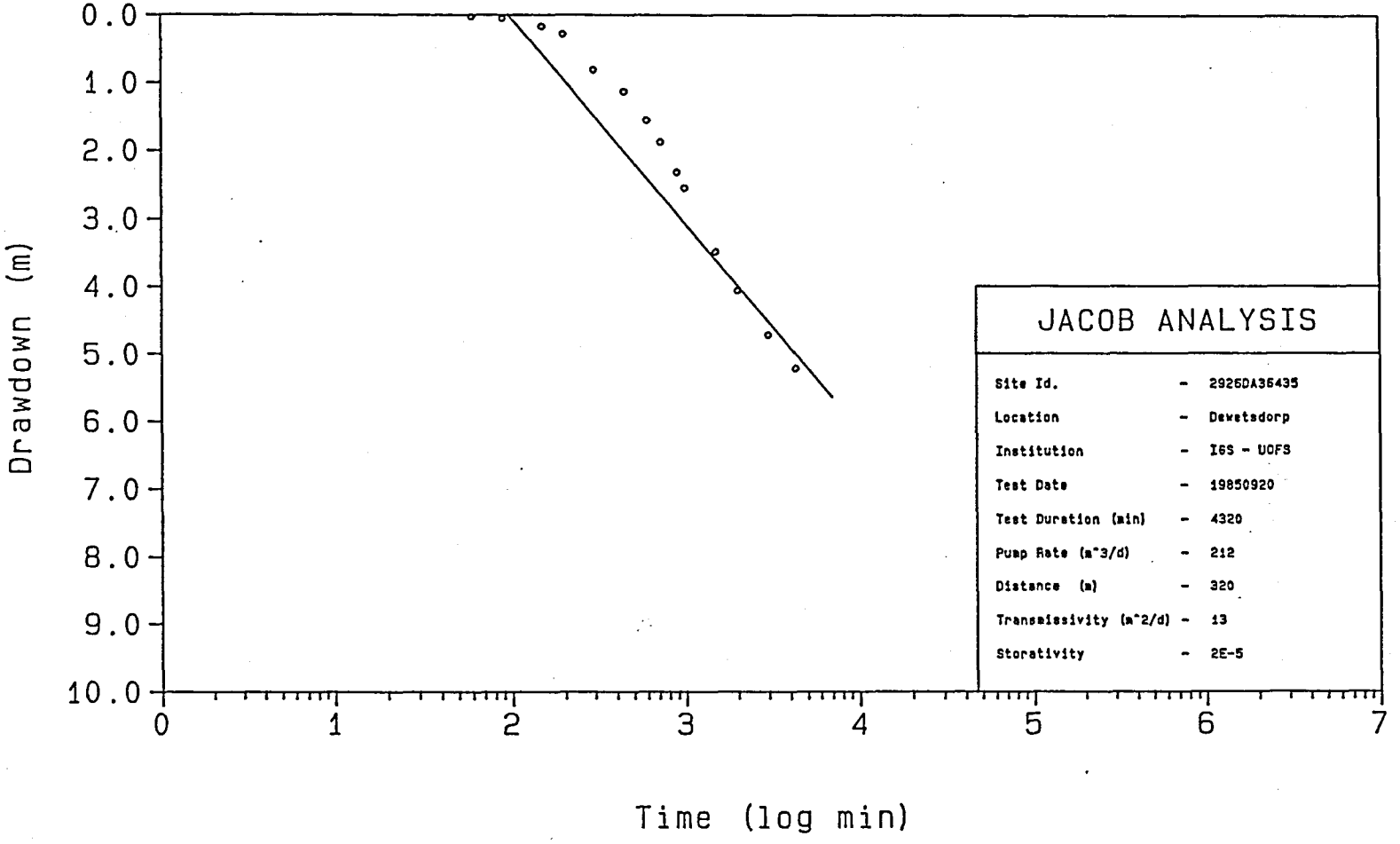

3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
W(u)
-2
-1
0
1
2
3
4
5
6
7
1/u
THEIS ANALYSIS
Site Id. - 2925DA35433
Location - Dewetadorp
Institution - ISS - UOFS
Test Date - 19850920
Test Duration (min) - 4320
Pumping Rate (m^3/d) - 212
Distance (m) - 214
Transmissivity (m^2/d) - 35
Storativity - 2E-4

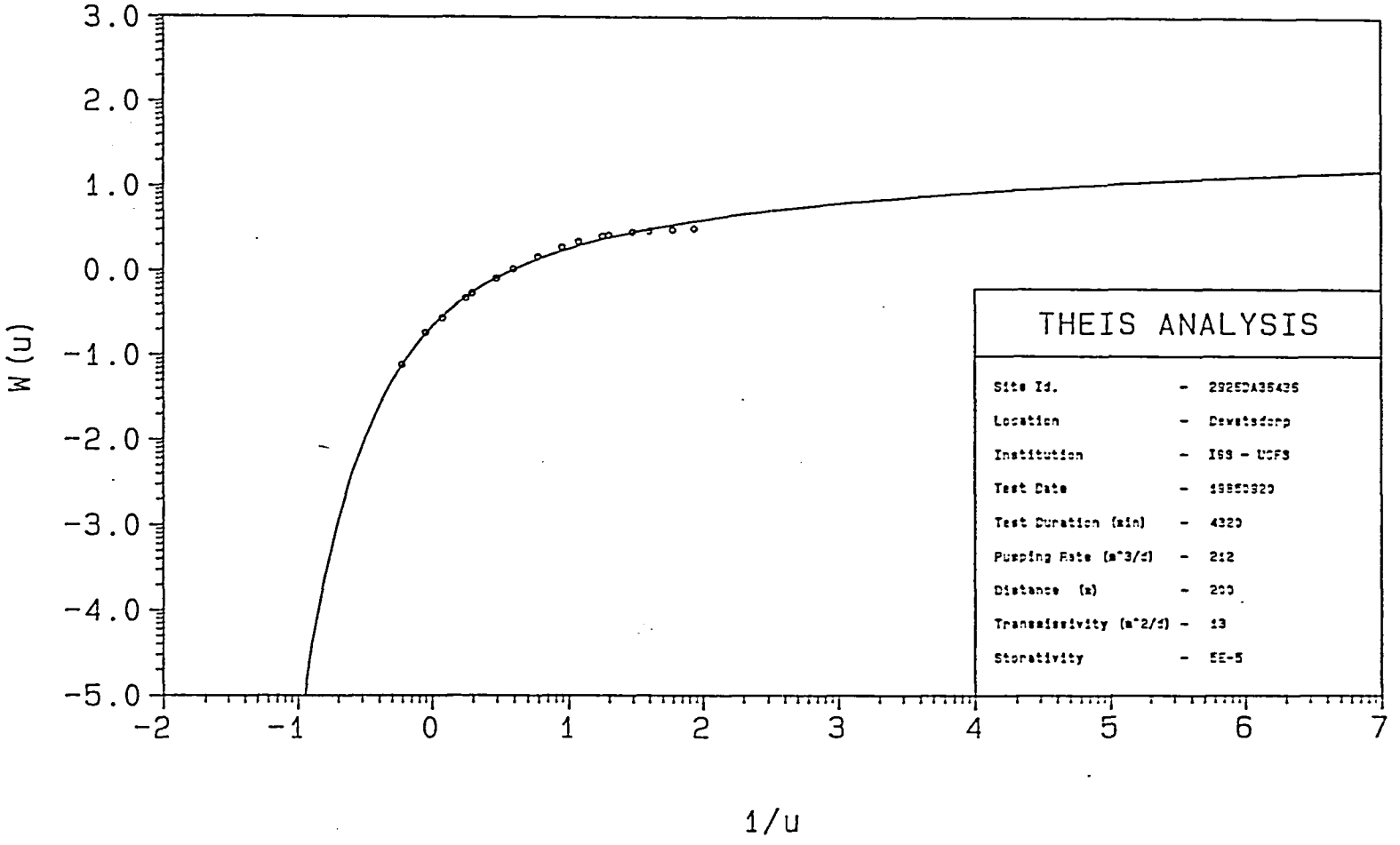

0.0
0.5
1.0
1.5
2.0
Drawdown (m)
0
1
2
3
4
5
6
7
Time (log min)
JACOB ANALYSIS
Site Id. - 2926DA36433
Location - Dewetsdorp
Institution - IGS - UOFS
Test Date - 19850920
Test Duration (min) - 4320
Pumping Rate (m^3/d) - 212
Distance (m) - 214
Transmissivity (m^2/d) - 40
Storativity - 2E-4

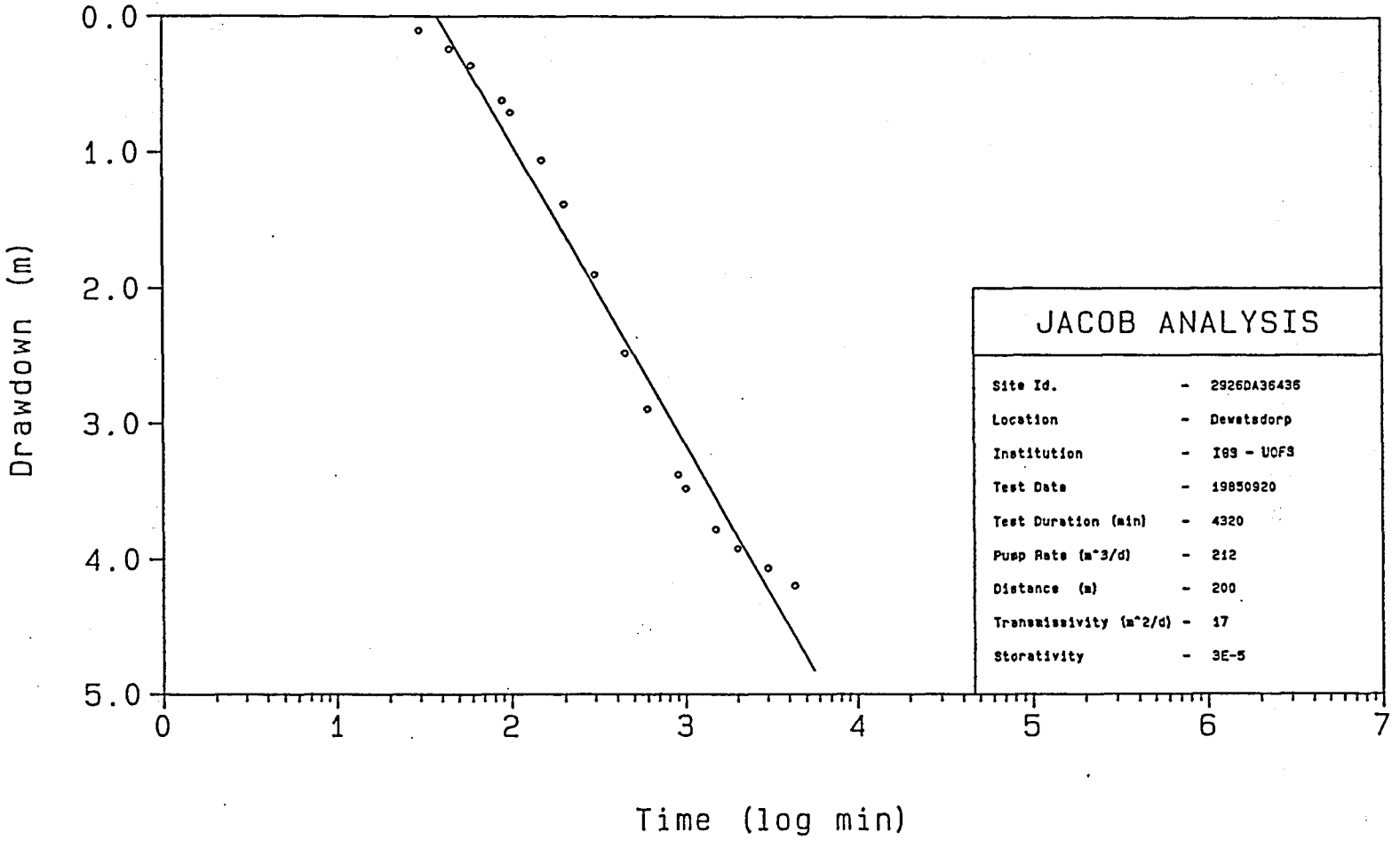

3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
W(u)
-2
-1
0
1
2
3
4
5
6
7
1/u
THEIS ANALYSIS
Site Id. - 2926DA35434
Location - Dewetsdorp
Institution - ISS - UOFS
Test Date - 19950920
Test Duration (min) - 4320
Pumping Rate (m^3/d) - 212
Distance (m) - 340
Transmissivity (m^2/d) - 7
Storativity - 1E-4

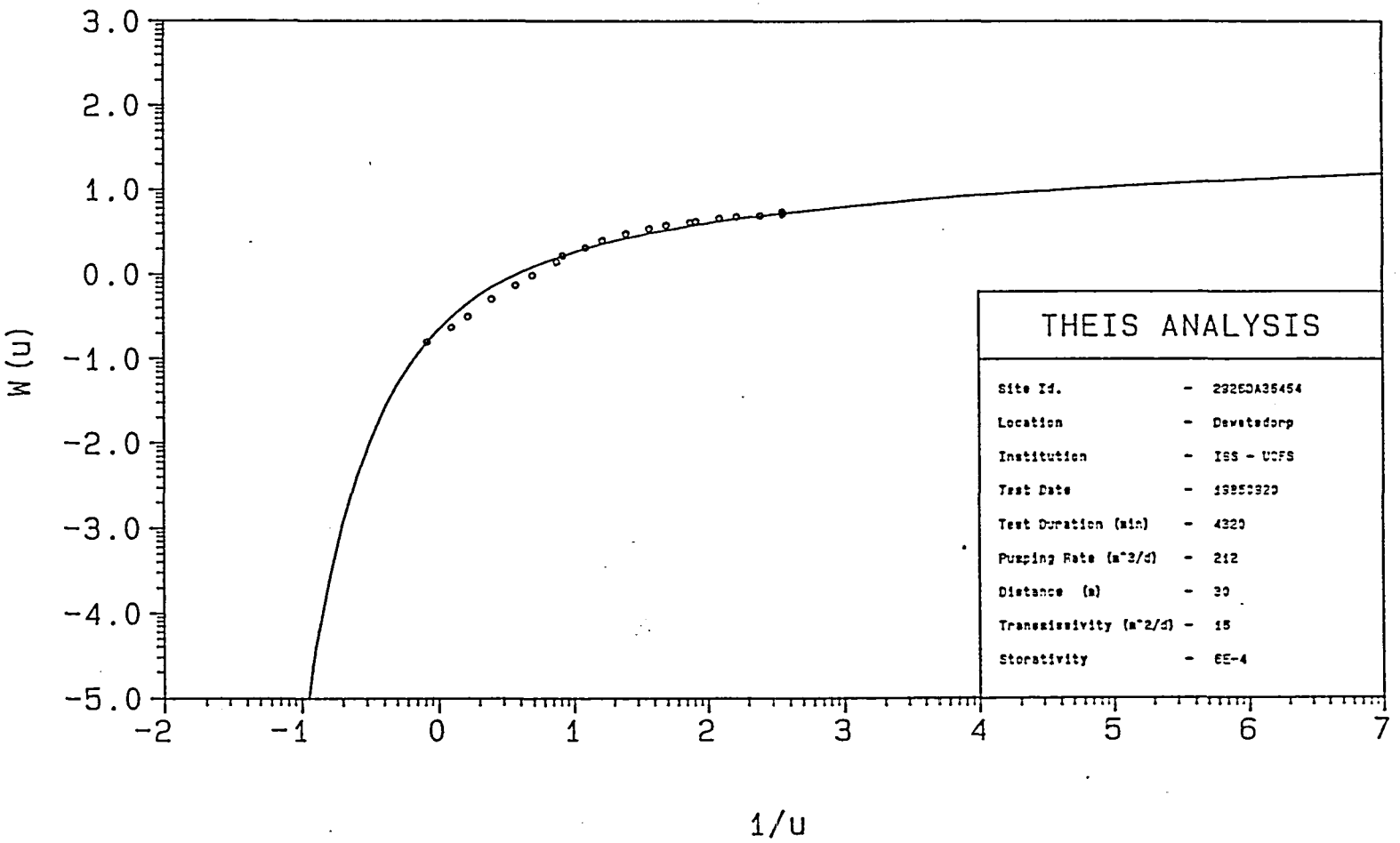

Drawdown (m)
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
0
1
2
3
4
5
6
7
Time (log min)
JACOB ANALYSIS
Site Id. - 2926DA36434
Location - Dewetsdorp
Institution - IGS - UOFS
Test Date - 19850920
Test Duration (min) - 4320
Pumping Rate (m^3/d) - 212
Distance (m) - 340
Transmissivity (m^2/d) - 12
Storativity - 7E-5

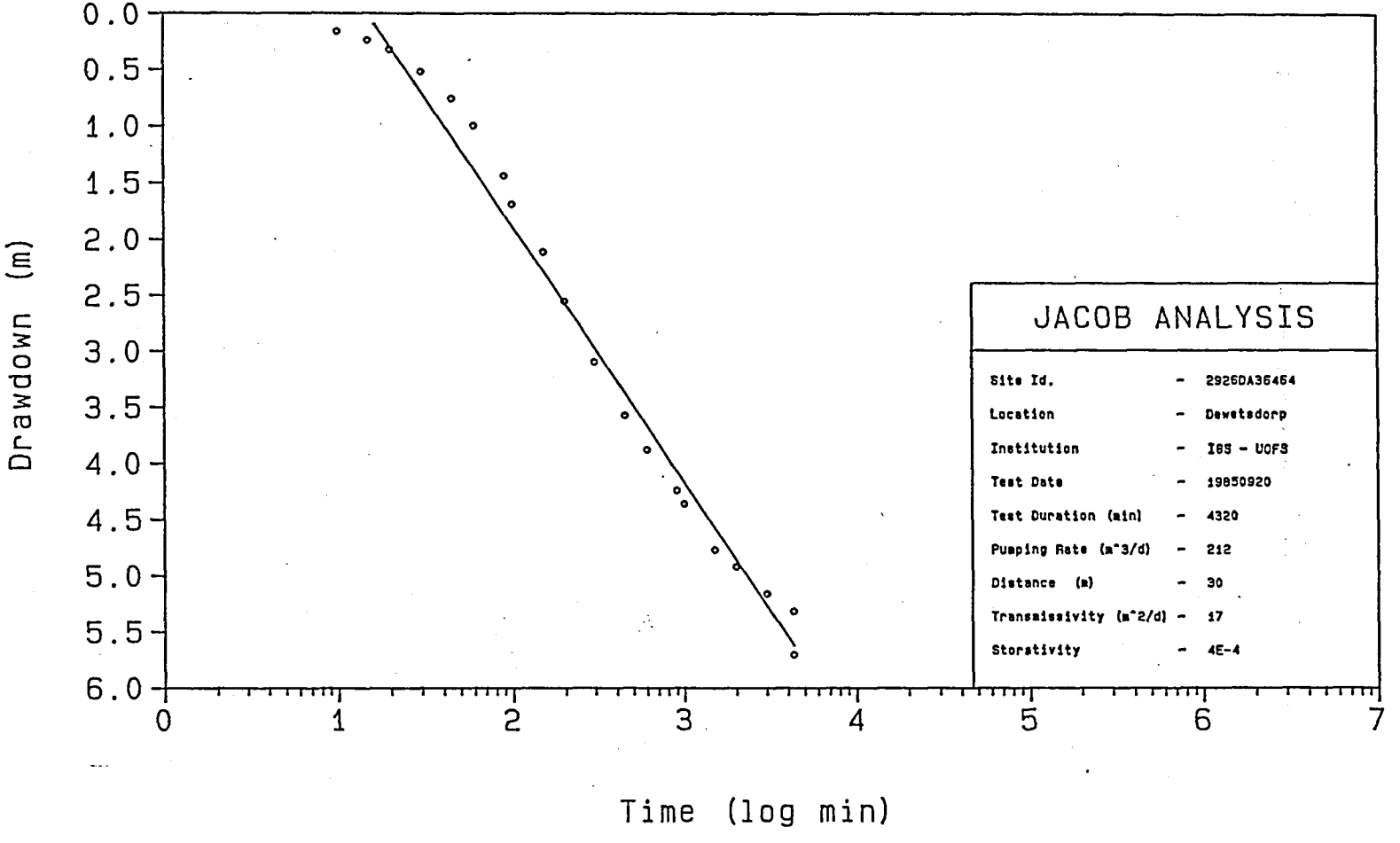

3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
W(u)
-2
-1
0
1
2
3
4
5
6
7
1/u
THEIS ANALYSIS
Site Id. - 2926DA36435
Location - Dewatadorp
Institution - IGS - UCFS
Test Date - 19850920
Test Duration (min) - 4320
Pump Rate (m^3/d) - 212
Distance (m) - 320
Transmissivity (m^2/d) - 9
Storativity - 5E-5

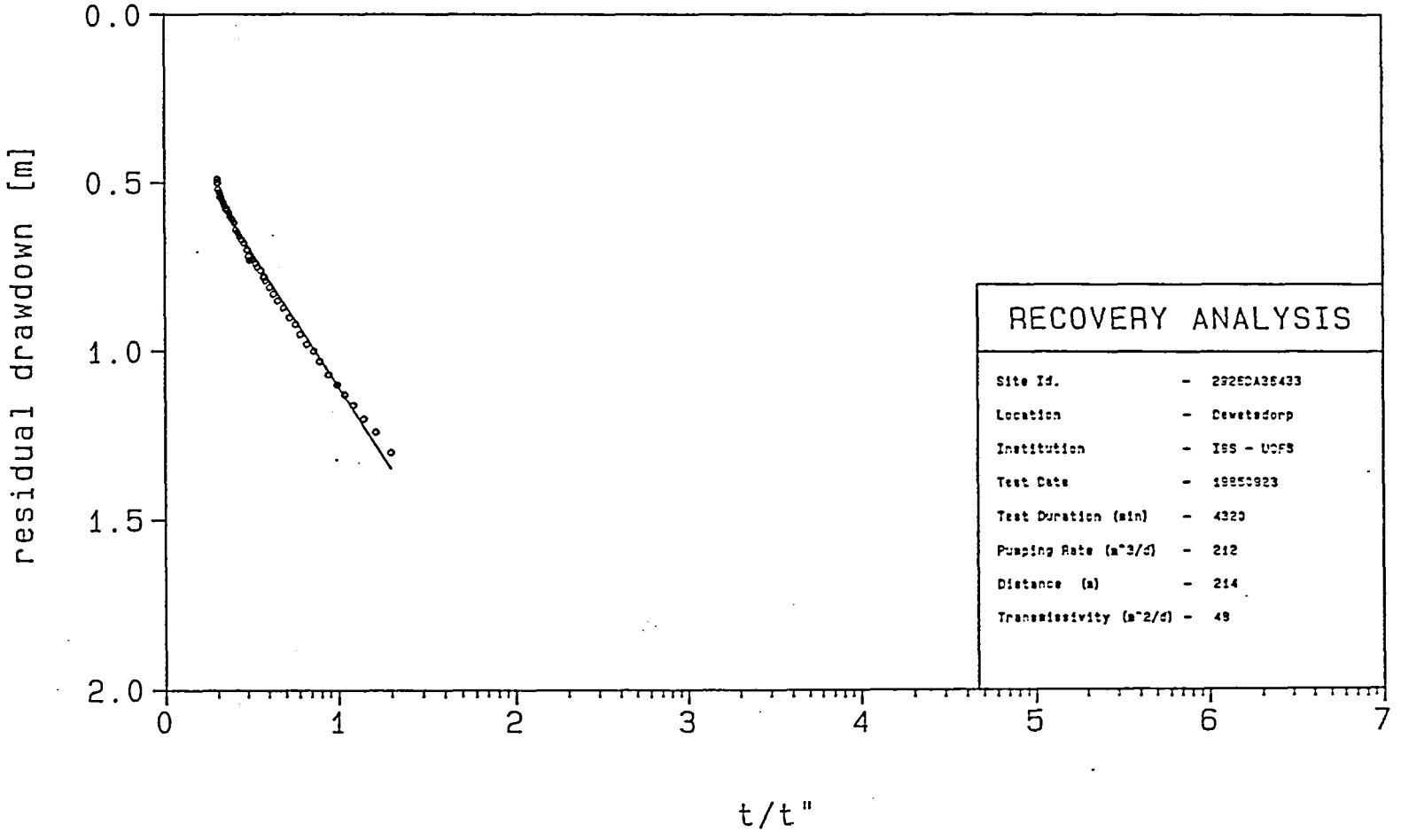

0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
9.0
10.0
Drawdown (m)
0
1
2
3
4
5
6
7
Time (log min)
JACOB ANALYSIS
Site Id. - 2926DA36435
Location - Dewetsdorp
Institution - IGS - UOFS
Test Date - 19850920
Test Duration (min) - 4320
Pump Rate (m^3/d) - 212
Distance (m) - 320
Transmissivity (m^2/d) - 13
Storativity - 2E-5

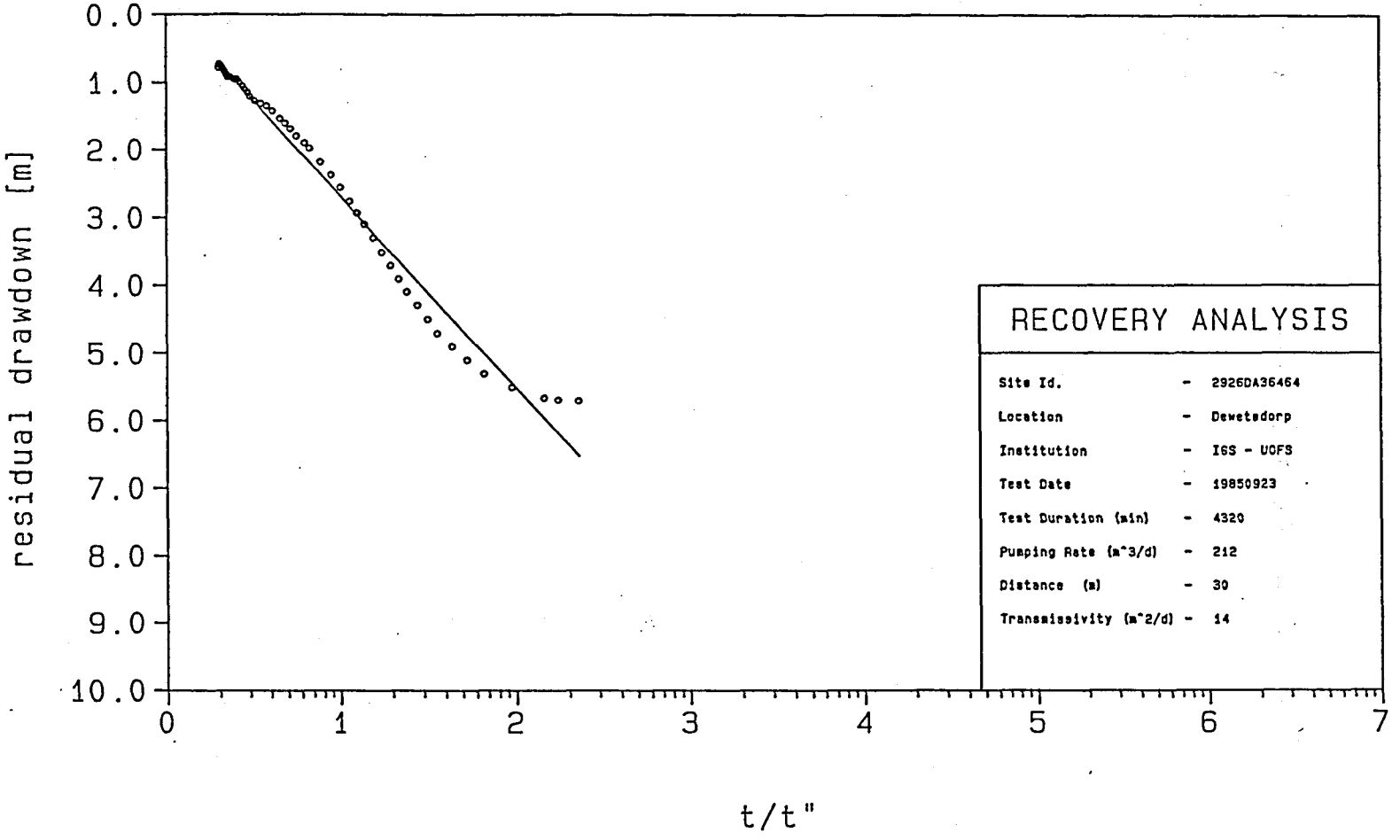

3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
W(u)
-2
-1
0
1
2
3
4
5
6
7
1/u
THEIS ANALYSIS
Site Id. - 2925DA35435
Location - Dewetsdorp
Institution - I69 - UOFS
Test Date - 19850320
Test Duration (min) - 4320
Pumping Rate (m^3/d) - 212
Distance (m) - 200
Transmissivity (m^2/d) - 13
Storativity - 5E-5

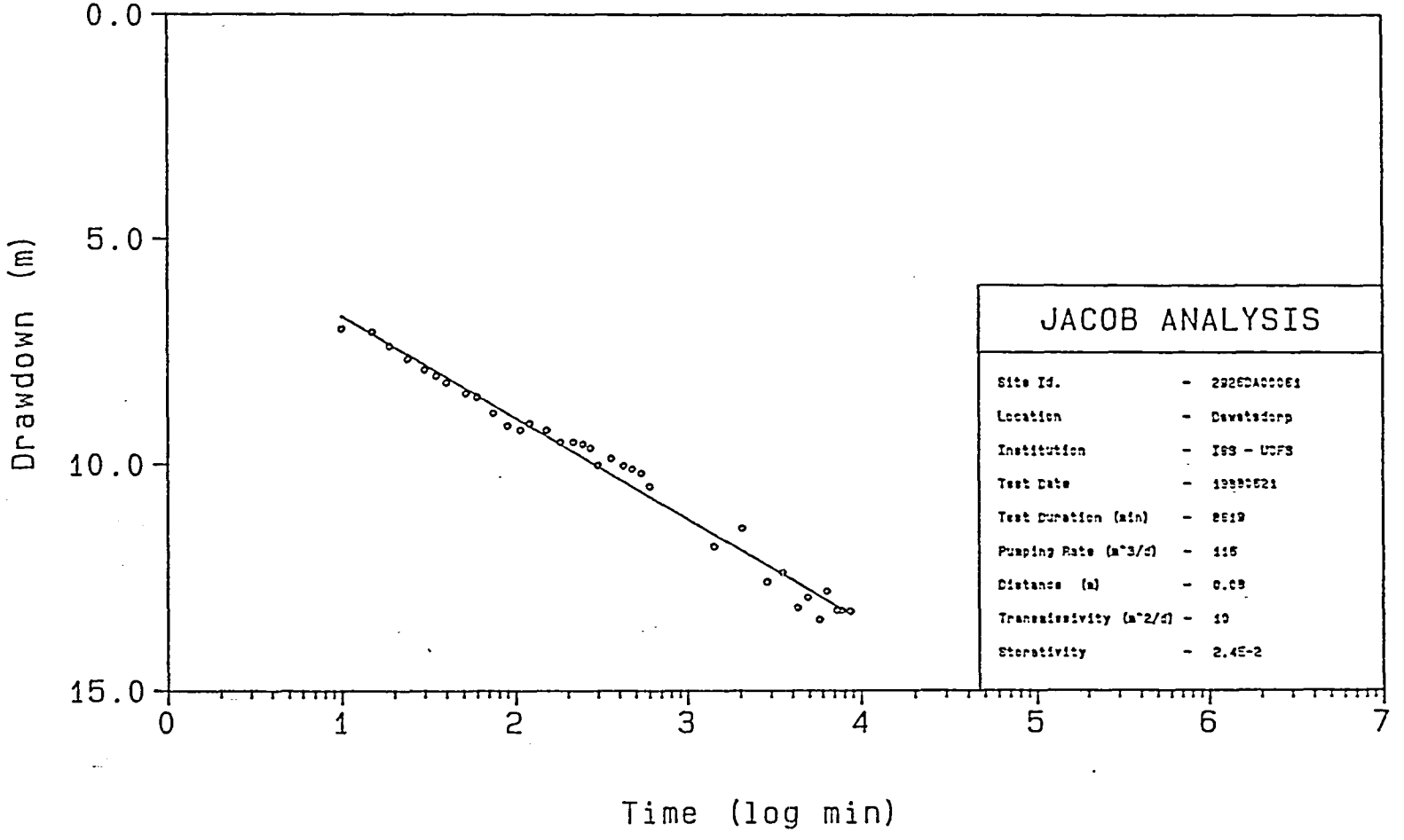

0.0
1.0
2.0
3.0
4.0
5.0
Drawdown (m)
0
1
2
3
4
5
6
7
Time (log min)
JACOB ANALYSIS
Site Id. - 2926DA36436
Location - Dewetsdorp
Institution - IGS - UOFS
Test Date - 19850920
Test Duration (min) - 4320
Pump Rate (m^3/d) - 212
Distance (m) - 200
Transmissivity (m^2/d) - 17
Storativity - 3E-5

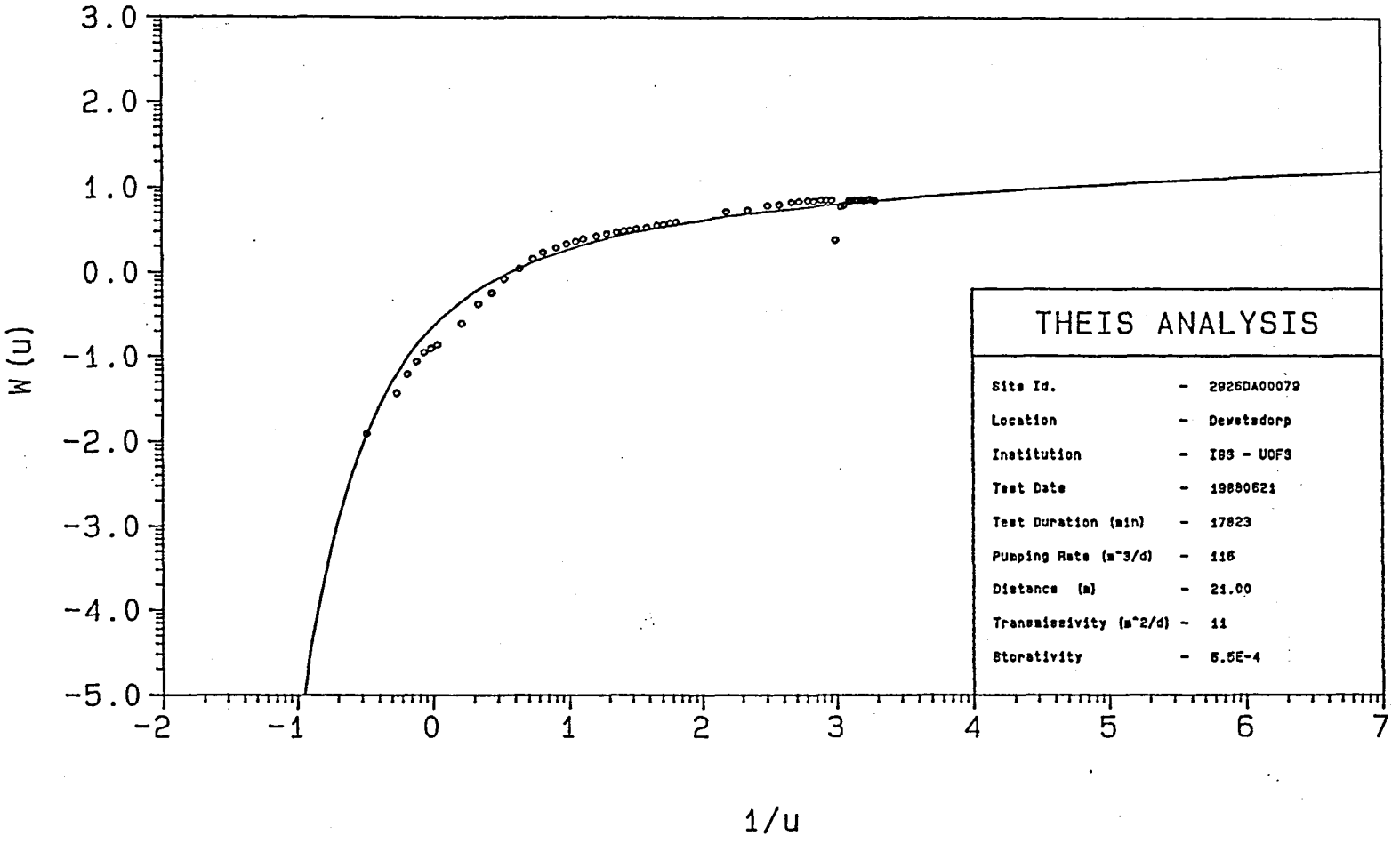

3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
W(u)
-2
-1
0
1
2
3
4
5
6
7
1/u
THEIS ANALYSIS
Site Id. - 2926DA35454
Location - Dewetsdorp
Institution - ISS - UOFS
Test Date - 19950929
Test Duration (min) - 4320
Pumping Rate (m^3/d) - 212
Distance (m) - 30
Transmissivity (m^2/d) - 15
Storativity - 6E-4

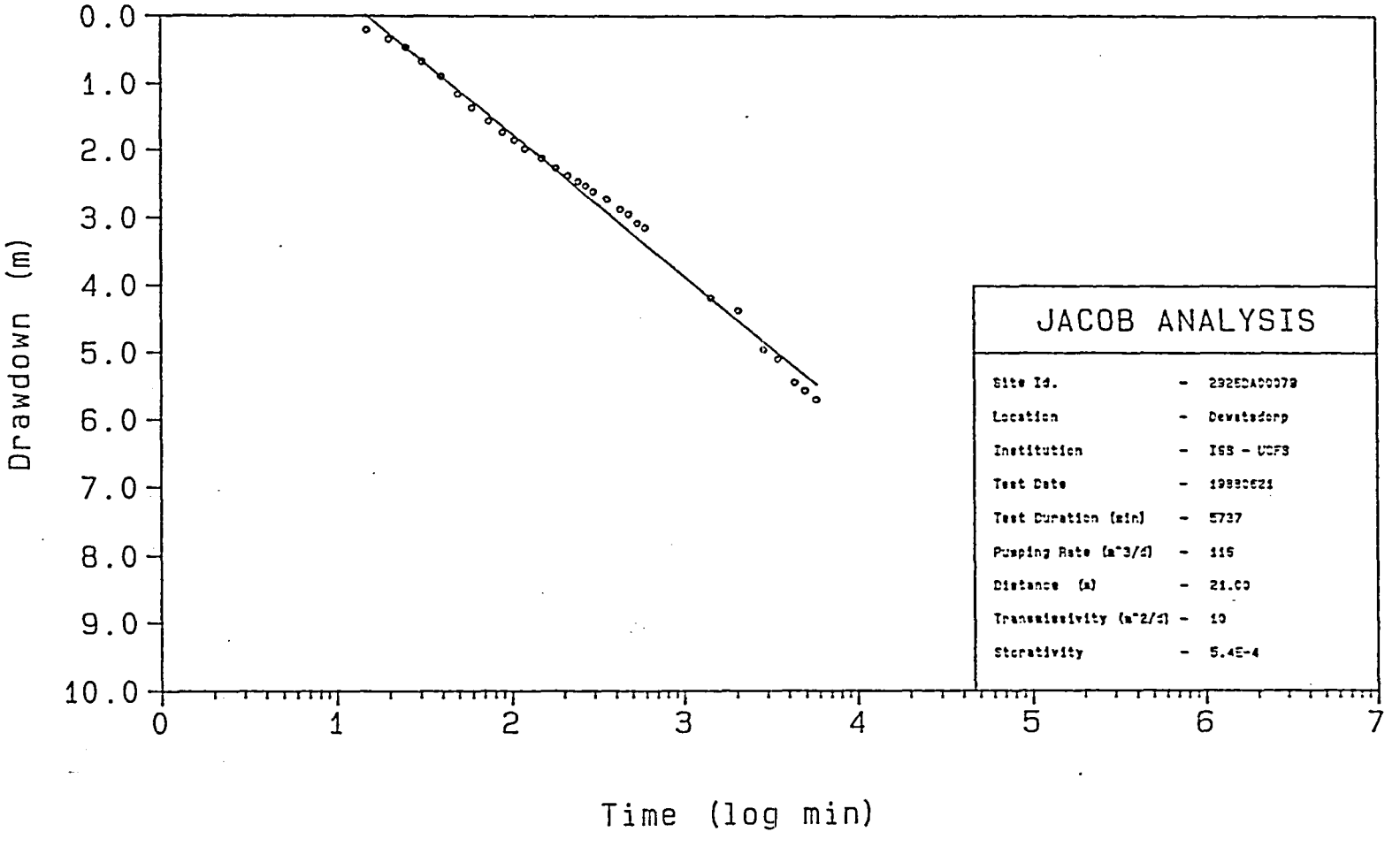

Drawdown (m)
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
4.5
5.0
5.5
6.0
0
1
2
3
4
5
6
7
Time (log min)
JACOB ANALYSIS
Site Id. - 2926DA36464
Location - Dewetsdorp
Institution - IBS - UOFS
Test Date - 19850920
Test Duration (min) - 4320
Pumping Rate (m^3/d) - 212
Distance (m) - 30
Transmissivity (m^2/d) - 17
Storativity - 4E-4

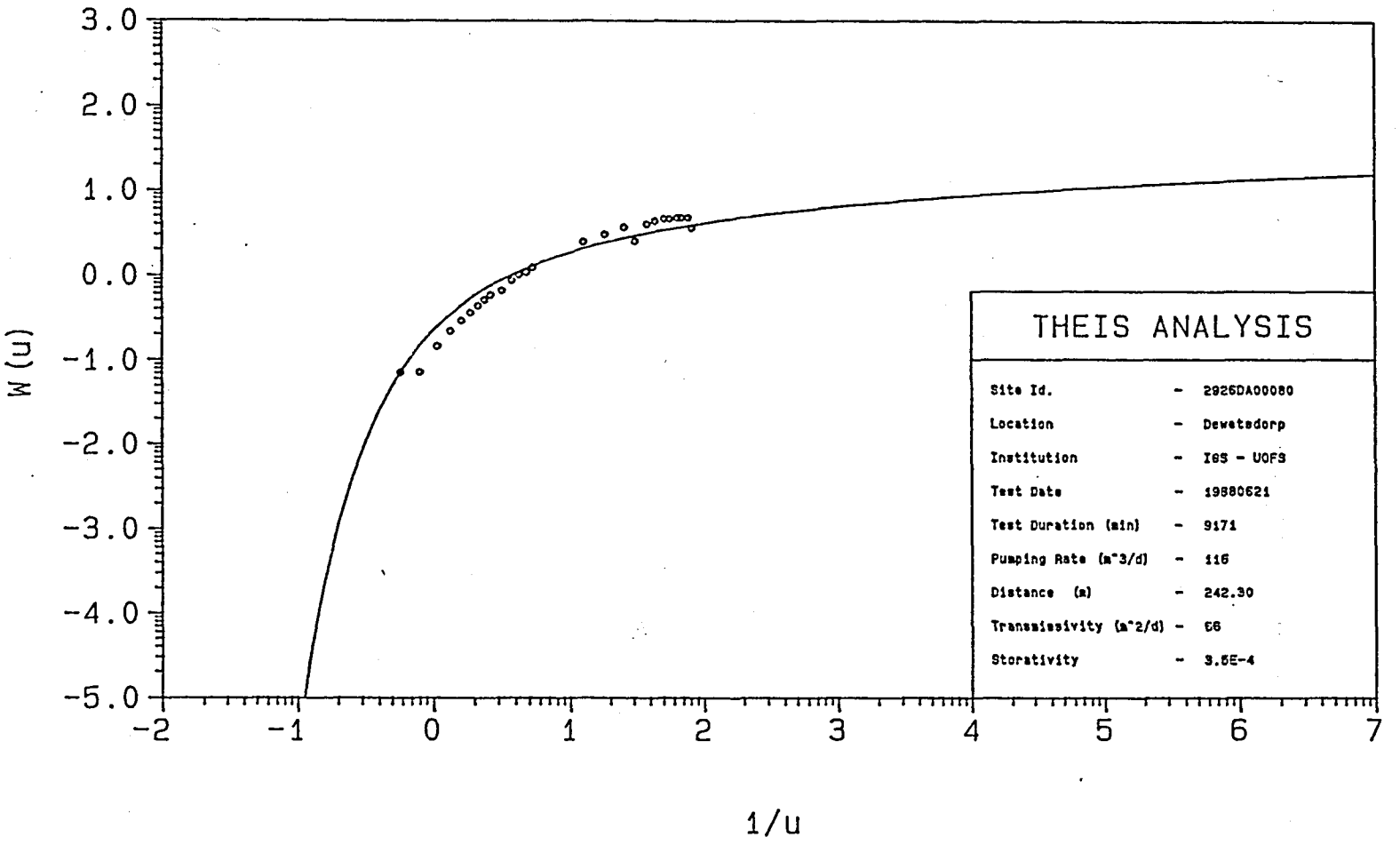

0.0
0.5
1.0
1.5
2.0
residual drawdown [m]
0
1
2
3
4
5
6
7
t/t"
RECOVERY ANALYSIS
Site Id. - 2926DA35433
Location - Dewetsdorp
Institution - ISS - UOFS
Test Date - 19850923
Test Duration (min) - 4320
Pumping Rate (m^3/d) - 212
Distance (m) - 214
Transmissivity (m^2/d) - 48

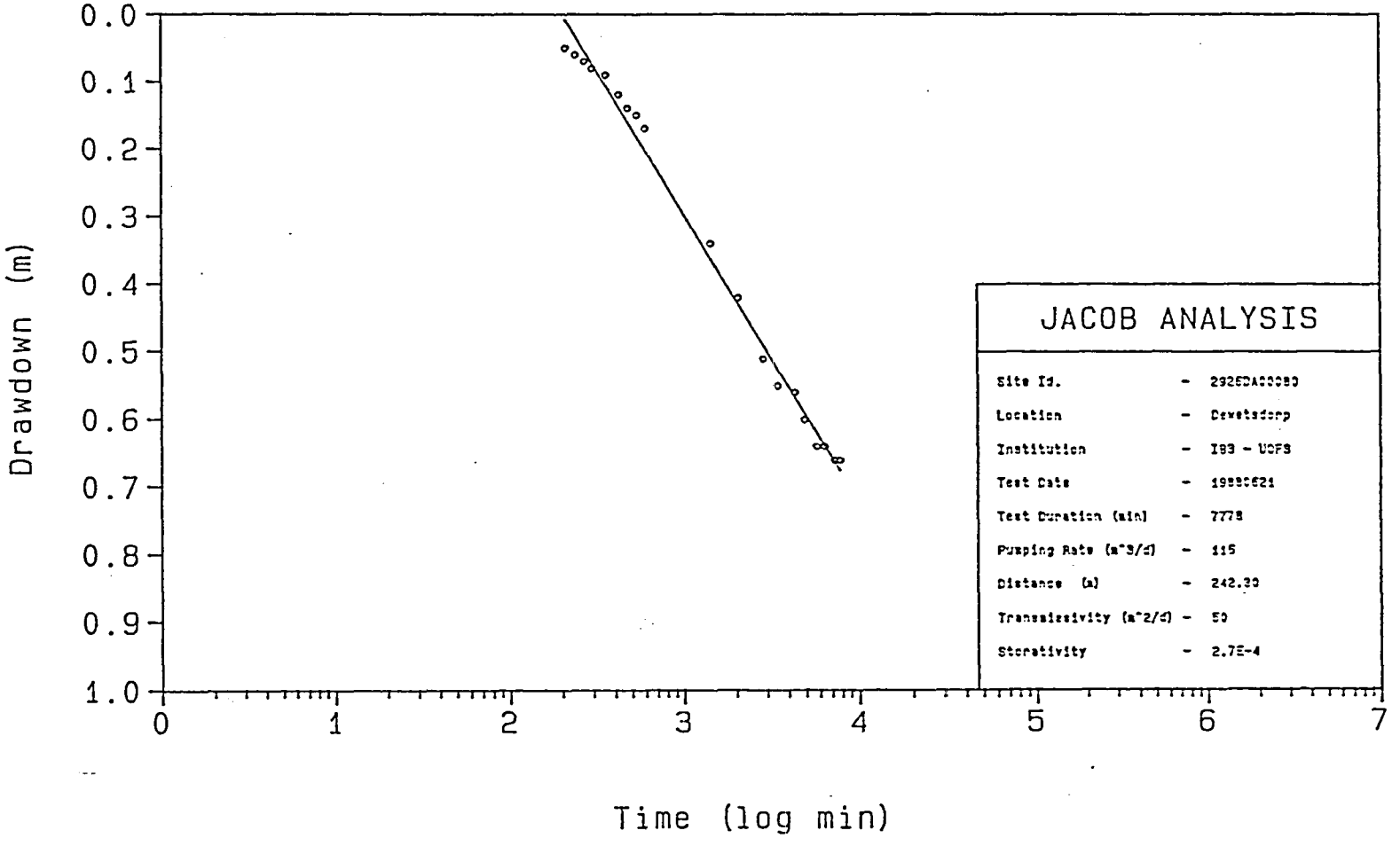

residual drawdown [m]
0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
9.0
10.0
0
1
2
3
4
5
6
7
t/t"
RECOVERY ANALYSIS
Site Id. - 2926DA36464
Location - Dewetsdorp
Institution - IGS - UOFS
Test Date - 19850923
Test Duration (min) - 4320
Pumping Rate (m^3/d) - 212
Distance (m) - 30
Transmissivity (m^2/d) - 14

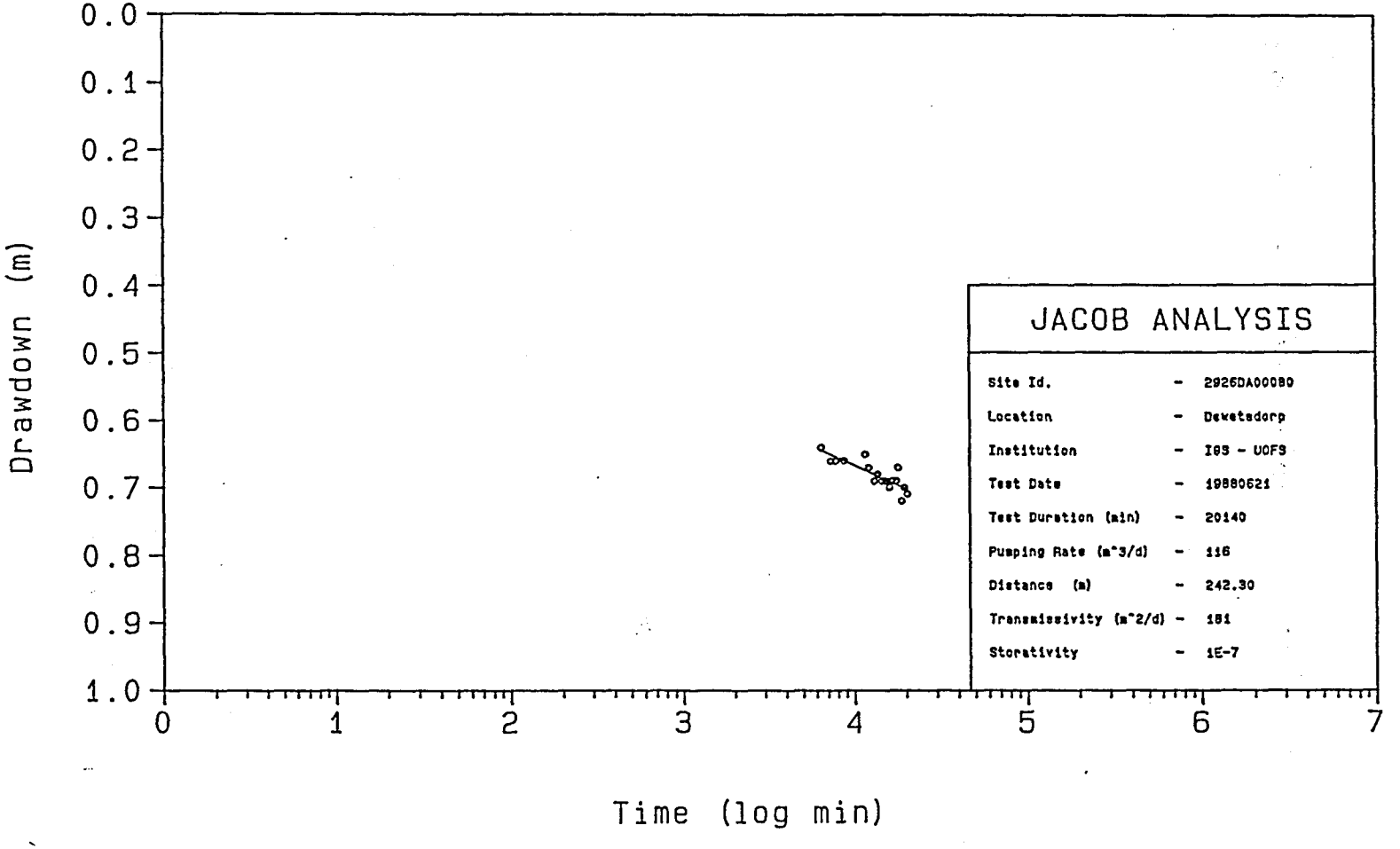

0.0
5.0
10.0
15.0
Drawdown (m)
0
1
2
3
4
5
6
7
Time (log min)
JACOB ANALYSIS
Site Id. - 2926DA0006I
Location - Dewetsdorp
Institution - IGS - UOFS
Test Date - 19890621
Test Duration (min) - 8619
Pumping Rate (m^3/d) - 115
Distance (m) - 0.09
Transmissivity (m^2/d) - 19
Storativity - 2.4E-2

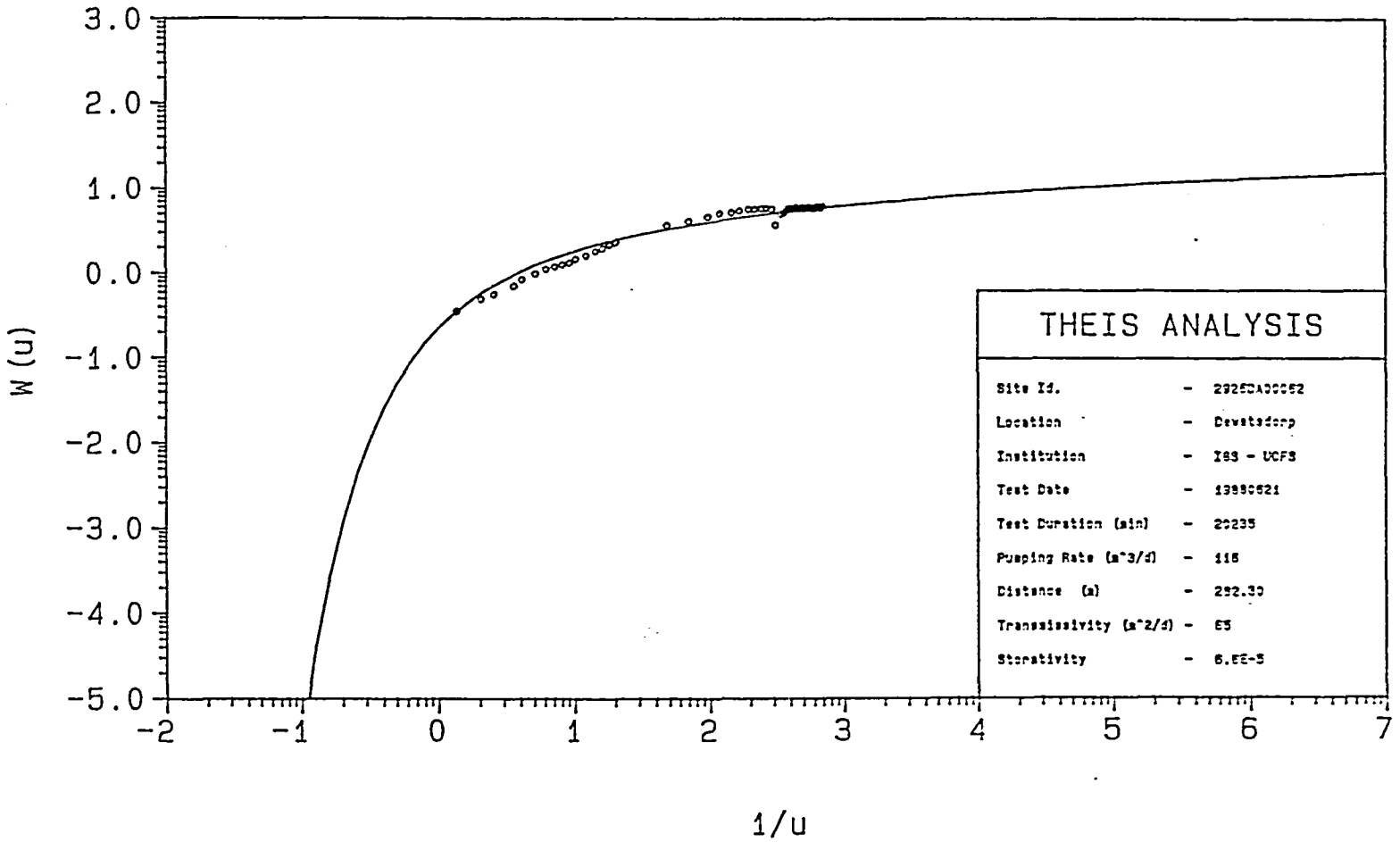

3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
W(u)
-2
-1
0
1
2
3
4
5
6
7
1/u
THEIS ANALYSIS
Site Id. - 2926DA00079
Location - Dewetsdorp
Institution - IGS - UOFS
Test Date - 19880621
Test Duration (min) - 17823
Pumping Rate (m^3/d) - 116
Distance (m) - 21.00
Transmissivity (m^2/d) - 11
Storativity - 5.5E-4

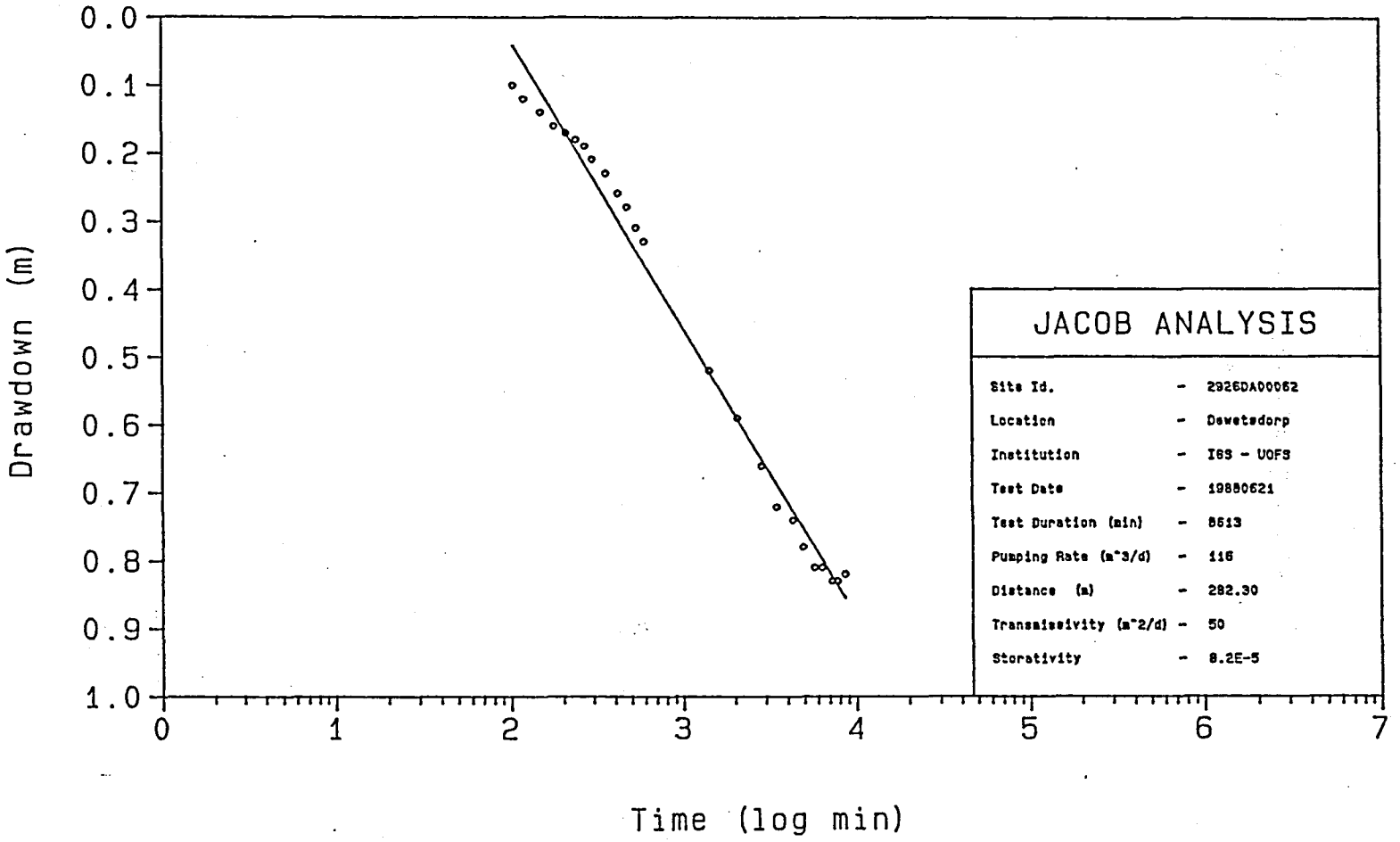

Drawdown (m)
0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
9.0
10.0
0
1
2
3
4
5
6
7
Time (log min)
JACOB ANALYSIS
Site Id. - 2925DA00079
Location - Devetsdorp
Institution - ISS - UOFS
Test Date - 19880621
Test Duration (min) - 5737
Pumping Rate (m^3/d) - 115
Distance (m) - 21.00
Transmissivity (m^2/d) - 10
Storativity - 5.4E-4

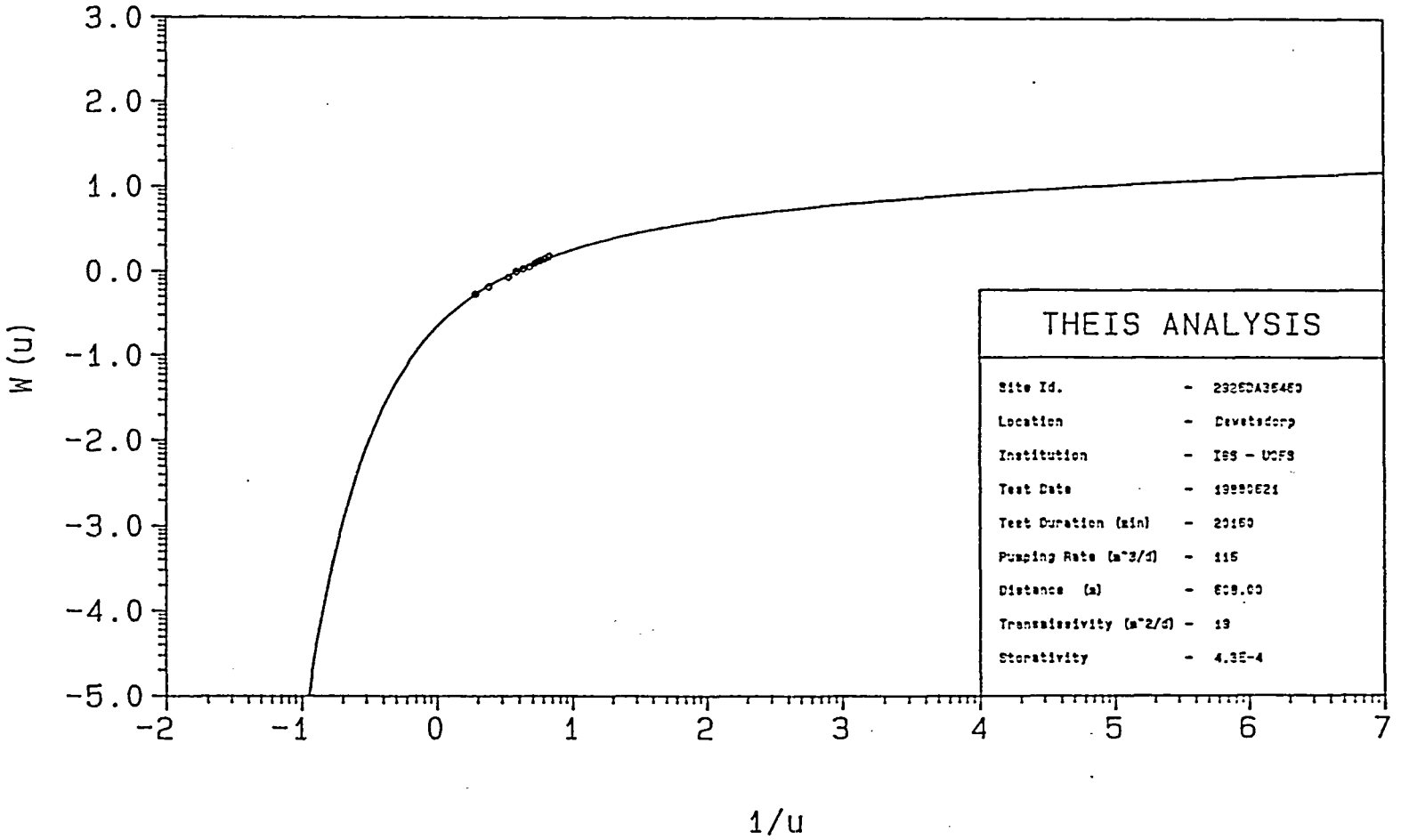

3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
W(u)
-2
-1
0
1
2
3
4
5
6
7
1/u
THEIS ANALYSIS
Site Id. - 2926DA00080
Location - Dewetsdorp
Institution - IWS - UOFS
Test Date - 19880621
Test Duration (min) - 9171
Pumping Rate (m^3/d) - 116
Distance (m) - 242.30
Transmissivity (m^2/d) - 66
Storativity - 3.5E-4

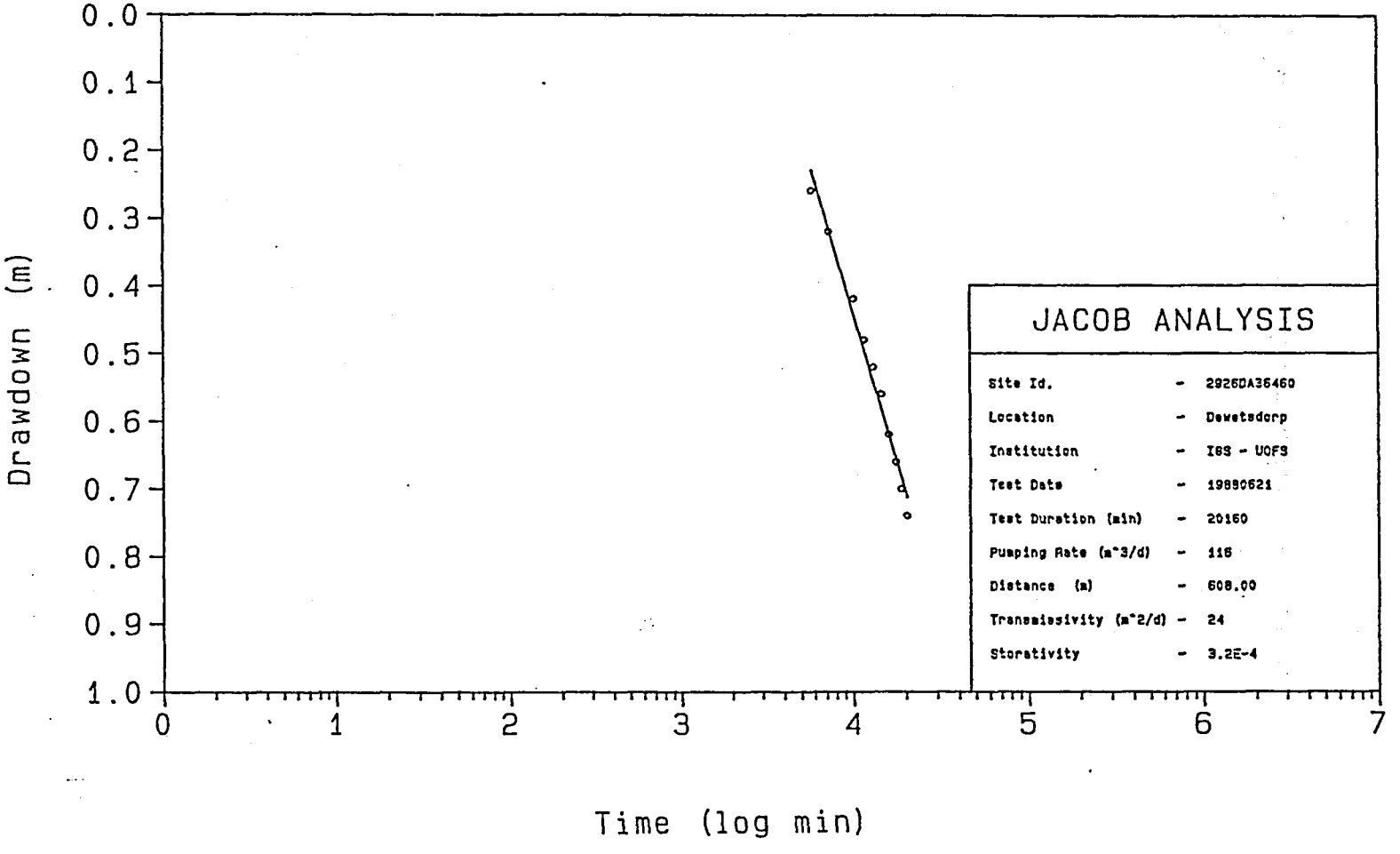

0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Drawdown (m)
0
1
2
3
4
5
6
7
Time (log min)
JACOB ANALYSIS
Site Id. - 2926DA0089
Location - Dewetsdorp
Institution - I89 - UOFS
Test Date - 19890621
Test Duration (min) - 7778
Pumping Rate (m^3/d) - 115
Distance (m) - 242.39
Transmissivity (m^2/d) - 50
Storativity - 2.7E-4

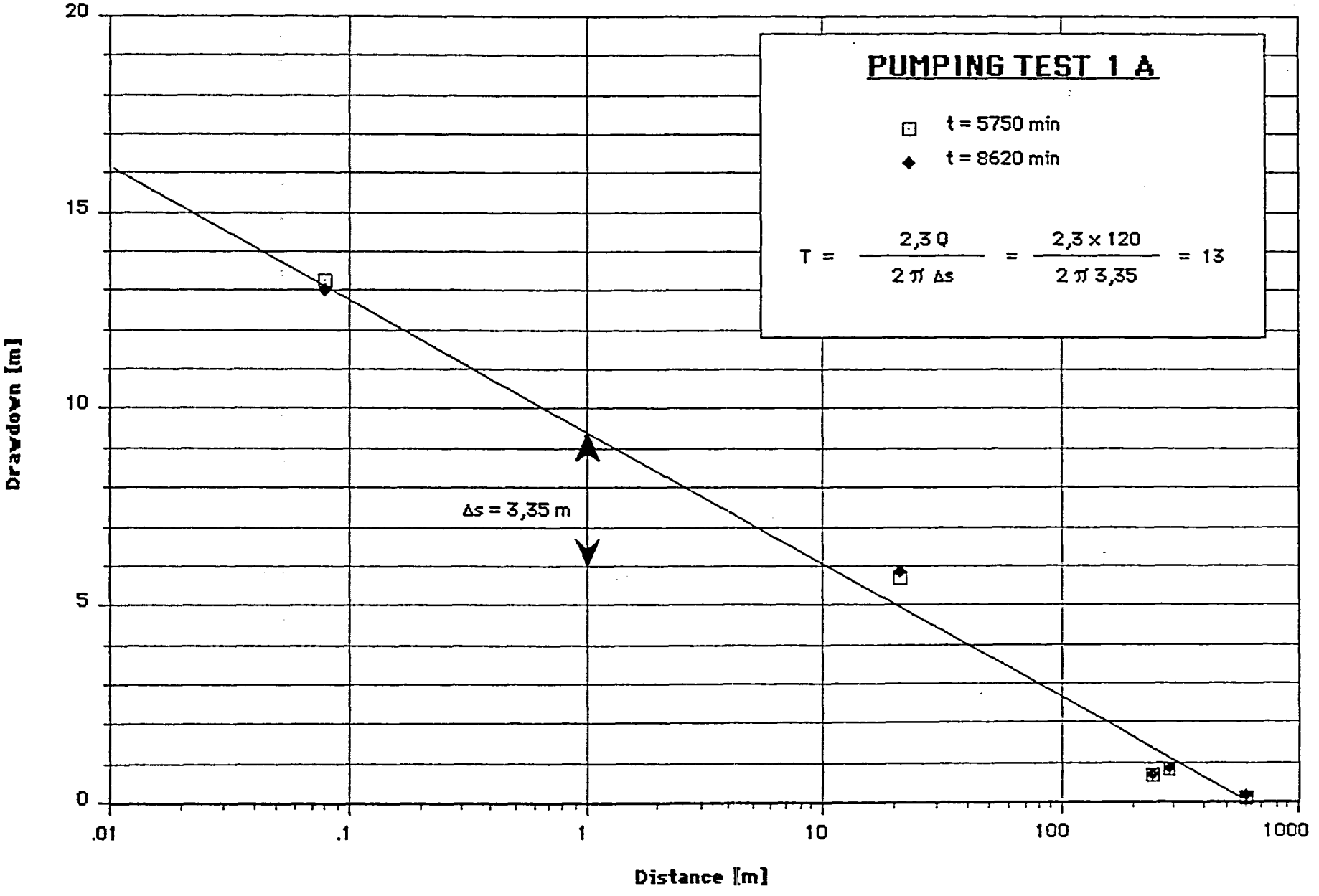

Drawdown (m)
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
0
1
2
3
4
5
6
7
Time (log min)
JACOB ANALYSIS
Site Id. - 2926DA00080
Location - Deweteedorp
Institution - IGS - UOFS
Test Date - 19880621
Test Duration (min) - 20140
Pumping Rate (m^3/d) - 116
Distance (m) - 242.30
Transmissivity (m^2/d) - 181
Storativity - 1E-7

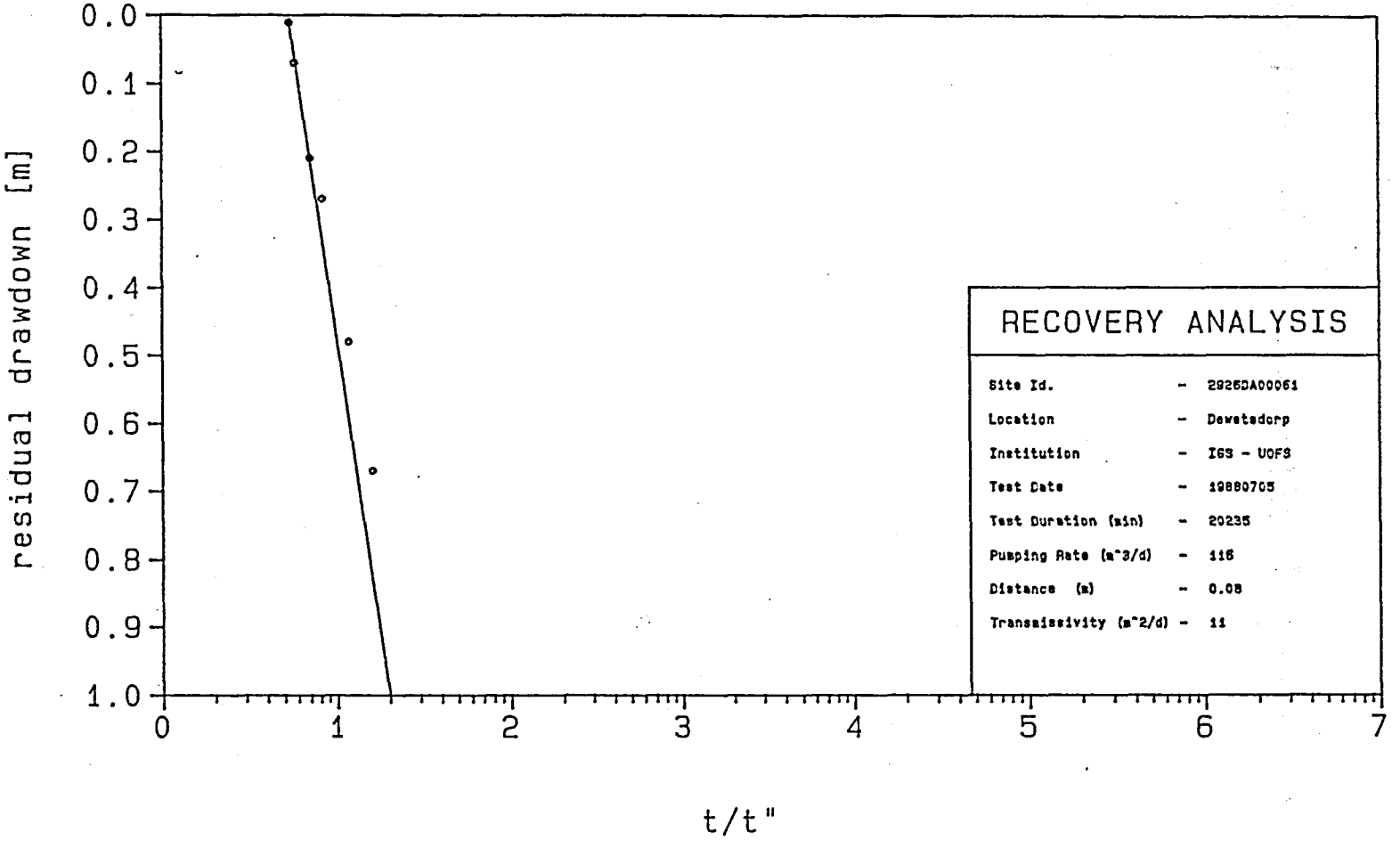

3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
W(u)
-2
-1
0
1
2
3
4
5
6
7
1/u
THEIS ANALYSIS
Site Id. - 2925DA00052
Location - Devetsdorp
Institution - IGS - UOFS
Test Date - 19990621
Test Duration (min) - 20235
Pumping Rate (m^3/d) - 116
Distance (m) - 292.30
Transmissivity (m^2/d) - 65
Storativity - 6.EE-5

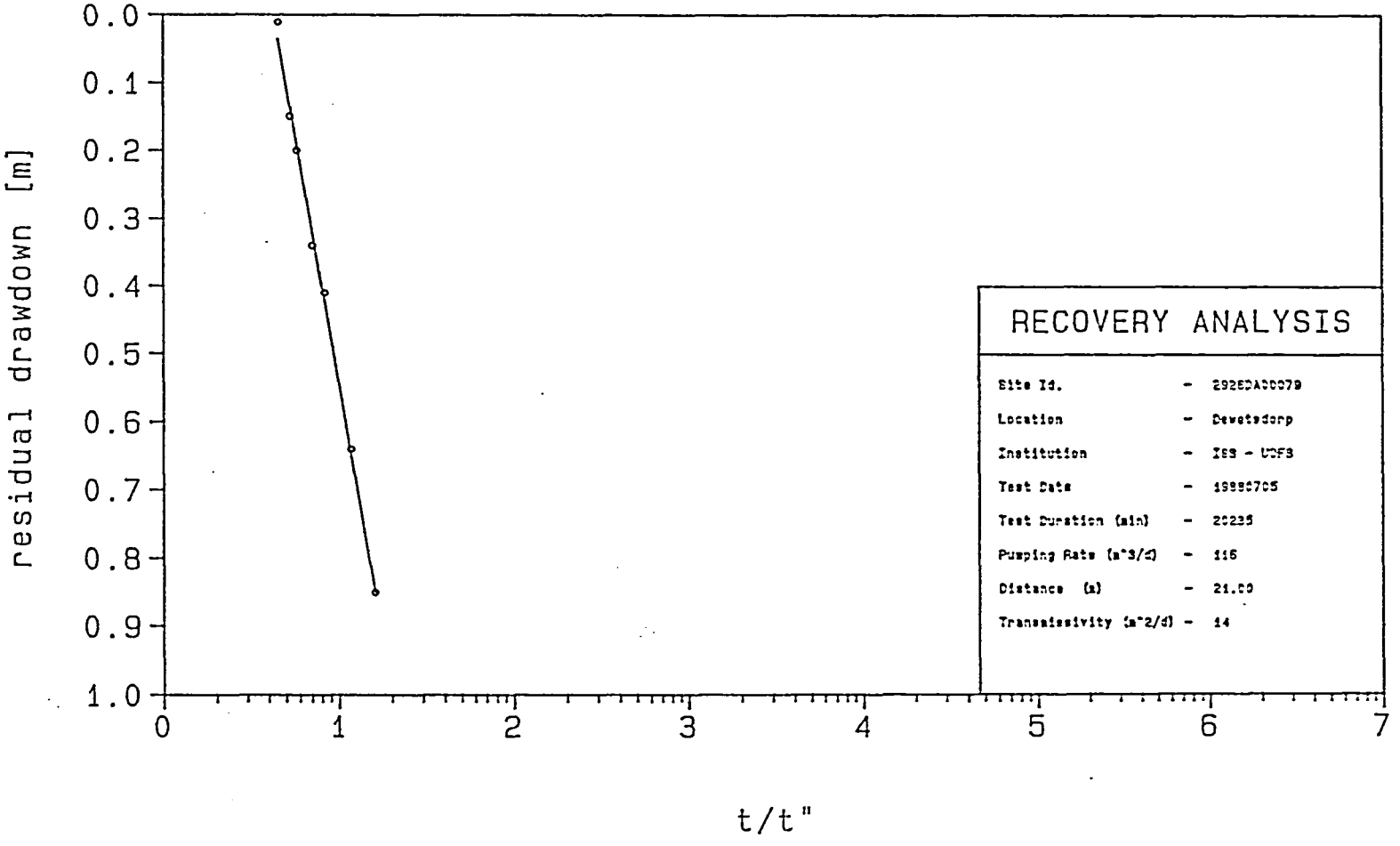

Drawdown (m)
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
0
1
2
3
4
5
6
7
Time (log min)
JACOB ANALYSIS
Site Id. - 2926DA00062
Location - Dewetsdorp
Institution - IGS - UOFS
Test Date - 19880621
Test Duration (min) - 8613
Pumping Rate (m^3/d) - 116
Distance (m) - 282.30
Transmissivity (m^2/d) - 50
Storativity - 8.2E-5

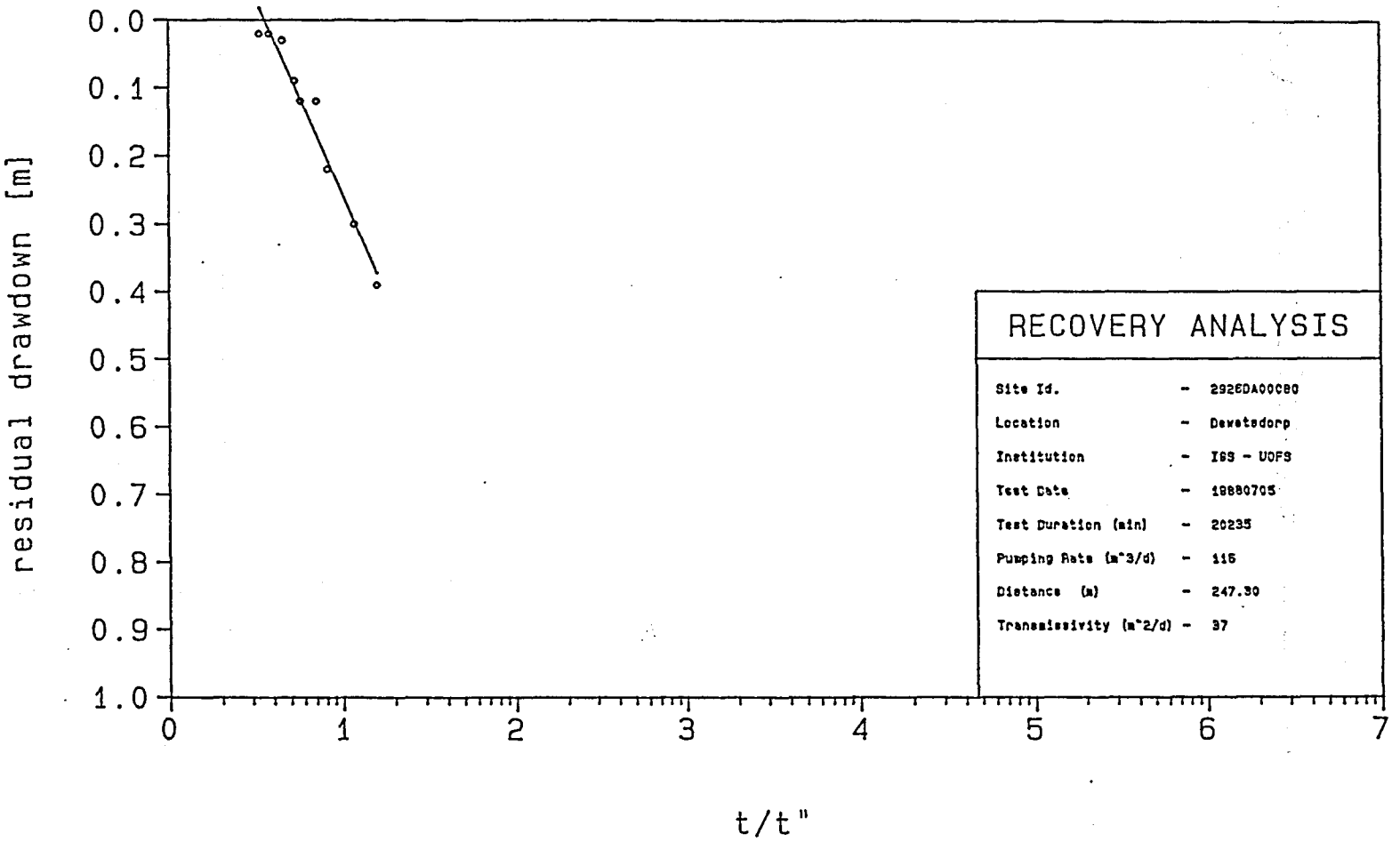

3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
W(u)
-2
-1
0
1
2
3
4
5
6
7
1/u
THEIS ANALYSIS
Site Id. - 2325DA35469
Location - Devetsdorp
Institution - IBS - UOFS
Test Date - 19990621
Test Duration (min) - 20160
Pumping Rate (m^3/d) - 115
Distance (m) - 609.00
Transmissivity (m^2/d) - 19
Storativity - 4.3E-4

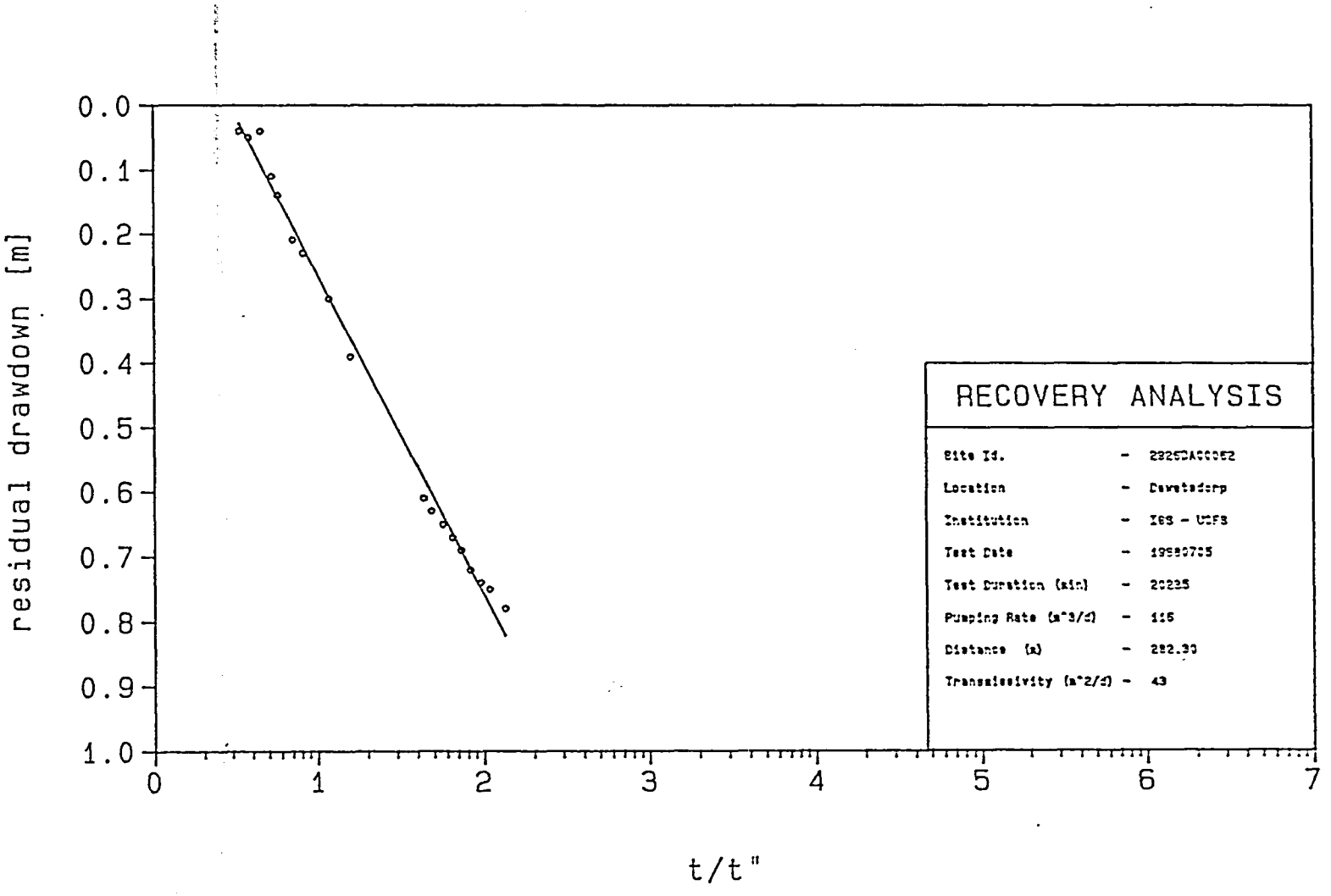

Drawdown (m)
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
0
1
2
3
4
5
6
7
Time (log min)
JACOB ANALYSIS
Site Id. - 2926DA36460
Location - Dewetsdorp
Institution - IBS - UOFS
Test Date - 19890621
Test Duration (min) - 20160
Pumping Rate (m^3/d) - 116
Distance (m) - 608.00
Transmissivity (m^2/d) - 24
Storativity - 3.2E-4

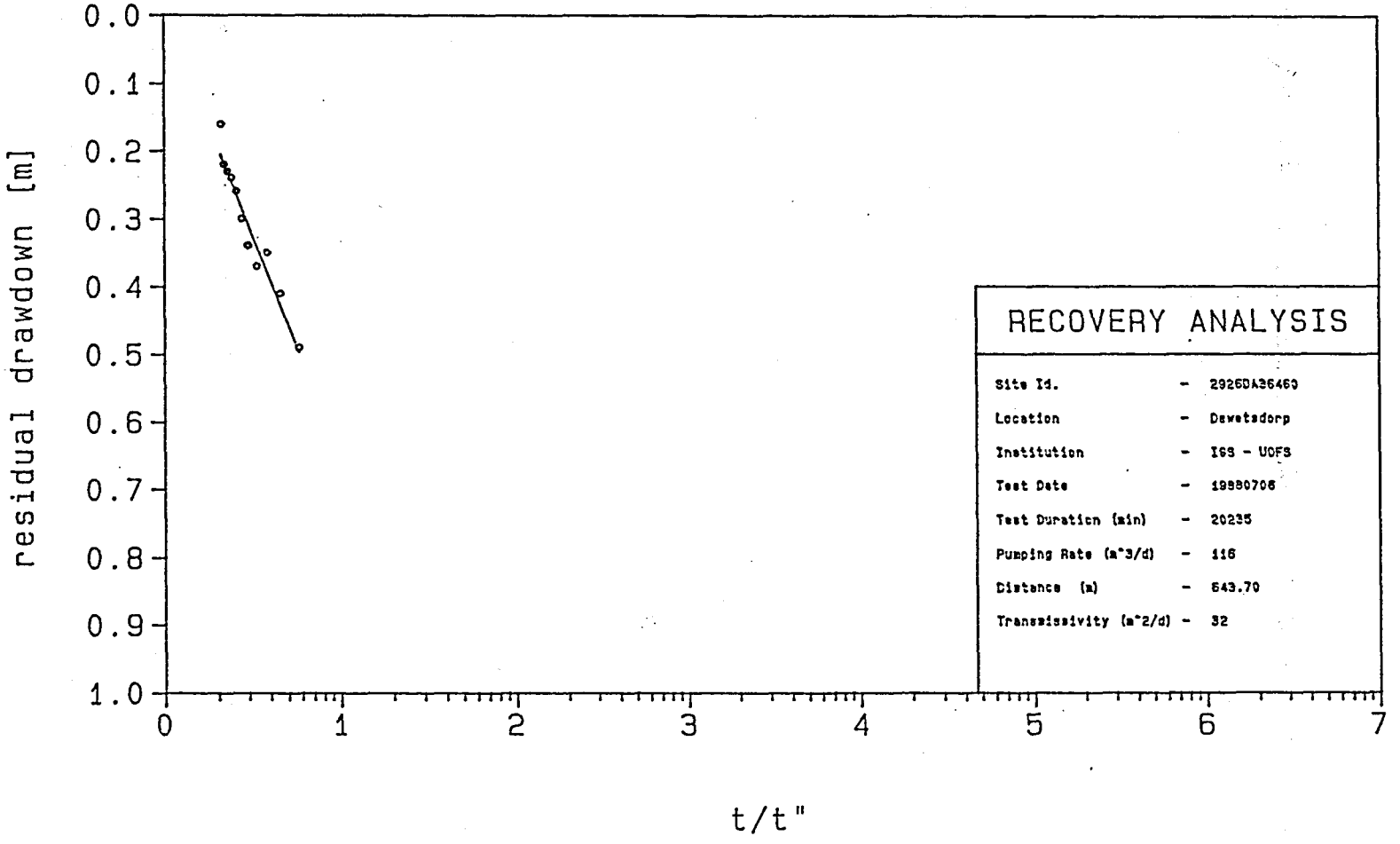

PUMPING TEST 1 A
t = 5750 min
t = 8620 min
T = 2,3 Q / 2 π Δs = 2,3 x 120 / 2 π 3,35 = 13
Δs = 3,35 m
Drawdown [m]
Distance [m]
20
15
10
5
0
.01
.1
1
10
100
1000


residual drawdown [m]
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
0
1
2
3
4
5
6
7
t/t"
RECOVERY ANALYSIS
Site Id. - 2926DA00061
Location - Dewetsdorp
Institution - IGS - UOFS
Test Date - 19880705
Test Duration (min) - 20235
Pumping Rate (m^3/d) - 116
Distance (m) - 0.08
Transmissivity (m^2/d) - 11


residual drawdown [m]
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
0
1
2
3
4
5
6
7
t/t"
RECOVERY ANALYSIS
Site Id. - 292EDA00079
Location - Dewetsdorp
Institution - ISS - UOFS
Test Date - 19950705
Test Duration (min) - 20235
Pumping Rate (m^3/d) - 116
Distance (m) - 21.00
Transmissivity (m^2/d) - 14


residual drawdown [m]
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
0
1
2
3
4
5
6
7
t/t"
RECOVERY ANALYSIS
Site Id. - 2926DA00080
Location - Dewetsdorp
Institution - ISS - UOFS
Test Date - 19880705
Test Duration (min) - 20235
Pumping Rate (m^3/d) - 115
Distance (m) - 247.30
Transmissivity (m^2/d) - 37


residual drawdown [m]
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
0
1
2
3
4
5
6
7
t/t"
RECOVERY ANALYSIS
Site Id. - 2925DA0052
Location - Dewetsdorp
Institution - IGS - UOFS
Test Date - 19980705
Test Duration (min) - 20225
Pumping Rate (m^3/d) - 115
Distance (m) - 282.30
Transmissivity (m^2/d) - 43


residual drawdown [m]
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
0
1
2
3
4
5
6
7
t/t"
RECOVERY ANALYSIS
Site Id. - 2926DA36460
Location - Dewetsdorp
Institution - IGS - UOFS
Test Date - 19880706
Test Duration (min) - 20235
Pumping Rate (m^3/d) - 116
Distance (m) - 643.70
Transmissivity (m^2/d) - 32

* HydroBase * Chemistry Report * Date printed : 22 January 1990
Generated for : Dewetsdorp - IGS/WRC Research project

Nr. on map	Date	Time	Depth m	pH	EC mS/m	TDS mg/L	T.Alk mg/L	Na mg/L	K mg/L	Ca mg/L	Mg mg/L	Si mg/L	Cl mg/L	SO4 mg/L	F mg/L	NO3(N) mg/L
1 A	19671204	12h00		7.40	50.0	368	378	58		64	18		28	10	0.8	
1 A	19760624	08h50		7.94	51.5	390	189	40	1.9	42	16	10.6	27	23	0.6	2.0
2 A	19760624	08h45		8.17	49.8	375	171	46	1.8	33	17	11.4	27	22	0.5	4.1
3 A	19671208	12h00		7.60	52.0	376	415	62		52	26		14	10	0.8	
5 A	19760624	10h05		7.94	65.6	531	298	60	1.7	54	19	13.3	16	14	0.6	0.4
6 A	19760624	09h20		7.83	55.5	451	259	37	0.6	43	26	14.7	14	13	0.4	0.7
8 A	19760624	09h05		7.96	73.9	537	228	100	1.1	34	17	9.6	61	44	0.9	0.5
12 A	19760616	13h10		7.85	46.8	369	201	18	2.2	44	21	14.5	9	15	0.2	3.0
G 2377	19760614	11h20	33.00	8.25	58.1	492	270	84	1.0	24	17	11.0	16	18	1.0	0.6
DEW 22	19760614	16h00		7.80	112.4	717	119	176	1.6	30	12	5.3	164	83	0.6	22.8
DEW 45	19760614	16h00		7.41	66.4	407	100	133	1.3	5	1	0.1	113	18	0.7	2.7
DEW 47	19760614	16h25		7.75	53.9	424	183	122	0.6	3	1	5.4	33	27	2.5	1.9
DEW 51	19760614	17h10		7.97	78.0	637	312	117	1.6	40	18	9.1	37	36	0.6	1.5
DEW 62	19760615	12h00		8.03	66.8	445	180	32	0.9	48	35	13.0	79	13	0.2	2.8
DEW 81	19760615	14h20		7.91	101.1	744	250	202	1.3	16	6	4.3	98	73	0.3	9.2
DEW 134	19760624	12h30		7.88	46.7	394	207	106	0.5	2	1	5.2	14	13	1.9	0.6
G36429	19850122	14h00	77.00	7.90	36.3	291	121	67	4.8	18	3	4.8	36	12	2.8	0.0
G36429	19850122	14h00	101.00	7.50	55.2	429	99	76	12.7	35	7	5.0	47	128	2.2	0.0
G36430	19850123	15h00	19.00	8.00	39.0	323	168	53	3.7	25	10	5.1	6	20	0.7	0.1
G36430	19850123	15h00	45.00	8.00	39.7	394	212	94	5.5	12	4	7.4	16	1	2.7	0.1
G36430	19850123	15h00	100.00	8.05	40.9	447	238	106	15.5	12	3	7.9	13	3	1.9	0.4
G36431	19850223	13h00	23.00	8.09	39.6	330	170	68	2.2	20	6	5.0	5	21	1.2	0.2
G36433	19850124	13h00	48.00	8.30	40.2	343	187	60	1.9	19	15	8.8	7	11	0.9	0.1
G36434	19850125	12h00	90.00	8.20	48.5	359	130	103	8.2	12	2	1.6	63	5	8.3	0.1
G36435	19850125	16h00	19.00	8.00	40.9	307	127	73	3.3	14	8	4.6	35	8	9.9	0.1
G36435	19850125	16h00	41.00	7.90	28.5	236	106	62	7.5	5	2	4.8	18	3	7.1	0.2
G36436	19850125	15h00	19.00	8.20	38.1	322	173	67	2.4	16	8	9.0	7	10	1.1	0.1
G36437	19850128	10h00	22.00	8.00	35.6	291	159	24	4.3	34	17	12.6	4	12	0.3	0.2
G36439	19850129	13h00	40.00	4.85	33.1	299	155	66	6.8	13	3	6.3	8	12	1.3	0.1
G36441	19850128	17h00	41.00	8.20	40.0	358	192	81	5.6	17	2	5.9	5	11	1.4	0.1
G36443	19850130	17h00	100.00	8.50	29.0	265	141	72	1.6	6	1	5.2	3	7	1.1	0.1
G36449	19850130	17h00	30.00	8.34	46.0	443	235	110	2.9	10	6	7.7	6	19	0.8	0.2
G36449	19850130	17h00	101.00	8.50	42.8	418	223	106	2.2	8	7	7.9	6	15	1.1	0.1
G36450	19850131	08h00	41.00	8.11	50.3	413	209	103	2.9	8	3	6.0	14	23	3.1	0.2
G36452	19850204	15h00	30.00	8.30	36.3	308	169	49	1.7	17	16	9.5	6	11	0.6	0.1
G36455	19850204	11h00	35.00	8.40	41.3	368	193	92	4.9	10	5	5.8	12	8	1.6	0.1
G36456	19850204	15h00	30.00	8.30	45.0	400	210	101	5.0	11	4	6.3	7	16	1.0	0.0
G36461	19850205	11h00	30.00	7.90	46.3	391	220	56	5.5	29	13	8.0	8	10	0.7	0.2
G36465	19850207	12h00	29.00	8.20	32.5	316	163	74	3.5	12	5	6.7	4	17	1.1	0.0
G36467	19850208	12h00	21.00	8.30	39.0	353	191	63	1.1	20	13	8.0	4	18	1.1	0.1

Sample No.	$\delta^{18}O$ [‰]	δD [‰]	^{3}H (TU)
DG36443/053	-4.67	-29.4	0.4
DG36433/100	-4.98	-30.9	0.0
DG36444/025	-5.33	-32.2	0.0
DG36429/100	-4.58	-28.4	2.7
DG36433/019	-5.07	-32.2	1.0
DG36433/049	-5.23	-31.7	0.9
DG36430/100	-5.60	-36.5	0.4
DG36450/041	-5.42	-32.4	1.5
AG36450/012	-3.54	-28.2	0.2
AG36483/127	-3.54	-31.0	2.0
AG36491/031	-3.29	-28.1	1.3
AG36496/030	-4.07	-31.5	0.4
AG36499/068	-4.98	-37.1	0.0
AG36499A/45	-4.98	-37.1	0.0
AG36502/025	-4.84	-33.7	1.1
AG36504/018	-4.47	-28.0	0.5
AG36504/100	-4.50	-27.4	0.8
AG36505/012	-4.37	-28.5	0.9
AG36505/042	-4.45	-31.6	0.3
AG36508/025	-4.25	-28.2	1.3
AG36515/050	-3.39	-25.1	2.0
AG36516/030	-4.54	-29.4	1.3
DR281185/01	-1.56	-0.9	
DR281185/02	-6.95	-42.9	
DR281185/03	-7.63	-47.9	
DR281185/04	-7.03	-43.2	
DR281185/05	-5.22	-29.9	
DR281185/06	-5.49	-26.4	
DR281185/07	-6.51	-38.7	
DR031285/01	-5.20	-26.6	
DR031285/02	-4.31	-20.6	
DR031285/03	-6.05	-36.8	
DR341285/01	-7.50	-36.6	
DR341285/02	-8.77	-46.4	
DR341285/03	-8.21	-45.1	
DR341285/04	-8.25	-45.5	
DR341285/05	-8.18	-46.4	
DR341285/06	-8.82	-53.5	
DR041285/01	-2.68	-9.4	
DR041285/02	-4.93	-18.9	
DR041285/03	-5.82	-29.4	
DR041285/04	-5.96	-32.3	
DR051285/01	-3.20	-11.8	
DR051285/02	-4.71	-16.6	
DR051285/03	-4.02	-14.8	
DR051285/04	-6.50	-36.0	
DR051285/05	-9.43	-63.7	
DR051285/06	-10.38	-75.4	
DF111285	-1.69	-15.5	
DR161285/01	-2.59	-9.7	
DR161285/02	-4.55	-21.6	
DR161285/03	-5.41	-25.4	
DR161285/04	-4.36	-15.4	
DR161285/05	-3.71	-8.9	
DR161285/06	-5.84	-32.1	

Sample No.	$\delta^{18}O$ [‰]	δD [‰]
DR161285/07	-6.39	-36.2
DR161285/08	-7.07	-44.4
DR0230186/01	-1.12	-1.5
DR0230186/02	-0.42	+2.6
DR0230186/03	-2.04	-6.7
AR281185	+4.48	+38.6
AR291185	-4.75	-22.7
AR041285/01	-9.82	-63.8
AR041285/02	-10.18	-65.1
AR061285/01	-4.18	-12.5
AR061285/02	-7.71	-34.5
AR031285/01	-6.52	-36.8
AR031285/02	-7.61	-45.9
AR031285/03	-7.11	-40.9
AR031285/04	-8.71	-58.7
AR031285/05	-4.90	-27.8
AR031285/06	-4.40	-23.5
AR031285/07	-5.99	-31.8
AR031285/08	-4.83	-21.7
AR031285/09	-4.95	-23.6
AR031285/10	-5.69	
AR031285/11	-5.89	-31.8
Aar 1, 880216	-10.9	
Aar 2	-7.5	
Aar 3	-7.8	
Aar 4	-7.7	
Aar 5	-10.5	
Aar 6	-8.4	
Aar 7	-8.7	
Aar 8	-9.0	
Aar 9	-10.9	
Aar 10	-11.2	
Aar 11	-11.0	
Aar 14, 880219	-12.5	
DR 1, 880219	-4.7	
DR 2	-6.0	
DR 3	-7.1	
DR 4	-7.7	
DR 5	-7.5	
DR 6	-7.9	
DR 7	-8.7	
DR 8	-6.1	
DR 9	-4.4	
DR 10	-4.5	
DR 11	-4.3	
DR 12, 880221	-4.8	

SOIL PROFILE DESCRIPTIONS AND ANALYTICAL DATA

Profile No. 1: Oakleaf form, Letaba series. Horizon sequence: Orthic A on neocutanic B on unconsolidated parent material.

The orthic A-horizon is 25 cm deep, apedal, single-grained with good root development. It changes into a B21-horizon, found between a depth of 25 and 50 cm. It has cutans, is red, calcareous and contains roots to a depth of 40 cm. The B1-horizon changes gradually into a B22-horizon with few cutans and plentiful limestone layers. This horizon changes gradually into unconsolidated material.

	A1	B21	B22
Sand (%)	61	59	60
Silt (%)	9	13	18
Clay (%)	30	28	22
Depth(cm)	- 25	- 50	50 +

Profile No. 2: Mispah form, Kalkbank series. Horizon sequence: Orthic A on calcrete.

The orthic A-horizon varies in thickness between 20 and 60 cm and has a good root distribution.

The calcrete consists of separate layers with soil of varying texture in between.

	A	C
Sand (%)	84	82
Silt (%)	7	9
Clay (%)	9	9
Depth(cm)	- 40	40 +

Profile No. 4: Sterkspruit form, Swaerskloof series. Horizon sequence: Orthic A on prismacutanic B on weathered shale.

The orthic A-horizon is unstructured, massive, 25 cm thick and changes abruptly in the prismacutanic B-horizon which is red coloured with moderately developed prisms. It occurs between 20 to 40 cm and changes into a weakly structured B horizon which reaches a depth of 50 cm. The underlying shale is weathered.

	A1	B2	B3
Sand (%)	60	58	58
Silt (%)	20	13	19
Clay (%)	20	29	23
Depth(cm)	- 20	- 40	- 50 +

Profile No. 13: Hutton form, Shigalo series. Horizon sequence: Orthic A on red apedal B-horizon.

The soil probably originated from wind-blown material. The orthic A is 30 cm thick and changes gradually into the red apedal B which is calcareous, unstructured (single-grained) and reaches a depth of 90 cm.

	A	C
Sand (%)	86	84
Silt (%)	5	6
Clay (%)	9	10
Depth(cm)	- 30	-90

DRY- AND WET BULK DENSITIES IN DE AAR AREA.

SITE	DEPTH	WATER%	NEU C.R.	WBD	GAM C.R.	DBD
AAR - 1	/0.10 :	10.48 +/- 1.09	0.224	1.88 +/- 0.03	2.117	1.78 +/- 0.03
AAR - 1	/0.20 :	11.31 +/- 0.55	0.260	1.91 +/- 0.01	2.194	1.79 +/- 0.01
AAR - 1	/0.40 :	11.20 +/- 0.29	0.260	1.81 +/- 0.02	2.314	1.69 +/- 0.02
AAR - 1	/0.70 :	11.14 +/- 0.30	0.234	1.79 +/- 0.04	2.336	1.68 +/- 0.04

SITE	DEPTH	WATER%	NEU C.R.	WBD	GAM C.R.	DBD
AAR - 3	/0.10 :	6.47 +/- 0.31	0.193	1.78 +/- 0.03	2.586	1.72 +/- 0.03
AAR - 3	/0.20 :	9.49 +/- 0.75	0.220	1.88 +/- 0.02	3.009	1.78 +/- 0.01
AAR - 3	/0.40 :	12.11 +/- 0.54	0.251	1.97 +/- 0.09	3.439	1.85 +/- 0.08
AAR - 3	/0.70 :	10.79 +/- 0.33	0.311	1.87 +/- 0.06	2.719	1.76 +/- 0.05

SITE	DEPTH	WATER%	NEU C.R.	WBD	GAM C.R.	DBD
AAR - 2	/0.10 :	14.08 +/- 0.74	0.144	1.63 +/- 0.02	2.523	1.49 +/- 0.02
AAR - 2	/0.20 :	13.83 +/- 0.77	0.162	1.63 +/- 0.03	2.747	1.49 +/- 0.02
AAR - 2	/0.40 :	6.28 +/- 0.07	0.172	1.82 +/- 0.02	2.703	1.76 +/- 0.02
AAR - 2	/0.70 :	18.78 +/- 0.29	0.265	2.03 +/- 0.03	2.705	1.85 +/- 0.03

SITE	DEPTH	WATER%	NEU C.R.	WBD	GAM C.R.	DBD
AAR - 8	/0.10 :	8.53 +/- 1.59	0.237	1.71 +/- 0.06	2.060	1.62 +/- 0.05
AAR - 8	/0.20 :	12.33 +/- 0.31	0.290	1.87 +/- 0.03	2.028	1.75 +/- 0.03
AAR - 8	/0.40 :	11.09 +/- 0.53	0.312	1.85 +/- 0.09	2.147	1.74 +/- 0.08

SITE	DEPTH	WATER%	NEU C.R.	WBD	GAM C.R.	DBD
AAR - 9	/0.10 :	7.82 +/- 0.33	0.217	1.64 +/- 0.03	2.365	1.56 +/- 0.02
AAR - 9	/0.20 :	9.20 +/- 0.55	0.254	1.78 +/- 0.08	2.162	1.69 +/- 0.08
AAR - 9	/0.40 :	10.31 +/- 0.65	0.274	1.87 +/- 0.03	2.348	1.77 +/- 0.03
AAR - 9	/0.70 :	10.49 +/- 0.94	0.268	1.82 +/- 0.03	2.218	1.71 +/- 0.03

SITE	DEPTH	WATER%	NEU C.R.	WBD	GAM C.R.	DBD
AAR - 10	/0.10 :	3.45 +/- 0.16	0.107	1.81 +/- 0.00	1.963	1.78 +/- 0.00
AAR - 10	/0.20 :	5.95 +/- 0.65	0.137	1.85 +/- 0.02	1.984	1.79 +/- 0.02
AAR - 10	/0.40 :	6.64 +/- 0.30	0.171	1.87 +/- 0.08	2.258	1.81 +/- 0.08

SITE	DEPTH	WATER%	NEU C.R.	WBD	GAM C.R.	DBD
AAR - 11	/0.10 :	4.97 +/- 0.86	0.256	1.62 +/- 0.04	2.269	1.57 +/- 0.03
AAR - 11	/0.20 :	12.41 +/- 1.18	0.317	1.40 +/- 0.03	2.481	1.28 +/- 0.03
AAR - 11	/0.40 :	21.23 +/- 0.20	0.361	1.56 +/- 0.01	2.415	1.35 +/- 0.01
AAR - 11	/0.70 :	30.86 +/- 0.39	0.448	1.94 +/- 0.04	2.248	1.63 +/- 0.04

SITE	DEPTH	WATER%	NEU C.R.	WBD	GAM C.R.	DBD
AAR - 12	/0.10 :	5.60 +/- 0.88	0.156	1.72 +/- 0.01	2.485	1.66 +/- 0.01
AAR - 12	/0.20 :	5.73 +/- 1.01	0.253	1.68 +/- 0.04	2.038	1.62 +/- 0.05
AAR - 12	/0.40 :	18.48 +/- 0.47	0.313	1.69 +/- 0.04	2.541	1.50 +/- 0.04
AAR - 12	/0.70 :	23.05 +/- 1.51	0.392	1.91 +/- 0.01	2.357	1.68 +/- 0.01

SITE : ACCESS TUBE NUMBER(-).
WATER% : VOLUME MOISTURE CONTENTS(%).
GAM C.R. : GAMMA-GAMMA COUNT RATIO(-).
WBD : WET BULK DENSITY (Mg/m^3).
DEPTH : DEPTH BELOW SURFACE (m).
NEU C.R. : NEUTRON COUNT RATIO(-).
GAM CPM. : GAMMA-GAMMA COUNTS PER MINUTE(-).
DBD : DRY BULK DENSITY (Mg/m^3).

DRY- AND WET BULK DENSITIES IN DE AAR AREA.

SITE	DEPTH	WATER%	NEU C.R.	WBD	GAM C.R.	DBD
AAR - 13/0.10 :		4.70 +/- 0.29	0.286	1.84 +/- 0.06	1.760	1.80 +/- 0.05
AAR - 13/0.20 :		10.02 +/- 0.88	0.347	1.73 +/- 0.06	1.941	1.63 +/- 0.06
AAR - 13/0.40 :		15.40 +/- 0.63	0.352	1.91 +/- 0.06	2.000	1.76 +/- 0.05
AAR - 13/0.70 :		11.94 +/- 0.38	0.307	2.05 +/- 0.02	1.836	1.93 +/- 0.02

SITE	DEPTH	WATER%	NEU C.R.	WBD	GAM C.R.	DBD
AAR - 14/0.10 :		8.66 +/- 2.36	0.188	1.85 +/- 0.01	2.409	1.76 +/- 0.02
AAR - 14/0.20 :		13.23 +/- 0.91	0.236	2.01 +/- 0.02	2.101	1.88 +/- 0.01
AAR - 14/0.40 :		12.68 +/- 0.22	0.292	2.00 +/- 0.04	2.154	1.87 +/- 0.03
AAR - 14/0.70 :		11.30 +/- 0.11	0.376	2.00 +/- 0.02	2.049	1.88 +/- 0.02
AAR - 14/1.10 :		18.10 +/- 0.43	0.414	2.17 +/- 0.05	1.985	1.98 +/- 0.05

SITE	DEPTH	WATER%	NEU C.R.	WBD	GAM C.R.	DBD
AAR - 16/0.10 :		4.88 +/- 1.52	0.169	1.62 +/- 0.02	2.141	1.57 +/- 0.02
AAR - 16/0.20 :		8.29 +/- 0.79	0.219	1.60 +/- 0.09	2.067	1.52 +/- 0.09
AAR - 16/0.40 :		9.87 +/- 0.45	0.277	1.53 +/- 0.07	2.527	1.43 +/- 0.06
AAR - 16/0.70 :		9.92 +/- 0.38	0.361	1.54 +/- 0.06	2.396	1.44 +/- 0.05
AAR - 16/1.10 :		12.58 +/- 0.28	0.344	1.61 +/- 0.04	2.291	1.48 +/- 0.03

SITE	DEPTH	WATER%	NEU C.R.	WBD	GAM C.R.	DBD
AAR - 20/0.10 :		8.97 +/- 0.83	0.222	1.28 +/- 0.03	2.485	1.19 +/- 0.03
AAR - 20/0.20 :		13.68 +/- 0.53	0.287	1.67 +/- 0.08	2.038	1.53 +/- 0.08
AAR - 20/0.40 :		18.25 +/- 0.60	0.399	1.85 +/- 0.03	2.541	1.66 +/- 0.03
AAR - 20/0.70 :		16.96 +/- 1.43	0.409	1.67 +/- 0.02	2.357	1.50 +/- 0.00

SITE	DEPTH	WATER%	NEU C.R.	WBD	GAM C.R.	DBD
AAR - 22/0.10 :		7.63 +/- 0.65	0.259	1.65 +/- 0.04	2.084	1.57 +/- 0.03
AAR - 22/0.20 :		11.71 +/- 0.66	0.362	1.70 +/- 0.08	2.099	1.58 +/- 0.07
AAR - 22/0.40 :		19.13 +/- 0.52	0.366	1.74 +/- 0.07	2.156	1.55 +/- 0.07
AAR - 22/0.70 :		19.12 +/- 0.99	0.297	1.73 +/- 0.02	2.250	1.54 +/- 0.02

SITE : ACCESS TUBE NUMBER(-).
WATER% : VOLUME MOISTURE CONTENTS(%).
GAM C.R. : GAMMA-GAMMA COUNT RATIO(-).
WBD : WET BULK DENSITY (Mg/m^3).

DEPTH : DEPTH BELOW SURFACE (m).
NEU C.R. : NEUTRON COUNT RATIO(-).
GAM CPM. : GAMMA-GAMMA COUNTS PER MINUTE(-).
DBD : DRY BULK DENSITY (Mg/m^3).

TEXTURE ANALYSIS IN DE AAR AREA.

SITE /DEPTH	F1	F2	F3	F4	F5	F6	F7	FT
AAR - 1/0.1 :	3.14	6.19	9.15	43.69	3.64	14.00	10.63	90.43
AAR - 1/0.2 :	1.66	4.68	8.42	43.76	4.10	15.60	20.70	99.00
AAR - 1/0.4 :	.12	3.53	7.22	45.38	6.85	18.80	17.30	99.30
AAR - 1/0.7 :	.72	2.42	3.80	54.96	9.78	19.20	8.60	99.48

SITE /DEPTH	F1	F2	F3	F4	F5	F6	F7	FT
AAR - 2/0.1 :	.68	.24	.04	44.36	5.52	21.60	26.20	99.44
AAR - 2/0.2 :	.40	.26	.86	40.52	4.08	18.20	27.20	99.52
AAR - 2/0.4 :	2.52	7.53	15.14	42.99	3.42	15.70	12.60	99.90
AAR - 2/0.7 :	.04	2.86	5.60	32.94	4.34	18.40	34.40	99.38

SITE /DEPTH	F1	F2	F3	F4	F5	F6	F7	FT
AAR - 3/0.1 :	2.96	6.18	9.14	29.10	7.40	24.50	18.43	97.71
AAR - 3/0.2 :	3.93	8.25	14.66	37.66	3.56	13.20	17.13	98.39
AAR - 3/0.4 :	4.82	10.38	12.57	24.95	4.60	22.70	18.60	98.62
AAR - 3/0.7 :	8.31	14.11	15.05	28.58	5.18	16.60	11.90	99.74

SITE /DEPTH	F1	F2	F3	F4	F5	F6	F7	FT
AAR - 8/0.1 :	.56	2.84	6.63	40.40	4.60	17.70	26.60	99.32
AAR - 8/0.2 :	1.58	3.54	6.92	39.24	2.86	16.40	26.50	97.04
AAR - 8/0.4 :	1.81	4.16	6.87	48.75	6.52	18.60	14.50	101.20

SITE /DEPTH	F1	F2	F3	F4	F5	F6	F7	FT
AAR - 9/0.1 :	1.22	2.82	5.49	43.91	6.12	18.50	20.90	98.96
AAR - 9/0.2 :	1.34	3.12	5.64	46.46	5.36	15.80	22.40	100.12
AAR - 9/0.4 :	3.26	5.62	7.40	45.69	1.48	14.20	19.40	97.04
AAR - 9/0.7 :	3.72	5.82	7.16	47.16	7.34	10.50	15.83	97.53

SITE /DEPTH	F1	F2	F3	F4	F5	F6	F7	FT
AAR - 10/0.1 :	3.16	5.82	7.82	65.04	4.78	5.40	7.40	99.42
AAR - 10/0.2 :	1.42	4.32	6.96	65.12	4.40	6.90	10.00	99.12
AAR - 10/0.4 :	2.22	4.28	6.52	66.13	2.88	7.10	8.70	97.84

SITE /DEPTH	F1	F2	F3	F4	F5	F6	F7	FT
AAR - 12/0.1 :	.20	.34	1.52	49.00	.80	22.30	23.10	97.26
AAR - 12/0.2 :	.12	.22	1.04	60.18	7.92	18.90	10.40	98.78
AAR - 12/0.4 :	.08	.42	1.46	42.44	7.82	26.00	21.53	99.75
AAR - 12/0.7 :	.20	.48	1.34	45.04	5.08	25.60	21.83	99.57

SITE /DEPTH	F1	F2	F3	F4	F5	F6	F7	FT
AAR - 13/0.1 :	.40	2.06	9.79	48.98	3.62	18.00	14.80	97.64
AAR - 13/0.7 :	.02	.62	5.92	58.50	4.28	4.70	25.40	99.44

SITE	:ACCESS TUBE NUMBER(-).	DEPTH	:DEPTH BELOW SURFACE(m).
F1	:FRACTION <2.000 >1.000	F2	:FRACTION <1.000 >0.500
F3	:FRACTION <0.500 >0.250	F4	:FRACTION <0.250 >0.045
F5	:GROVE SILT FRACTION	F6	:FINE SILT FRACTION
F7	:CLAY FRACTION	FT	:TOTAL (MUST BE ≈ 100%)

TEXTURE ANALYSIS IN DE AAR AREA.

SITE /DEPTH	F1	F2	F3	F4	F5	F6	F7	FT
AAR - 14/0.1 :	.98	3.86	10.89	44.97	1.84	17.50	17.70	97.74
AAR - 14/0.2 :	1.82	6.98	13.56	35.08	3.74	12.20	26.10	99.48
AAR - 14/0.4 :	2.97	9.76	17.23	39.22	4.30	12.00	14.70	100.18
AAR - 14/0.7 :	6.27	16.28	32.87	26.19	3.58	7.60	7.00	99.80
AAR - 14/1.1 :	5.45	11.96	18.85	42.66	3.04	10.80	6.60	99.36

SITE /DEPTH	F1	F2	F3	F4	F5	F6	F7	FT
AAR - 16/0.1 :	1.30	2.64	10.36	55.54	3.10	13.70	10.60	97.24
AAR - 16/0.2 :	.50	2.40	10.60	45.18	5.04	17.50	17.70	98.92
AAR - 16/0.4 :	.86	3.04	10.64	42.73	5.60	21.90	15.60	100.36
AAR - 16/0.7 :	.50	2.79	10.72	38.75	9.22	22.40	14.20	98.58
AAR - 16/1.1 :	.80	1.93	9.71	31.24	11.82	27.20	16.50	99.20

SITE /DEPTH	F1	F2	F3	F4	F5	F6	F7	FT
AAR - 20/0.2 :	.38	.84	1.84	39.01	2.20	22.90	30.53	97.71
AAR - 20/0.4 :	.62	.90	2.02	49.97	2.00	19.00	23.93	98.43

SITE /DEPTH	F1	F2	F3	F4	F5	F6	F7	FT
AAR - 22/0.1 :	1.46	2.38	4.52	56.20	6.76	12.30	18.13	101.75
AAR - 22/0.2 :	1.90	2.98	5.54	51.73	1.54	13.50	24.73	101.91
AAR - 22/0.4 :	.38	1.24	2.96	52.60	3.44	19.00	21.90	101.52
AAR - 22/0.7 :	3.12	5.71	7.19	40.20	6.26	22.30	14.80	99.58

SITE	:ACCESS TUBE NUMBER(-).	DEPTH	:DEPTH BELOW SURFACE(m).
F1	:FRACTION <2.000 >1.000	F2	:FRACTION <1.000 >0.500
F3	:FRACTION <0.500 >0.250	F4	:FRACTION <0.250 >0.045
F5	:GROVE SILT FRACTION	F6	:FINE SILT FRACTION
F7	:CLAY FRACTION	FT	:TOTAL (MUST BE ≈ 100%)

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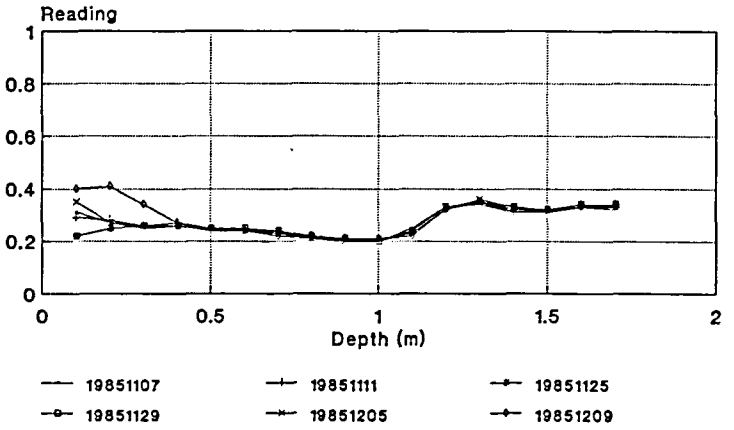
SOIL MOISTURE TUBE 1
1985



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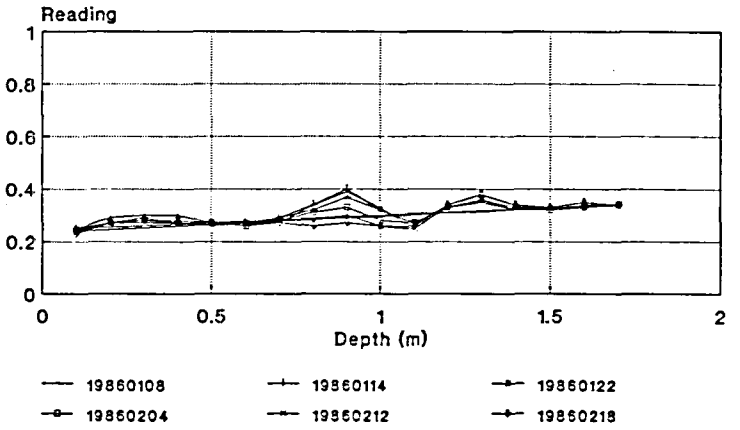
SOIL MOISTURE TUBE 1
January -February 1986



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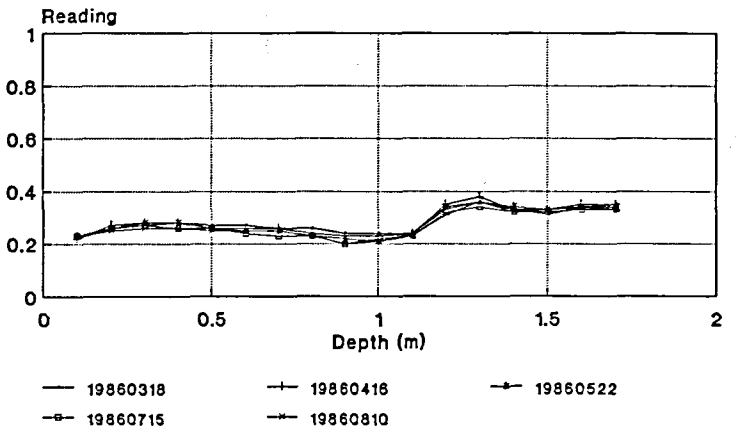

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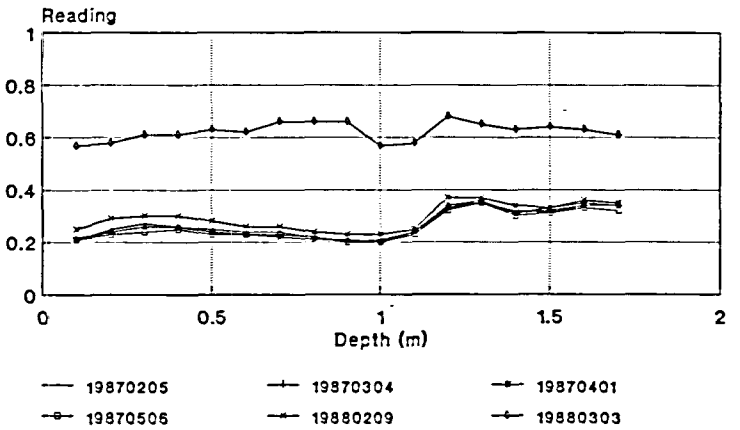
February 1987 - March 1988



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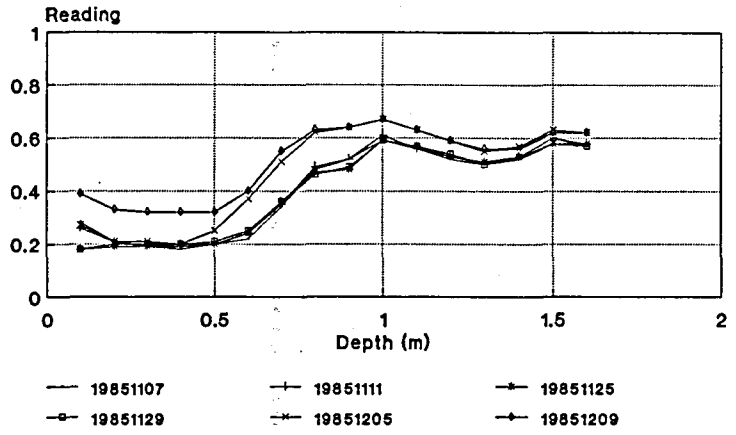

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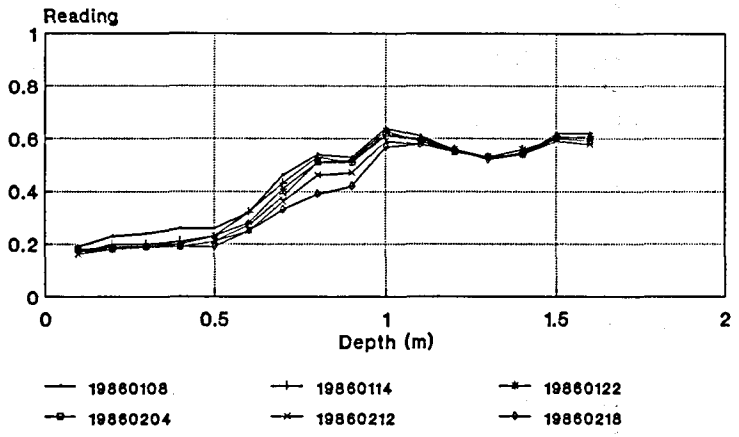

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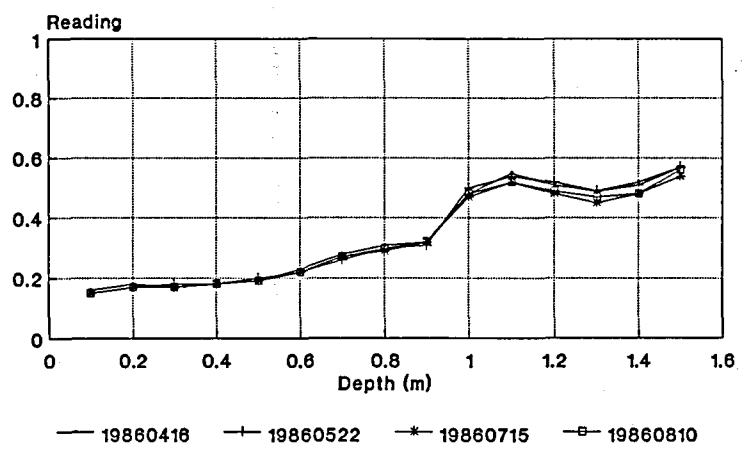

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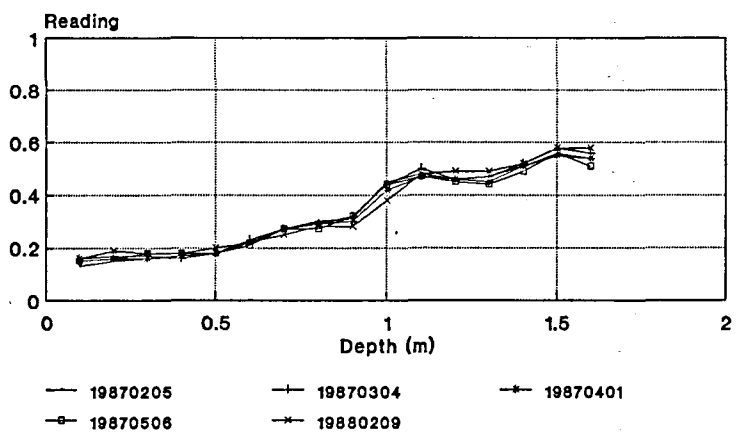

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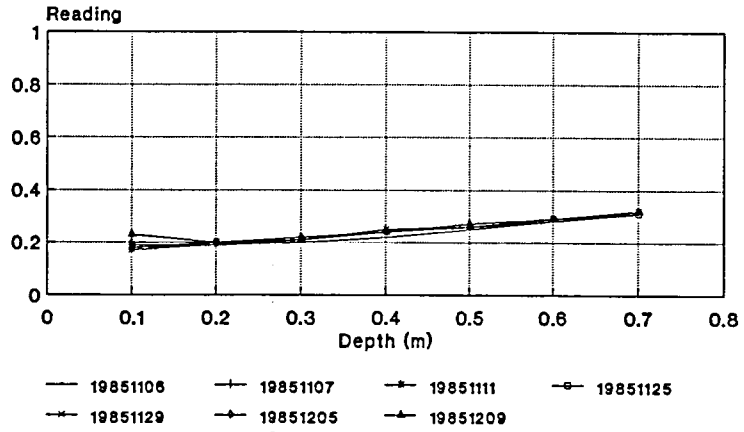

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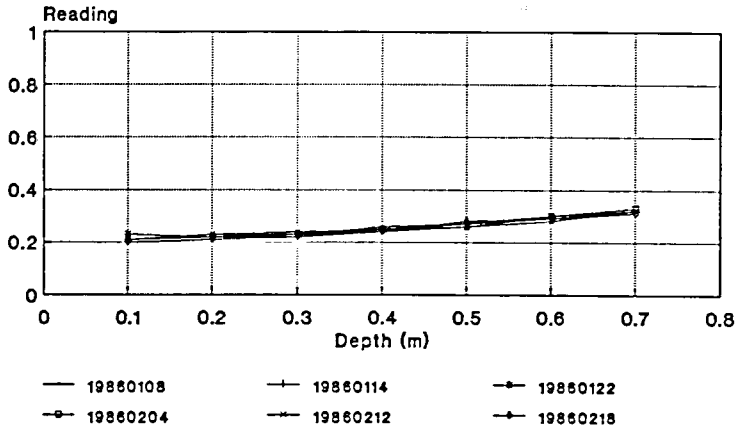

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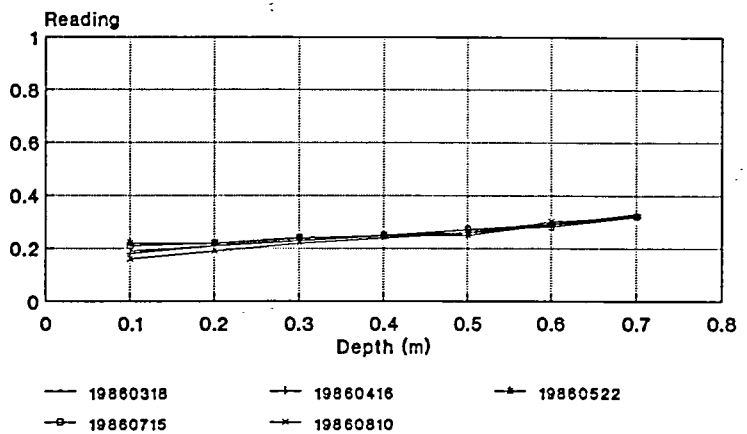
March - August 1986



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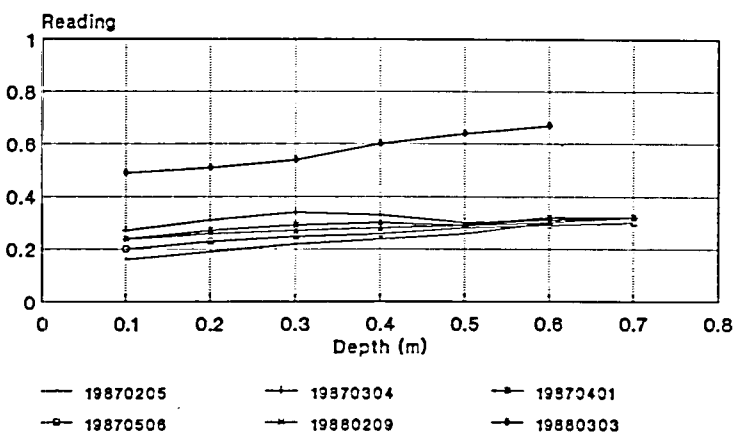

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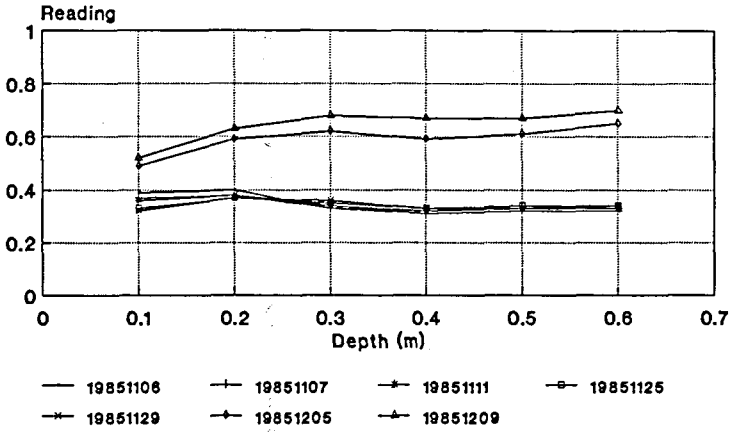

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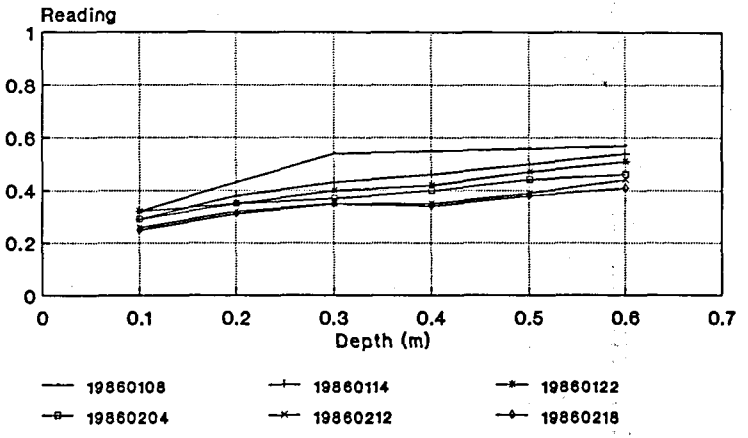

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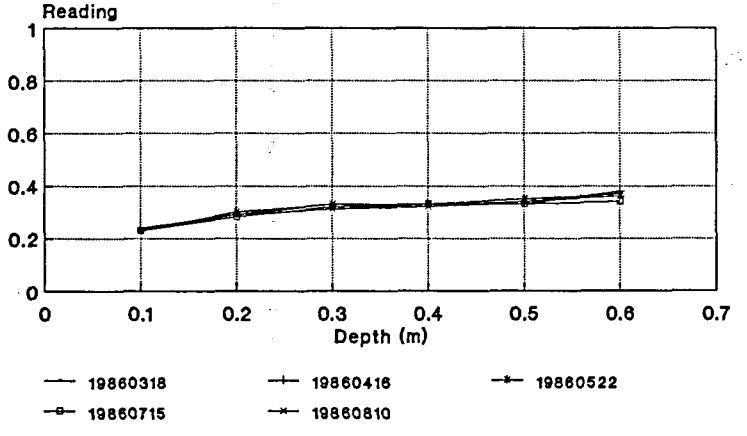
SOIL MOISTURE TUBE 4
March - August 1986



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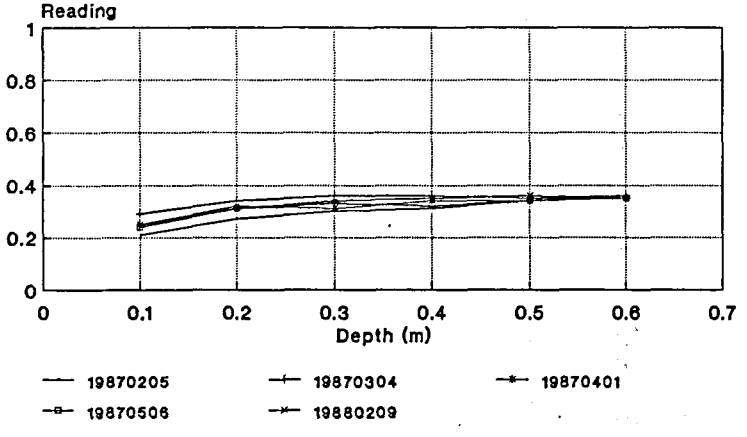
SOIL MOISTURE TUBE 4
February 1987 - February 1988



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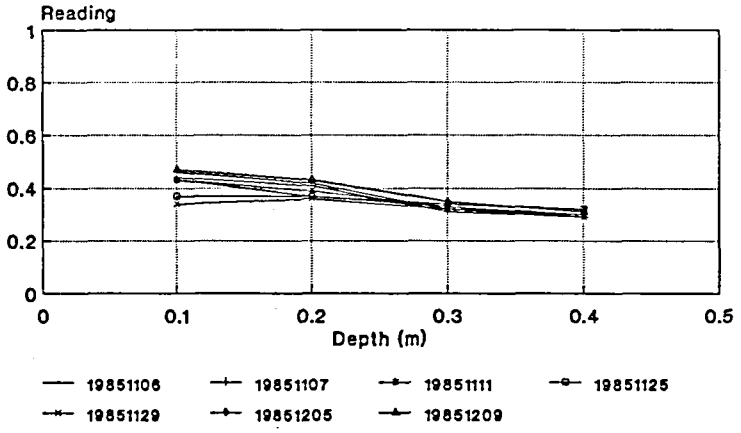

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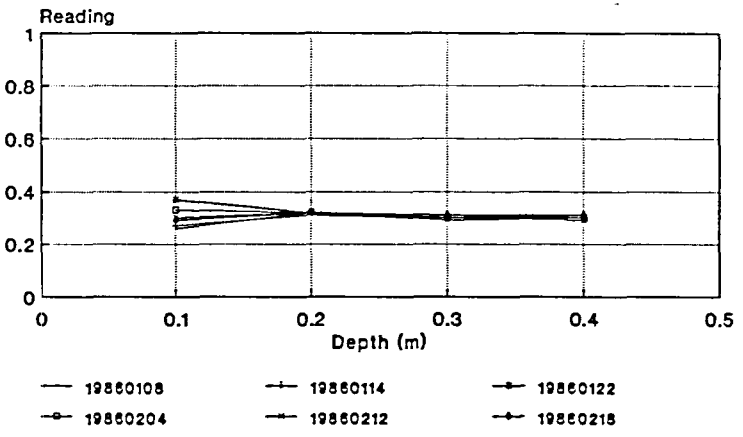

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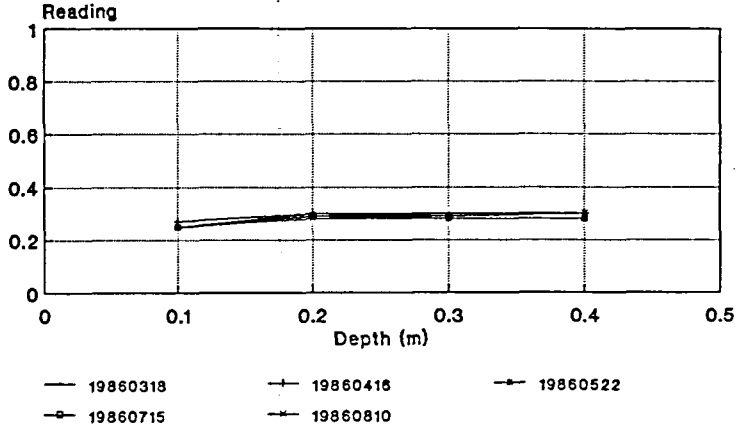
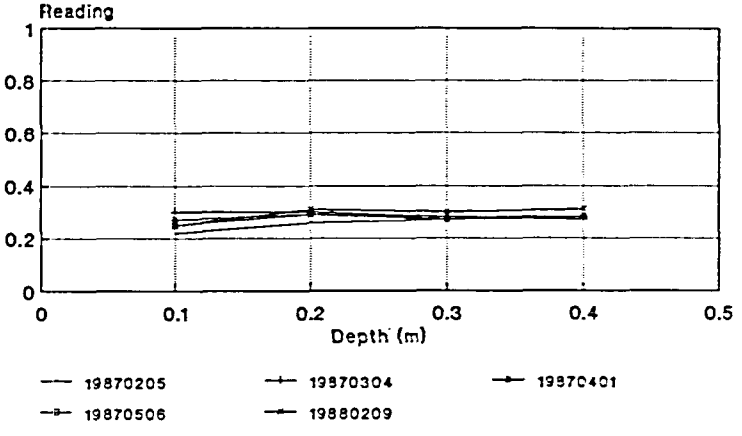
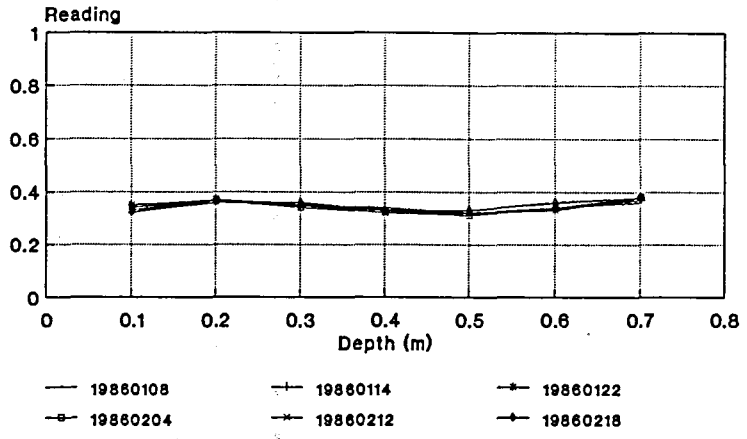


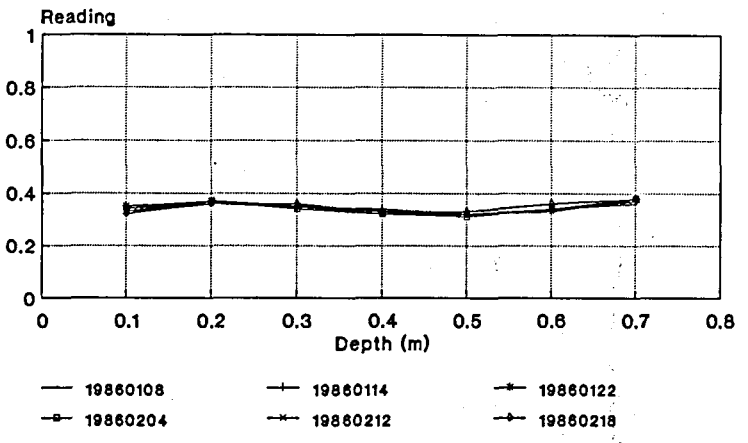
DE AAR : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 5
February 1987 - February 1988



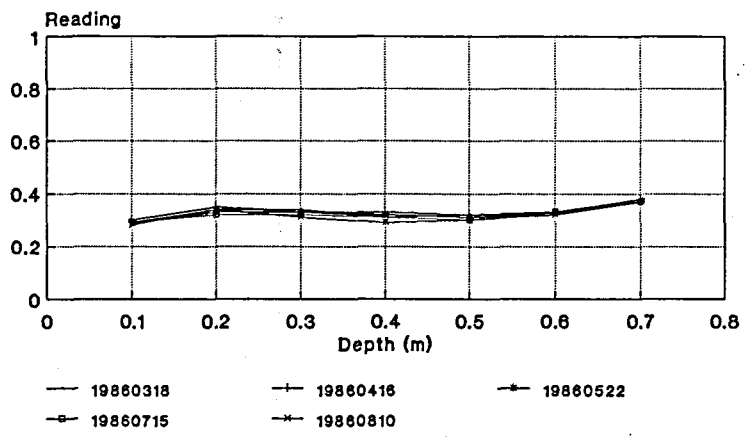
DE AAR : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 6
1985



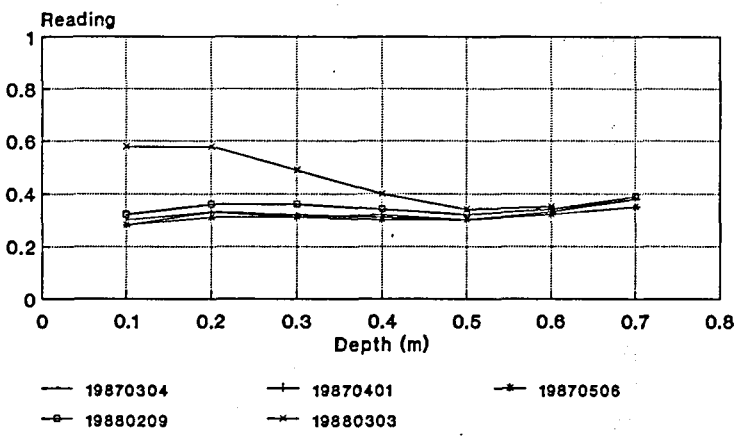
DE AAR : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 6
January - February 1986



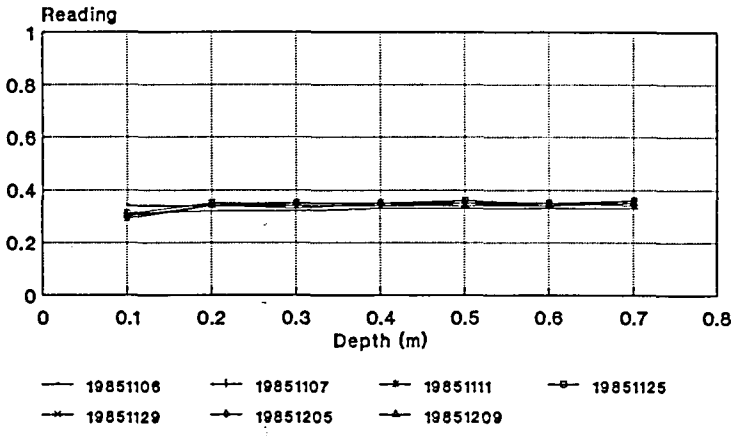
DE AAR : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 6
March - February 1986



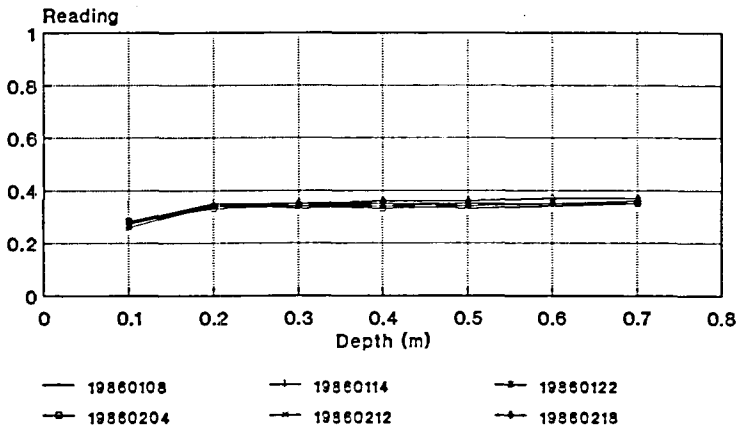
DE AAR : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 6
March 1987 - March 1988



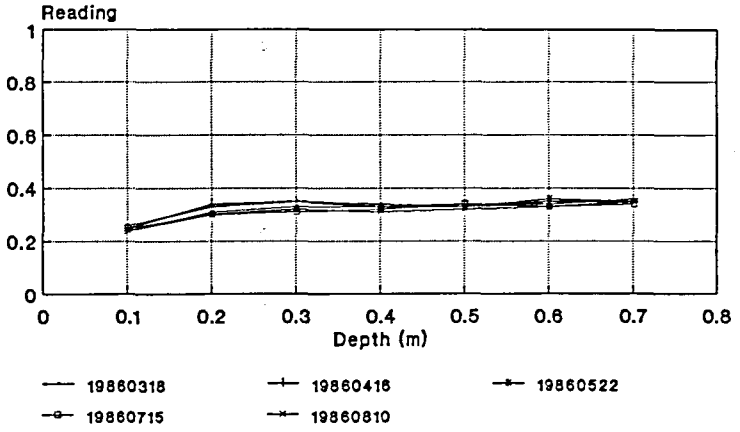
DE AAR : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 7
1985



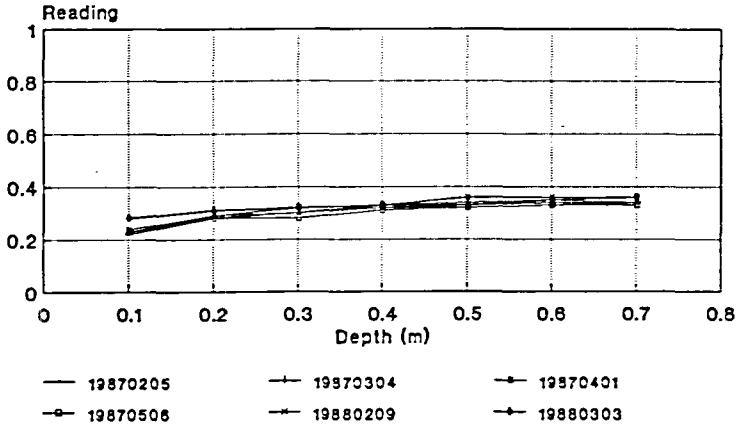
DE AAR : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 7
January - February 1986



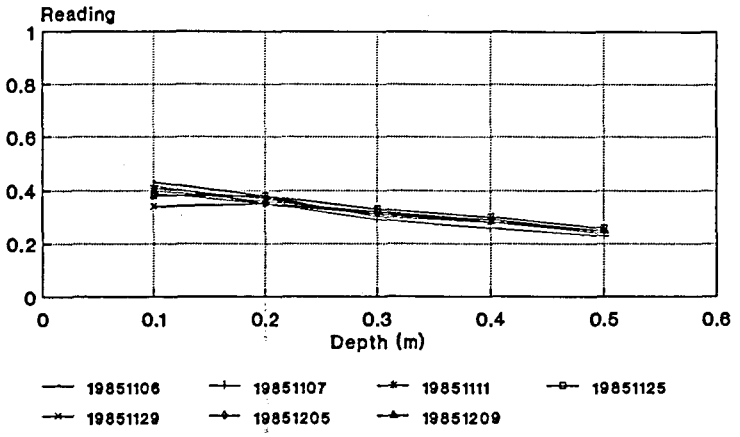
DE AAR : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 7
March - August 1986



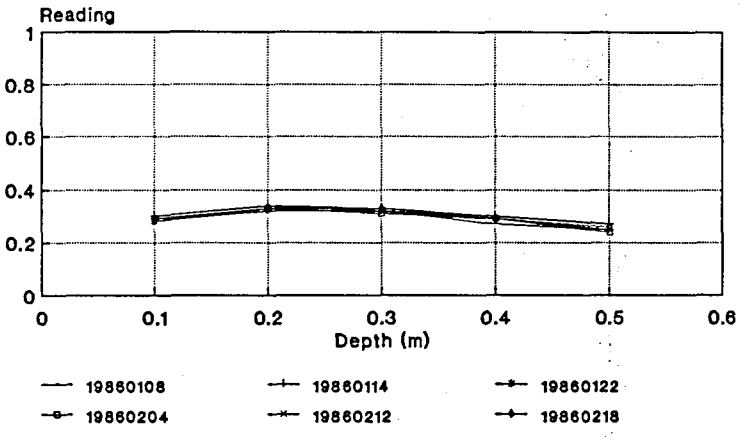
DE AAR : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 7
February 1987 - March 1988



DE AAR : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 8
1985



DE AAR : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 8
January - February 1986



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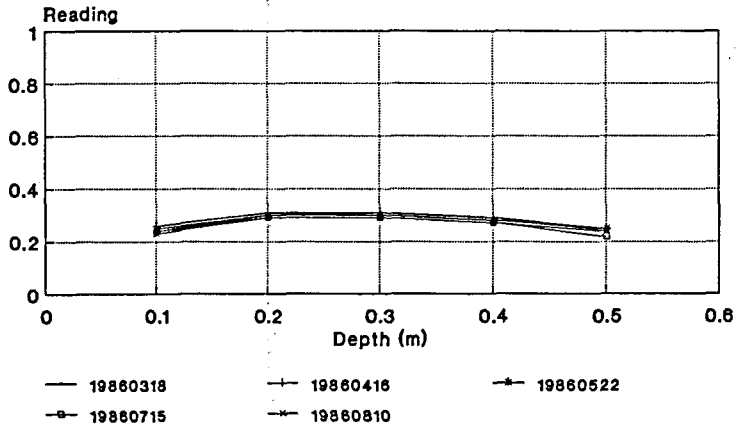
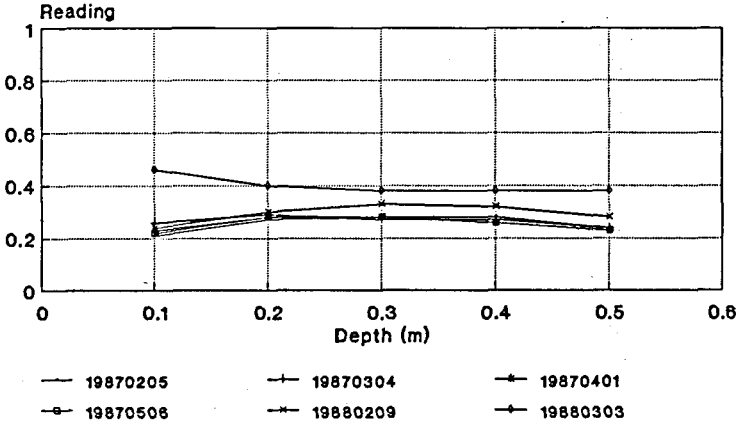
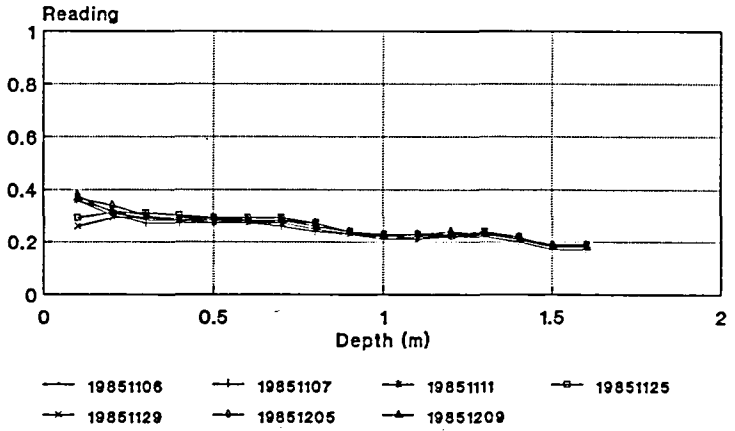
SOIL MOISTURE TUBE 8
March - August 1986



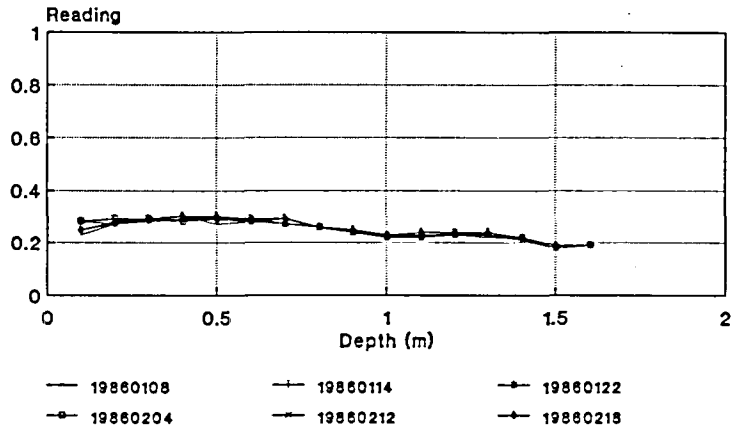
DE AAR : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 8
February 1987- March 1988



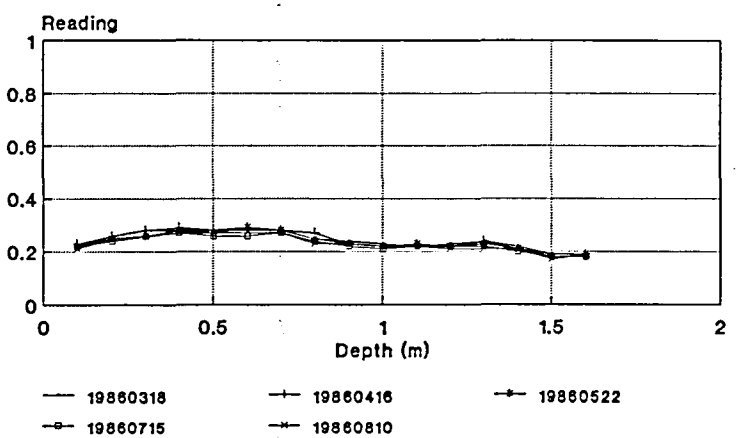
DE AAR : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 9
1985



DE AAR : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 9
January - February 1986



DE AAR : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 9
March - August 1986



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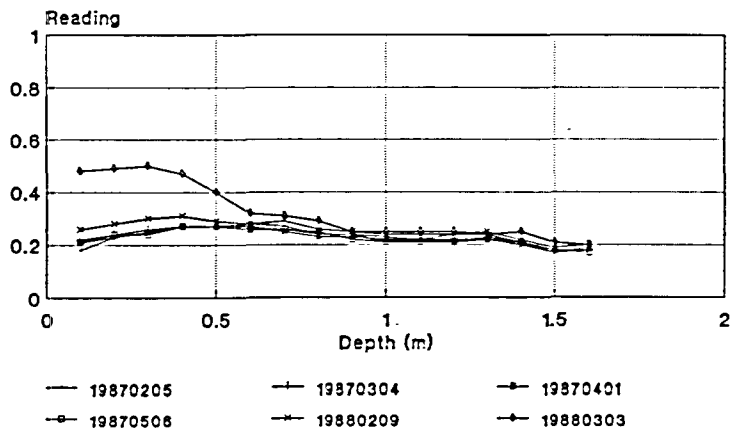
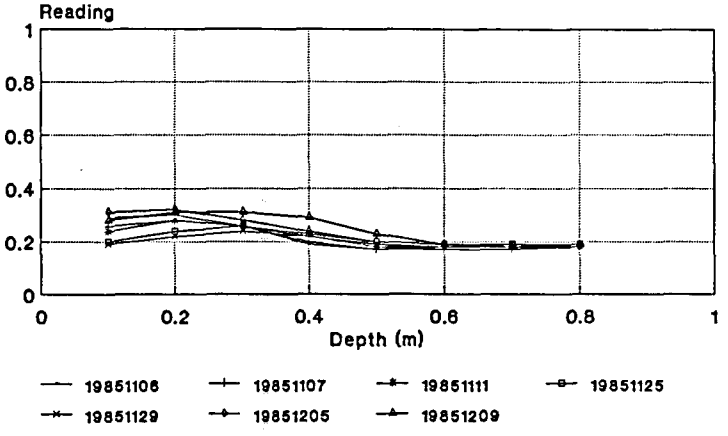
SOIL MOISTURE TUBE 9
February 1987 - March 1988



DE AAR : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 10
1985



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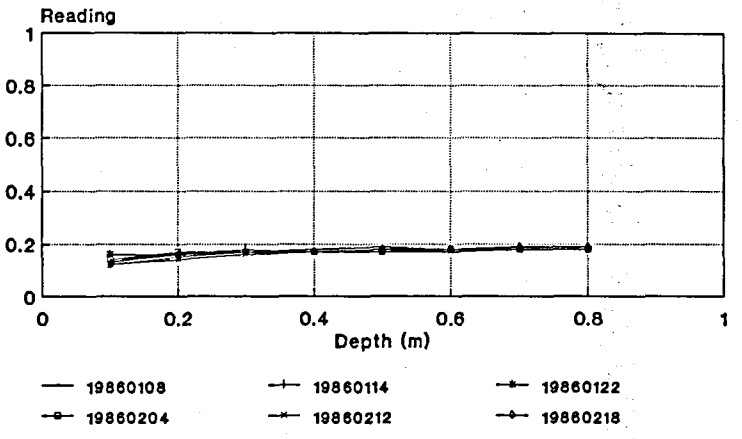
SOIL MOISTURE TUBE 10
January - February 1986



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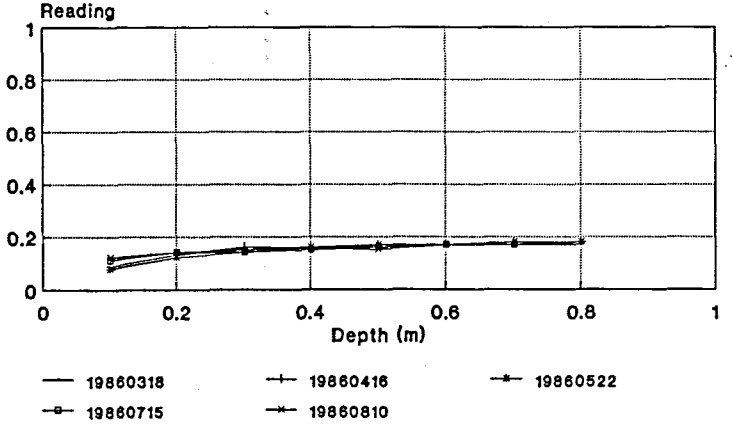
SOIL MOISTURE TUBE 10
March - August 1986



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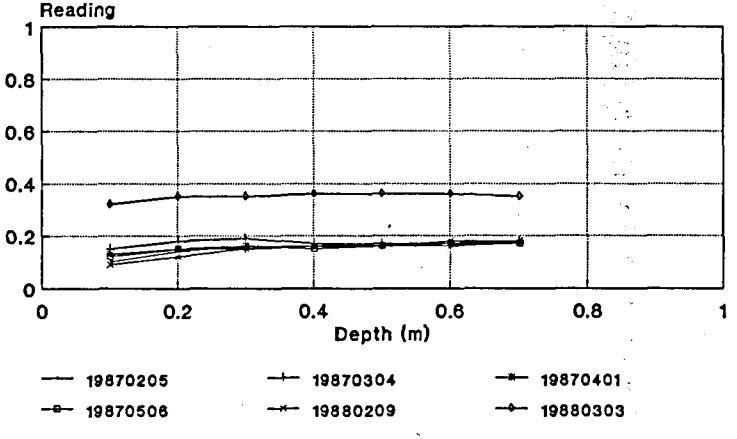
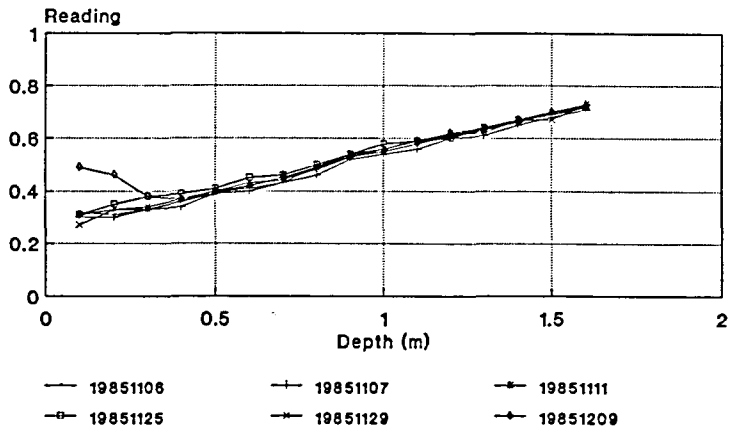
SOIL MOISTURE TUBE 10
February 1987 - March 1988



DE AAR : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 11
1985



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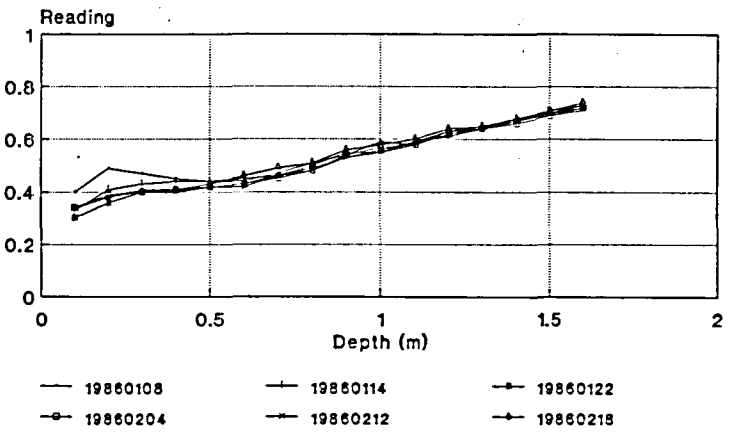
SOIL MOISTURE TUBE 11
January - February 1986



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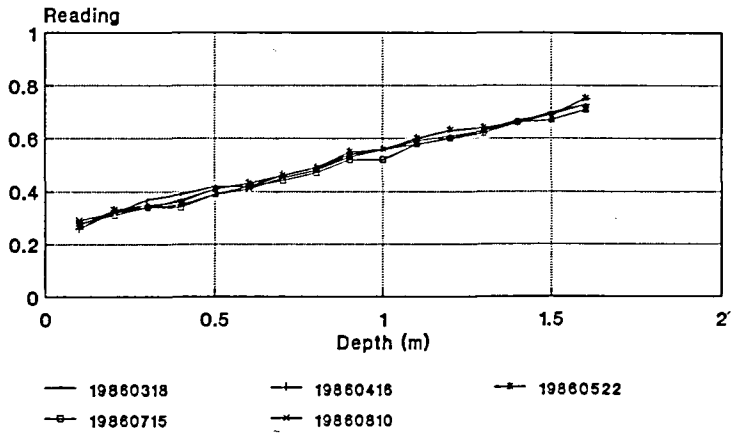
SOIL MOISTURE TUBE 11
March - August 1986



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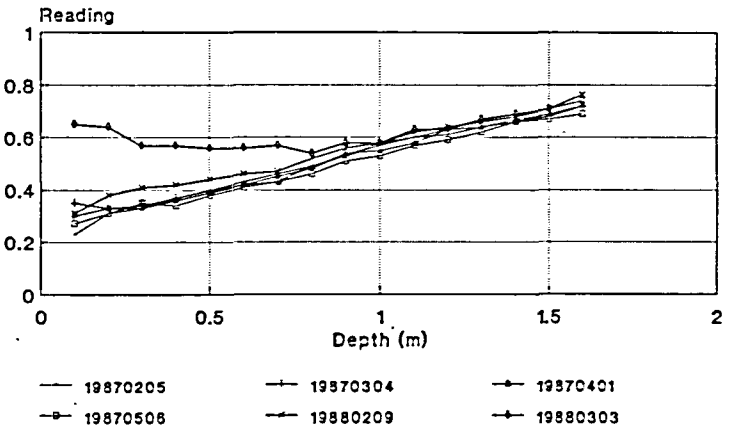
SOIL MOISTURE TUBE 11
February 1987 - March 1988



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SOIL MOISTURE TUBE 12
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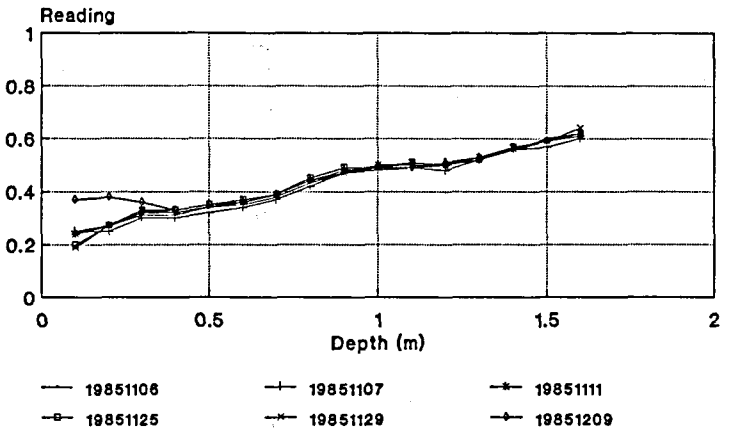

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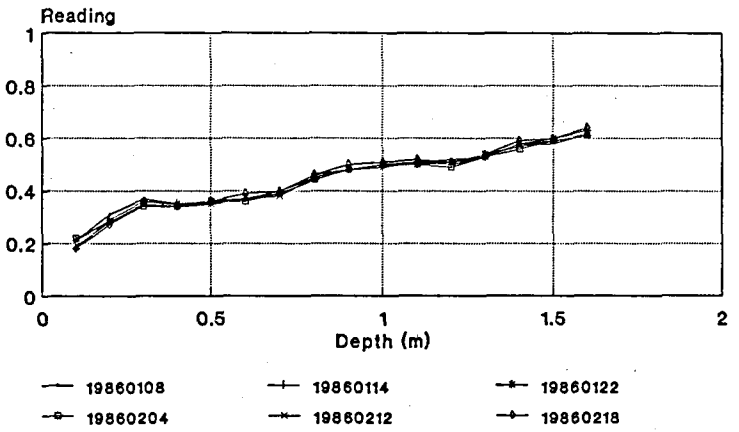
SOIL MOISTURE TUBE 12
January - February 1986



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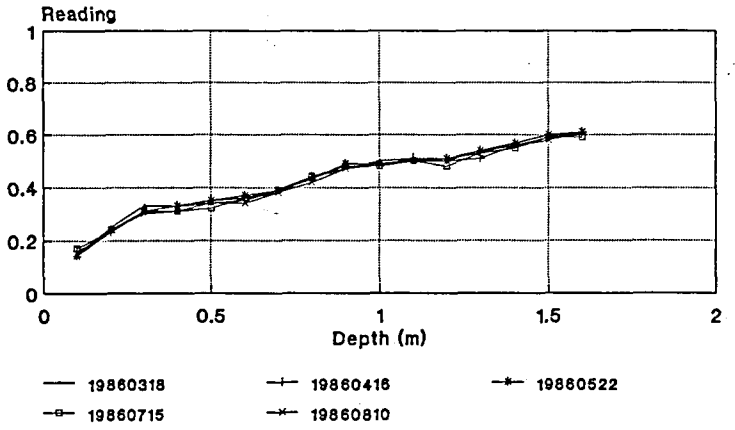
SOIL MOISTURE TUBE 12
March - August 1986



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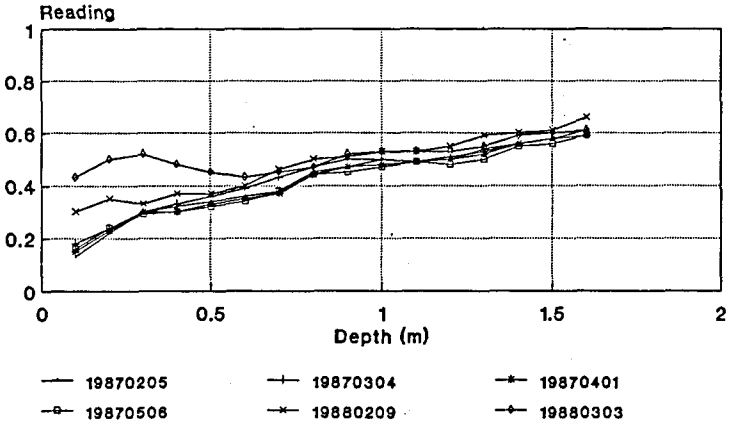
SOIL MOISTURE TUBE 12
February 1987 - March 1988



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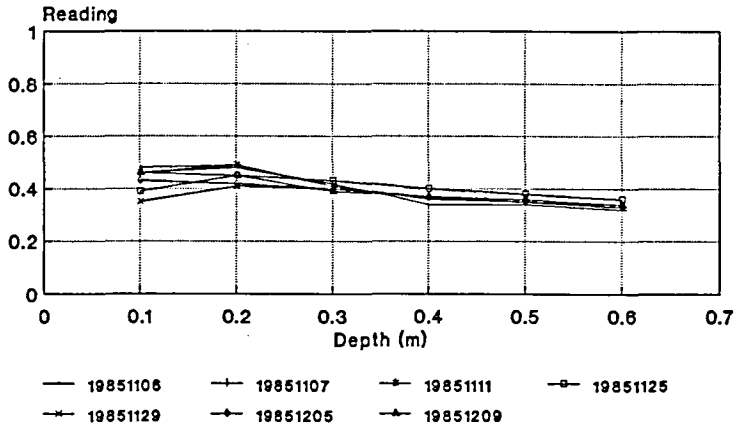
SOIL MOISTURE TUBE 13
1985



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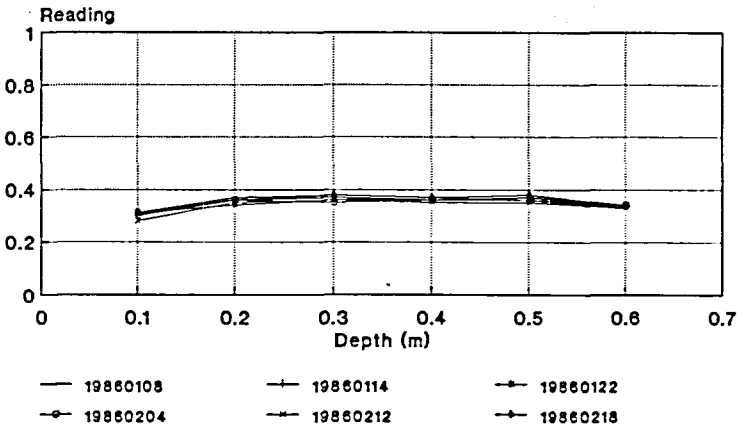
SOIL MOISTURE TUBE 13
January - February 1986



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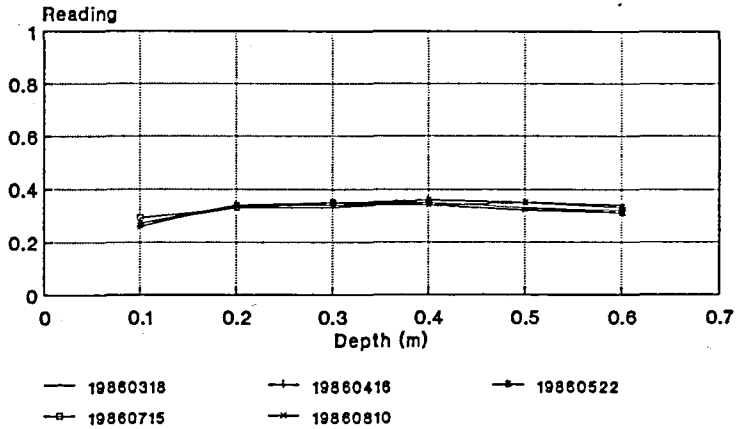
SOIL MOISTURE TUBE 13
March - August 1986



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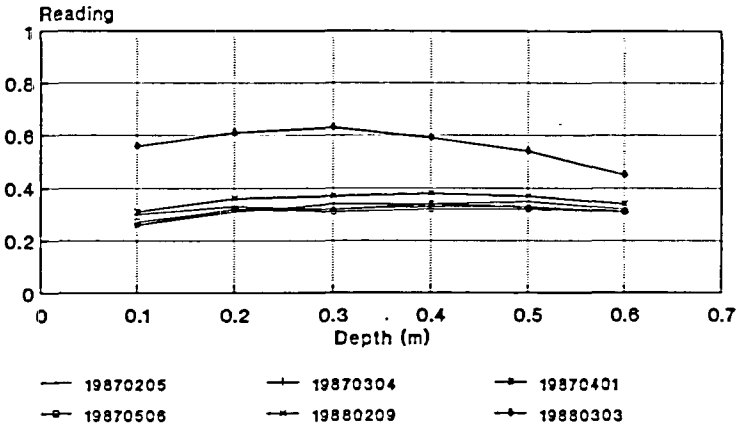
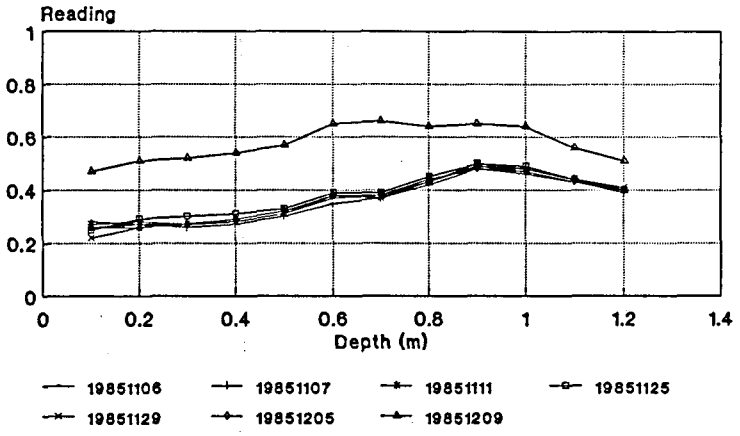
SOIL MOISTURE TUBE 13
February 1987 - February 1988



DE AAR : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 14
1985



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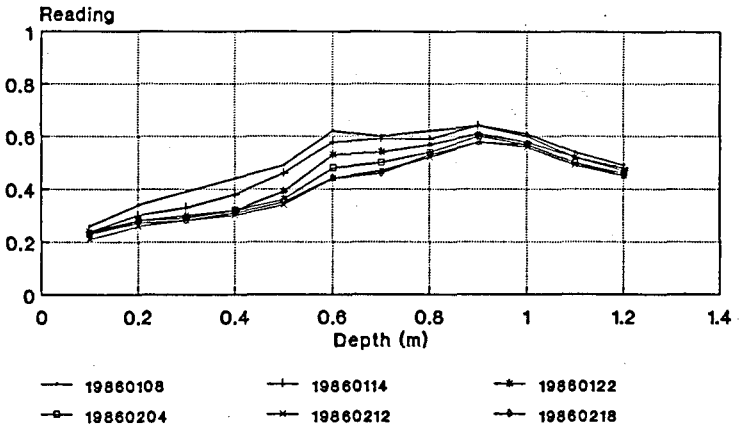
SOIL MOISTURE TUBE 14
January - February 1986



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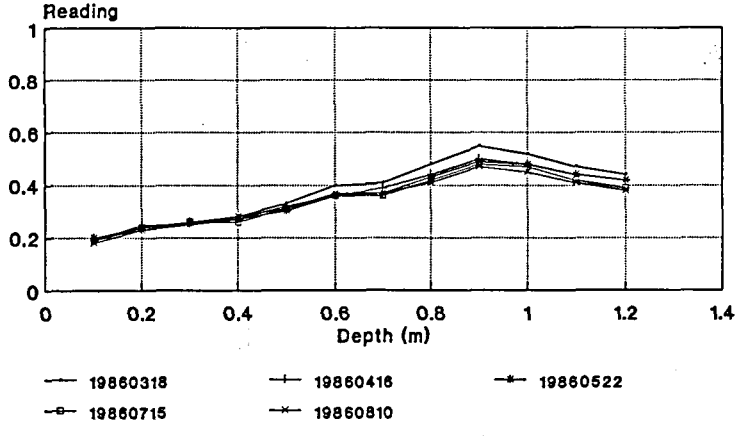
SOIL MOISTURE TUBE 14
March - August 1986



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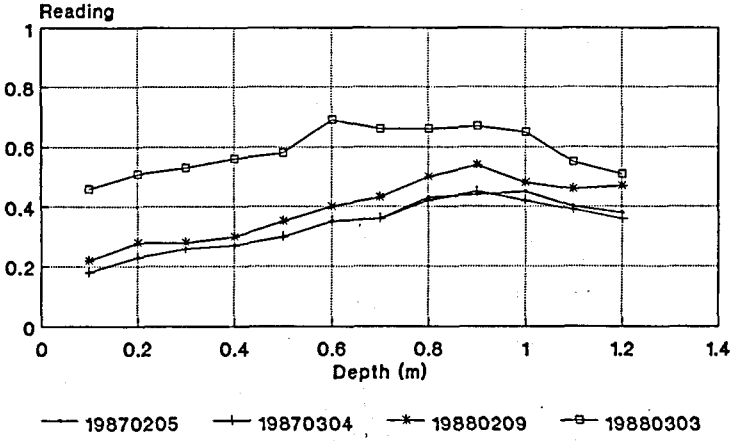
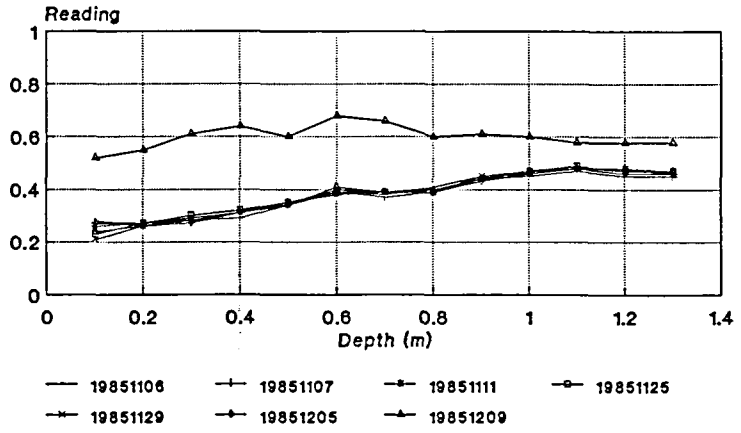
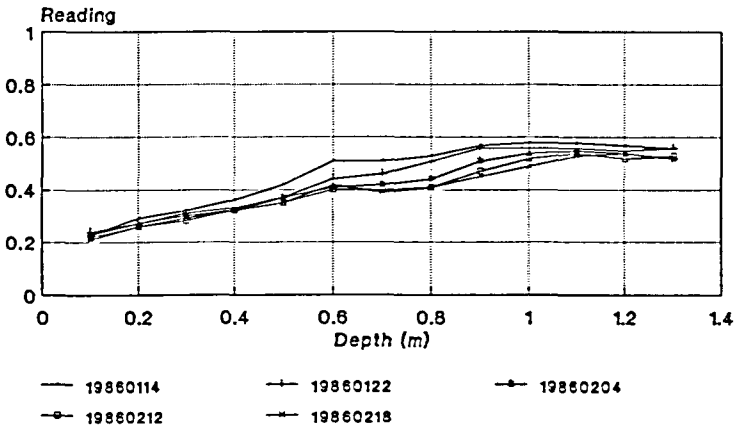
SOIL MOISTURE TUBE 14
February 1987 - March 1988



DE AAR : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 15
1985



DE AAR : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 15
January - February 1986



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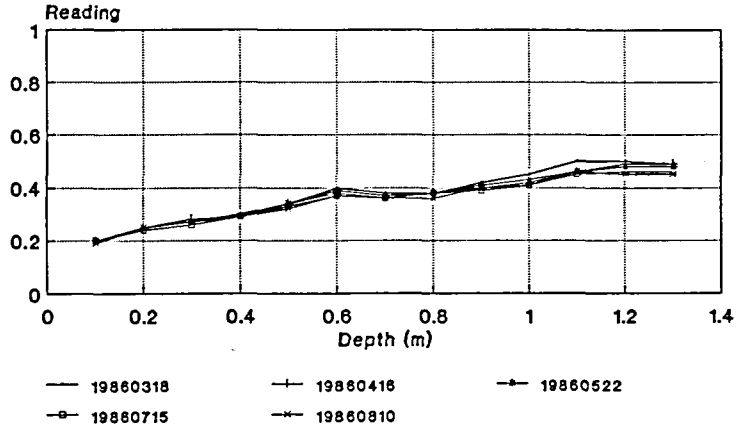
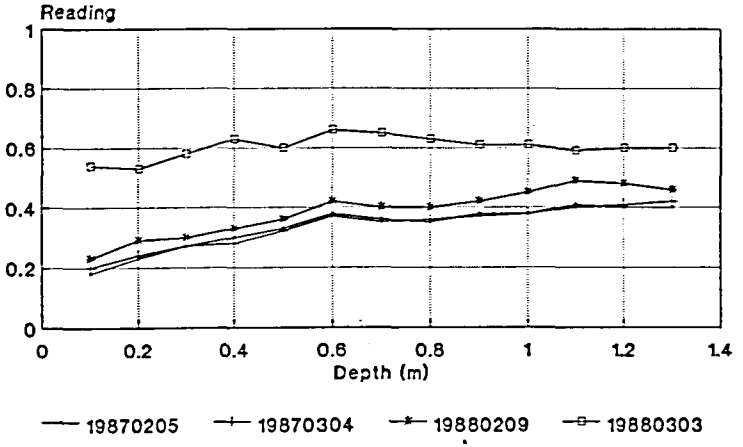
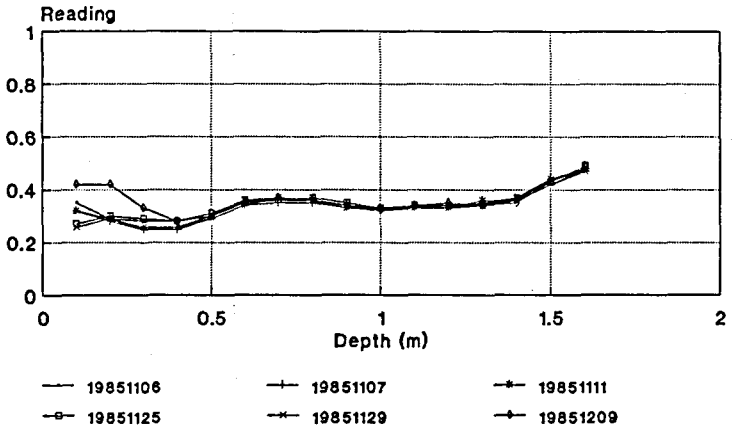
SOIL MOISTURE TUBE 15
March - August 1986



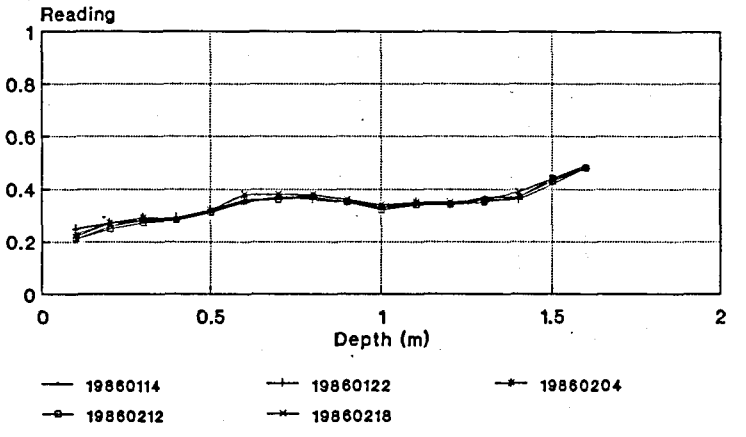
DE AAR : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 15
February 1987 - March 1988



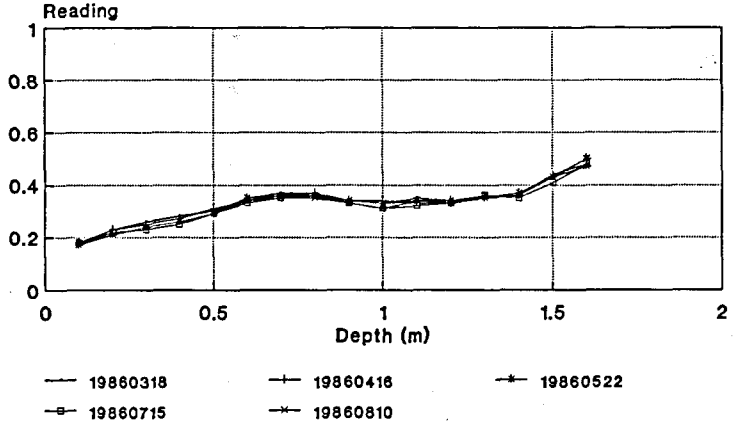
DE AAR : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 16
1985



DE AAR : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 16
January - February 1986



DE AAR : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 16
March - August 1986



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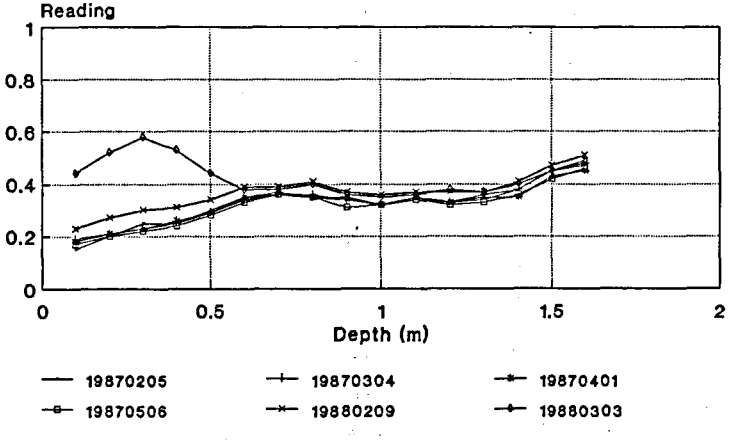
SOIL MOISTURE TUBE 16
February 1987 - March 1988



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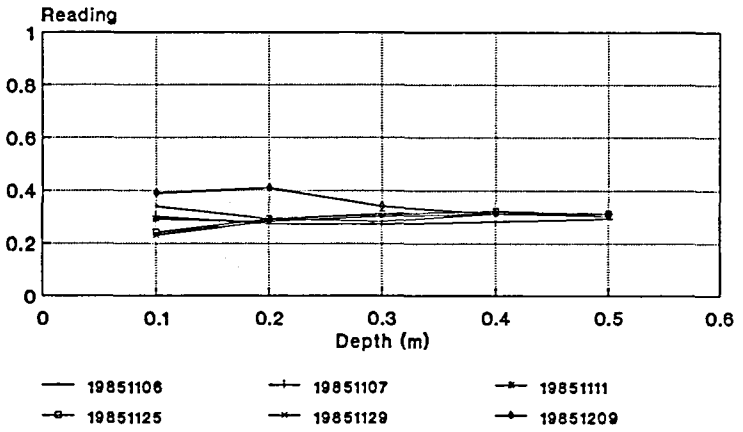
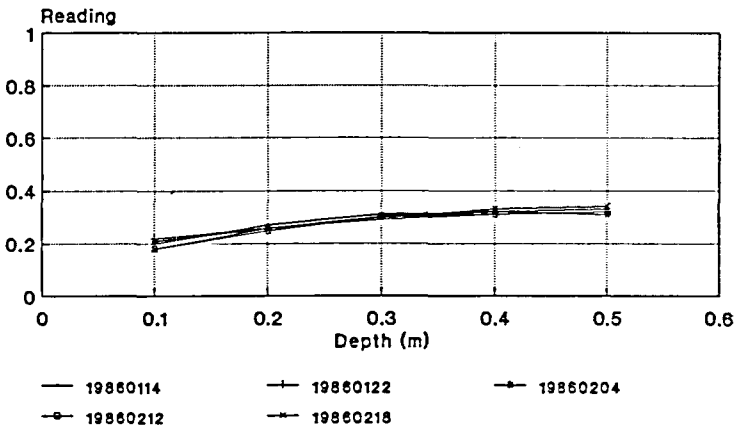
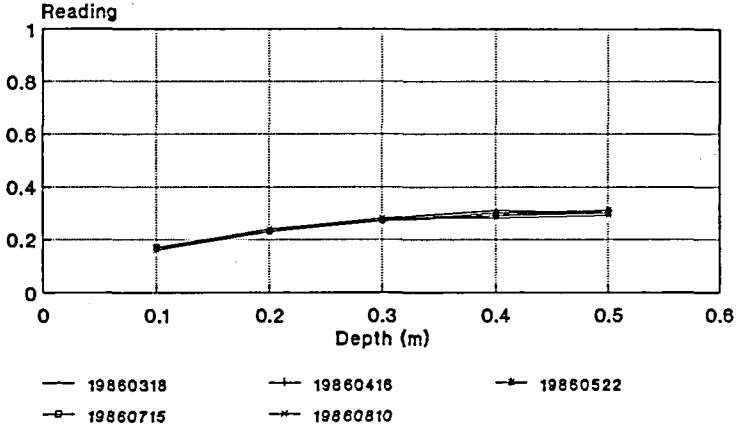
SOIL MOISTURE TUBE 17
1985



DE AAR : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 17
January - February 1986



DE AAR : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 17
March - August 1986



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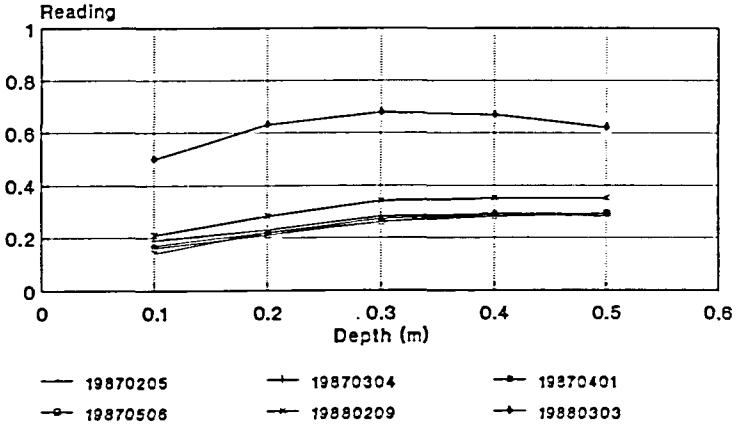
SOIL MOISTURE TUBE 17
February 1987 - March 1988



DE AAR : IGS/WRC RESEARCH PROJECT
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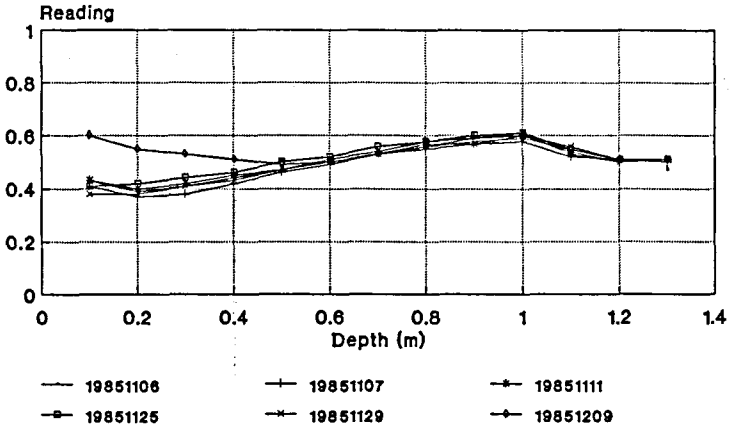
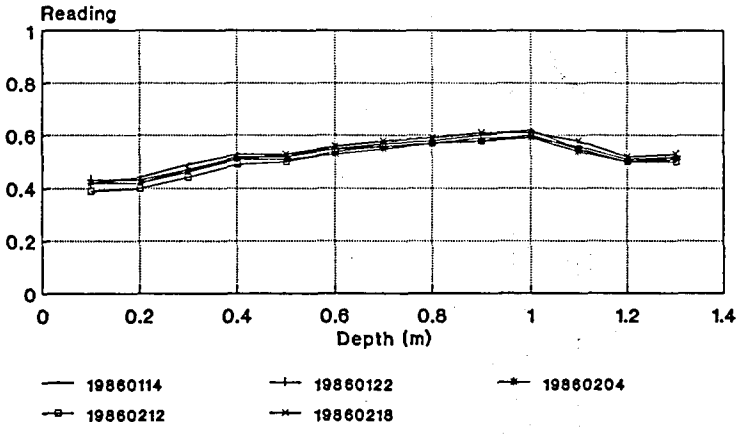
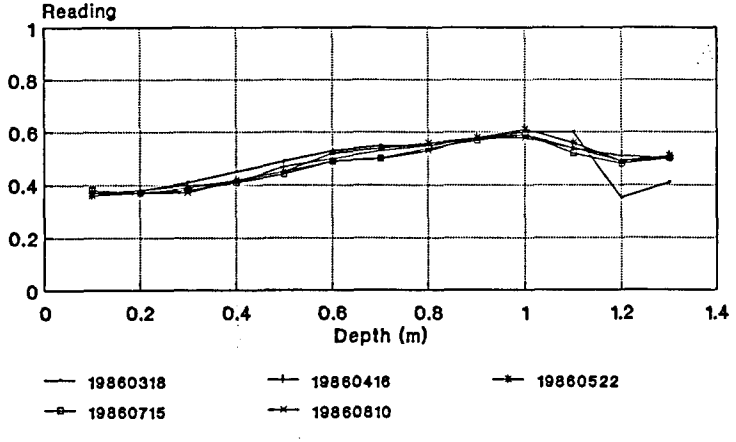


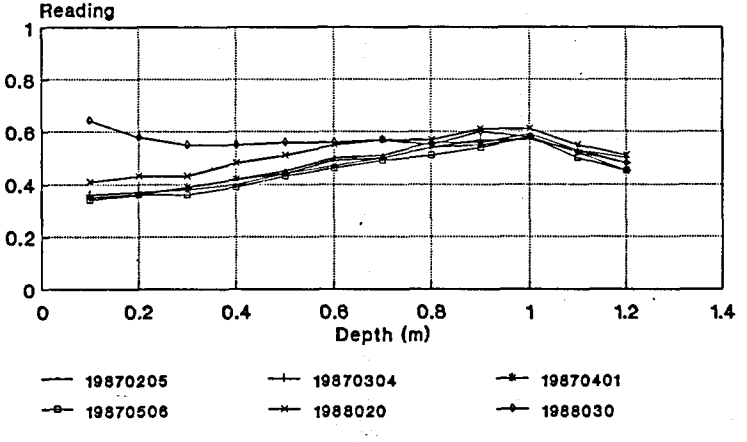
DE AAR : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 18
January - February 1986



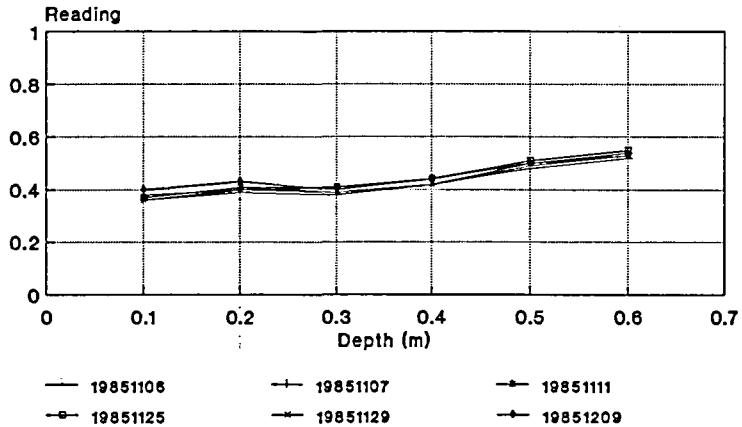
DE AAR : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 18
March - August 1986



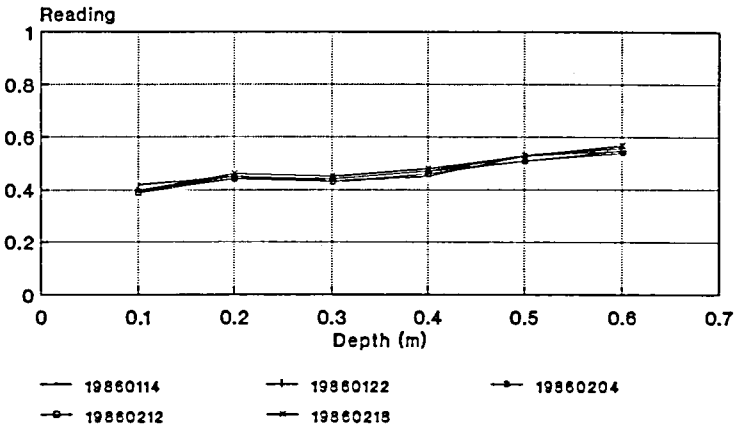
DE AAR : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 18
February 1987 - March 1988



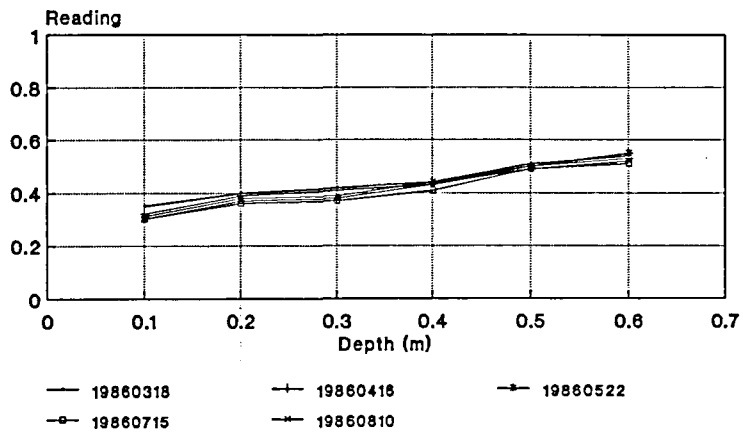
DE AAR : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 19
1985



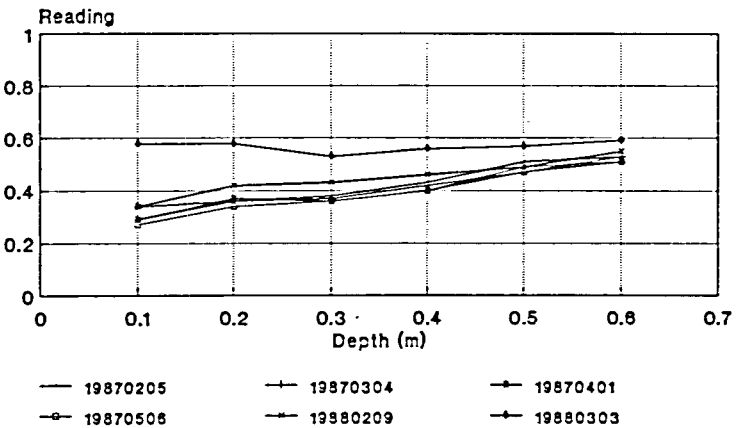
DE AAR : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 19
January - February 1986



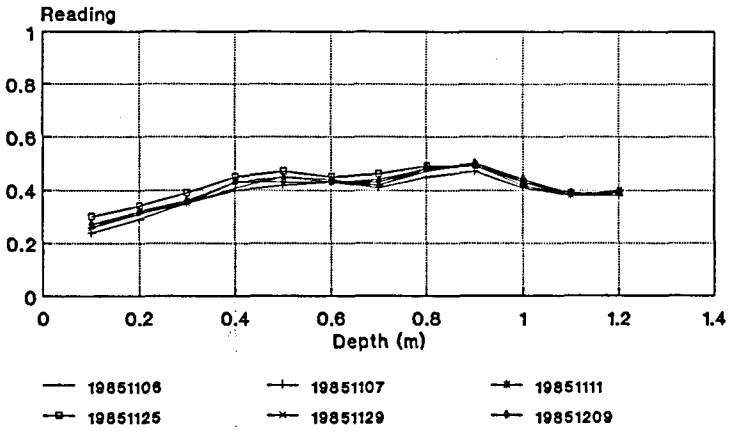
DE AAR : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 19
March - August 1986



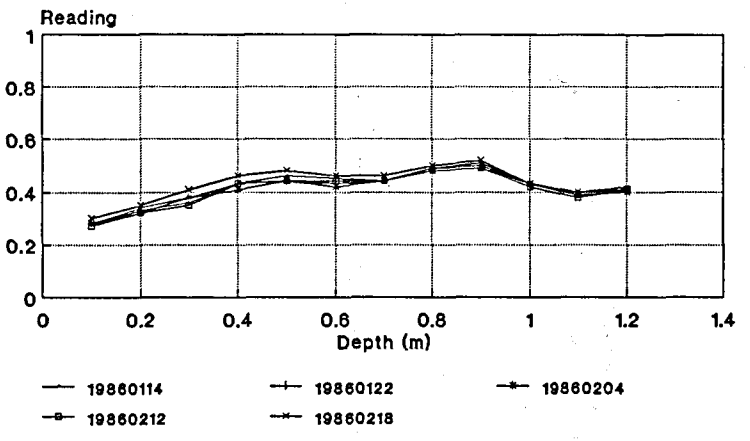
DE AAR : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 19
February 1987 - March 1988



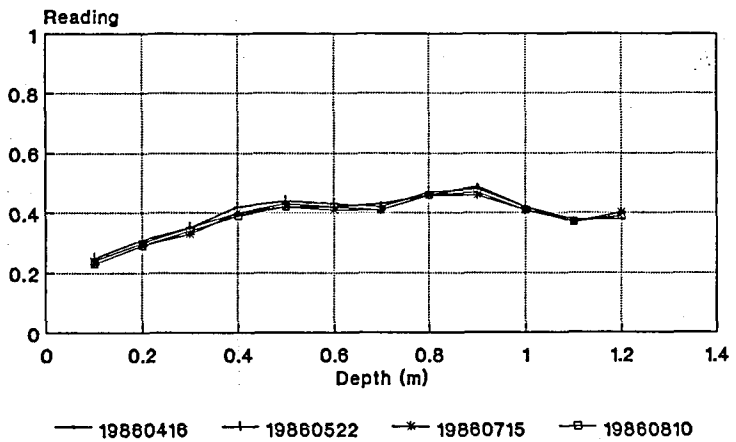
DE AAR : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 20
1985



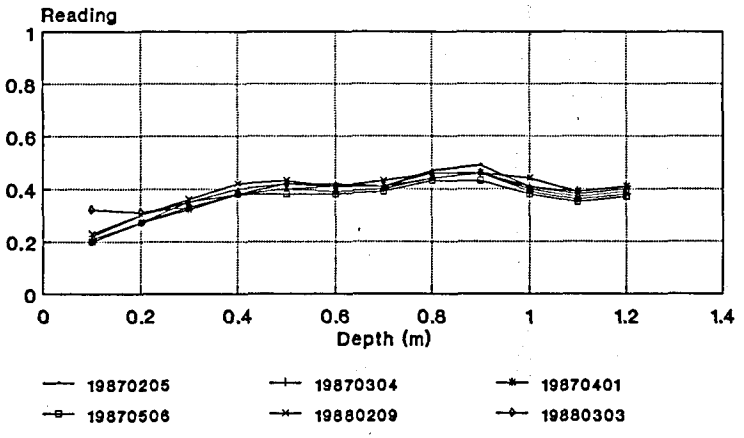
DE AAR : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 20
January - February 1986



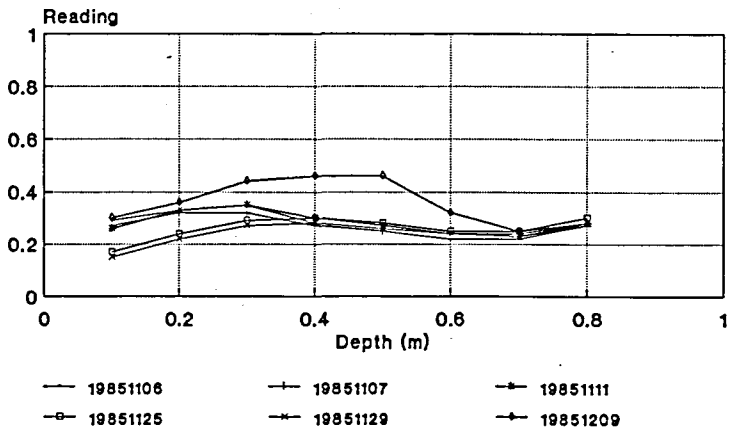
DE AAR : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 20
April - August 1986



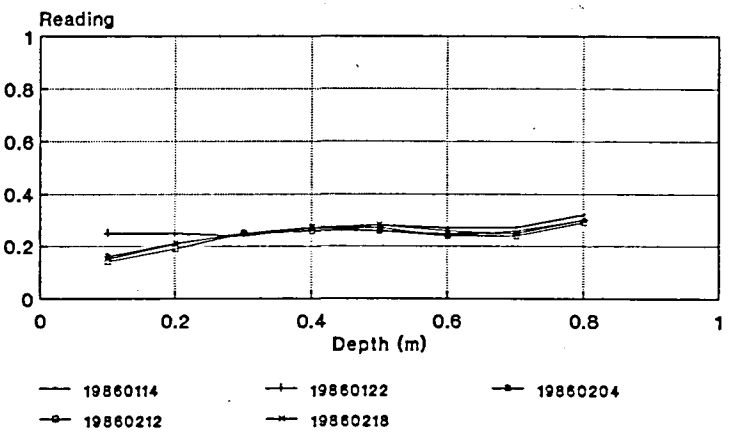
DE AAR : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 20
February 1987 - March 1988



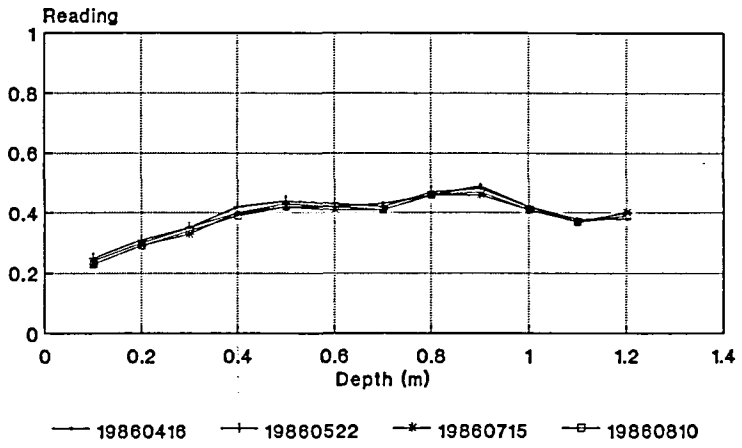
DE AAR : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 21
1985



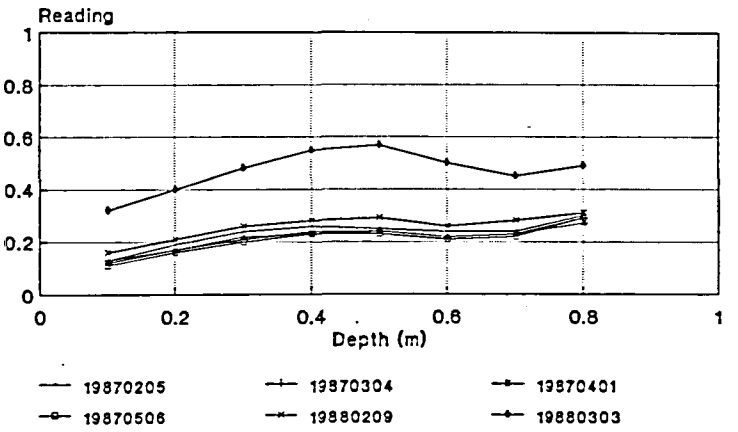
DE AAR : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 21
January - February 1986



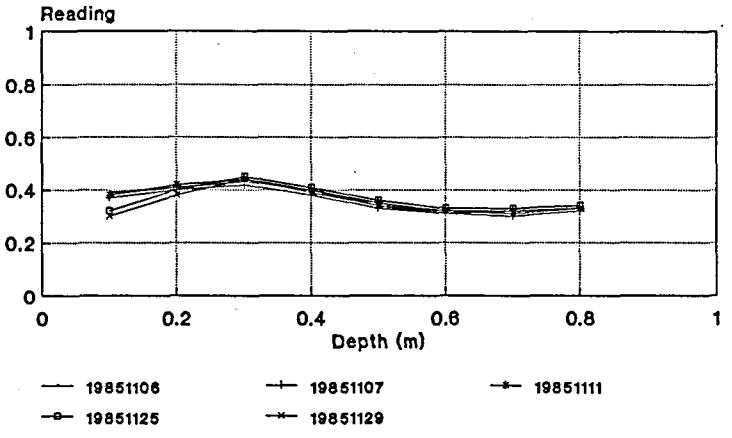
DE AAR : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 20
April - August 1986



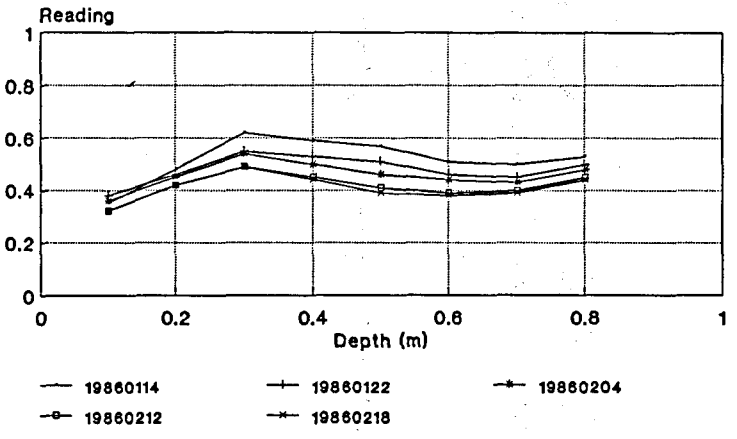
DE AAR : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 21
February 1987 - March 1988



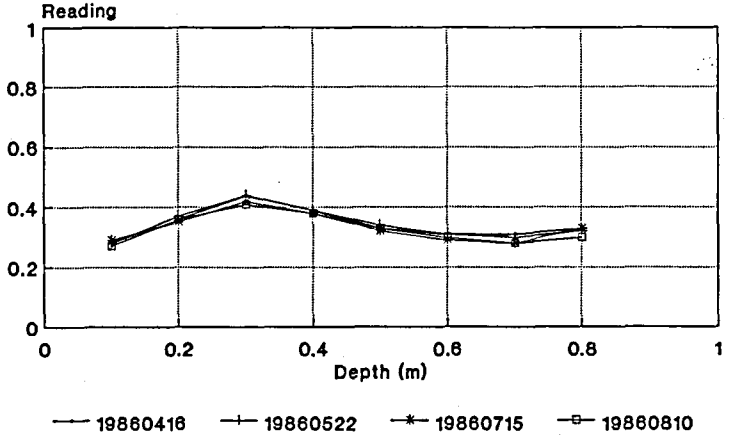
DE AAR : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 22
1985



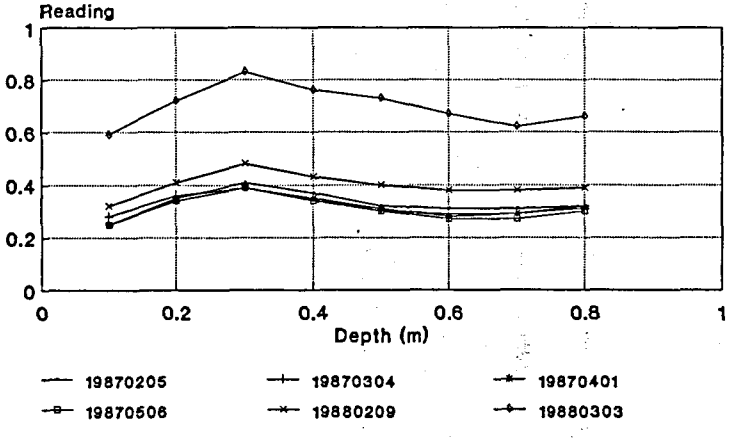
DE AAR : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 22
January - February 1986



DE AAR : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 22
April - August 1986



DE AAR : IGS/WRC RESEARCH PROJECT
SOIL MOISTURE TUBE 22
February 1987 - March 1988



```
==========================================================================
* HydroBase *  S I T E   R E P O R T  *        DATE :  1 February 1990
Generated for : DE AAR - IGS-WRC RESEARCH PROJECT
==========================================================================

Site name : NEW VAALKOP
Remarks :
------------------------------          ------------------------------
Site ID: 3023DB36469                    Number on map: G36469
------------------------------          ------------------------------
E-W coordinate   :  -88566.48           N-S coordinate : 3397014.33
Ground Elevation: 1242.72 mamsl         Collar Height: 0.00 m
Depth of Casing:       m                Diameter of Hole:  165 mm
Logged by: H. Willemink                 Date Drilled: 19850219
--------------------------------------------------------------------------
  Depth (m)  Thickness
  from   to    (m)              Description
--------------------------------------------------------------------------
Geology

  0.00   2.00  2.00 SHALE : 39ECCA fractured. With some dolerite
                    fragments
  2.00   7.00  5.00 SHALE : 39ECCA blue; jointed; hard.
  7.00  13.00  6.00 SHALE : 39ECCA weathered; jointed. With rust
                    marks on joints
 13.00  31.00 18.00 SHALE : 39ECCA blue; hard.


--------------------------------------------------------------------------

==========================================================================
* HydroBase *  S I T E   R E P O R T  *        DATE :  1 February 1990
Generated for : DE AAR - IGS-WRC RESEARCH PROJECT
==========================================================================

Site name : NEW VAALKOP
Remarks :
------------------------------          ------------------------------
Site ID: 3023DB36470                    Number on map: G36470
------------------------------          ------------------------------
E-W coordinate   :  -88569.40           N-S coordinate : 3397007.75
Ground Elevation: 1243.28 mamsl         Collar Height: 0.00 m
Depth of Casing:       m                Diameter of Hole:  165 mm
Logged by: H. Willemink                 Date Drilled: 19850220
--------------------------------------------------------------------------
  Depth (m)  Thickness
  from   to    (m)              Description
--------------------------------------------------------------------------
Geology

  0.00   2.00  2.00 DOLERITE : 40KRDL very weathered; jointed.
  2.00   9.00  7.00 DOLERITE : 40KRDL very jointed.
  9.00  13.00  4.00 SHALE : 39ECCA baked; jointed. With some dolerite
 13.00  25.00 12.00 SHALE : 39ECCA hard; jointed. With mineral spots
                    on joints
 25.00  50.00 25.00 SHALE : 39ECCA blue; hard. With some calcite in
                    places

Geohydrology

 44.00  44.00  0.00 0.07 m3/h Blow test yield
                    YIELD ≈ 0,015 l/s
--------------------------------------------------------------------------
```

* HydroBase * S I T E R E P O R T * DATE : 1 February 1990
Generated for : DE AAR - IGS-WRC RESEARCH PROJECT

Site name : NEW VAALKOP
Remarks :

Site ID: 3023DB36471	Number on map: G36471
E-W coordinate : -88570.34	N-S coordinate : 3397003.87
Ground Elevation: 1242.88 mamsl	Collar Height: 0.00 m
Depth of Casing: m	Diameter of Hole: 165 mm
Logged by: H. Willemink	Date Drilled: 25/02/85

Depth (m) from	to	Thickness (m)	Description
Geology			
0.00	10.00	10.00	SHALE : 39ECCA jointed.
10.00	11.00	1.00	SHALE : 39ECCA very jointed.
11.00	30.00	19.00	DOLERITE : 40KRDL hard; jointed. And shale with large fragments
30.00	38.00	8.00	DOLERITE : 40KRDL slightly jointed. With rust marks
38.00	75.00	37.00	DOLERITE : 40KRDL solid.
Geohydrology			
44.00	44.00	0.00	0.01 L/sec Blow test yield YIELD ≈ 0,013 l/s

* HydroBase * S I T E R E P O R T * DATE : 1 February 1990
Generated for : DE AAR - IGS-WRC RESEARCH PROJECT

Site name : SINCLAIRS DAM
Remarks :

Site ID: 3023DB36472	Number on map: G36472
E-W coordinate : -92426.08	N-S coordinate : 3396207.25
Ground Elevation: 1267.79 mamsl	Collar Height: 0.00 m
Depth of Casing: m	Diameter of Hole: 165 mm
Logged by: H. Willemink	Date Drilled: 19850219

Depth (m) from	to	Thickness (m)	Description
Geology			
0.00	1.00	1.00	SOIL : 46RCNT
1.00	22.00	21.00	SHALE : 39ECCA dark green; very jointed.
22.00	34.00	12.00	SHALE : 39ECCA blue; silty.
34.00	72.00	38.00	SHALE : 39ECCA black; silty; hard.
72.00	78.00	6.00	SHALE : 39ECCA bluish red; baked; hard. With prominent calcite on 79m
Geohydrology			
40.00	40.00	0.00	0.01 L/sec Blow test yield YIELD ≈ 0,013 l/s

* HydroBase * S I T E R E P O R T * DATE : 1 February 1990
Generated for : DE AAR - IGS-WRC RESEARCH PROJECT

Site name : SINCLAIRS DAM
Remarks :

Site ID: 3023DB36473	Number on map: G36473
E-W coordinate : -93152.40	N-S coordinate : 3394604.00
Ground Elevation: 1287.84 mamsl	Collar Height: 0.00 m
Depth of Casing: m	Diameter of Hole: 165 mm
Logged by: H. Willemink	Date Drilled: 19850221

Depth (m) from	to	Thickness (m)	Description
Geology			
0.00	11.00	11.00	DOLERITE : 40KRDL
11.00	16.00	5.00	SHALE : 39ECCA hard; jointed.
16.00	18.00	2.00	SHALE : 39ECCA blue. With rust marks
18.00	42.00	24.00	SHALE : 39ECCA blue; silty.
Geohydrology			
(no information.)			

* HydroBase * S I T E R E P O R T * DATE : 1 February 1990
Generated for : DE AAR - IGS-WRC RESEARCH PROJECT

Site name : BRANDFONTEIN
Remarks :

Site ID: 3023DB36474	Number on map: G36474
E-W coordinate : -85505.17	N-S coordinate : 3389903.18
Ground Elevation: 1210.30 mamsl	Collar Height: 0.00 m
Depth of Casing: m	Diameter of Hole: 165 mm
Logged by: H. Willemink	Date Drilled: 19850226

Depth (m) from	to	Thickness (m)	Description
Geology			
0.00	7.00	7.00	LIMESTONE : 39ECCA very calcareous; jointed.
7.00	12.00	5.00	SHALE : 39ECCA bluish red; baked. With calcite on some places
12.00	75.00	63.00	SHALE : 39ECCA greenish blue; baked; hard. Hard black shale on 50m with calcite
75.00	101.00	26.00	DOLERITE : 40KRDL
Geohydrology			
12.00	12.00	0.00	0.01 L/sec Estimate yield YIELD ≈ 0,013 l/s

```
================================================================================
* HydroBase *  S I T E   R E P O R T  *          DATE :  1 February 1990
Generated for : DE AAR - IGS-WRC RESEARCH PROJECT
================================================================================

Site name : KLEINBRANDFONTEIN (BRANDFONTEIN)
Remarks :
--------------------------------  ------------------------------
Site ID: 3023DB36475              Number on map: G36475
--------------------------------  ------------------------------
E-W coordinate   :  -85275.41     N-S coordinate : 3390401.75
Ground Elevation: 1211.49 mamsl   Collar Height: 0.00 m
Depth of Casing:        m         Diameter of Hole:  165 mm
Logged by: H. Willemink           Date Drilled: 19850225
--------------------------------------------------------------------------------
  Depth (m)  Thickness
  from   to   (m)              Description
--------------------------------------------------------------------------------
Geology

  0.00   8.00  8.00 SHALE : 39ECCA jointed; weathered. And baked
  8.00  14.00  6.00 SHALE : 39ECCA baked; jointed. And some minerals
                    on joints
 14.00  30.00 16.00 SHALE : 39ECCA greenish blue; baked.

Geohydrology

  7.00   7.00  0.00 0.00 L/sec  yield

 14.00  14.00  0.00 0.02 L/sec Blow test yield

--------------------------------------------------------------------------------

================================================================================
* HydroBase *  S I T E   R E P O R T  *          DATE :  1 February 1990
Generated for : DE AAR - IGS-WRC RESEARCH PROJECT
================================================================================

Site name : KLEINBRANDFONTEIN (BRANDFONTEIN)
Remarks :
--------------------------------  ------------------------------
Site ID: 3023DB36476              Number on map: G36476
--------------------------------  ------------------------------
E-W coordinate   :  -85023.39     N-S coordinate : 3390404.00
Ground Elevation: 1209.15 mamsl   Collar Height: 0.00 m
Depth of Casing:        m         Diameter of Hole:  165 mm
Logged by: H. Willemink           Date Drilled: 19850226
--------------------------------------------------------------------------------
  Depth (m)  Thickness
  from   to   (m)              Description
--------------------------------------------------------------------------------
Geology

  0.00   4.00  4.00 SHALE : 39ECCA jointed; weathered. Well jointed
                    and baked.
  4.00  27.00 23.00 SHALE : 39ECCA greenish blue; baked. Some places
                    jointed as at 15m with argillaceous minerals and
                    at 25m calcite.
 27.00  31.00  4.00 SHALE : 39ECCA blue; baked; hard.

Geohydrology

( no information. )
--------------------------------------------------------------------------------
```

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================================================================================
* HydroBase *  S I T E   R E P O R T  *          DATE :  1 February 1990
Generated for : DE AAR - IGS-WRC RESEARCH PROJECT
================================================================================

Site name : KLEINBRANDFONTEIN (BRANDFONTEIN)
Remarks :
--------------------------------  ----------------------------
Site ID: 3023DB36477              Number on map: G36477
--------------------------------  ----------------------------
E-W coordinate    :  -85728.46    N-S coordinate : 3389747.75
Ground Elevation: 1212.63 mamsl   Collar Height: 0.00 m
Depth of Casing:        m         Diameter of Hole:  165 mm
Logged by: H. Willemink           Date Drilled: 19850227
--------------------------------------------------------------------------------
  Depth (m)  Thickness
  from   to    (m)              Description
--------------------------------------------------------------------------------
Geology

  0.00   5.00  5.00 SHALE : 39ECCA very baked; jointed.
  5.00  12.00  7.00 SHALE : 39ECCA dark green; baked.
 12.00  15.00  3.00 DOLERITE : 40KRDL Fresh dolerite
 15.00  30.00 15.00 SHALE : 39ECCA greenish blue; baked. With red
                    marks on places and on 25m purple with olive
                    green baked shale

Geohydrology

 17.00  17.00  0.00 0.38 L/sec Estimate yield

--------------------------------------------------------------------------------

================================================================================
* HydroBase *  S I T E   R E P O R T  *          DATE :  1 February 1990
Generated for : DE AAR - IGS-WRC RESEARCH PROJECT
================================================================================

Site name : KLEINBRANDFONTEIN (BRANDFONTEIN)
Remarks :
--------------------------------  ----------------------------
Site ID: 3023DB36478              Number on map: G36478
--------------------------------  ----------------------------
E-W coordinate    :  -85426.36    N-S coordinate : 3389504.50
Ground Elevation: 1209.65 mamsl   Collar Height: 0.00 m
Depth of Casing:        m         Diameter of Hole:  165 mm
Logged by: H. Willemink           Date Drilled: 19850227
--------------------------------------------------------------------------------
  Depth (m)  Thickness
  from   to    (m)              Description
--------------------------------------------------------------------------------
Geology

  0.00   8.00  8.00 SHALE : 39ECCA very baked; jointed.
  8.00  30.00 22.00 SHALE : 39ECCA greenish blue; baked; hard, some
                    joints with rust marks.

Geohydrology

  8.00   8.00  0.00 1.37 m3/h Estimate yield

--------------------------------------------------------------------------------
```

```
==========================================================================
* HydroBase *  S I T E   R E P O R T  *          DATE :  1 February 1990
Generated for : DE AAR - IGS-WRC RESEARCH PROJECT
==========================================================================

Site name : KLEINBRANDFONTEIN (BRANDFONTEIN)
Remarks :
------------------------------          ------------------------------
Site ID: 3023DB36479                    Number on map: G36479
------------------------------          ------------------------------
E-W coordinate   :  -85252.01           N-S coordinate : 3391999.50
Ground Elevation: 1217.32 mamsl         Collar Height: 0.00 m
Depth of Casing:       m                Diameter of Hole:  165 mm
Logged by: H. Willemink                 Date Drilled: 19850217
--------------------------------------------------------------------------
  Depth (m)  Thickness
  from   to   (m)              Description
--------------------------------------------------------------------------
Geology

  0.00   8.00  8.00 SHALE : 39ECCA green; weathered.
  8.00  14.00  6.00 SHALE : 39ECCA dark green; jointed. With rust
                    marks on joints
 14.00  18.00  4.00 SHALE : 39ECCA dark grey; slightly jointed.
 18.00  31.00 13.00 SHALE : 39ECCA blue.

Geohydrology

 11.00  11.00  0.00 0.25 L/sec Estimate yield

--------------------------------------------------------------------------

==========================================================================
* HydroBase *  S I T E   R E P O R T  *          DATE :  1 February 1990
Generated for : DE AAR - IGS-WRC RESEARCH PROJECT
==========================================================================

Site name : KLEINBRANDFONTEIN (BRANDFONTEIN)
Remarks :
------------------------------          ------------------------------
Site ID: 3023DB36480                    Number on map: G36480
------------------------------          ------------------------------
E-W coordinate   :  -84545.77           N-S coordinate : 3392668.50
Ground Elevation: 1221.55 mamsl         Collar Height: 0.00 m
Depth of Casing:       m                Diameter of Hole:  165 mm
Logged by: H. Willemink                 Date Drilled: 19850227
--------------------------------------------------------------------------
  Depth (m)  Thickness
  from   to   (m)              Description
--------------------------------------------------------------------------
Geology

  0.00   7.00  7.00 SHALE : 39ECCA very hard; jointed.
  7.00  12.00  5.00 SHALE : 39ECCA jointed. With lots of rust marks
                    on joints
 12.00  37.00 25.00 SHALE : 39ECCA greenish blue; hard.

Geohydrology

( no information. )
--------------------------------------------------------------------------
```

* HydroBase * S I T E R E P O R T * DATE : 1 February 1990
Generated for : DE AAR - IGS-WRC RESEARCH PROJECT

Site name : SINCLAIRS DAM
Remarks :

Site ID: 3023DB36481	Number on map: G36481
E-W coordinate : -89266.88	N-S coordinate : 3391901.25
Ground Elevation: 1237.52 mamsl	Collar Height: 0.00 m
Depth of Casing: m	Diameter of Hole: 165 mm
Logged by: H. Willemink	Date Drilled: 19850301

Depth (m) from	to	Thickness (m)	Description
Geology			
0.00	6.00	6.00	SHALE : 39ECCA dark green; very jointed.
6.00	23.00	17.00	SHALE : 39ECCA greenish green; jointed.
23.00	40.00	17.00	SHALE : 39ECCA blue; silty.
Geohydrology			
29.00	29.00	0.00	0.01 L/sec Estimate yield

* HydroBase * S I T E R E P O R T * DATE : 1 February 1990
Generated for : DE AAR - IGS-WRC RESEARCH PROJECT

Site name : SINCLAIRS DAM
Remarks :

Site ID: 3023DB36482 Number on map: G36482

E-W coordinate... : -89344.46 N-S coordinate : 3393767.50
Ground Elevation: 1241.52 mamsl Collar Height: 0.00 m
Depth of Casing: m Diameter of Hole: 165 mm
Logged by: H. Willemink Date Drilled: 19850304

Depth (m) from	to	Thickness (m)	Description
Geology			
0.00	6.00	6.00	SHALE : 39ECCA blue; jointed; weathered. With a soil layer of some desimetres
6.00	22.00	16.00	SHALE : 39ECCA dark green; jointed; weathered. With rust marks on joints
22.00	51.00	29.00	SHALE : 39ECCA hard.
51.00	65.00	14.00	SHALE : 39ECCA bluish blue. With calcite on joints as on 52 up to 56m and again on 62m
65.00	71.00	6.00	SHALE : 39ECCA greenish blue. And some red shale in between
71.00	102.00	31.00	SHALE : 39ECCA greenish blue; slightly baked.
Geohydrology			
29.00	29.00	0.00	0.36 L/sec Blow test yield

* HydroBase * S I T E R E P O R T * DATE : 26 March 1990
Generated for : DE AAR - IGS-WRC RESEARCH PROJECT

Site name : SINCLAIRS DAM
Remarks :

Site ID: 3023DB36483 Number on map: G36483

E-W coordinate : -89134.38 N-S coordinate : 3393714.75
Ground Elevation: 1239.25 mamsl Collar Height: 0.00 m
Depth of Casing: m Diameter of Hole: 165 mm
Logged by: IGS Date Drilled: 19850307

Depth (m) from	to	Thickness (m)	Description
Geology			
0.00	5.00	5.00	SHALE : 39ECCA dark green; very jointed.
5.00	24.00	19.00	SHALE : 39ECCA dark green; jointed. With rust marks and a prominent calcite layer at 24m.
24.00	30.00	6.00	SHALE : 39ECCA blue; silty; jointed.
30.00	32.00	2.00	SHALE : 39ECCA blue; hard.
32.00	36.00	4.00	SHALE : 39ECCA bluish blue. Calcite at some places.
36.00	85.00	49.00	SHALE : 39ECCA bluish blue. 49 to 53m some calcite, 73 to 75m calcite, 80 to 82m calcite and some rust spots.
85.00	103.00	18.00	SHALE : 39ECCA greenish blue; baked; hard. With calcite at 86m.
103.00	127.00	24.00	SHALE : 39ECCA greenish blue; baked; hard. With some rust at 122m.
Geohydrology			
23.00	23.00	0.00	9.00 m3/h Container yield
34.00	34.00	0.00	3.24 m3/h V-notch yield

* HydroBase * S I T E R E P O R T * DATE : 1 February 1990
Generated for : DE AAR - IGS-WRC RESEARCH PROJECT

Site name : SINCLAIRS DAM
Remarks :

Site ID: 3023DB36484 Number on map: G36484

E-W coordinate : -88843.47 N-S coordinate : 3393672.75
Ground Elevation: 1237.83 mamsl Collar Height: 0.00 m
Depth of Casing: m Diameter of Hole: 165 mm
Logged by: H. Willemink Date Drilled: 19850308

Depth (m) from	to	Thickness (m)	Description
Geology			
0.00	6.00	6.00	SHALE : 39ECCA dark green; jointed. And some weathered black shale
6.00	40.00	34.00	SHALE : 39ECCA blue. 20m some rust 25m " "
Geohydrology			
16.00	16.00	0.00	0.19 L/sec Container yield

* HydroBase * S I T E R E P O R T * DATE : 1 February 1990
Generated for : DE AAR - IGS-WRC RESEARCH PROJECT

Site name : SINCLAIRS DAM
Remarks :

Site ID: 3023DB36485	Number on map: G36485
E-W coordinate : -88864.45	N-S coordinate : 3393838.25
Ground Elevation: 1236.66 mamsl	Collar Height: 0.00 m
Depth of Casing: m	Diameter of Hole: 165 mm
Logged by: H. Willemink	Date Drilled: 19850308

Depth (m) from	to	Thickness (m)	Description
Geology			
0.00	7.00	7.00	SHALE : 39ECCA dark green; very jointed.
7.00	31.00	24.00	SHALE : 39ECCA silty; jointed. On 10 to 15m some purple mineral clay in joints and on 27 to 29 m well jointed with lots of rust in joints
31.00	42.00	11.00	SHALE : 39ECCA blue; hard. With calcite in joints
Geohydrology			
30.00	40.00	10.00	0.81 L/sec V-notch yield

* HydroBase * S I T E R E P O R T * DATE : 1 February 1990
Generated for : DE AAR - IGS-WRC RESEARCH PROJECT

Site name : SINCLAIRS DAM
Remarks :

Site ID: 3023DB36486	Number on map: G36486
E-W coordinate : -89362.85	N-S coordinate : 3393614.00
Ground Elevation: 1242.99 mamsl	Collar Height: 0.00 m
Depth of Casing: m	Diameter of Hole: 165 mm
Logged by: H. Willemink	Date Drilled: 19850309

Depth (m) from	to	Thickness (m)	Description
Geology			
0.00	12.00	12.00	SHALE : 39ECCA greenish green; very jointed; weathered.
12.00	32.00	20.00	SHALE : 39ECCA slightly jointed. With some rust spots in joints
32.00	34.00	2.00	SHALE : 39ECCA blue. Some rust spots
34.00	37.00	3.00	SHALE : 39ECCA bluish blue; soft.
37.00	41.00	4.00	SHALE : 39ECCA blue.
41.00	45.00	4.00	SHALE : 39ECCA bluish blue.
Geohydrology			
31.00	31.00	0.00	0.02 L/sec Estimate yield Moist at 25 m.

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==========================================================================
* HydroBase *  S I T E   R E P O R T  *        DATE :  1 February 1990
Generated for : DE AAR - IGS-WRC RESEARCH PROJECT
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Site name : SINCLAIRS DAM
Remarks :
------------------------------          ------------------------------
Site ID: 3023DB36487                    Number on map: G36487
------------------------------          ------------------------------
E-W coordinate    :  -89638.41          N-S coordinate : 3395226.50
Ground Elevation: 1244.14 mamsl         Collar Height: 0.00 m
Depth of Casing:        m               Diameter of Hole: 165 mm
Logged by: H. Willemink                 Date Drilled: 19850309
--------------------------------------------------------------------------
  Depth (m)  Thickness
  from   to    (m)          Description
--------------------------------------------------------------------------
Geology

  0.00  11.00 11.00 SHALE : 39ECCA greenish green; very jointed.
 11.00  16.00  5.00 DOLERITE : 40KRDL greenish green; baked; jointed.
                    And shale
 16.00  22.00  6.00 SHALE : 39ECCA greenish green; slightly jointed.
 22.00  33.00 11.00 DOLERITE : 40KRDL fresh.
 33.00  40.00  7.00 SHALE : 39ECCA blue; hard.


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==========================================================================
* HydroBase *  S I T E   R E P O R T  *        DATE :  1 February 1990
Generated for : DE AAR - IGS-WRC RESEARCH PROJECT
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Site name : SINCLAIRS DAM
Remarks :
------------------------------          ------------------------------
Site ID: 3023DB36488                    Number on map: G36488
------------------------------          ------------------------------
E-W coordinate    :  -90136.30          N-S coordinate : 3395316.50
Ground Elevation: 1245.91 mamsl         Collar Height: 0.00 m
Depth of Casing:        m               Diameter of Hole:  165 mm
Logged by: H. Willemink                 Date Drilled: 19850309
--------------------------------------------------------------------------
  Depth (m)  Thickness
  from   to    (m)          Description
--------------------------------------------------------------------------
Geology

  0.00  10.00 10.00 DOLERITE : 40KRDL slightly weathered.
 10.00  15.00  5.00 DOLERITE : 40KRDL fresh; jointed.
 15.00  17.00  2.00 DOLERITE : 40KRDL fresh.
 17.00  20.00  3.00 SHALE : 39ECCA greenish green; baked; jointed.
 20.00  22.00  2.00 SHALE : 39ECCA greenish blue; baked. Red spots.
 22.00  42.00 20.00 SHALE : 39ECCA greenish blue; baked. Some rust
                    spots and red spots.
Geohydrology

( no information. )
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==========================================================================
* HydroBase *  S I T E   R E P O R T  *        DATE :  1 February 1990
Generated for : DE AAR - IGS-WRC RESEARCH PROJECT
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Site name : SINCLAIRS DAM
Remarks :
------------------------------          ------------------------------
Site ID: 3023DB36489                    Number on map: G36489
------------------------------          ------------------------------
E-W coordinate   :  -89848.22           N-S coordinate : 3395265.52
Ground Elevation: 1243.67 mamsl         Collar Height: 0.00 m
Depth of Casing:       m                Diameter of Hole:  165 mm
Logged by: H. Willemink                 Date Drilled: 19850312
--------------------------------------------------------------------------
  Depth (m)  Thickness
  from   to    (m)              Description
--------------------------------------------------------------------------
Geology

  0.00   7.00  7.00 SHALE : 39ECCA greenish green; baked; jointed.
  7.00  10.00  3.00 DOLERITE : 40KRDL jointed; weathered.
 10.00  19.00  9.00 DOLERITE : 40KRDL fresh.
 19.00  21.00  2.00 DOLERITE : 40KRDL weathered.
 21.00  32.00 11.00 DOLERITE : 40KRDL fresh.
 32.00 102.00 70.00 SHALE : 39ECCA black; silty; hard. Rust in joints


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==========================================================================
* HydroBase *  S I T E   R E P O R T  *        DATE :  1 February 1990
Generated for : DE AAR - IGS-WRC RESEARCH PROJECT
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Site name : SINCLAIRS DAM
Remarks :
------------------------------          ------------------------------
Site ID: 3023DB36490                    Number on map: G36490
------------------------------          ------------------------------
E-W coordinate   :  -89763.55           N-S coordinate : 3395420.75
Ground Elevation: 1241.84 mamsl         Collar Height: 0.00 m
Depth of Casing:       m                Diameter of Hole:  165 mm
Logged by: H. Willemink                 Date Drilled: 19850311
--------------------------------------------------------------------------
  Depth (m)  Thickness
  from   to    (m)              Description
--------------------------------------------------------------------------
Geology

  0.00   7.00  7.00 SHALE : 39ECCA very jointed.
  7.00  13.00  6.00 DOLERITE : 40KRDL fresh; jointed.
 13.00  19.00  6.00 DOLERITE : 40KRDL slightly fresh; jointed.
 19.00  25.00  6.00 DOLERITE : 40KRDL solid.
 25.00  27.00  2.00 SHALE : 39ECCA greenish blue; baked. Light brown
                    grey to red spotted blue grey baked shale with
                    dolerite and some large fragments with rust on
                    joints.
 27.00  40.00 13.00 SHALE : 39ECCA blue; hard.

Geohydrology

( no information. )
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==========================================================================
* HydroBase *  S I T E   R E P O R T  *        DATE :  1 February 1990
Generated for : DE AAR - IGS-WRC RESEARCH PROJECT
==========================================================================

Site name : SINCLAIRS DAM
Remarks :
------------------------------          ----------------------------
Site ID: 3023DB36491                    Number on map: G36491
------------------------------          ----------------------------
E-W coordinate    :  -89958.60          N-S coordinate : 3395132.00
Ground Elevation: 1247.10 mamsl         Collar Height: 0.00 m
Depth of Casing:      m                 Diameter of Hole: 165 mm
Logged by: H. Willemink                 Date Drilled: 19850311
--------------------------------------------------------------------------
  Depth (m)  Thickness
  from   to    (m)              Description
--------------------------------------------------------------------------
Geology

  0.00   2.00   2.00 DOLERITE : 40KRDL fresh. With baked shale
                     fragments
  2.00  11.00   9.00 SHALE : 39ECCA very jointed.
 11.00  17.00   6.00 SHALE : 39ECCA slightly jointed.
 17.00  19.00   2.00 SHALE : 39ECCA very jointed.
 19.00  22.00   3.00 SHALE : 39ECCA slightly jointed.
 22.00  25.00   3.00 SHALE : 39ECCA very jointed.
 25.00  30.00   5.00 SHALE : 39ECCA slightly jointed.
 30.00  32.00   2.00 SHALE : 39ECCA blue; jointed.
 32.00  35.00   3.00 SHALE : 39ECCA slightly jointed.
 35.00  60.00  25.00 SHALE : 39ECCA blue. On 41m blue grey shale
                     On 44m calcite and again on 48m and 53 m


Geohydrology

 31.00  31.00   0.00 1.11 L/sec V-notch yield

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* HydroBase * S I T E R E P O R T * DATE : 1 February 1990
Generated for : DE AAR - IGS-WRC RESEARCH PROJECT

Site name : SINCLAIRS DAM
Remarks :

Site ID: 3023DB36492 Number on map: G36492

E-W coordinate : -89999.00 N-S coordinate : 3395142.50
Ground Elevation: 1247.33 mamsl Collar Height: 0.00 m
Depth of Casing: m Diameter of Hole: 165 mm
Logged by: H. Willemink Date Drilled: 19850312

Depth (m) from	to	Thickness (m)	Description
Geology			
0.00	4.00	4.00	SHALE : 39ECCA fresh. With calcrete
4.00	12.00	8.00	SHALE : 39ECCA very jointed.
12.00	19.00	7.00	SHALE : 39ECCA jointed. With a prominent joint on 18m
19.00	42.00	23.00	SHALE : 39ECCA blue; slightly jointed. Between 24 and 27m somewhat jointed
Geohydrology			
31.00	31.00	0.00	0.37 L/sec Estimate yield

* HydroBase * S I T E R E P O R T * DATE : 1 February 1990
Generated for : DE AAR - IGS-WRC RESEARCH PROJECT

Site name : SINCLAIRS DAM
Remarks :

Site ID: 3023DB36493 Number on map: G36493

E-W coordinate : -91051.92 N-S coordinate : 3395885.75
Ground Elevation: 1251.27 mamsl Collar Height: 0.00 m
Depth of Casing: m Diameter of Hole: 165 mm
Logged by: H. Willemink Date Drilled: 19850313

Depth (m) from	to	Thickness (m)	Description
Geology			
0.00	19.00	19.00	SHALE : 39ECCA dark green; very weathered; jointed.
19.00	25.00	6.00	SHALE : 39ECCA blue; slightly jointed.
25.00	27.00	2.00	SHALE : 39ECCA greenish blue; hard.
27.00	31.00	4.00	SHALE : 39ECCA blue; slightly baked.
31.00	34.00	3.00	DOLERITE : 40KRDL fine crystalline; fresh.
34.00	35.00	1.00	SHALE : 39ECCA greenish blue; baked. Red spots
35.00	50.00	15.00	DOLERITE : 40KRDL fresh.
Geohydrology			
26.00	26.00	0.00	0.04 L/sec Estimate yield

* HydroBase * S I T E R E P O R T * DATE : 1 February 1990
Generated for : DE AAR - IGS-WRC RESEARCH PROJECT

Site name : SINCLAIRS DAM
Remarks :

Site ID: 3023DB36494 Number on map: G36494
E-W coordinate : -90904.60 N-S coordinate : 3396187.75
Ground Elevation: 1250.78 mamsl Collar Height: 0.00 m
Depth of Casing: m Diameter of Hole: 165 mm
Logged by: H. Willemink Date Drilled: 19850312

Depth (m) from	to	Thickness (m)	Description
Geology			
0.00	6.00	6.00	SHALE : 39ECCA dark green; fractured.
6.00	13.00	7.00	SHALE : 39ECCA dark green; weathered; jointed.
13.00	18.00	5.00	DOLERITE : 40KRDL very jointed; weathered.
18.00	19.00	1.00	SHALE : 39ECCA very baked; jointed.
19.00	22.00	3.00	SHALE : 39ECCA jointed.
22.00	42.00	20.00	SHALE : 39ECCA silty. From 30m a lot of calcite

* HydroBase * S I T E R E P O R T * DATE : 1 February 1990
Generated for : DE AAR - IGS-WRC RESEARCH PROJECT

Site name : SINCLAIRS DAM
Remarks :

Site ID: 3023DB36495 Number on map: G36495
E-W coordinate : -90785.05 N-S coordinate : 3396437.25
Ground Elevation: 1251.09 mamsl Collar Height: 0.00 m
Depth of Casing: m Diameter of Hole: 165 mm
Logged by: H. Willemink Date Drilled: 19850313

Depth (m) from	to	Thickness (m)	Description
Geology			
0.00	5.00	5.00	SHALE : 39ECCA dark green; very jointed; weathered.
5.00	18.00	13.00	SHALE : 39ECCA dark green; jointed.
18.00	42.00	24.00	SHALE : 39ECCA blue; silty; hard. Rust marks at 22m.
Geohydrology			
(no information.)			

* HydroBase * S I T E R E P O R T * DATE : 1 February 1990
Generated for : DE AAR - IGS-WRC RESEARCH PROJECT

Site name : SINCLAIRS DAM
Remarks :

Site ID: 3023DB36496	Number on map: G36496
E-W coordinate : -90668.30	N-S coordinate : 3396338.17
Ground Elevation: 1248.75 mamsl	Collar Height: 0.00 m
Depth of Casing: m	Diameter of Hole: 165 mm
Logged by: H. Willemink	Date Drilled: 19850319

Depth (m) from	to	Thickness (m)	Description
Geology			
0.00	2.00	2.00	SHALE : 39ECCA fractured.
2.00	13.00	11.00	SHALE : 39ECCA jointed; weathered.
13.00	14.00	1.00	DOLERITE : 40KRDL coarse crystalline; jointed. And hard baked shale with mineral rich clay in joints
14.00	27.00	13.00	SHALE : 39ECCA dark green; jointed.
27.00	33.00	6.00	SHALE : 39ECCA blue; slightly jointed.
33.00	68.00	35.00	SHALE : 39ECCA greenish blue; silty; hard. Sandstone bands on 45m Calcite on 49m and again on 51m
68.00	69.00	1.00	SHALE : 39ECCA greenish blue. And red spots
69.00	73.00	4.00	SHALE : 39ECCA coarse grained; greenish blue; baked. Red spots and dolerite fragments
73.00	78.00	5.00	DOLERITE : 40KRDL coarse crystalline; fresh.
78.00	80.00	2.00	DOLERITE : 40KRDL greenish black; baked. Dolerite and black shale with some rust spots
80.00	94.00	14.00	DOLERITE : 40KRDL coarse crystalline; fresh.
Geohydrology			
27.00	27.00	0.00	0.75 L/sec V-notch yield

* HydroBase * S I T E R E P O R T * DATE : 1 February 1990
Generated for : DE AAR - IGS-WRC RESEARCH PROJECT

Site name : SINCLAIRS DAM
Remarks :

Site ID: 3023DB36497 Number on map: G36497

E-W coordinate : -90408.30 N-S coordinate : 3396465.75
Ground Elevation: 1246.41 mamsl Collar Height: 0.00 m
Depth of Casing: m Diameter of Hole: 165 mm
Logged by: H. Willemink Date Drilled: 19850314

Depth (m) from	to	Thickness (m)	Description
Geology			
0.00	5.00	5.00	SHALE : 39ECCA dark green; very weathered; jointed.
5.00	23.00	18.00	SHALE : 39ECCA coarse grained; dark green; baked; hard. Mineral rich clay
23.00	33.00	10.00	SHALE : 39ECCA blue; jointed. On 30m joint with dark green grey coarse fragments of weathered shale
33.00	86.00	53.00	SHALE : 39ECCA blue; silty. Some rust spots on 40m anda prominent calcite layer on 85m
86.00	88.00	2.00	SHALE : 39ECCA dark grey; baked. Some red spots
88.00	96.00	8.00	DOLERITE : 40KRDL coarse crystalline; fresh.
Geohydrology			
55.00	55.00	0.00	0.00 L/sec yield
59.00	59.00	0.00	0.01 L/sec Estimate yield

* HydroBase * S I T E R E P O R T * DATE : 1 February 1990
Generated for : DE AAR - IGS-WRC RESEARCH PROJECT

Site name : SINCLAIRS DAM
Remarks :

Site ID: 3023DB36498	Number on map: G36498
E-W coordinate : -90592.52	N-S coordinate : 3396274.61
Ground Elevation: 1249.34 mamsl	Collar Height: 0.00 m
Depth of Casing: m	Diameter of Hole: 165 mm
Logged by: H. Willemink	Date Drilled: 19850318

Depth (m) from	to	Thickness (m)	Description
Geology			
0.00	2.00	2.00	SHALE : 39ECCA dark green; very jointed.
2.00	22.00	20.00	SHALE : 39ECCA blue; slightly jointed.
22.00	40.00	18.00	SHALE : 39ECCA blue; silty.
Geohydrology			
25.00	25.00	0.00	0.04 L/sec Estimate yield

* HydroBase * S I T E R E P O R T * DATE : 1 February 1990
Generated for : DE AAR - IGS-WRC RESEARCH PROJECT

Site name : RHENOSTERPOORT (KLEINBRANDFONTEIN)
Remarks :

Site ID: 3023DB36499	Number on map: G36499
E-W coordinate : -83290.54	N-S coordinate : 3396992.77
Ground Elevation: 1222.14 mamsl	Collar Height: 0.00 m
Depth of Casing: m	Diameter of Hole: 165 mm
Logged by: H. Willemink	Date Drilled: 19850320

Depth (m) from	to	Thickness (m)	Description
Geology			
0.00	1.00	1.00	SAND AND SILT : 39ECCA fine grained; soft. With clay and soft calcrete and dolerite fragments
1.00	2.00	1.00	SAND AND CLAY : 39ECCA fine grained.
2.00	6.00	4.00	SAND, GRAVEL AND CLAY : 39ECCA fine grained; weathered.
6.00	7.00	1.00	SAND, GRAVEL AND CLAY : 39ECCA fine to coarse grained.
7.00	9.00	2.00	SHALE : 39ECCA coarse grained; greyish green; weathered.
9.00	25.00	16.00	SHALE : 39ECCA greyish green; slightly weathered. Rust spots and mineral dendrites on bedding planes
25.00	48.00	23.00	SHALE : 39ECCA dark green. Rusty spots on some places
48.00	69.00	21.00	SHALE : 39 ECCA black. Prominent zone on 68m filled with calcite and very large fragments
69.00	76.00	7.00	SHALE : 39ECCA coarse grained; blue; silty.
76.00	81.00	5.00	SHALE : 39ECCA blue; silty.
Geohydrology			
39.00	52.00	13.00	0.24 L/sec Container yield
68.00	76.00	8.00	16.26 L/sec V-notch yield

* HydroBase * S I T E R E P O R T * DATE : 1 February 1990
Generated for : DE AAR - IGS-WRC RESEARCH PROJECT

Site name : RHENOSTERPOORT (KLEINBRANDFONTEIN)
Remarks :

Site ID: 3023DB36500	Number on map: G36500
E-W coordinate : -83428.38	N-S coordinate : 3396762.75
Ground Elevation: 1218.77 mamsl	Collar Height: 0.00 m
Depth of Casing: m	Diameter of Hole: 165 mm
Logged by: H. Willemink	Date Drilled: 19850321

Depth (m) from	to	Thickness (m)	Description
Geology			
0.00	2.00	2.00	SAND AND CLAY : 39ECCA calcareous; silty.
2.00	4.00	2.00	SAND AND CLAY : 39ECCA fine grained; silty.
4.00	6.00	2.00	SAND, GRAVEL AND CLAY : 39ECCA fine to coarse grained; baked; silty.
6.00	7.00	1.00	SAND, GRAVEL AND CLAY : 39ECCA coarse grained; blue; baked. With hornfels
7.00	8.00	1.00	SAND, GRAVEL AND CLAY : 39ECCA coarse grained; blue; baked. With hornfels
8.00	18.00	10.00	SHALE : 39ECCA greyish green; jointed. Rust marks
18.00	48.00	30.00	SHALE : 39ECCA dark grey; hard.

* HydroBase * S I T E R E P O R T * DATE : 1 February 1990
Generated for : DE AAR - IGS-WRC RESEARCH PROJECT

Site name : RHENOSTERPOORT (KLEINBRANDFONTEIN)
Remarks :

Site ID: 3023DB36501 Number on map: G36501
E-W coordinate : -83160.10 N-S coordinate : 3397213.10
Ground Elevation: 1223.85 mamsl Collar Height: 0.00 m
Depth of Casing: m Diameter of Hole: 165 mm
Logged by: H. Willemink Date Drilled: 19850322

Depth (m) from	to	Thickness (m)	Description
Geology			
0.00	3.00	3.00	SAND AND CLAY : 39ECCA fine grained; silty; sandy.
3.00	4.00	1.00	SAND, GRAVEL AND CLAY : 39ECCA coarse and fine grained; sandy; silty.
4.00	5.00	1.00	SAND AND CLAY : 39ECCA sandy; silty.
5.00	8.00	3.00	SAND, GRAVEL AND CLAY : 39ECCA fine to coarse grained; sandy; silty.
8.00	12.00	4.00	SHALE : 39ECCA greyish green; jointed; weathered.
12.00	18.00	6.00	SHALE : 39ECCA dark grey; slightly jointed.
18.00	26.00	8.00	SHALE : 39ECCA dark grey.
26.00	40.00	14.00	SHALE : 39ECCA blue.
Geohydrology			
16.00	16.00	0.00	0.10 L/sec Container yield

* HydroBase * S I T E R E P O R T * DATE : 1 February 1990
Generated for : DE AAR - IGS-WRC RESEARCH PROJECT

Site name : RHENOSTERPOORT (KLEINBRANDFONTEIN)
Remarks :

Site ID: 3023DB36502 Number on map: G36502

E-W coordinate : -83569.37 N-S coordinate : 3396924.40
Ground Elevation: 1219.53 mamsl Collar Height: 0.00 m
Depth of Casing: m Diameter of Hole: 203 mm
Logged by: H. Willemink Date Drilled: 19850325

Depth (m) from	to	Thickness (m)	Description
Geology			
0.00	3.00	3.00	SAND AND CLAY : 39ECCA fine grained; sandy; silty.
3.00	4.00	1.00	SAND AND CLAY : 39ECCA argillaceous; silty.
4.00	7.00	3.00	SAND, GRAVEL AND CLAY : 39ECCA fine to coarse grained; arenaceous; silty. Weathered shale and sharp dolerite and calc
7.00	13.00	6.00	SAND, GRAVEL AND CLAY : 39ECCA fine to coarse grained; greyish green; sandy; silty. And weathered shale
13.00	30.00	17.00	SHALE : 39ECCA dark grey. With rust marks
30.00	42.00	12.00	SHALE : 39ECCA blue.
Geohydrology			
25.00	25.00	0.00	0.31 L/sec V-notch yield YIELD increased during drilling to 1,0 l/s.

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==========================================================================
* HydroBase *  S I T E   R E P O R T  *        DATE :  1 February 1990
Generated for : DE AAR - IGS-WRC RESEARCH PROJECT
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Site name : RHENOSTERPOORT (KLEINBRANDFONTEIN)
Remarks :
------------------------------          ----------------------------
Site ID: 3023DB36503                    Number on map: G36503
------------------------------          ----------------------------
E-W coordinate  :  -83021.11            N-S coordinate : 3397062.50
Ground Elevation: 1222.58 mamsl         Collar Height: 0.00 m
Depth of Casing:       m                Diameter of Hole:  165 mm
Logged by: H. Willemink                 Date Drilled: 19850329
--------------------------------------------------------------------------
  Depth (m)  Thickness
  from   to    (m)              Description
--------------------------------------------------------------------------
Geology

  0.00   3.00  3.00 SAND, GRAVEL AND CLAY : 39ECCA fine grained;
                    sandy; silty. Shale and dolerite with rubble and
                    calc
  3.00   6.00  3.00 SAND AND GRAVEL : 39ECCA fine grained; sandy;
                    silty.
  6.00  11.00  5.00 SAND AND SILT : 39ECCA fine to coarse grained;
                    silty.
 11.00  13.00  2.00 SHALE : 39ECCA dark grey; weathered.
 13.00  15.00  2.00 SHALE : 39ECCA jointed.
 15.00  24.00  9.00 SHALE : 39ECCA dark grey; weathered; jointed. And
                    clay
 24.00  42.00 18.00 SHALE : 39ECCA dark grey. With rust marks


--------------------------------------------------------------------------
```

* HydroBase * S I T E R E P O R T * DATE : 1 February 1990
Generated for : DE AAR - IGS-WRC RESEARCH PROJECT

Site name : RHENOSTERPOORT (KLEINBRANDFONTEIN)
Remarks :

Site ID: 3023DB36504	Number on map: G36504
E-W coordinate : -82809.36	N-S coordinate : 3395257.65
Ground Elevation: 1207.14 mamsl	Collar Height: 0.00 m
Depth of Casing: m	Diameter of Hole: 165 mm
Logged by: H. Willemink	Date Drilled: 19850329

Depth (m) from	to	Thickness (m)	Description
Geology			
0.00	1.00	1.00	SILT : 39ECCA fine grained; sandy.
1.00	2.00	1.00	SAND AND GRAVEL : 39ECCA fine grained; silty; calcareous.
2.00	3.00	1.00	SANDSTONE AND SHALE : 39ECCA fine grained; silty; calcareous. And weathered shale
3.00	9.00	6.00	SHALE : 39ECCA jointed; weathered.
9.00	17.00	8.00	SHALE : 39ECCA dark grey; jointed. With rust
17.00	31.00	14.00	SHALE : 39ECCA bluish blue; silty; jointed.
31.00	100.00	69.00	SHALE : 39ECCA bluish blue; soft; silty. Some chert bands and calcite in joints somewhat weathered
Geohydrology			
11.00	11.00	0.00	0.13 L/sec Estimate yield
18.00	42.00	24.00	3.27 L/sec V-notch yield YIELD increased during drilling to 4,98 l/s.

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================================================================================
* HydroBase *  S I T E   R E P O R T  *          DATE :  1 February 1990
Generated for : DE AAR - IGS-WRC RESEARCH PROJECT
================================================================================

Site name : RHENOSTERPOORT (KLEINBRANDFONTEIN)
Remarks :
--------------------------------  ----------------------------
Site ID: 3023DB36505              Number on map: G36505
--------------------------------  ----------------------------
E-W coordinate. .:  -83065.16     N-S coordinate : 3395225.50
Ground Elevation: 1208.58 mamsl   Collar Height: 0.00 m
Depth of Casing:        m         Diameter of Hole:  165 mm
Logged by: H. Willemink           Date Drilled: 19850329
--------------------------------------------------------------------------------
  Depth (m)  Thickness
  from   to    (m)              Description
--------------------------------------------------------------------------------
Geology

  0.00   5.00  5.00 SAND AND SILT : 39ECCA fine to coarse grained;
                    calcareous; silty.
  5.00   6.00  1.00 SHALE : 39ECCA weathered.
  6.00  10.00  4.00 SHALE : 39ECCA dark grey; jointed; weathered.
 10.00  33.00 23.00 SHALE : 39ECCA coarse grained; bluish blue; soft;
                    jointed.
 33.00  42.00  9.00 SHALE : 39ECCA bluish blue; jointed.

Geohydrology

 12.00  12.00  0.00 0.80 L/sec V-notch yield

--------------------------------------------------------------------------------

================================================================================
* HydroBase *  S I T E   R E P O R T  *          DATE :  1 February 1990
Generated for : DE AAR - IGS-WRC RESEARCH PROJECT
================================================================================

Site name : RHENOSTERPOORT (KLEINBRANDFONTEIN)
Remarks :
--------------------------------  ----------------------------
Site ID: 3023DB36506              Number on map: G36506
--------------------------------  ----------------------------
E-W coordinate   :  -82492.69     N-S coordinate : 3396050.75
Ground Elevation: 1221.76 mamsl   Collar Height: 0.00 m
Depth of Casing:        m         Diameter of Hole:  165 mm
Logged by: H. Willemink           Date Drilled: 19850328
--------------------------------------------------------------------------------
  Depth (m)  Thickness
  from   to    (m)              Description
--------------------------------------------------------------------------------
Geology

  0.00   6.00  6.00 SHALE : 39ECCA weathered.
  6.00  30.00 24.00 SHALE : 39ECCA dark grey; weathered; jointed.

Geohydrology

( no information. )
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================================================================================
* HydroBase *  S I T E   R E P O R T  *          DATE :  1 February 1990
Generated for : DE AAR - IGS-WRC RESEARCH PROJECT
================================================================================

Site name : RHENOSTERPOORT (KLEINBRANDFONTEIN)
Remarks :
--------------------------------  --------------------------------
Site ID: 3023DB36507              Number on map: G36507
--------------------------------  --------------------------------
E-W coordinate    :  -82522.84    N-S coordinate : 3395282.63
Ground Elevation: 1208.15 mamsl   Collar Height: 0.00 m
Depth of Casing:        m         Diameter of Hole:  165 mm
Logged by: H. Willemink           Date Drilled: 19850329
--------------------------------------------------------------------------------
  Depth (m)  Thickness
  from   to    (m)              Description
--------------------------------------------------------------------------------
Geology

  0.00  10.00 10.00 SHALE : 39ECCA greenish grey; jointed; weathered.
 10.00  18.00  8.00 SHALE : 39ECCA black; weathered; jointed. With
                          rust marks on joints
 18.00  22.00  4.00 CALCITE : 39ECCA slightly jointed.
 22.00  40.00 18.00 SHALE : 39ECCA bluish black; jointed; soft.

Geohydrology

 14.00  14.00  0.00 0.39 L/sec Container yield

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==========================================================================
* HydroBase *  S I T E   R E P O R T  *        DATE :  1 February 1990
Generated for : DE AAR - IGS-WRC RESEARCH PROJECT
==========================================================================

Site name : RHENOSTERPOORT (KLEINBRANDFONTEIN)
Remarks :
------------------------------          ------------------------------
Site ID: 3023DB36508                    Number on map: G36508
------------------------------          ------------------------------
E-W coordinate  . :  -82581.39          N-S coordinate : 3395103.00
Ground Elevation: 1207.87 mamsl         Collar Height: 0.00 m
Depth of Casing:      m                 Diameter of Hole:  165 mm
Logged by: H. Willemink                 Date Drilled: 19850329
--------------------------------------------------------------------------
  Depth (m)  Thickness
  from   to    (m)              Description
--------------------------------------------------------------------------
Geology

  0.00    2.00   2.00 SHALE : 39ECCA weathered; jointed. And calc in
                      joints
  2.00    4.00   2.00 SHALE : 39ECCA weathered.
  4.00   10.00   6.00 SHALE : 39ECCA weathered; jointed.
 10.00   20.00  10.00 SHALE : 39ECCA dark grey. With rust
 20.00   30.00  10.00 SHALE : 39ECCA black. Some rust marks

Geohydrology

 25.00   25.00   0.00 0.20 L/sec Estimate yield

--------------------------------------------------------------------------
```

*HydroBase * S I T E R E P O R T * DATE : 1 February 1990
Generated for : DE AAR - IGS-WRC RESEARCH PROJECT

Site name : RHENOSTERPOORT (KLEINBRANDFONTEIN)
Remarks :

Site ID: 3023DB36509	Number on map: G36509
E-W coordinate : -83017.46	N-S coordinate : 3395396.60
Ground Elevation: 1208.29 mamsl	Collar Height: 0.00 m
Depth of Casing: m	Diameter of Hole: 165 mm
Logged by: H. Willemink	Date Drilled: 19850330

Depth (m) from	to	Thickness (m)	Description
Geology			
0.00	4.00	4.00	SAND, GRAVEL AND CLAY : 39ECCA fine grained; calcareous; silty. Sand with shale and dolerite
4.00	10.00	6.00	SHALE : 39ECCA greyish green; weathered.
10.00	17.00	7.00	SHALE : 39ECCA dark grey; jointed.
17.00	30.00	13.00	SHALE : 39ECCA black; slightly weathered; jointed. Some prominent rust marks on 23m and on 25 m some calcite in joints
Geohydrology			
18.00	18.00	0.00	0.81 L/sec Container yield

* HydroBase * S I T E R E P O R T * DATE : 1 February 1990
Generated for : DE AAR - IGS-WRC RESEARCH PROJECT

Site name : RHENOSTERPOORT (KLEINBRANDFONTEIN)
Remarks :

Site ID: 3023DB36510	Number on map: G36510
E-W coordinate : -82643.17	N-S coordinate : 3394669.02
Ground Elevation: 1204.94 mamsl	Collar Height: 0.00 m
Depth of Casing: m	Diameter of Hole: 165 mm
Logged by: H. Willemink	Date Drilled: 19850330

Depth (m) from	to	Thickness (m)	Description
Geology			
0.00	3.00	3.00	SHALE : 39ECCA fine grained; silty; calcareous. Sand weathered shale
3.00	6.00	3.00	SHALE : 39ECCA jointed; weathered.
6.00	22.00	16.00	SHALE : 39ECCA dark grey; slightly jointed. Prominent rust marks in joints
22.00	30.00	8.00	SHALE : 39ECCA dark grey; solid.
30.00	54.00	24.00	SHALE : 39ECCA black. on 48m zone with grey white calcite
Geohydrology			
37.00	37.00	0.00	0.04 L/sec Estimate yield
60.00	60.00	0.00	0.27 L/sec Estimate yield

* HydroBase * S I T E R E P O R T * DATE : 1 February 1990
Generated for : DE AAR - IGS-WRC RESEARCH PROJECT

Site name : RHENOSTERPOORT (KLEINBRANDFONTEIN)
Remarks :

Site ID: 3023DB36511 Number on map: G36511

E-W coordinate : -82570.37 N-S coordinate : 3394429.54
Ground Elevation: 1204.43 mamsl Collar Height: 0.00 m
Depth of Casing: m Diameter of Hole: 165 mm
Logged by: H. Willemink Date Drilled: 19850330

Depth (m) from	to	Thickness (m)	Description
Geology			
0.00	3.00	3.00	SAND, GRAVEL AND CLAY : 39ECCA fine grained; silty; calcareous.
3.00	8.00	5.00	SHALE : 39ECCA weathered.
8.00	24.00	16.00	SHALE : 39ECCA coarse grained; greyish green; hard.
Geohydrology			
5.00	5.00	0.00	0.16 L/sec yield

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==========================================================================
* HydroBase *  S I T E   R E P O R T  *          DATE :  1 February 1990
Generated for : DE AAR - IGS-WRC RESEARCH PROJECT
==========================================================================

Site name : RHENOSTERPOORT (KLEINBRANDFONTEIN)
Remarks :
------------------------------          ------------------------------
Site ID: 3023DB36512                    Number on map: G36512
------------------------------          ------------------------------
E-W coordinate   : -82963.23            N-S coordinate : 3393891.50
Ground Elevation: 1204.68 mamsl         Collar Height: 0.00 m
Depth of Casing:       m                Diameter of Hole:  165 mm
Logged by: H. Willemink                 Date Drilled: 19850330
--------------------------------------------------------------------------
  Depth (m)  Thickness
  from   to    (m)              Description
--------------------------------------------------------------------------
Geology

  0.00    5.00   5.00 SAND, GRAVEL AND CLAY : 39ECCA fine grained;
                      silty.
  5.00    9.00   4.00 SILT AND CLAY : 39ECCA
  9.00   11.00   2.00 GRAVEL AND CLAY : 39ECCA coarse grained;
                      weathered.
 11.00   12.00   1.00 DOLERITE : 40KRDL very jointed.
 12.00   13.00   1.00 DOLERITE : 40KRDL coarse crystalline; slightly
                      weathered.

Geohydrology

  6.00   11.00   5.00 4.21 L/sec V-notch yield
                      Strong water at 11 m.
--------------------------------------------------------------------------
```

```
================================================================================
* HydroBase *  S I T E   R E P O R T  *        DATE :  1 February 1990
Generated for : DE AAR - IGS-WRC RESEARCH PROJECT
================================================================================

Site name : NEW VAALKOP
Remarks :
--------------------------------          ----------------------------
Site ID: 3023DB36513                      Number on map: G36513
--------------------------------          ----------------------------
E-W coordinate   : -84613.30              N-S coordinate : 3397827.50
Ground Elevation: 1223.26 mamsl           Collar Height: 0.00 m
Depth of Casing:       m                  Diameter of Hole: 165 mm
Logged by: H. Willemink                   Date Drilled: 19870331
--------------------------------------------------------------------------------
  Depth (m)  Thickness
  from   to    (m)              Description
--------------------------------------------------------------------------------
Geology

  0.00    8.00   8.00 SHALE : 39ECCA greyish green; baked.
  8.00   13.00   5.00 SHALE : 39ECCA bluish grey; slightly baked;
                      weathered. With some calcite
 13.00   24.00  11.00 SHALE : 39ECCA bluish grey; baked. Some red spots
 24.00   35.00  11.00 DOLERITE : 40KRDL coarse crystalline; fresh.

Geohydrology

( no information. )
--------------------------------------------------------------------------------

================================================================================
* HydroBase *  S I T E   R E P O R T  *        DATE :  1 February 1990
Generated for : DE AAR - IGS-WRC RESEARCH PROJECT
================================================================================

Site name : NEW VAALKOP
Remarks :
--------------------------------          ----------------------------
Site ID: 3023DB36514                      Number on map: G36514
--------------------------------          ----------------------------
E-W coordinate   :  -84469.91             N-S coordinate : 3398064.63
Ground Elevation: 1225.14 mamsl           Collar Height: 0.00 m
Depth of Casing:       m                  Diameter of Hole:  165 mm
Logged by: H. Willemink                   Date Drilled: 19850331
--------------------------------------------------------------------------------
  Depth (m)  Thickness
  from   to    (m)              Description
--------------------------------------------------------------------------------
Geology

  0.00    2.00   2.00 DOLERITE : 40KRDL coarse crystalline; weathered.
                      With calcrete.
  2.00   14.00  12.00 DOLERITE : 40KRDL weathered.
 14.00   28.00  14.00 DOLERITE : 40KRDL coarse crystalline;
                      feldspathic; solid.

Geohydrology

( no information. )
--------------------------------------------------------------------------------
```

```
==========================================================================
* HydroBase *  S I T E   R E P O R T  *        DATE :  1 February 1990
Generated for : DE AAR - IGS-WRC RESEARCH PROJECT
==========================================================================

Site name : NEW VAALKOP
Remarks :
------------------------------          ------------------------------
Site ID: 3023DB36515                    Number on map: G36515
------------------------------          ------------------------------
E-W coordinate  :  -83995.50            N-S coordinate : 3397891.23
Ground Elevation: 1224.88 mamsl         Collar Height: 0.00 m
Depth of Casing:       m                Diameter of Hole: 165 mm
Logged by: H. Willemink                 Date Drilled: 19850401
--------------------------------------------------------------------------
  Depth (m)  Thickness
  from   to    (m)              Description
--------------------------------------------------------------------------
Geology

  0.00   8.00   8.00 SHALE : 39ECCA greyish green; jointed; weathered.
  8.00  11.00   3.00 SHALE : 39ECCA reddish green; slightly baked.
 11.00  16.00   5.00 SHALE : 39ECCA bluish grey; slightly baked;
                      jointed. Red stains
 16.00  33.00  17.00 DOLERITE : 40KRDL solid.
 33.00  36.00   3.00 SHALE : 39ECCA coarse grained; greyish green;
                      baked. Some calcite in joints and red spots
 36.00  46.00  10.00 SHALE : 39ECCA bluish green; mineralised; baked.
                      And calcite and CU and FE combinations
 46.00  61.00  15.00 SHALE : 39ECCA coarse grained; bluish grey;
                      jointed; baked. With some rust and red spots
 61.00  62.00   1.00 DOLERITE : 40KRDL solid.

Geohydrology

 33.00  33.00   0.00 3.41 L/sec V-notch yield

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```

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================================================================================
* HydroBase *  S I T E   R E P O R T  *          DATE :  1 February 1990
Generated for : DE AAR - IGS-WRC RESEARCH PROJECT
================================================================================

Site name : NEW VAALKOP
Remarks :
-------------------------------          -------------------------------
Site ID: 3023DB36516                     Number on map: G36516
-------------------------------          -------------------------------
E-W coordinate   :  -83858.68            N-S coordinate : 3398115.80
Ground Elevation: 1227.68 mamsl          Collar Height: 0.00 m
Depth of Casing:        m                Diameter of Hole: 165 mm
Logged by: H. Willemink                  Date Drilled: 19850401
--------------------------------------------------------------------------------
  Depth (m)  Thickness
  from   to    (m)              Description
--------------------------------------------------------------------------------
Geology

  0.00   2.00  2.00 DOLERITE : 40KRDL weathered. And calcrete
  2.00  27.00 25.00 DOLERITE : 40KRDL coarse crystalline; weathered.
                    And brittle
 27.00  42.00 15.00 DOLERITE : 40KRDL fresh.

Geohydrology

 25.00  25.00  0.00 0.29 L/sec Container yield

--------------------------------------------------------------------------------

================================================================================
* HydroBase *  S I T E   R E P O R T  *          DATE :  1 February 1990
Generated for : DE AAR - IGS-WRC RESEARCH PROJECT
================================================================================

Site name : NEW VAALKOP
Remarks :
-------------------------------          -------------------------------
Site ID: 3023DB36517                     Number on map: G36517
-------------------------------          -------------------------------
E-W coordinate   :  -83948.52            N-S coordinate : 3397968.00
Ground Elevation: 1225.71 mamsl          Collar Height: 0.00 m
Depth of Casing:        m                Diameter of Hole:  165 mm
Logged by: H. Willemink                  Date Drilled: 1985
--------------------------------------------------------------------------------
  Depth (m)  Thickness
  from   to    (m)              Description
--------------------------------------------------------------------------------
Geology

( no information. )

Geohydrology

( no information. )
--------------------------------------------------------------------------------
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================================================================================
* HydroBase *  S I T E   R E P O R T  *          DATE :  1 February 1990
Generated for : DE AAR - IGS-WRC RESEARCH PROJECT
================================================================================

Site name : NEW VAALKOP
Remarks :
--------------------------------          ----------------------------
Site ID: 3023DB36518                      Number on map: G36518
--------------------------------          ----------------------------
E-W coordinate  :  -84009.86              N-S coordinate : 3397867.20
Ground Elevation: 1224.56 mamsl           Collar Height: 0.00 m
Depth of Casing:        m                 Diameter of Hole:  165 mm
Logged by: H. Willemink                   Date Drilled: 1985
--------------------------------------------------------------------------------
  Depth (m)  Thickness
  from   to    (m)              Description
--------------------------------------------------------------------------------
Geology

( no information. )


--------------------------------------------------------------------------------

================================================================================
* HydroBase *  S I T E   R E P O R T  *          DATE :  1 February 1990
Generated for : DE AAR - IGS-WRC RESEARCH PROJECT
================================================================================

Site name : SINCLAIRS DAM
Remarks :
--------------------------------          ----------------------------
Site ID: 3023DB36519                      Number on map: G36483A
--------------------------------          ----------------------------
E-W coordinate    :  -89114.88            N-S coordinate : 3393719.50
Ground Elevation: 1238.62 mamsl           Collar Height: 0.00 m
Depth of Casing:        m                 Diameter of Hole:  165 mm
Logged by: H. Willemink                   Date Drilled: 19850318
--------------------------------------------------------------------------------
  Depth (m)  Thickness
  from   to    (m)              Description
--------------------------------------------------------------------------------
Geology

  0.00    3.00   3.00 SHALE : 39ECCA very jointed; weathered.
  3.00    6.00   3.00 SHALE : 39ECCA dark green; jointed.
  6.00   20.00  14.00 SHALE : 39ECCA dark grey; slightly jointed. At
                       19m joints with weathered shale.
 20.00   42.00  22.00 SHALE : 39ECCA black; hard. At 14m rust and
                       betweem 30 and 36 m calcite in joints.

Geohydrology

 24.00   24.00   0.00 1.37 m3/h Estimate yield

--------------------------------------------------------------------------------
```

* HydroBase * S I T E R E P O R T * DATE : 1 February 1990
Generated for : DE AAR - IGS-WRC RESEARCH PROJECT

Site name : SINCLAIRS DAM
Remarks :

Site ID: 3023DB36520 Number on map: G36483B

E-W coordinate : -89134.00 N-S coordinate : 3393714.75
Ground Elevation: 1239.25 mamsl Collar Height: 0.00 m
Depth of Casing: m Diameter of Hole: 165 mm
Logged by: H. Willemink Date Drilled: 19850319

Depth (m) from	to	Thickness (m)	Description
Geology			
0.00	4.00	4.00	SHALE : 39ECCA greenish grey; very jointed.
4.00	10.00	6.00	SHALE : 39ECCA greenish grey; jointed.
10.00	19.00	9.00	SHALE : 39ECCA greenish grey; slightly jointed. With minerals
19.00	23.00	4.00	SHALE : 39ECCA bluish blue; soft; hard.
Geohydrology			
17.00	17.00	0.00	0.00 L/sec yield
19.00	19.00	0.00	0.00 L/sec yield
23.00	23.00	0.00	1.06 L/sec V-notch yield

* HydroBase * S I T E R E P O R T * DATE : 1 February 1990
Generated for : DE AAR - IGS-WRC RESEARCH PROJECT

Site name : SINCLAIRS DAM
Remarks :

Site ID: 3023DB36521	Number on map: G36483C
E-W coordinate : -89135.86	N-S coordinate : 3393760.00
Ground Elevation: 1240.23 mamsl	Collar Height: 0.00 m
Depth of Casing: m	Diameter of Hole: 165 mm
Logged by: H. Willemink	Date Drilled: 19880319

Depth (m) from	to	Thickness (m)	Description
Geology			
0.00	6.00	6.00	SHALE : 39ECCA greenish grey; very jointed.
6.00	21.00	15.00	SHALE : 39ECCA greyish green; silty.
21.00	40.00	19.00	SHALE : 39ECCA bluish blue; soft; silty. On 22 and 24m fine sanstone with calcite On 26 and 28m weathered joints On 30m fine sandstone with quartzite bands On 32m joints prominent with coarse weathered fragments
Geohydrology			
13.00	13.00	0.00	0.50 L/sec V-notch yield
16.00	16.00	0.00	0.50 L/sec V-notch yield
19.00	19.00	0.00	2.40 L/sec V-notch yield

* HydroBase * S I T E R E P O R T * DATE : 1 February 1990
Generated for : DE AAR - IGS-WRC RESEARCH PROJECT

Site name : SINCLAIRS DAM
Remarks :

Site ID: 3023DB36522	Number on map: G36483D
E-W coordinate : -89108.83	N-S coordinate : 3393729.00
Ground Elevation: 1238.97 mamsl	Collar Height: 0.00 m
Depth of Casing: m	Diameter of Hole: 165 mm
Logged by: H. Willemink	Date Drilled: 19850318

Depth (m) from	to	Thickness (m)	Description
Geology			
0.00	7.00	7.00	SHALE : 39ECCA greyish green; very jointed.
7.00	20.00	13.00	SHALE : 39ECCA greyish green; slightly jointed. Lots of minerals on places
20.00	42.00	22.00	SHALE : 39ECCA black; hard. Some rust on 23m and calcite on some places
Geohydrology			
24.00	24.00	0.00	0.38 L/sec Estimate yield

```
==========================================================================
* HydroBase *  S I T E   R E P O R T  *        DATE :  1 February 1990
Generated for : DE AAR - IGS-WRC RESEARCH PROJECT
==========================================================================

Site name : RHENOSTERPOORT
Remarks :
------------------------------          ------------------------------
Site ID: 3023DB36523                    Number on map: G36499A
------------------------------          ------------------------------
E-W coordinate  :  -83305.68            N-S coordinate : 3396966.75
Ground Elevation: 1221.81 mamsl         Collar Height: 0.00 m
Depth of Casing:       m                Diameter of Hole:  165 mm
Logged by: H. Willemink                 Date Drilled: 19850327
--------------------------------------------------------------------------
  Depth (m)  Thickness
  from   to    (m)              Description
--------------------------------------------------------------------------
Geology

  0.00   1.00  1.00 SAND AND CLAY : 39ECCA argillaceous.
  1.00   4.00  3.00 SAND AND CLAY : 39ECCA fine grained; silty;
                    calcareous.
  4.00   6.00  2.00 SAND, GRAVEL AND CLAY : 39ECCA coarse grained;
                    silty.
  6.00   7.00  1.00 SHALE : 39ECCA coarse grained; weathered.
  7.00  15.00  8.00 SHALE : 39ECCA greenish grey; weathered.
 15.00  60.00 45.00 SHALE : 39ECCA dark grey.
 60.00  72.00 12.00 SHALE : 39ECCA coarse grained; bluish blue;
                    silty; hard.
 72.00  94.00 22.00 CHERT : 39ECCA
 94.00 100.00  6.00 SHALE : 39ECCA greenish blue. With chert bands
100.00 102.00  2.00 SHALE : 39ECCA With chert bands

Geohydrology

 24.00  45.00 21.00 0.13 L/sec Container yield
 71.00  71.00  0.00 1.12 L/sec V-notch yield

--------------------------------------------------------------------------
```

* HydroBase * S I T E R E P O R T * DATE : 1 February 1990
Generated for : DE AAR - IGS-WRC RESEARCH PROJECT

Site name : RHENOSTERPOORT
Remarks :

Site ID: 3023DB36524 Number on map: G36499B
E-W coordinate : -83243.42 N-S coordinate : 3397070.50
Ground Elevation: 1222.12 mamsl Collar Height: 0.00 m
Depth of Casing: m Diameter of Hole: 165 mm
Logged by: H. Willemink Date Drilled: 19850327

Depth (m) from	to	Thickness (m)	Description
Geology			
0.00	3.00	3.00	SAND AND CLAY : 39ECCA fine grained; calcareous; sandy.
3.00	4.00	1.00	SAND AND CLAY : 39ECCA fine grained; silty; calcareous.
4.00	5.00	1.00	SAND AND CLAY : 39ECCA fine grained; sandy; silty.
5.00	6.00	1.00	SAND, GRAVEL AND CLAY : 39ECCA fine grained; sandy; silty.
6.00	9.00	3.00	SAND, GRAVEL AND CLAY : 39ECCA fine to coarse grained; sandy; silty.
9.00	13.00	4.00	SHALE : 39ECCA greyish green; jointed; weathered.
13.00	25.00	12.00	SHALE : 39ECCA dark grey. With rust spots
25.00	53.00	28.00	SHALE : 39ECCA dark grey.
53.00	72.00	19.00	SHALE : 39ECCA blue.
Geohydrology			
52.00	52.00	0.00	0.14 L/sec Container yield

G-BASE DE AAR Site ID and Mapnumbers.

All Site ID's start with 3023DB.....

S-ID	Num.on Map	S-ID	Num.on Map	S-ID	Num.on Map	S-ID	Num.on Map
00001	SNM1	00046	NVP 8	00091	POMP 11	36481	G36481
00002	SNM2	00047	NVP 9	00092	POMP 12	36482	G36482
00003	SNM3	00048	NVP 10	10001	NEUTRON 1	36483	G36483
00004	SNM4	00049	BRN 1	10002	NEUTRON 2	36484	G36484
00005	SNM5	00050	BRN 2	10003	NEUTRON 3	36485	G36485
00006	SNM6	00051	BRN 3	10004	NEUTRON 4	36486	G36486
00007	RHT1	00053	BRN 5	10005	NEUTRON 5	36487	G36487
00008	RHT2	00054	BRN 4	10006	NEUTRON 6	36488	G36488
00009	ZS1	00055	BRN 7	10007	NEUTRON 7	36489	G36489
00010	G23202	00056	BRN 8	10008	NEUTRON 8	36490	G36490
00011	G23202A	00057	BRN 9	10009	NEUTRON 9	36491	G36491
00012	G27703	00058	BRN 10	10010	NEUTRON 10	36492	G36492
00013	G27702G	00059	BRN 11	10011	NEUTRON 11	36493	G36493
00014	G27708D	00060	BRN 11A	10012	NEUTRON 12	36494	G36494
00015	G23203A	00061	BRN 12	10013	NEUTRON 13	36495	G36495
00016	VK1 (W)	00062	BRN 13	10014	NEUTRON 14	36496	G36496
00017	G23204D	00063	BRN 63	10015	NEUTRON 15	36497	G36497
00018	G23205C	00064	BRN 16	10016	NEUTRON 16	36498	G36498
00019	G23205F	00065	DAR 1	10017	NEUTRON 17	36499	G36499
00020	G23205B	00066	SNE 1	10018	NEUTRON 18	36500	G36500
00021	G27715G	00067	DPT 1	10019	NEUTRON 19	36501	G36501
00022	VP 1	00068	DPT 2	10020	NEUTRON 20	36502	G36502
00023	G23206A	00069	ZWS 1	10021	NEUTRON 21	36503	G36503
00024	RT 2	00070	ZWS 2	10022	NEUTRON 22	36504	G36504
00026	RT 3	00071	ZWS 3	20000	WEATHER STA	36505	G36505
00027	RT 1	00072	ZWS 4	20001	RAINGAUGE 1	36506	G36506
00028	G27719I	00073	ZWS 5	20002	CASSELLA	36507	G36507
00029	BN 1	00074	ZWS 6	27704	G27704	36508	G36508
00030	BN 2	00075	ZWS 7	27707	G27707	36509	G36509
00031	RHT 3	00076	ZWS 8	27723	G27723	36510	G36510
00032	RHT 4	00077	ZWS 9A	28402	G28402	36511	G36511
00033	RHT 4	00078	ZWS 10	28405	G28405	36512	G36512
00034	RHT 5	00079	ZWS 11	36469	G36469	36513	G36513
00035	RHT 6	00080	ZWS 12	36470	G36470	36514	G36514
00036	RHT 7	00081	POMP 1	36471	G36471	36515	G36515
00037	RHT 8	00082	POMP 2	36472	G36472	36516	G36516
00038	RHT 9	00083	POMP 3	36473	G36473	36517	G36517
00039	NVP 1	00084	POMP 4	36474	G36474	36518	G36518
00040	NVP 2	00085	POMP 5	36475	G36475	36519	G36483A
00041	NVP 3	00086	POMP 6	36476	G36476	36520	G36483B
00042	NVP 4	00087	POMP 7	36477	G36477	36521	G36483C
00043	NVP 5	00088	POMP 8	36478	G36478	36522	G36483D
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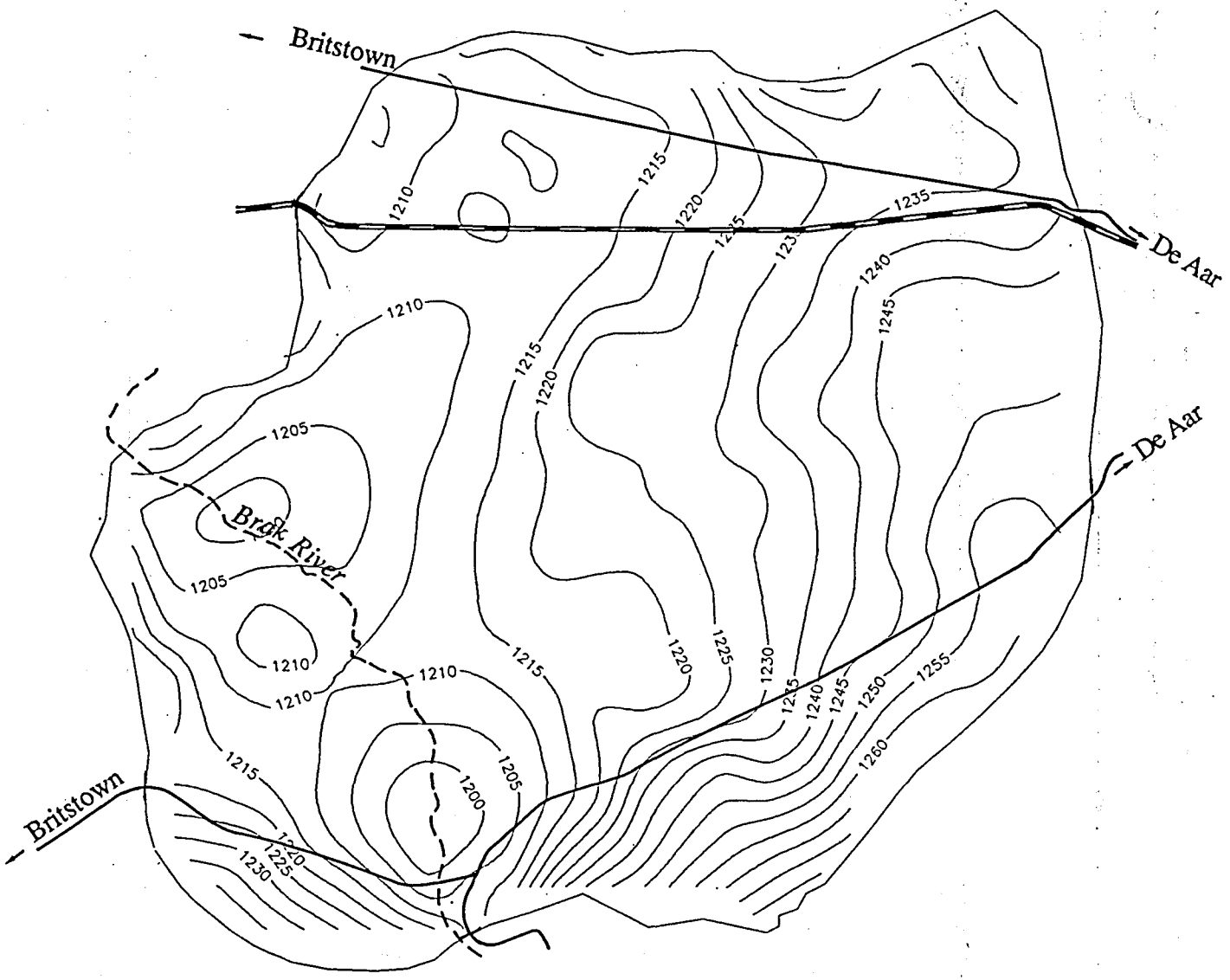
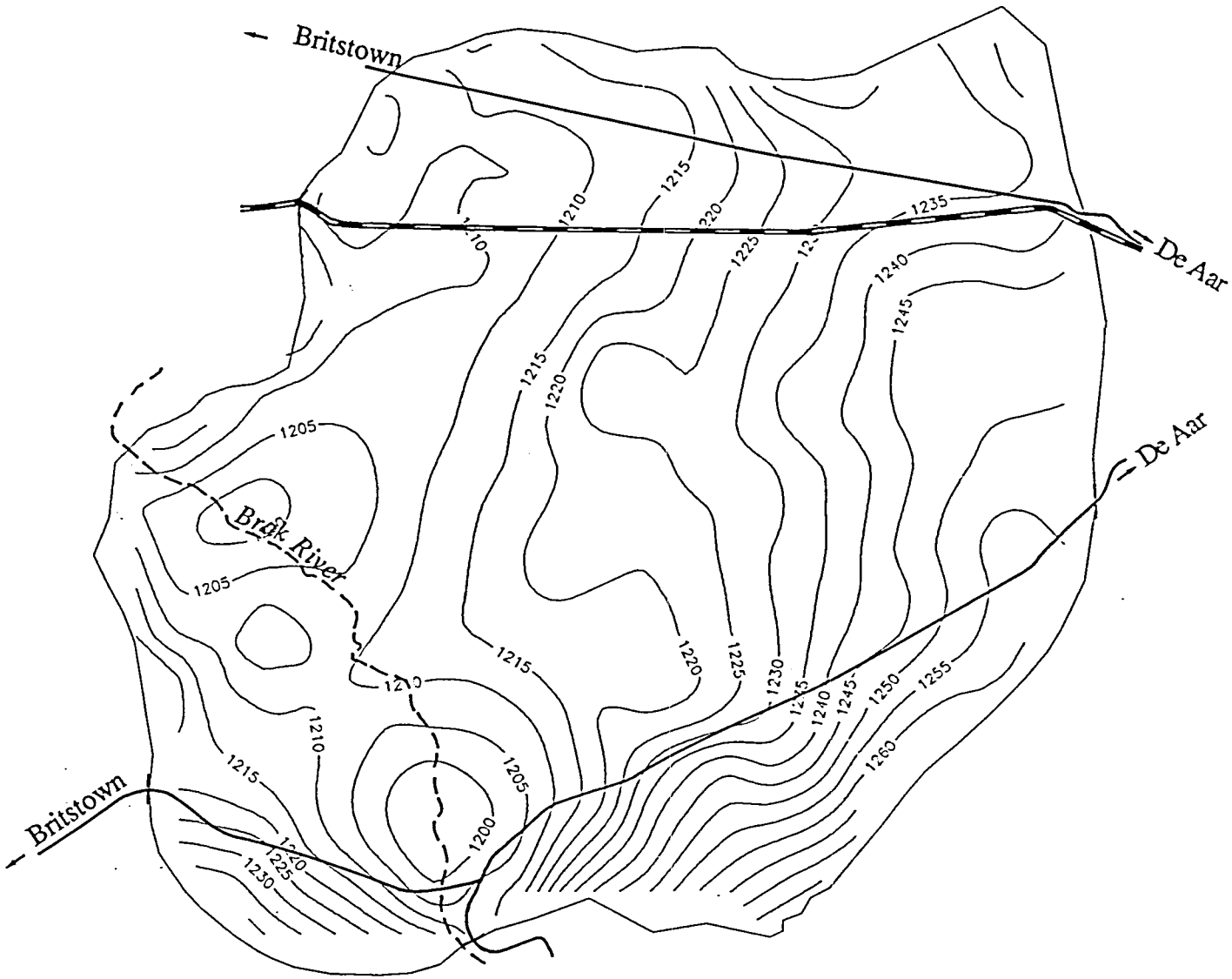
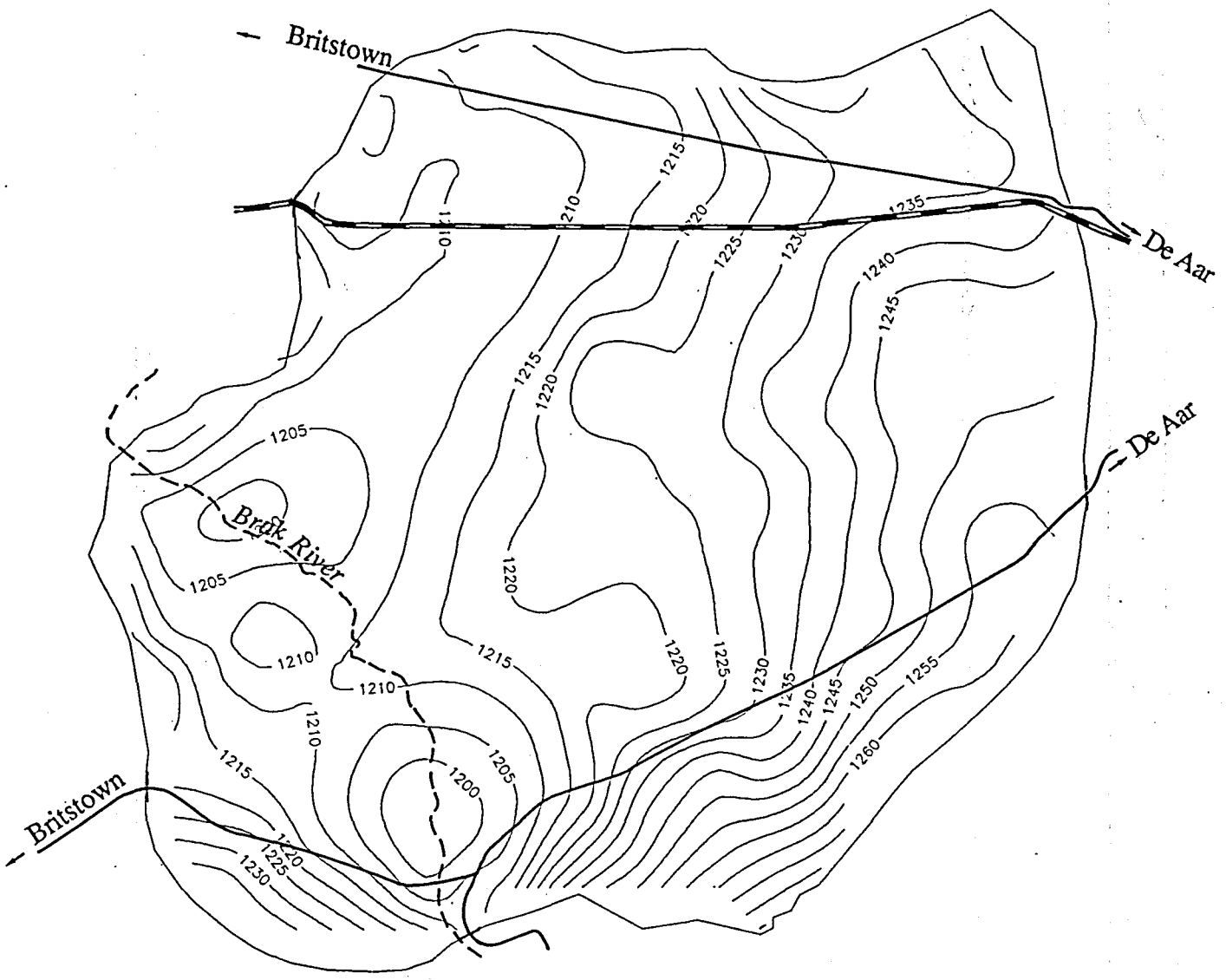


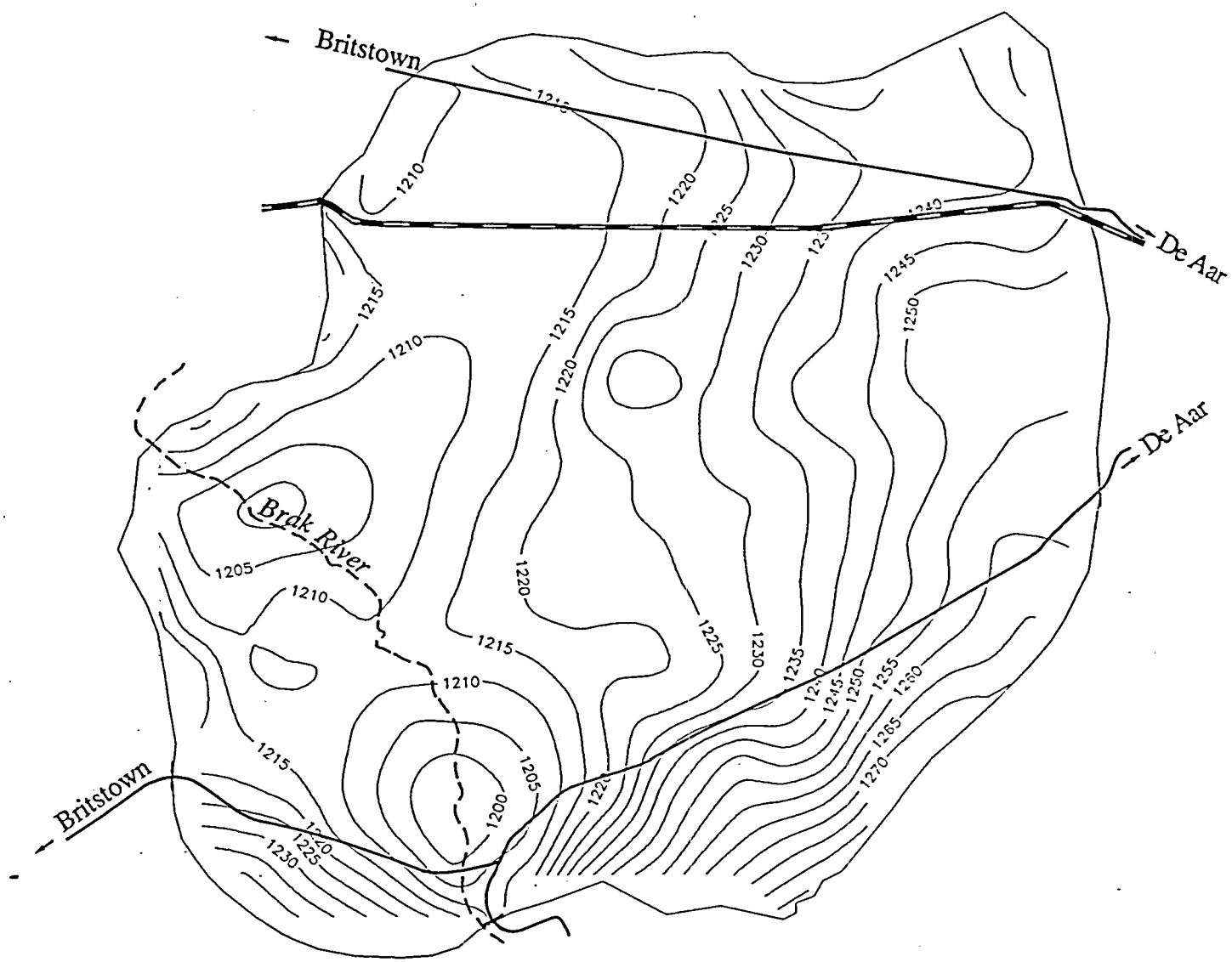
Boundaries of the De Aar aquifer showing the ground-water contours for October 1986.



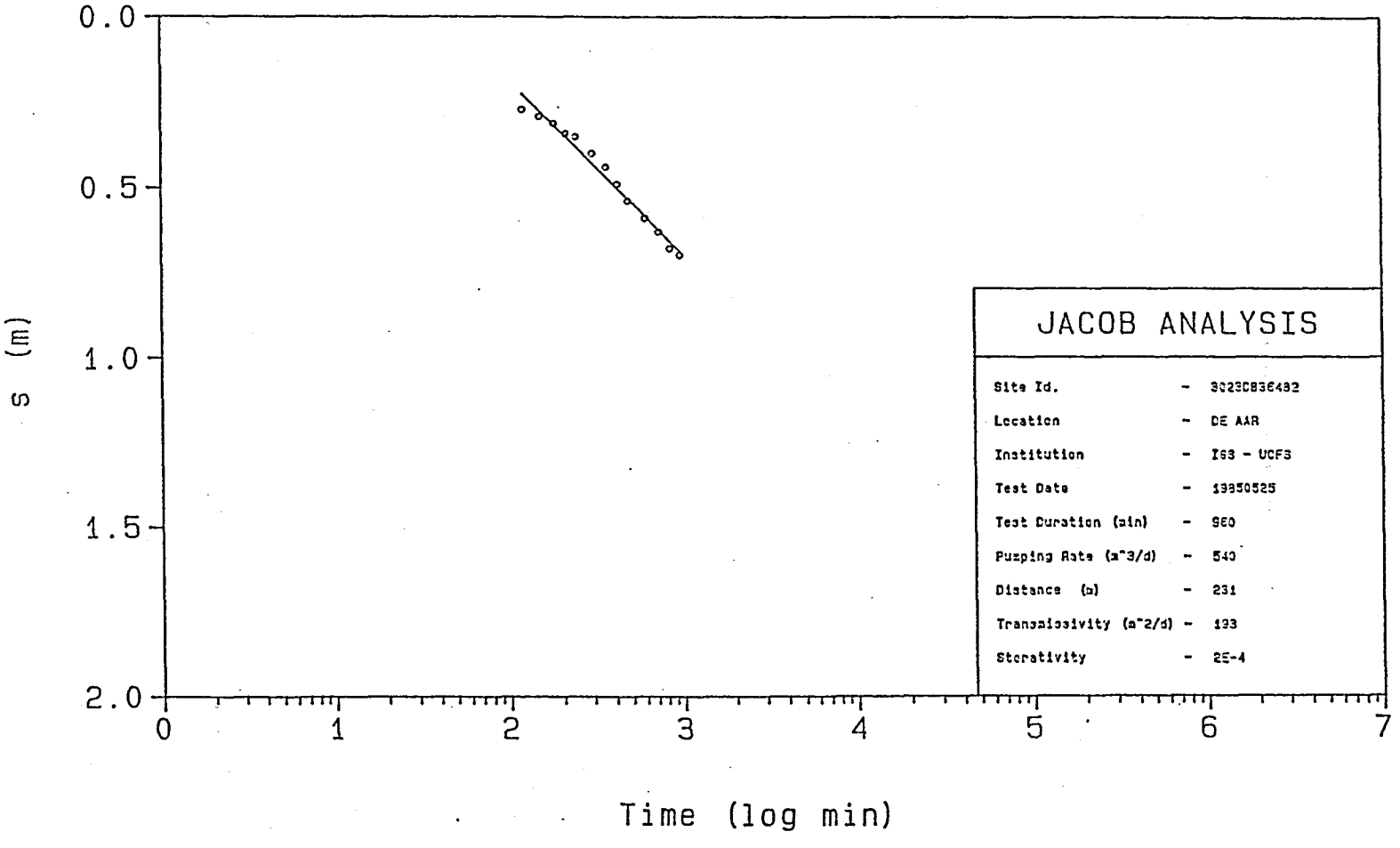
Boundaries of the De Aar aquifer showing the ground-water contours for October 1987.



Boundaries of the De Aar aquifer showing the ground-water contours for January 1988.



Boundaries of the De Aar aquifer showing the ground-water contours for April 1988.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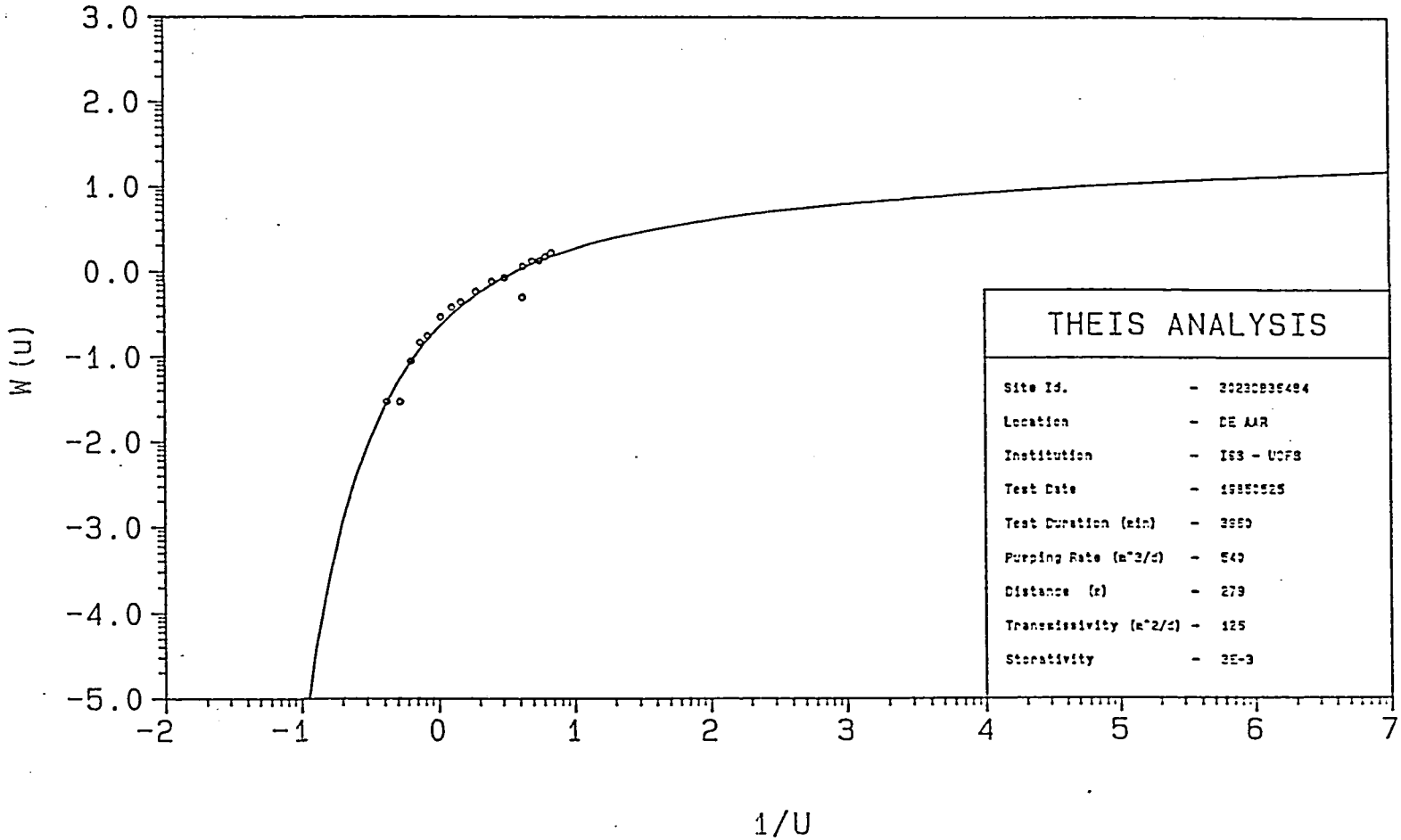
s (m)
0
1
2
3
4
5
6
7
Time (log min)
JACOB ANALYSIS
Site Id. - 3023CB36482
Location - DE AAR
Institution - IGS - UCFS
Test Date - 19850525
Test Duration (min) - 960
Pumping Rate (m^3/d) - 540
Distance (m) - 231
Transmissivity (m^2/d) - 193
Storativity - 2E-4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-5.0
W(u)
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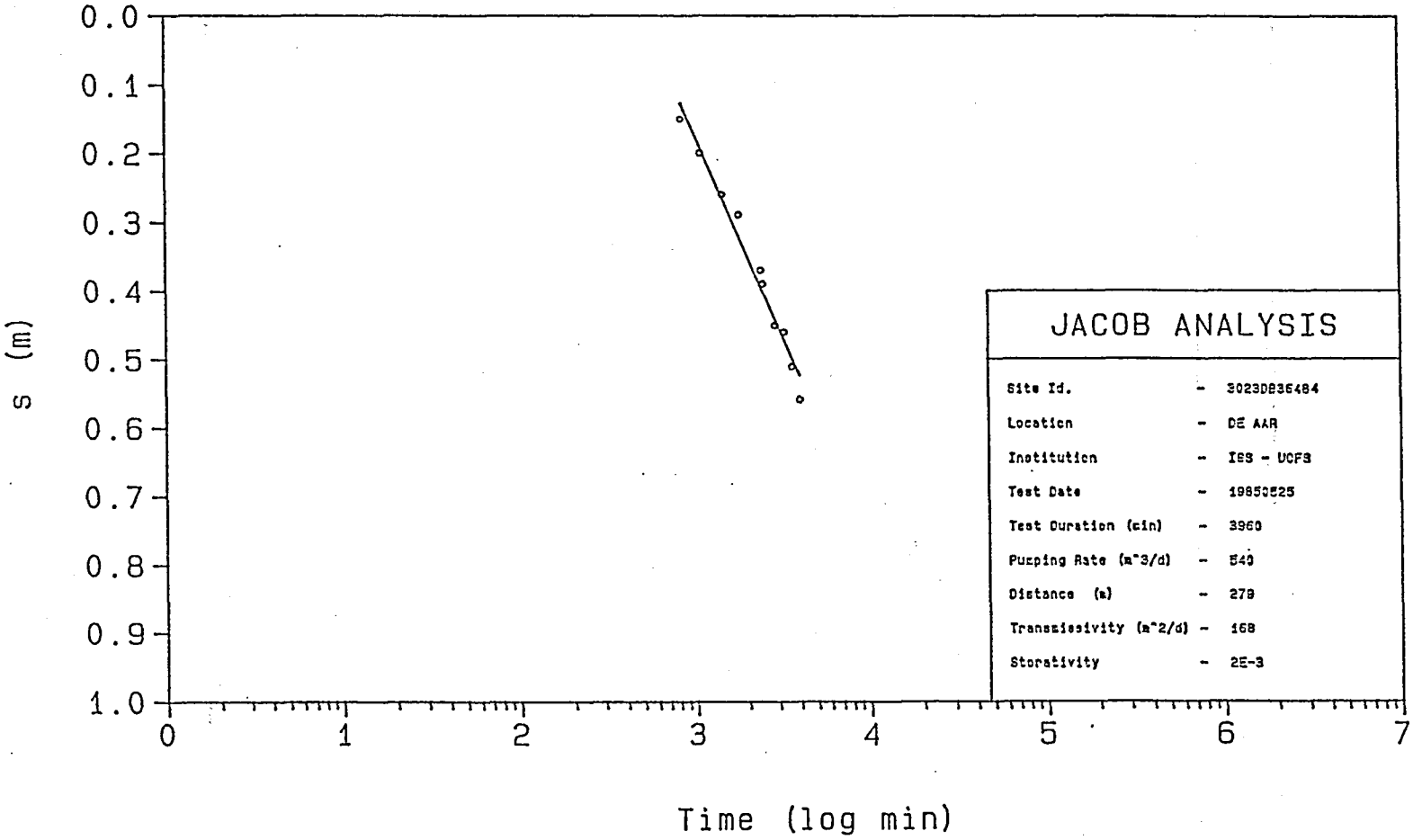
-1
0
1
2
3
4
5
6
7
1/U
THEIS ANALYSIS
Site Id. - 3323CB35484
Location - DE AAR
Institution - IGS - UOFS
Test Date - 19850525
Test Duration (min) - 3959
Pumping Rate (m^3/d) - 540
Distance (r) - 279
Transmissivity (m^2/d) - 125
Storativity - 3E-3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s (m)
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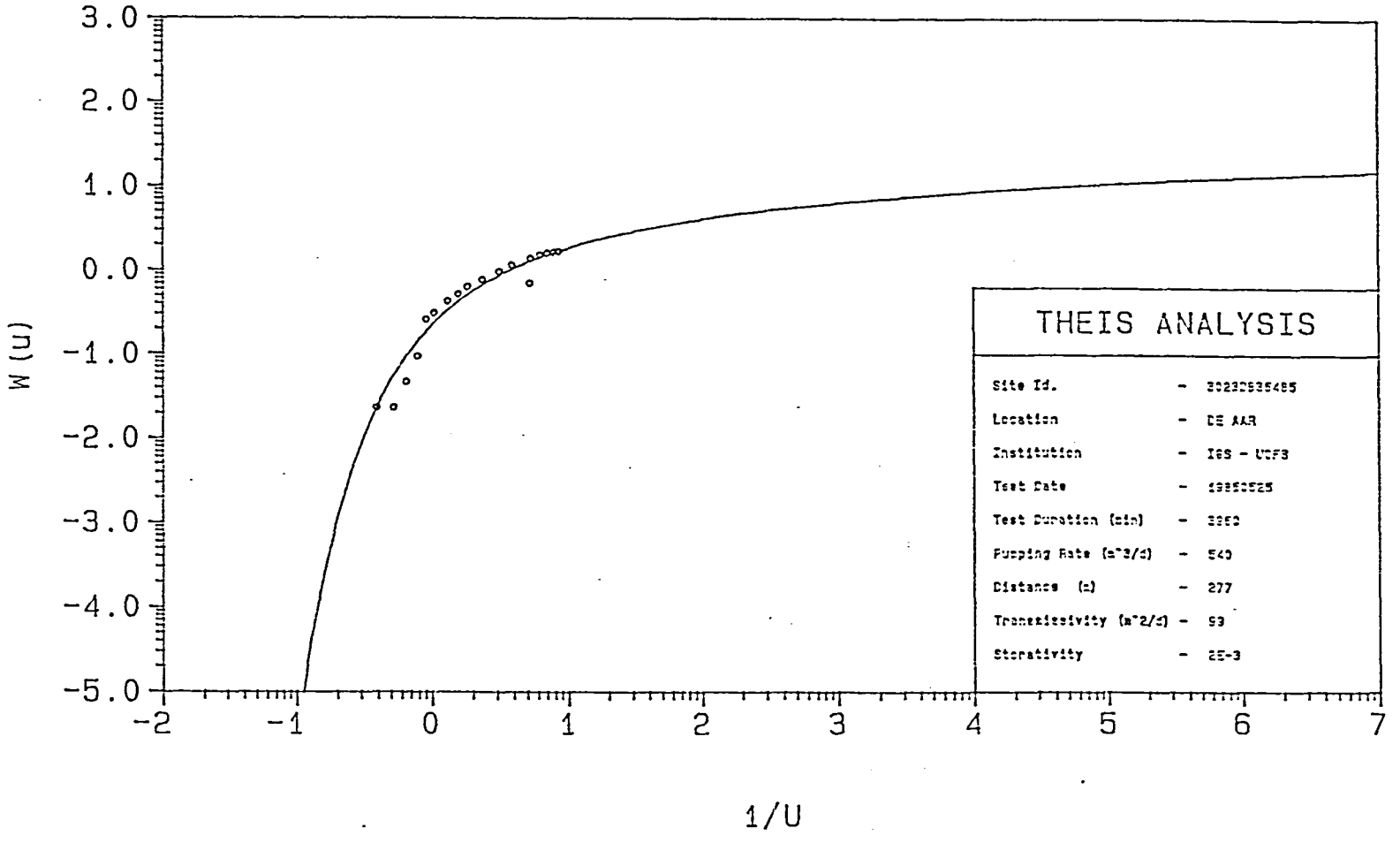
2
3
4
5
6
7
Time (log min)
JACOB ANALYSIS
Site Id. - 3023DB36484
Location - DE AAR
Institution - IBS - UOFS
Test Date - 19850525
Test Duration (min) - 3960
Pumping Rate (m^3/d) - 540
Distance (m) - 279
Transmissivity (m^2/d) - 168
Storativity - 2E-3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W(u)
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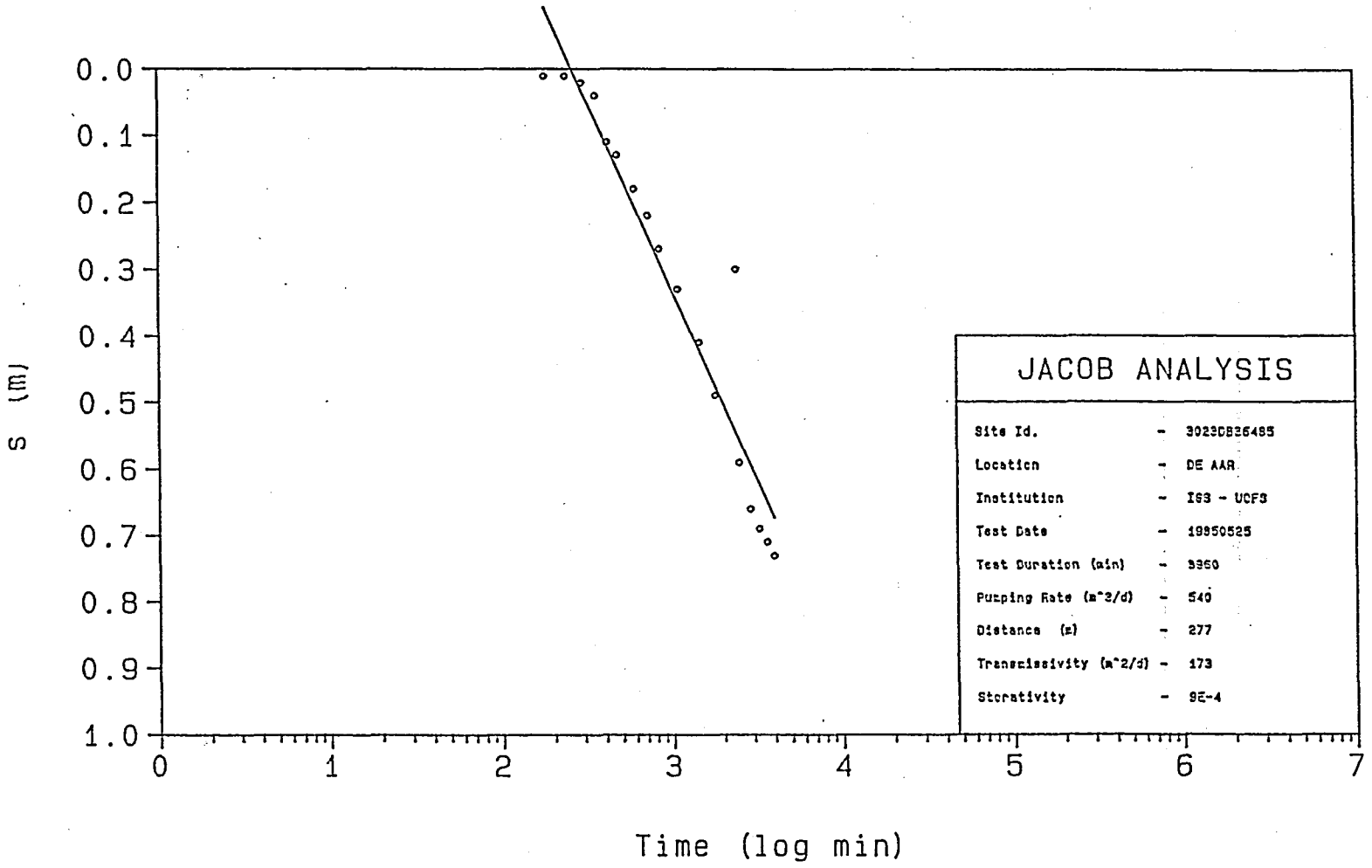
-1
0
1
2
3
4
5
6
7
1/U
THEIS ANALYSIS
Site Id. - 302305305405
Location - DE AAR
Institution - IGS - UOFS
Test Date - 19850525
Test Duration (min) - 3960
Pumping Rate (m^3/d) - 540
Distance (m) - 277
Transmissivity (m^2/d) - 93
Storativity - 2E-3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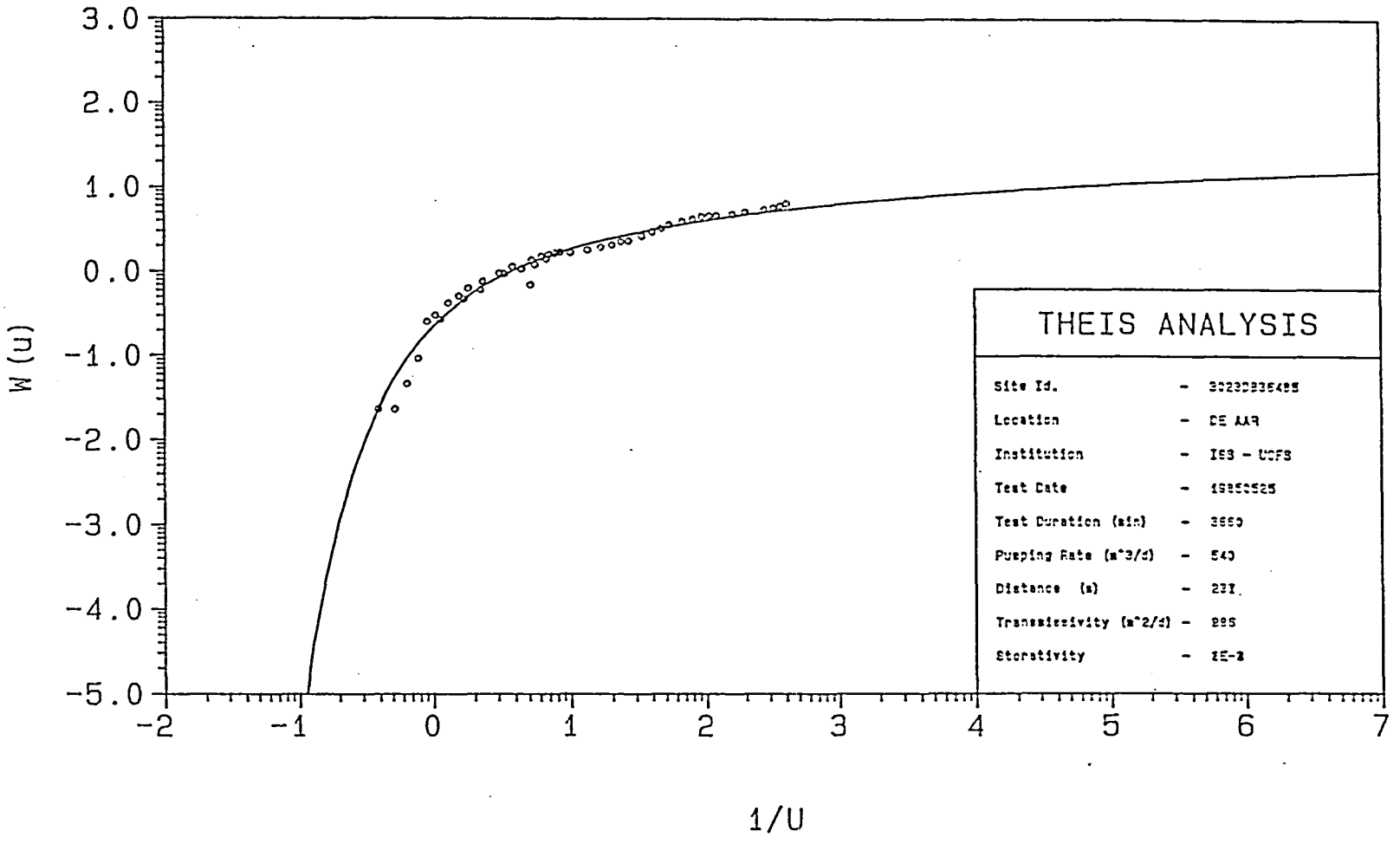
1
2
3
4
5
6
7
Time (log min)
JACOB ANALYSIS
Site Id. - 302308326485
Location - DE AAR
Institution - IGS - UCFS
Test Date - 19950525
Test Duration (min) - 3360
Pumping Rate (m^3/d) - 540
Distance (m) - 277
Transmissivity (m^2/d) - 173
Storativity - 9E-4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W(u)
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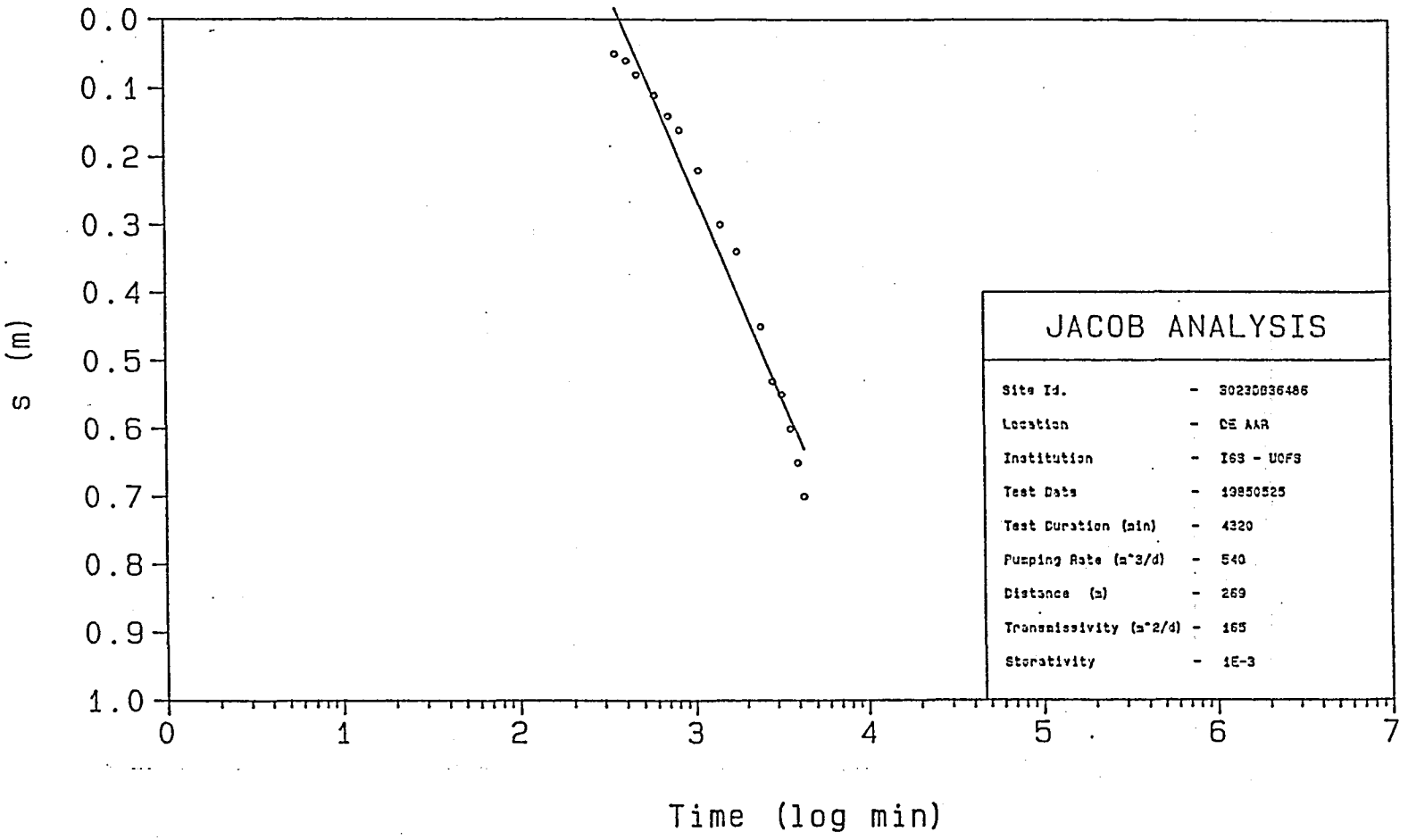
0
1
2
3
4
5
6
7
1/U
THEIS ANALYSIS
Site Id. - 3023033648S
Location - DE AAR
Institution - IGS - UOFS
Test Date - 19850525
Test Duration (min) - 3660
Pumping Rate (m^3/d) - 540
Distance (m) - 231
Transmissivity (m^2/d) - 295
Storativity - 1E-3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s (m)
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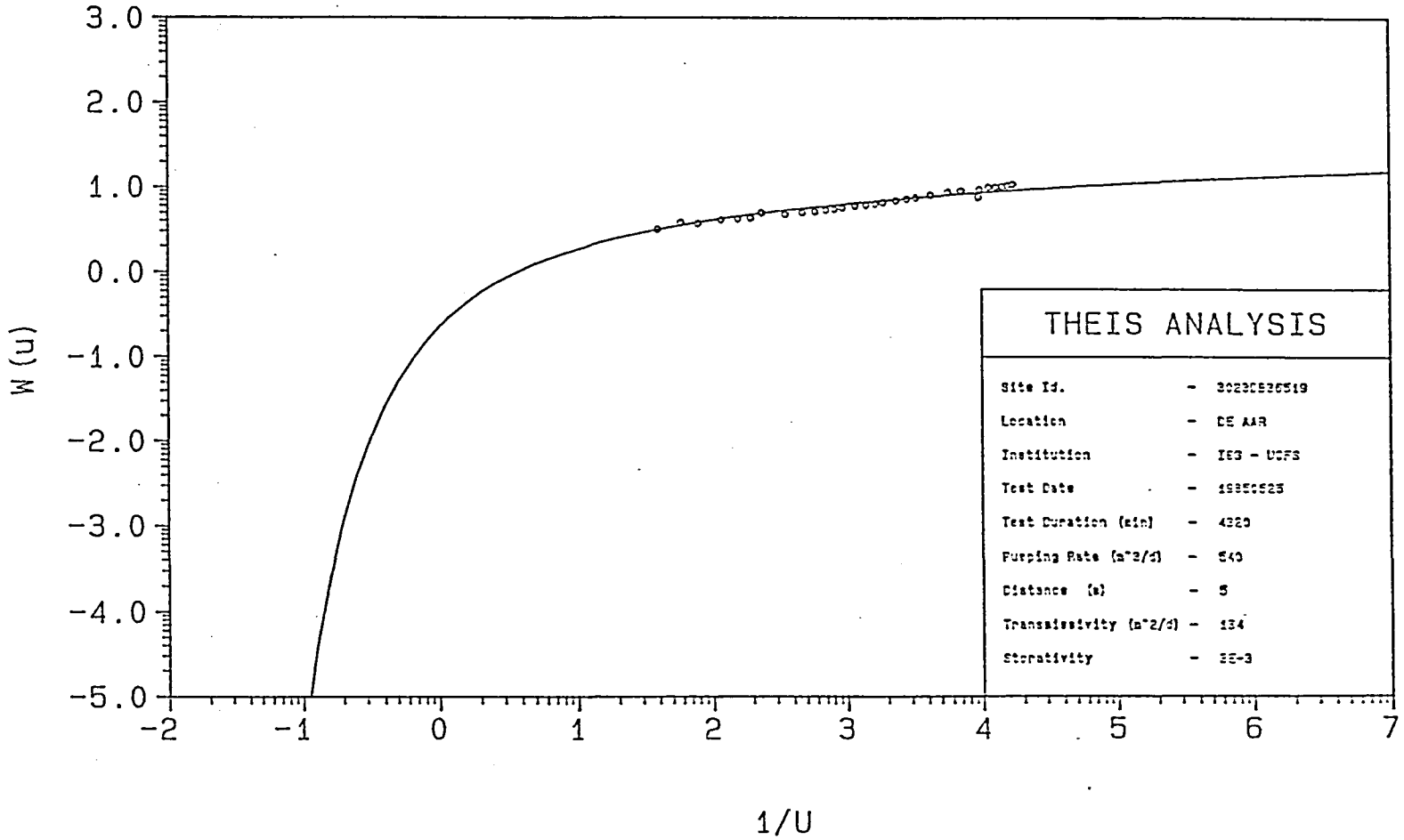
2
3
4
5
6
7
Time (log min)
JACOB ANALYSIS
Site Id. - 3023036486
Location - DE AAR
Institution - IGS - UOFS
Test Date - 19850525
Test Duration (min) - 4320
Pumping Rate (m^3/d) - 540
Distance (m) - 269
Transmissivity (m^2/d) - 165
Storativity - 1E-3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W(u)
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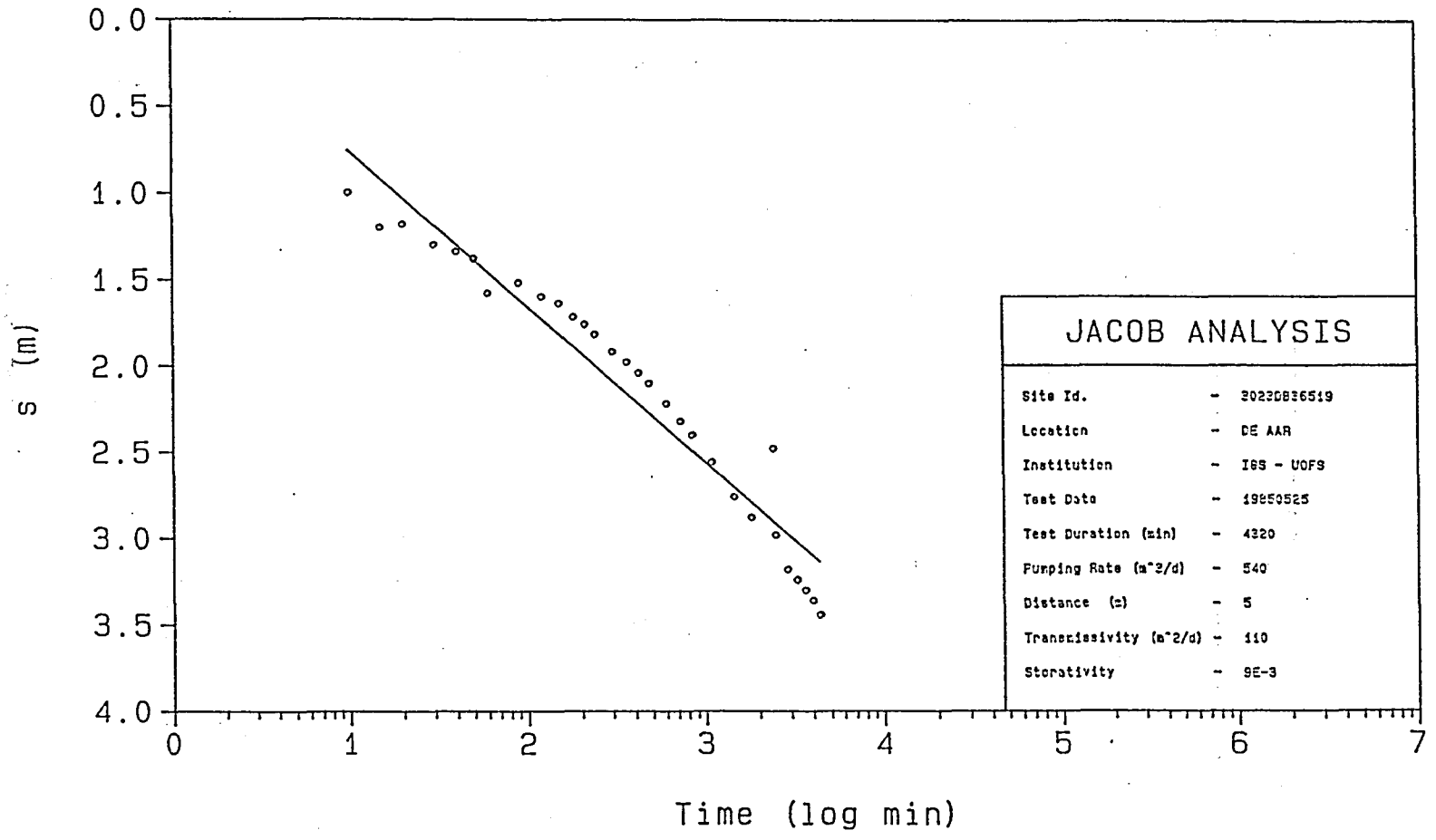
0
1
2
3
4
5
6
7
1/U
THEIS ANALYSIS
Site Id. - 3023E936519
Location - DE AAR
Institution - IE3 - UOFS
Test Date - 19950525
Test Duration (min) - 4320
Pumping Rate (m^3/d) - 540
Distance (m) - 5
Transmissivity (m^2/d) - 134
Storativity - 3E-3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s (m)
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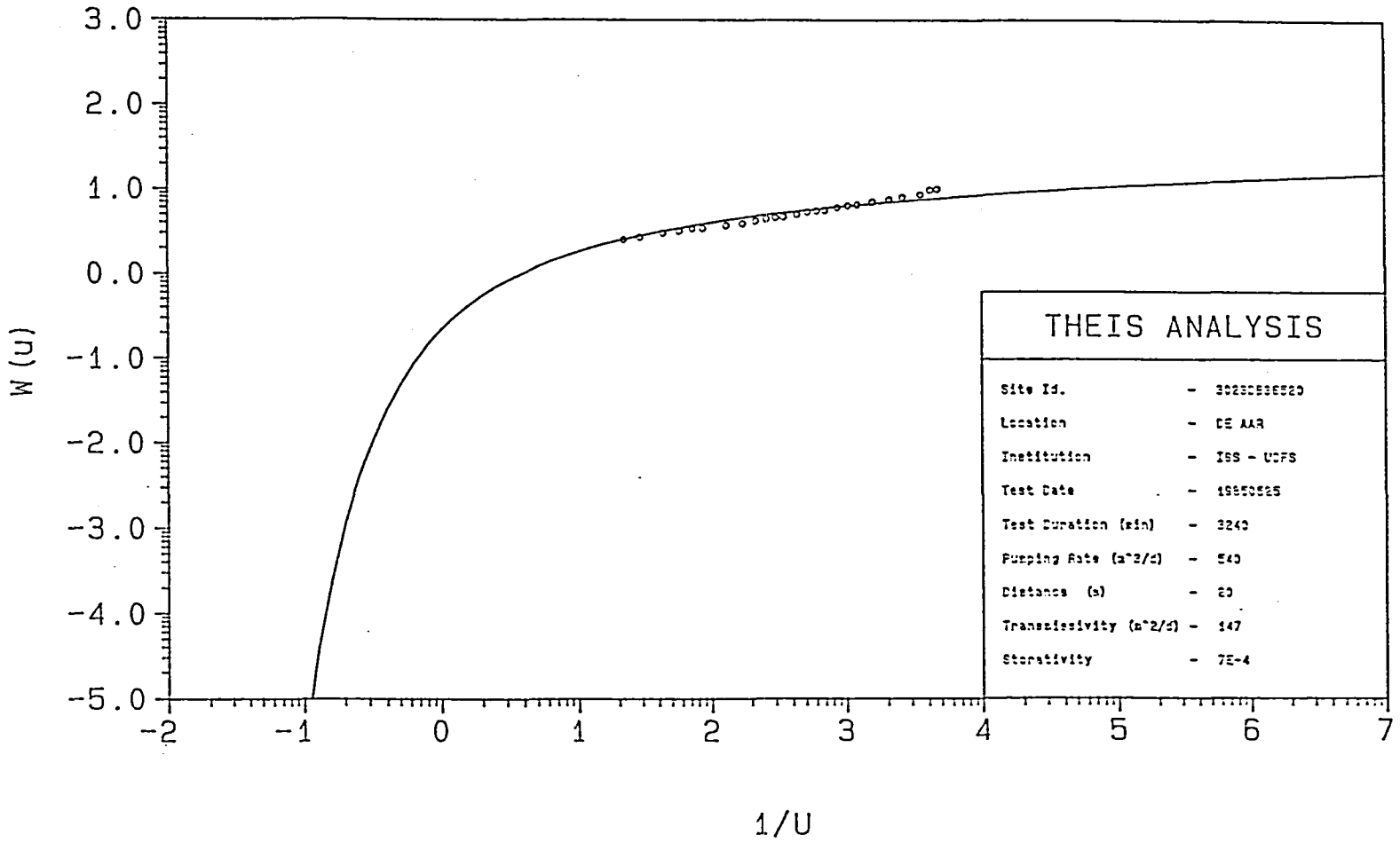
5
6
7
Time (log min)
JACOB ANALYSIS
Site Id. - 3023DB36519
Location - DE AAR
Institution - IGS - UOFS
Test Data - 19950525
Test Duration (min) - 4320
Pumping Rate (m^2/d) - 540
Distance (m) - 5
Transmissivity (m^2/d) - 110
Storativity - 9E-3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1
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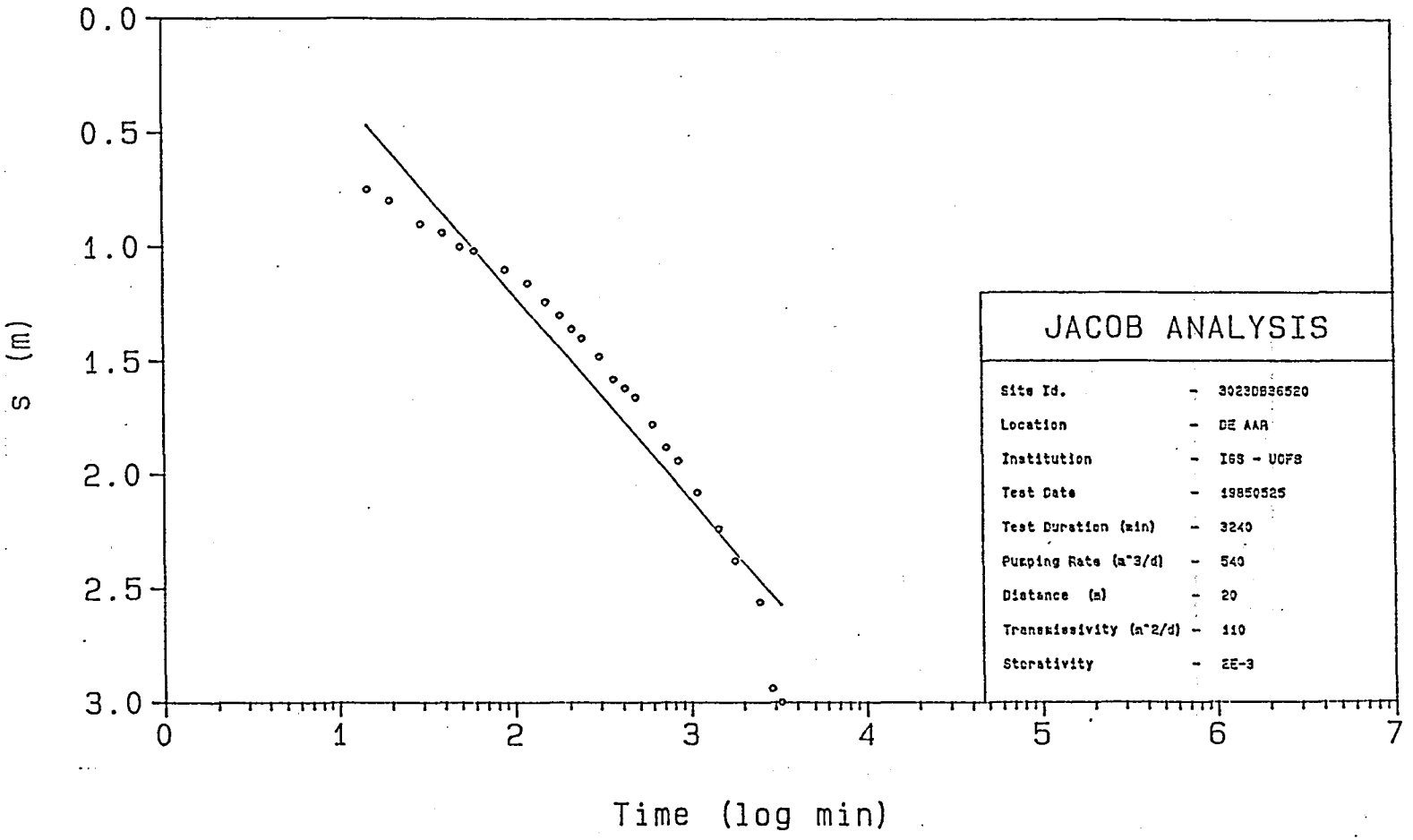
3
4
5
6
7
1/U
THEIS ANALYSIS
Site Id. - 3023D836520
Location - DE AAR
Institution - ISS - UOFS
Test Date - 19850525
Test Duration (min) - 3240
Pumping Rate (m^3/d) - 540
Distance (m) - 20
Transmissivity (m^2/d) - 147
Storativity - 7E-4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s (m)
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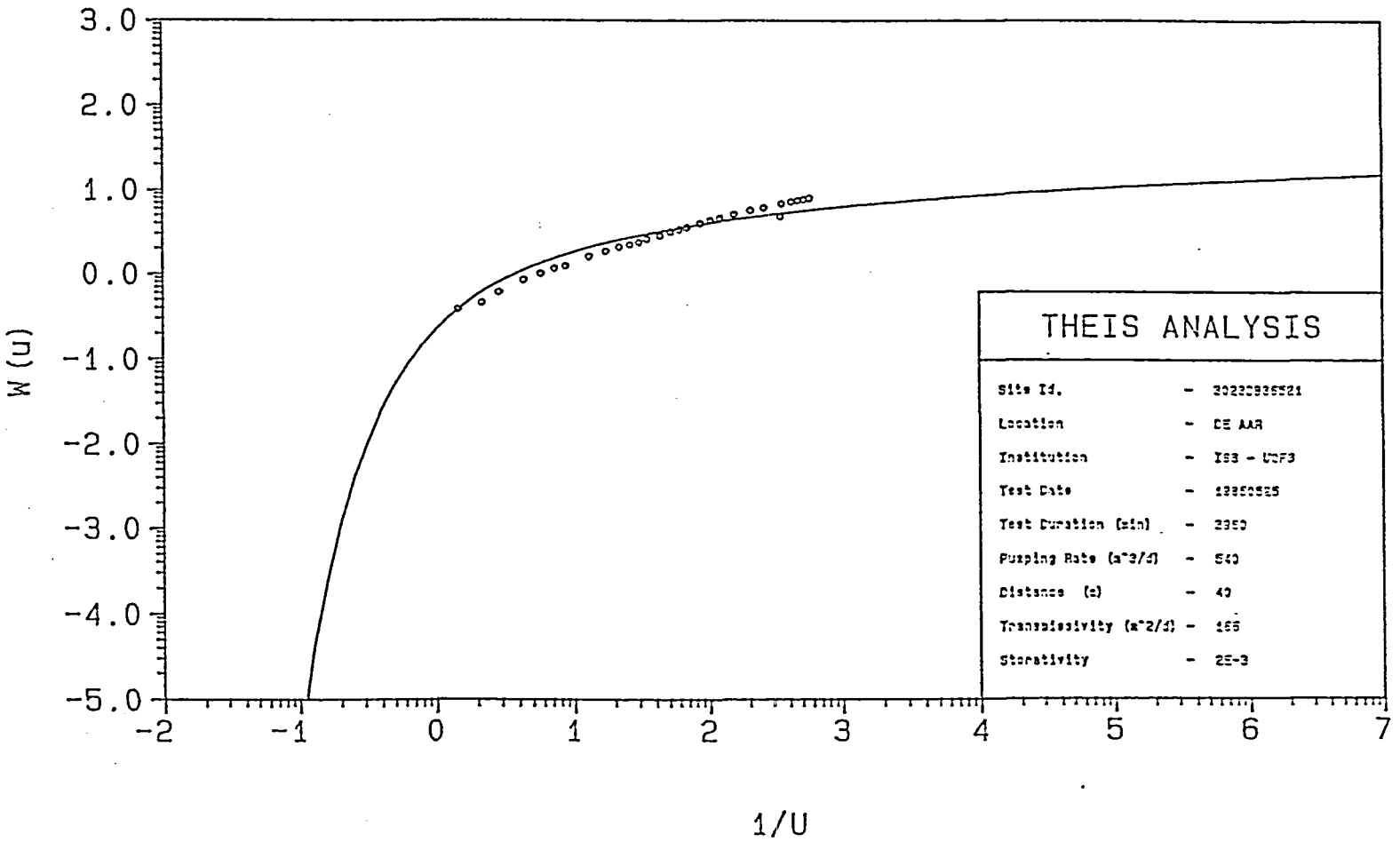
2
3
4
5
6
7
Time (log min)
JACOB ANALYSIS
Site Id. - 302308936520
Location - DE AAR
Institution - IGS - UOFS
Test Date - 19850525
Test Duration (min) - 3240
Pumping Rate (m^3/d) - 540
Distance (m) - 20
Transmissivity (m^2/d) - 110
Storativity - 2E-3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-5.0
W(u)
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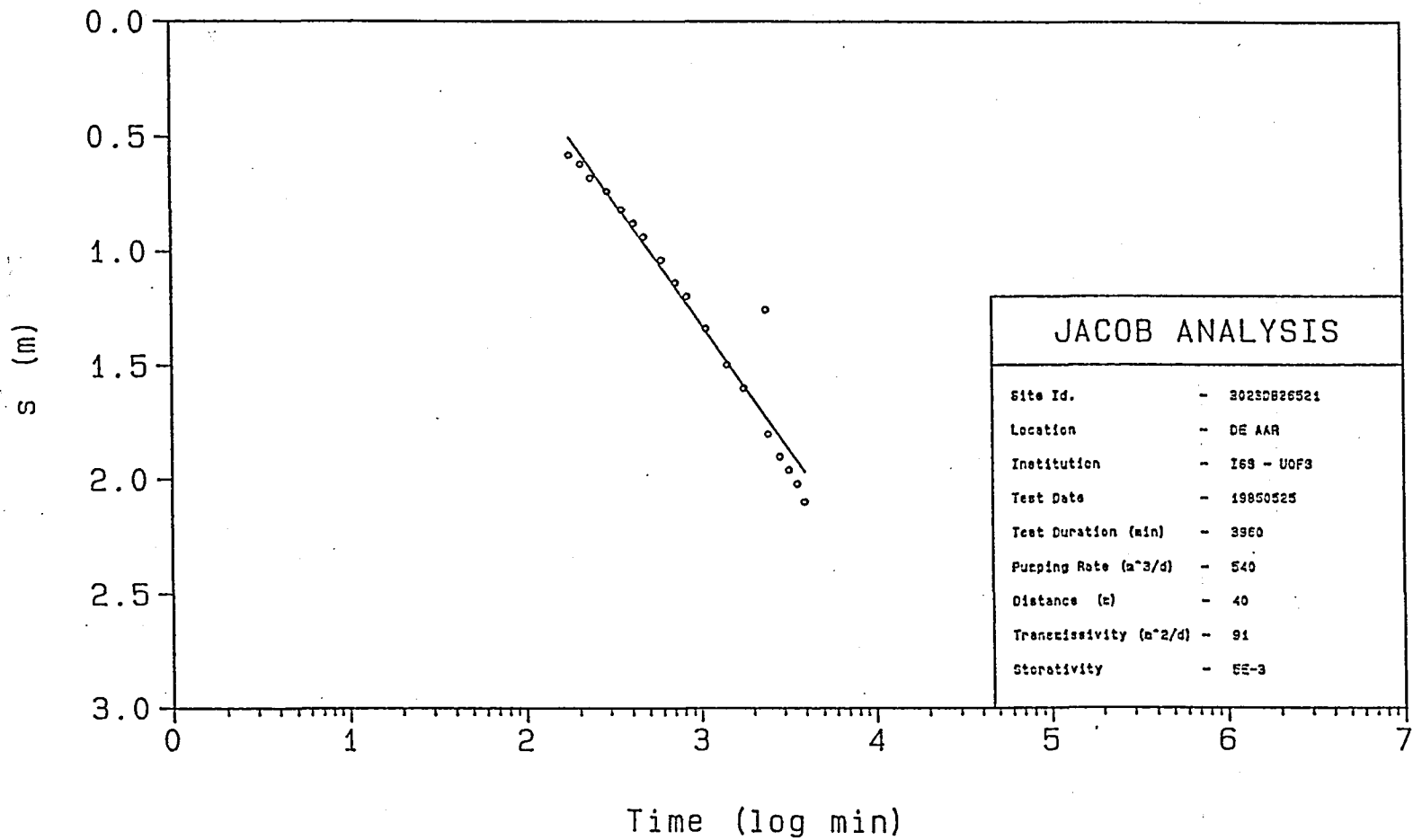
-1
0
1
2
3
4
5
6
7
1/U
THEIS ANALYSIS
Site Id. - 3022C935521
Location - DE AAR
Institution - ISS - UOFS
Test Date - 19950525
Test Duration (min) - 2350
Pumping Rate (m^3/d) - 540
Distance (m) - 40
Transmissivity (m^2/d) - 166
Storativity - 2E-3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s (m)
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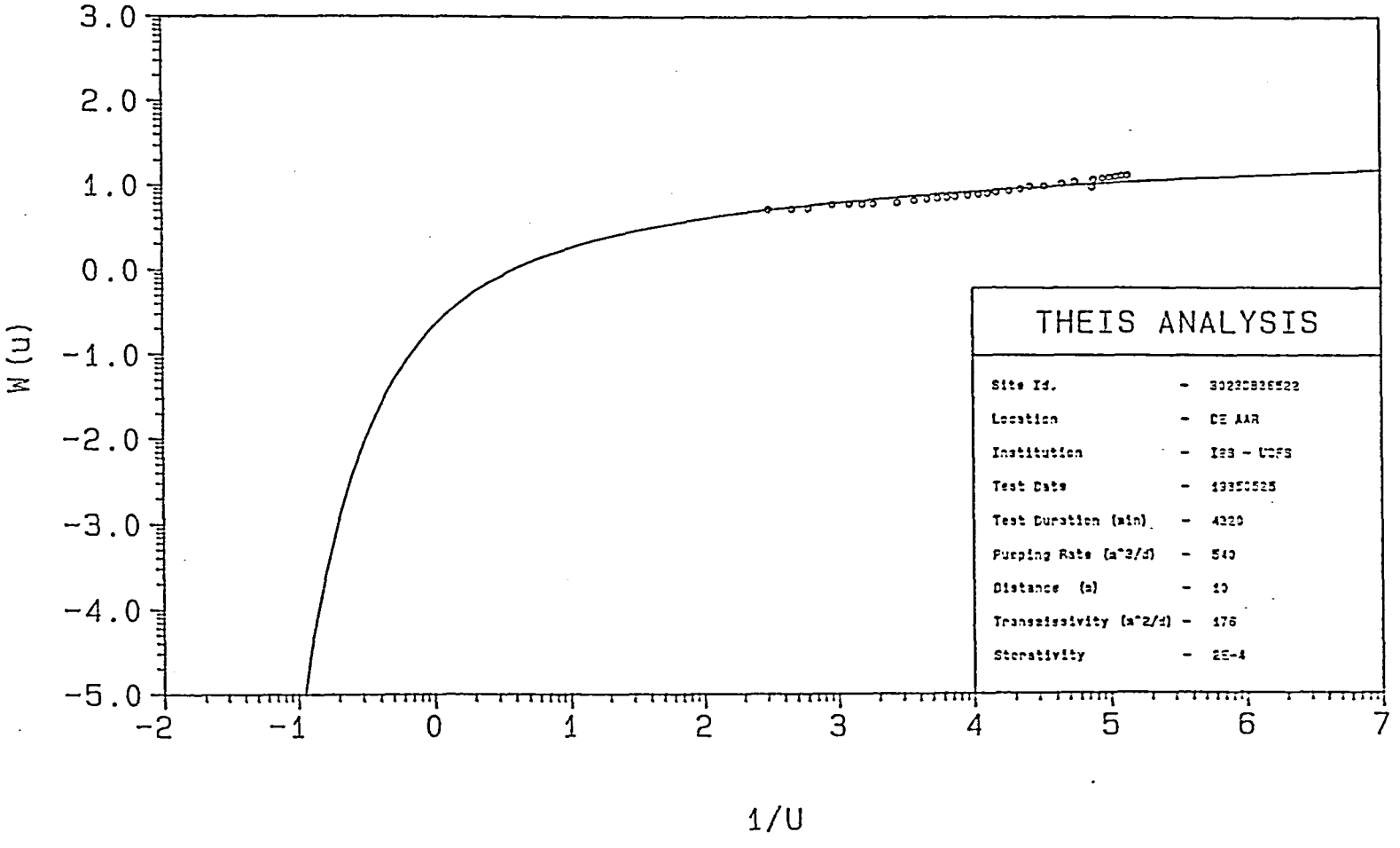
2
3
4
5
6
7
Time (log min)
JACOB ANALYSIS
Site Id. - 302300826521
Location - DE AAR
Institution - IGS - UOFS
Test Date - 19850525
Test Duration (min) - 3960
Pumping Rate (m^3/d) - 540
Distance (m) - 40
Transmissivity (m^2/d) - 91
Storativity - 5E-3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W(u)
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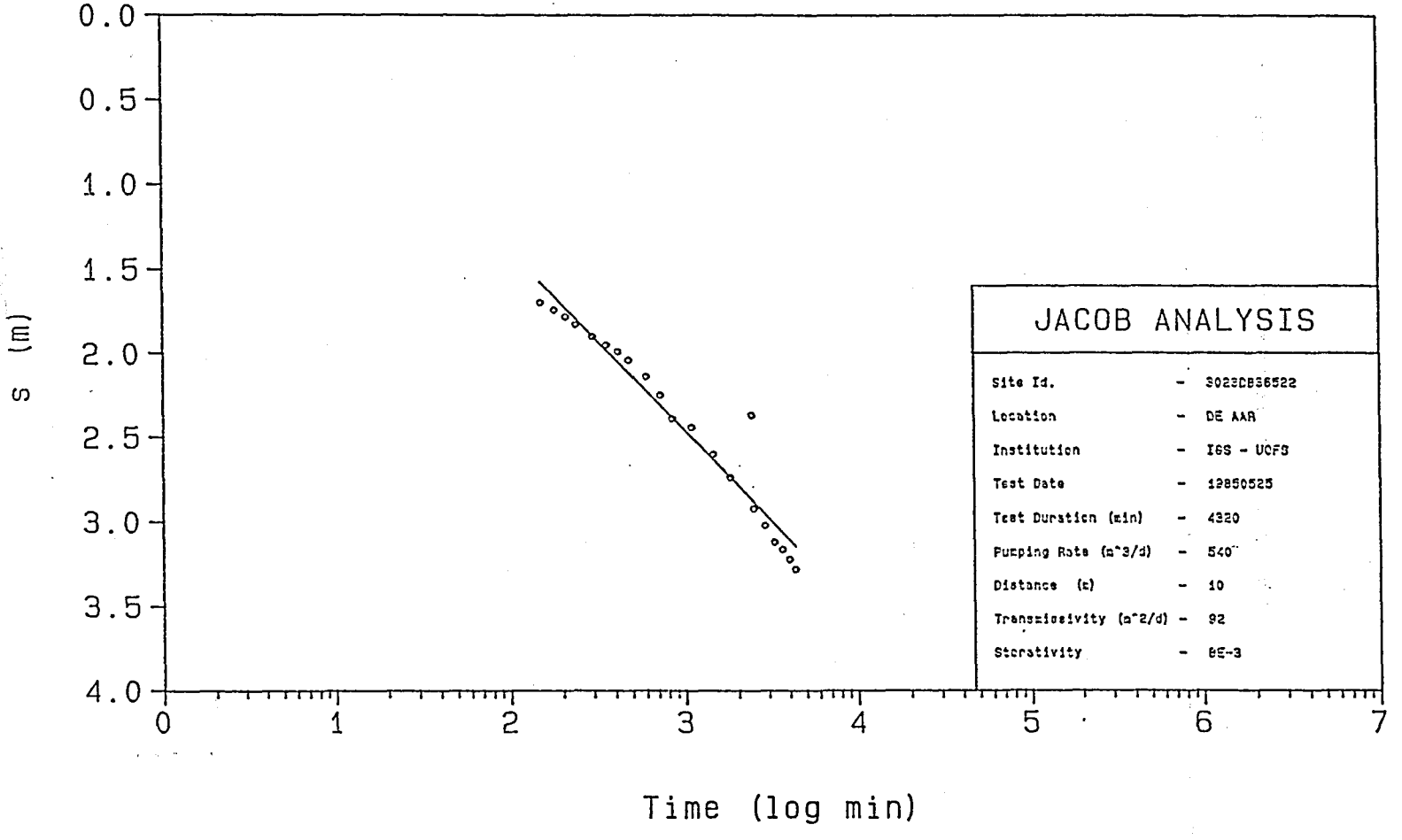
-1
0
1
2
3
4
5
6
7
1/U
THEIS ANALYSIS
Site Id. - 3023CB35S22
Location - CE AAR
Institution - IES - UCFS
Test Date - 13350525
Test Duration (min) - 4320
Purping Rate (m^3/d) - 540
Distance (m) - 10
Transmissivity (m^2/d) - 176
Storativity - 2E-4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s (m)
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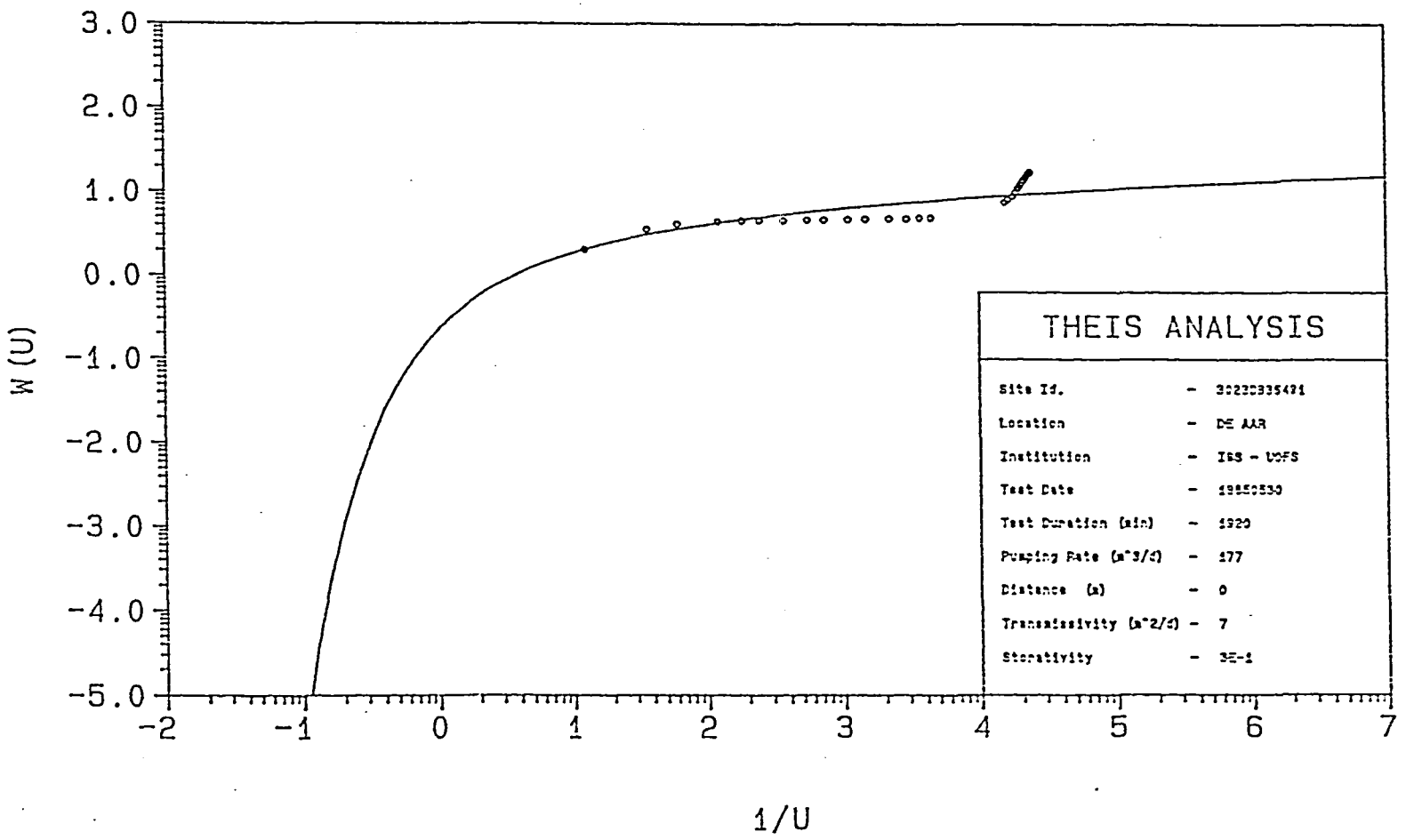
1
2
3
4
5
6
7
Time (log min)
JACOB ANALYSIS
Site Id. - 3023DB36522
Location - DE AAR
Institution - IGS - UOFS
Test Date - 19850525
Test Duration (min) - 4320
Pumping Rate (m^3/d) - 540
Distance (m) - 10
Transmissivity (m^2/d) - 92
Storativity - 8E-3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W(U)
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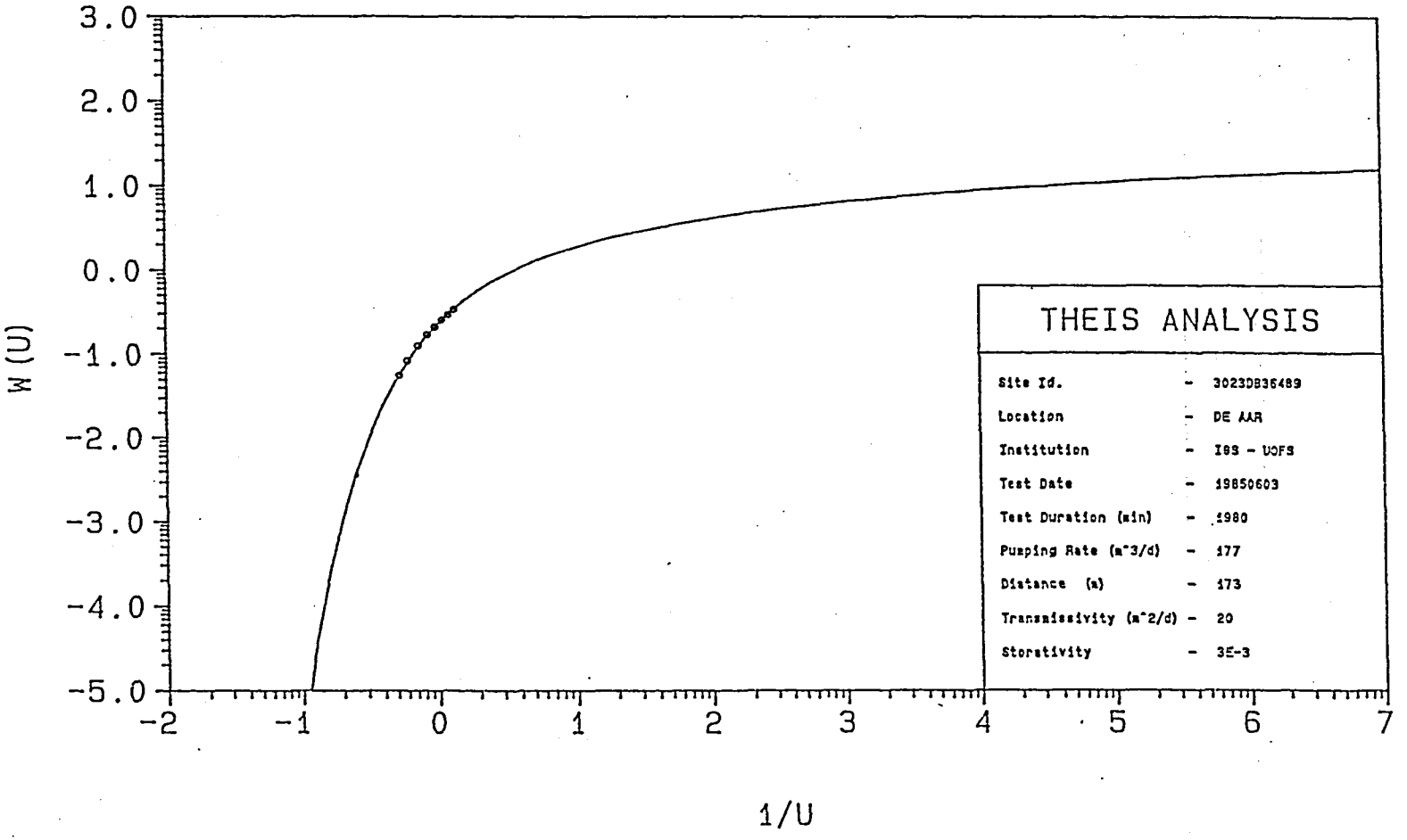
-1
0
1
2
3
4
5
6
7
1/U
THEIS ANALYSIS
Site Id. - 30230335491
Location - DE AAR
Institution - IBS - UOFS
Test Date - 19850530
Test Duration (min) - 1920
Pumping Rate (m^3/d) - 177
Distance (m) - 0
Transmissivity (m^2/d) - 7
Storativity - 3E-1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W(U)
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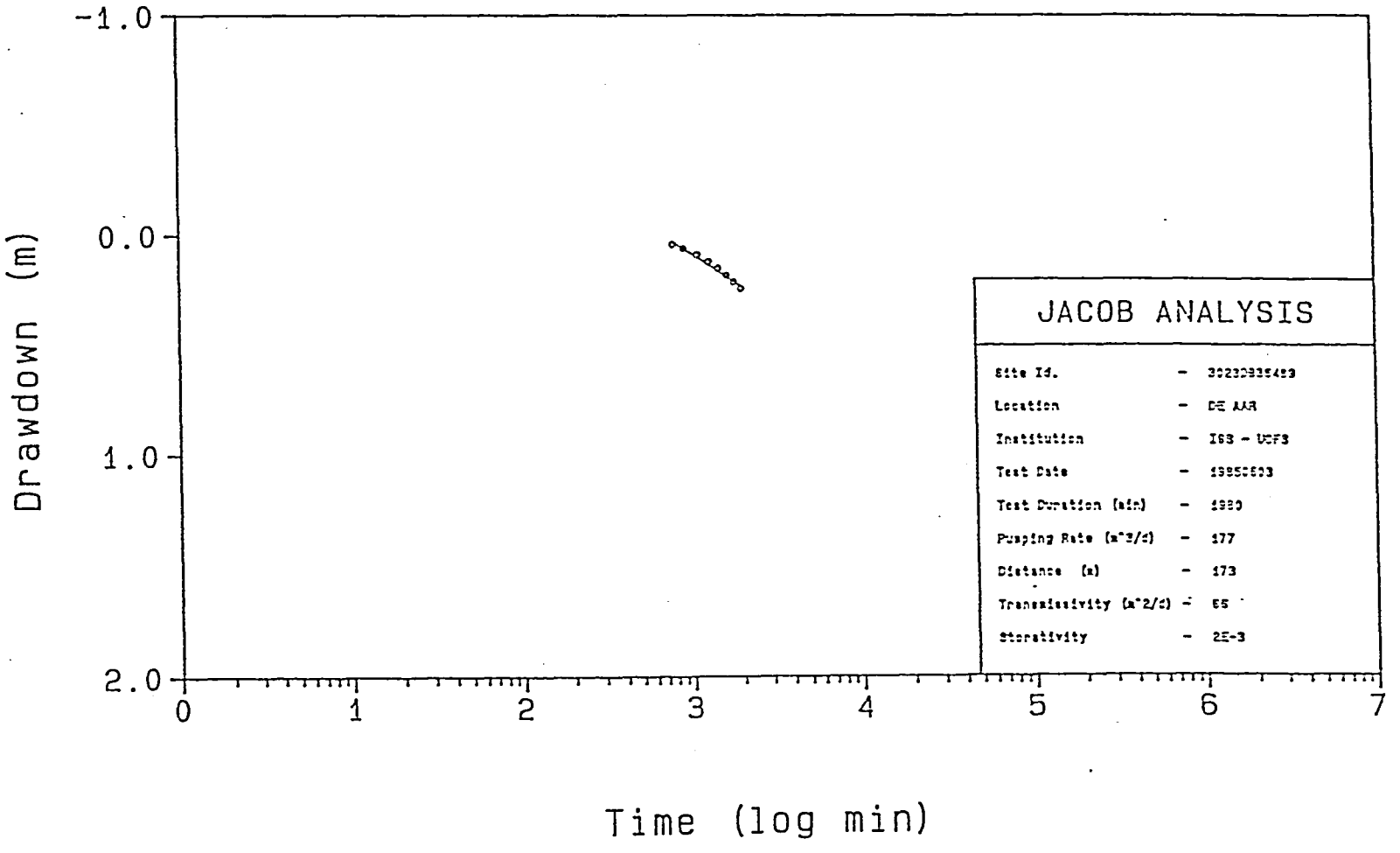
-1
0
1
2
3
4
5
6
7
1/U
THEIS ANALYSIS
Site Id. - 3023DB36489
Location - DE AAR
Institution - IBS - UOFS
Test Date - 19850603
Test Duration (min) - 1980
Pumping Rate (m^3/d) - 177
Distance (m) - 173
Transmissivity (m^2/d) - 20
Storativity - 3E-3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Drawdown (m)
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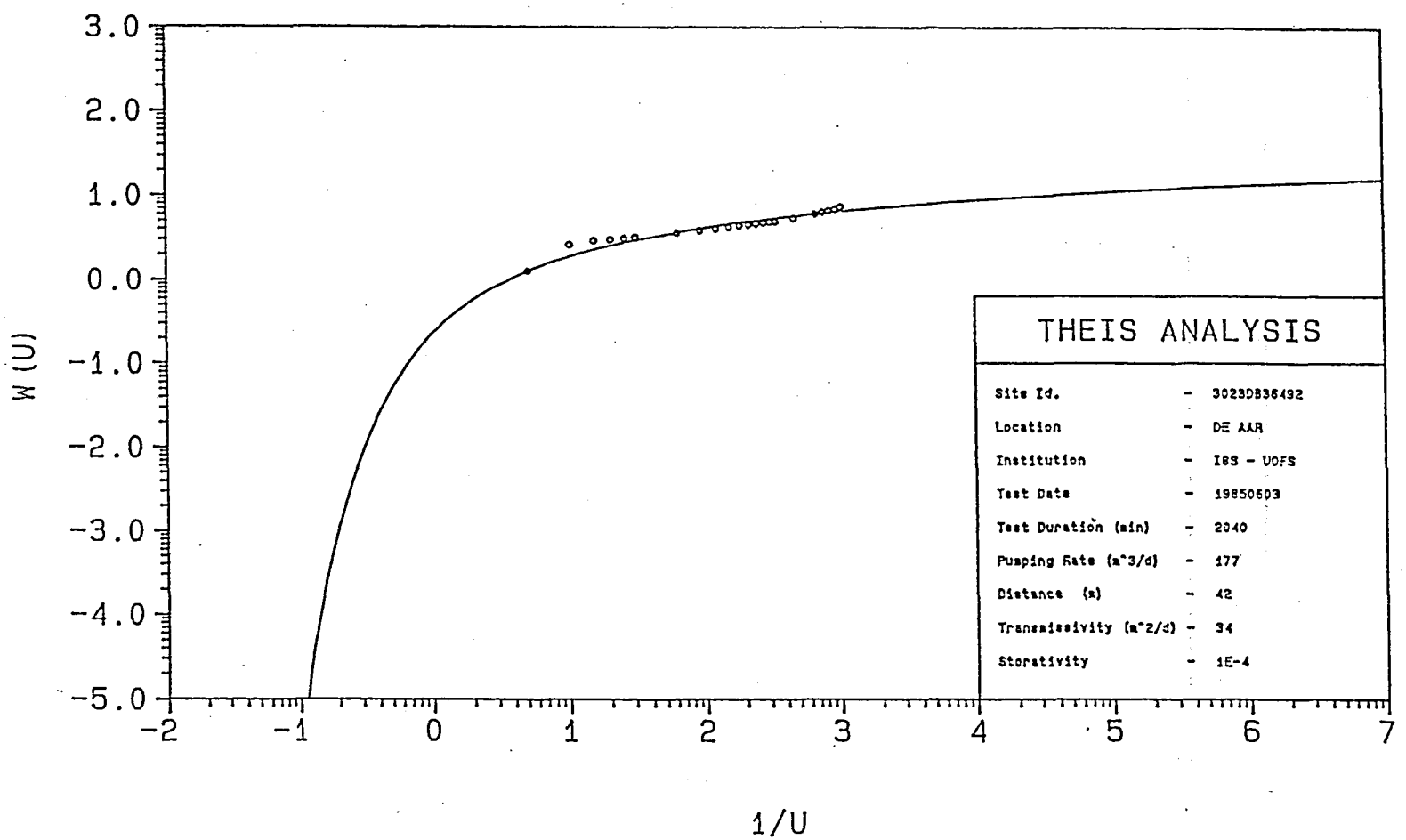
1
2
3
4
5
6
7
Time (log min)
JACOB ANALYSIS
Site Id. - 302300335403
Location - DE AAR
Institution - I&S - UOFS
Test Date - 19950503
Test Duration (min) - 1980
Pumping Rate (m^3/d) - 177
Distance (m) - 173
Transmissivity (m^2/d) - 65
Storativity - 2E-3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-5.0
W (U)
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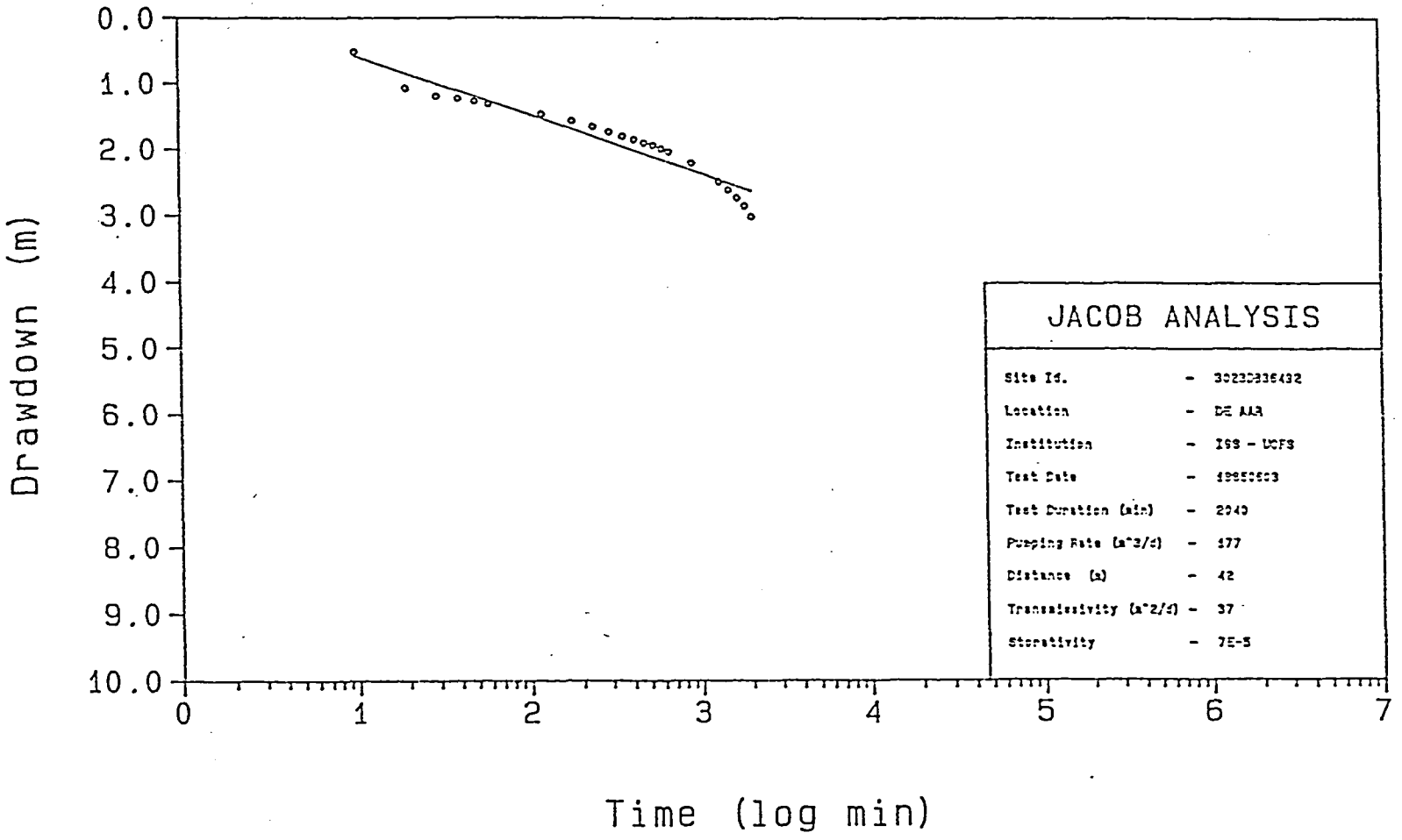
-1
0
1
2
3
4
5
6
7
1/U
THEIS ANALYSIS
Site Id. - 30230836492
Location - DE AAR
Institution - IGS - UOFS
Test Date - 19850603
Test Duration (min) - 2040
Pumping Rate (m^3/d) - 177
Distance (m) - 42
Transmissivity (m^2/d) - 34
Storativity - 1E-4


Drawdown (m)
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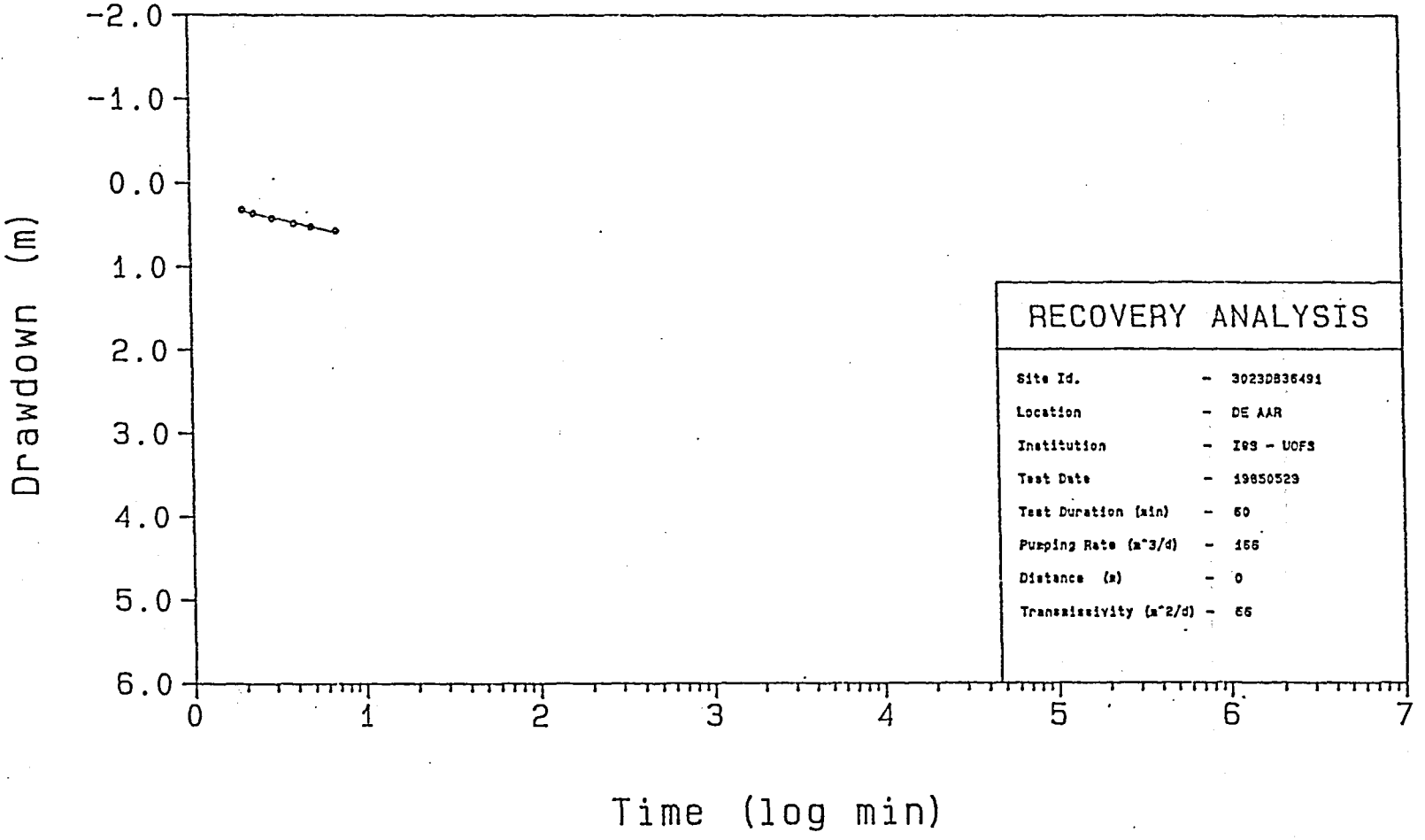
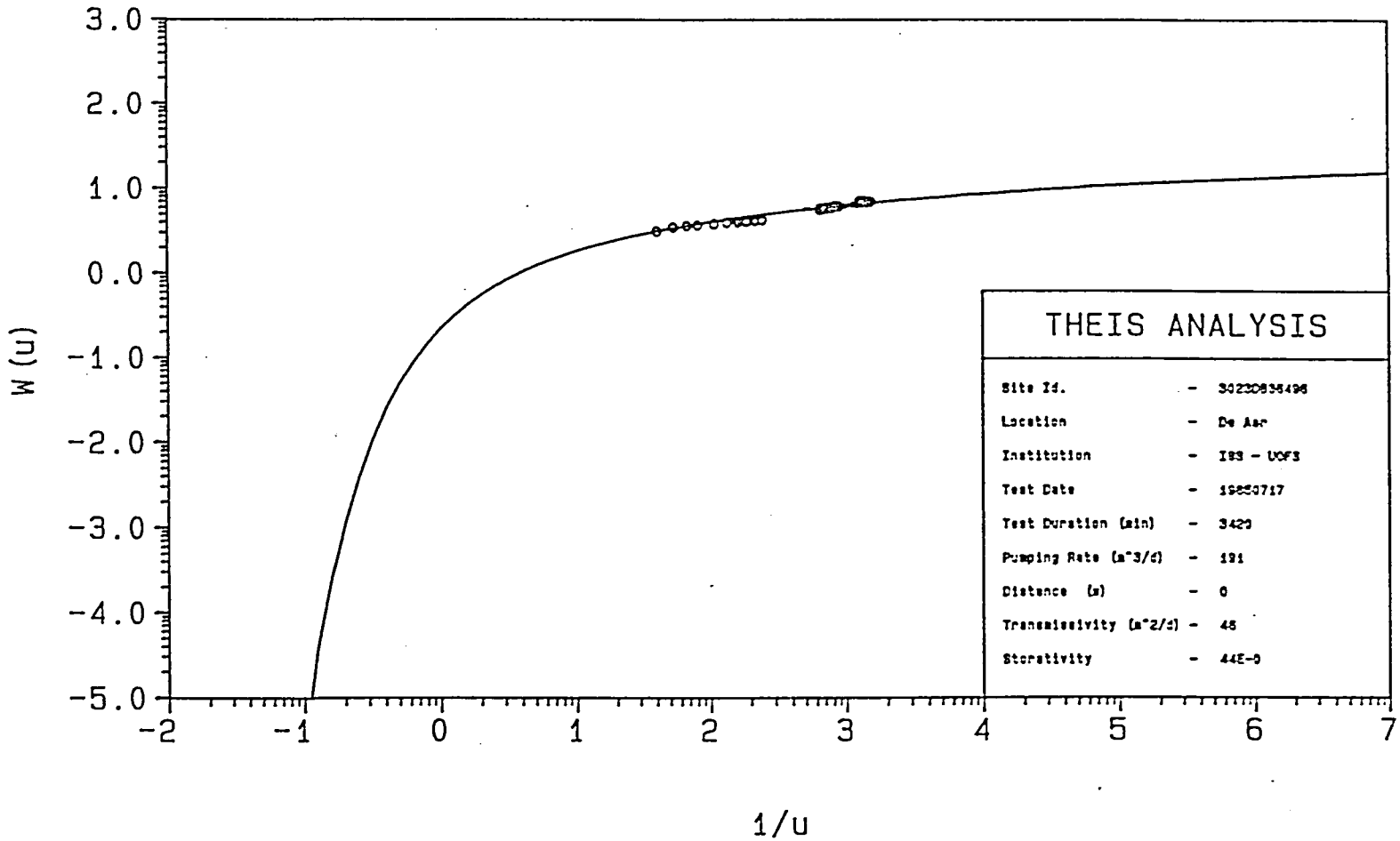
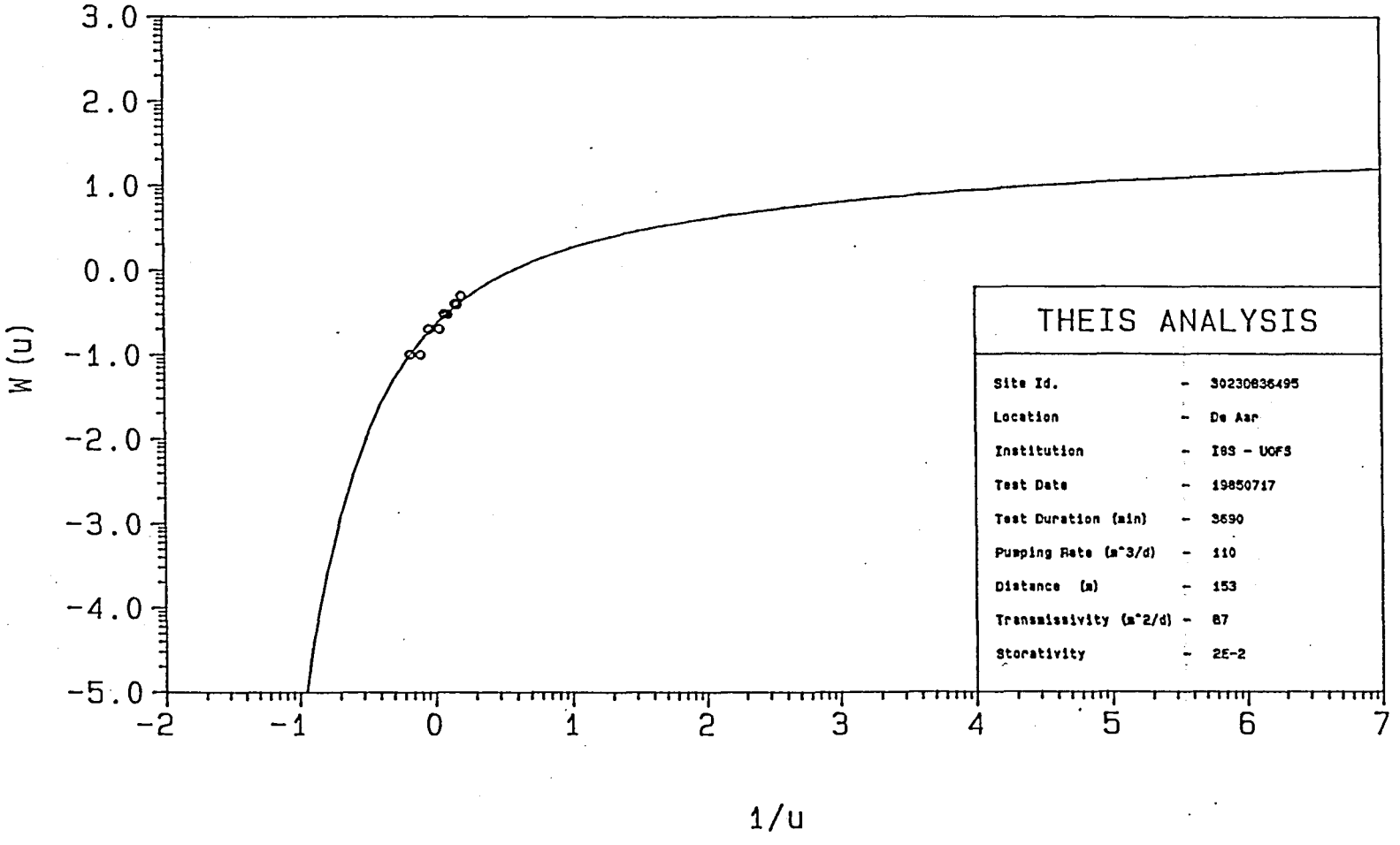
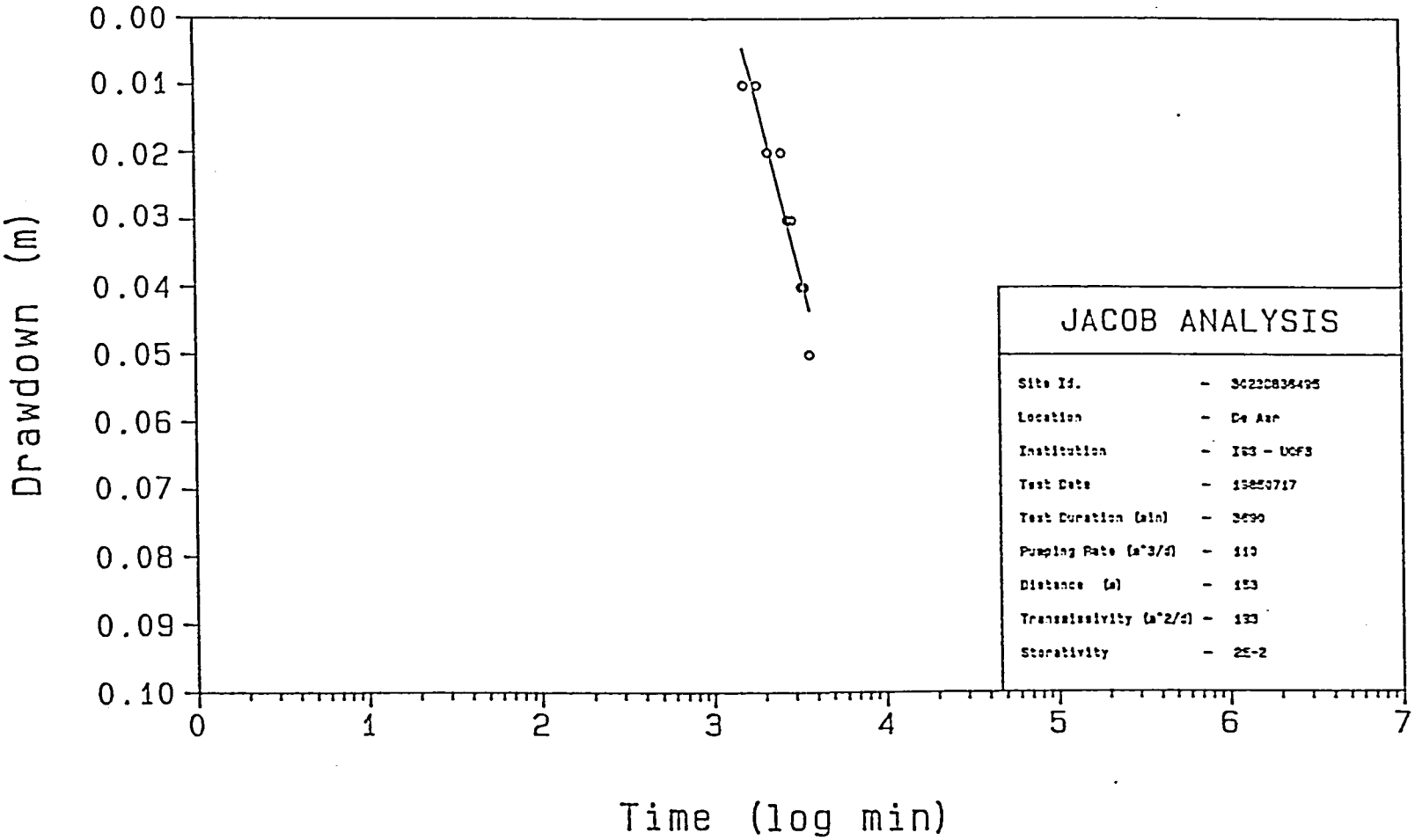
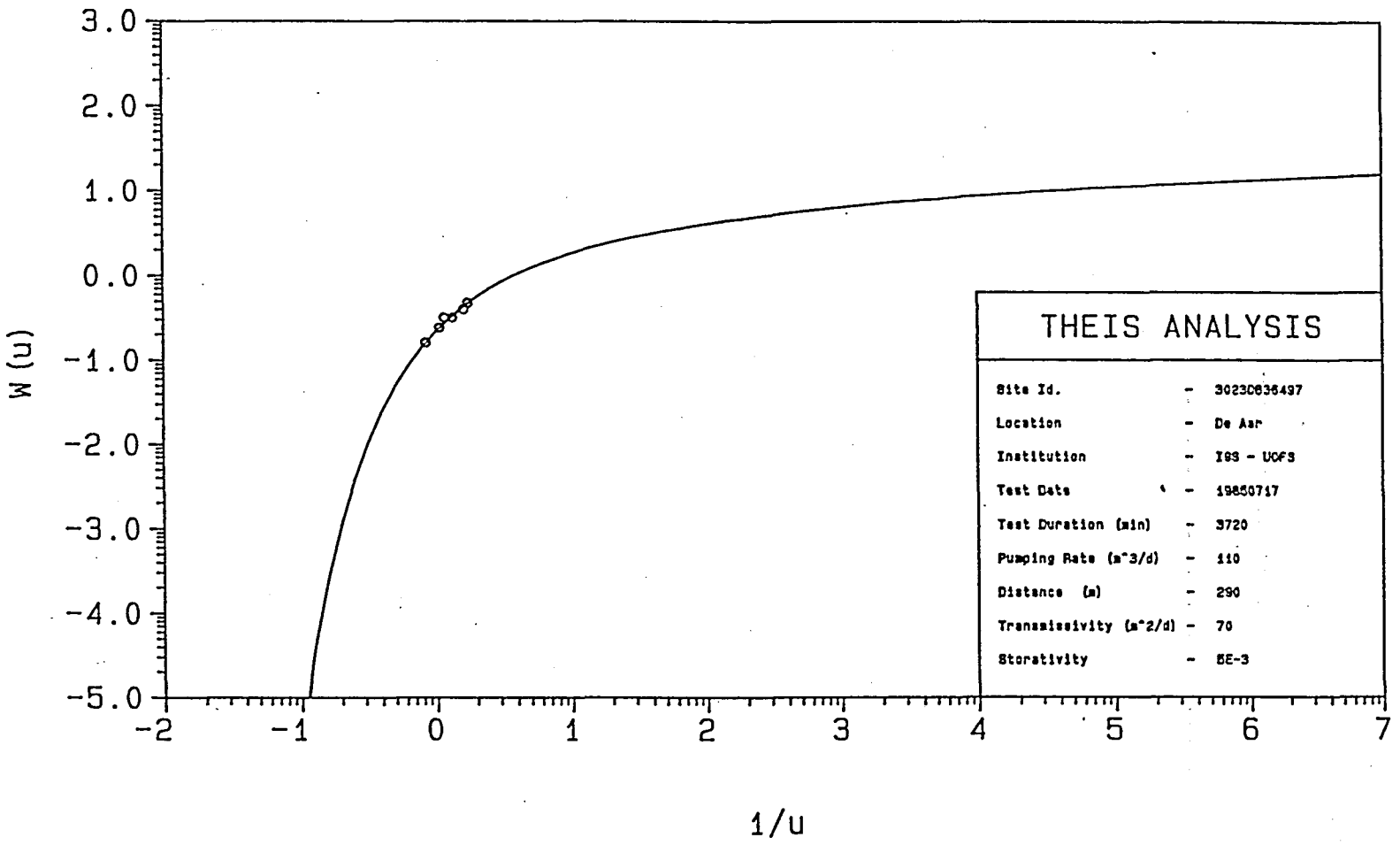
8.0
9.0
10.0
0
1
2
3
4
5
6
7
Time (log min)
JACOB ANALYSIS
Site Id. - 302230336432
Location - DE AAA
Institution - ISS - UCFS
Test Date - 19950803
Test Duration (min) - 2040
Pumping Rate (m^3/d) - 177
Distance (m) - 42
Transmissivity (m^2/d) - 37
Storativity - 7E-5

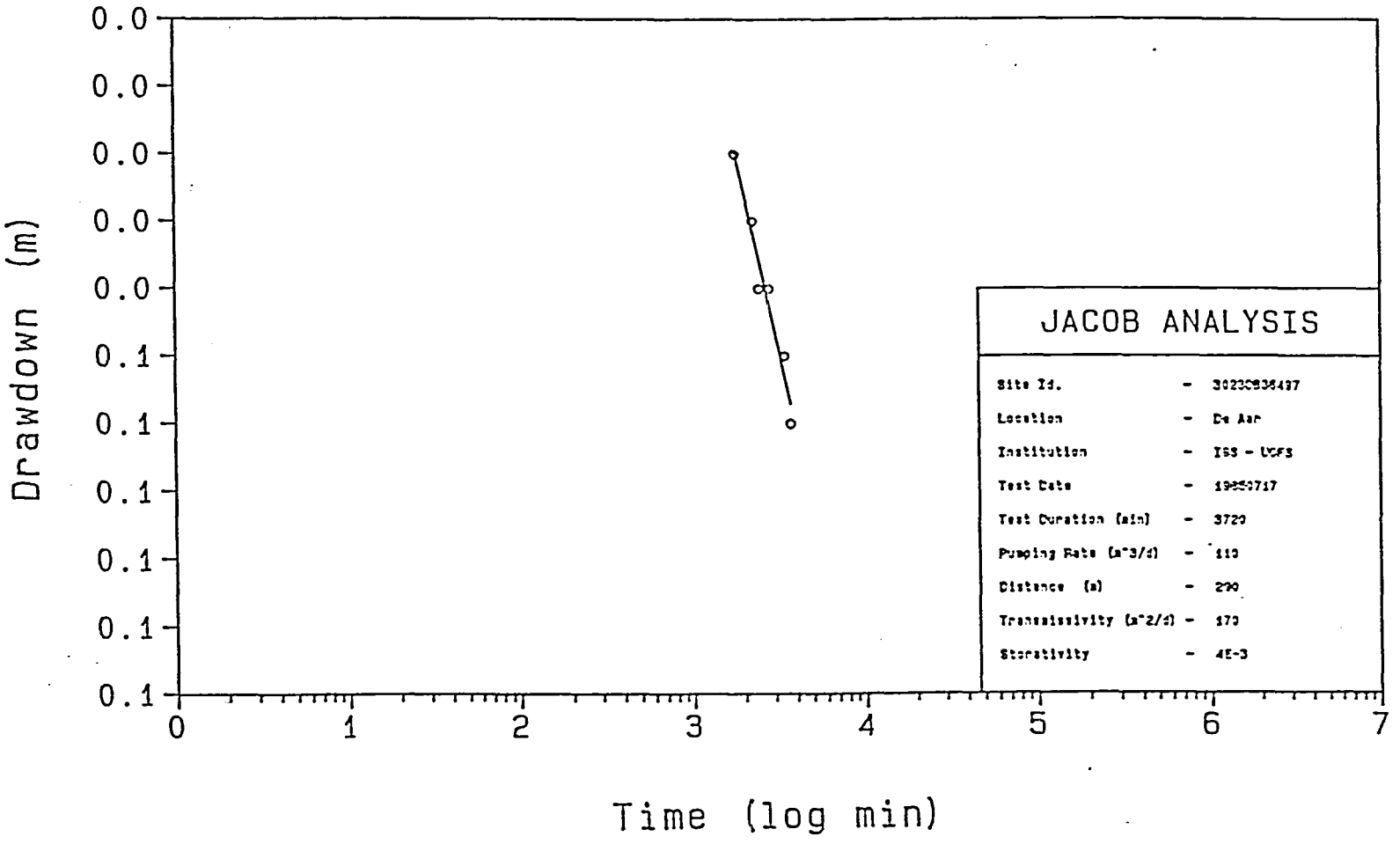

-2.0
-1.0
0.0
1.0
2.0
3.0
4.0
5.0
6.0
Drawdown (m)
0
1
2
3
4
5
6
7
Time (log min)
RECOVERY ANALYSIS
Site Id. - 3023DB36491
Location - DE AAR
Institution - IGS - UOFS
Test Date - 19850529
Test Duration (min) - 60
Pumping Rate (m^3/d) - 166
Distance (m) - 0
Transmissivity (m^2/d) - 66

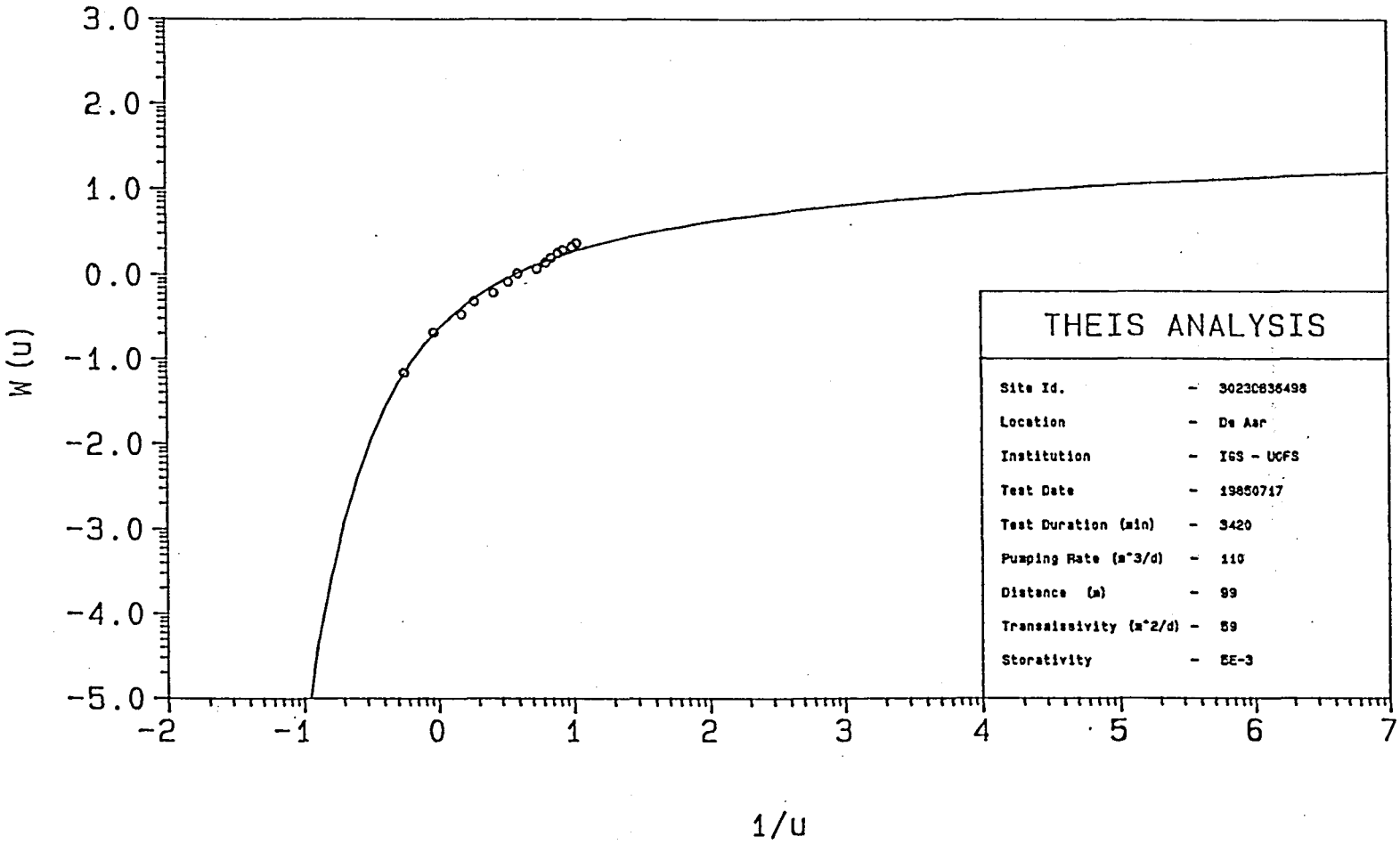

3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
W(u)
-2
-1
0
1
2
3
4
5
6
7
1/u
THEIS ANALYSIS
Site Id. - 302300836496
Location - De Aar
Institution - IBB - UOFS
Test Date - 19850717
Test Duration (min) - 3420
Pumping Rate (m^3/d) - 191
Distance (m) - 0
Transmissivity (m^2/d) - 48
Storativity - 44E-0

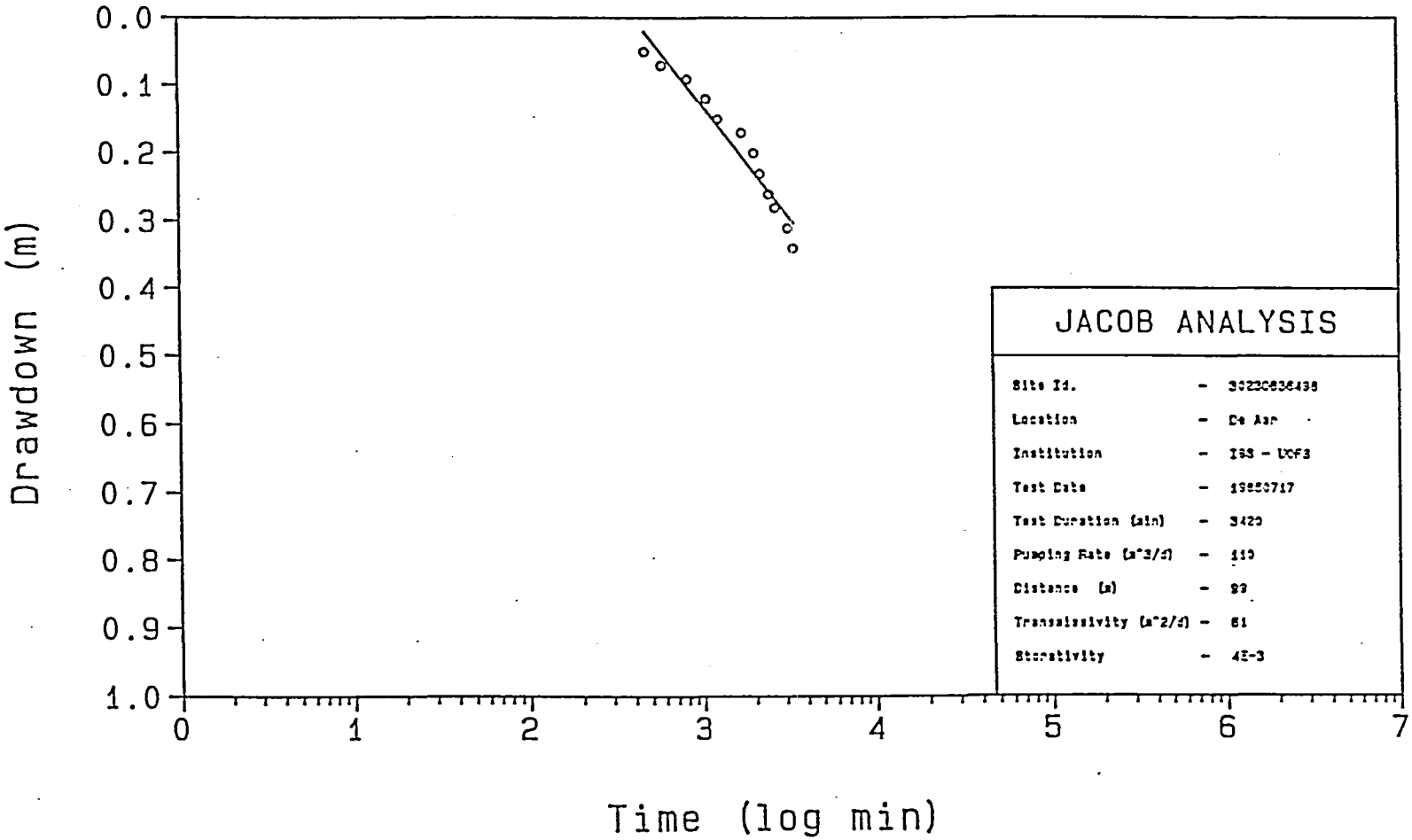

THEIS ANALYSIS
Site Id. - 30230836495
Location - De Aar
Institution - IGS - UOFS
Test Date - 19850717
Test Duration (min) - 3690
Pumping Rate (m^3/d) - 110
Distance (m) - 153
Transmissivity (m^2/d) - 87
Storativity - 2E-2
W(u)
1/u
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
-2
-1
0
1
2
3
4
5
6
7

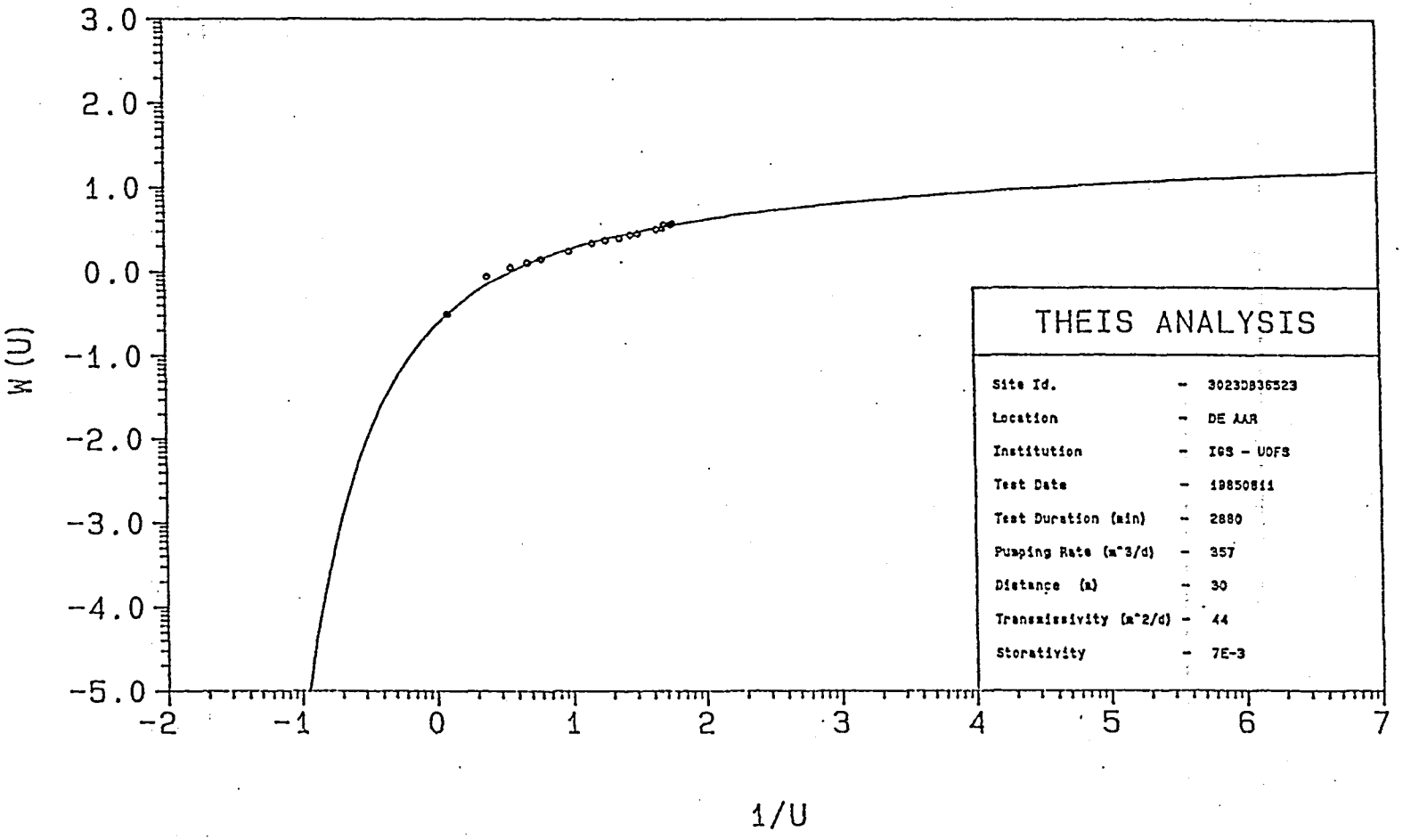

Drawdown (m)
0.00
0.01
0.02
0.03
0.04
0.05
0.06
0.07
0.08
0.09
0.10
0
1
2
3
4
5
6
7
Time (log min)
JACOB ANALYSIS
Site Id. - 362208836495
Location - De Aar
Institution - IGS - UOFS
Test Date - 19850717
Test Duration (min) - 3690
Pumping Rate (m^3/d) - 110
Distance (m) - 153
Transmissivity (m^2/d) - 133
Storativity - 2E-2

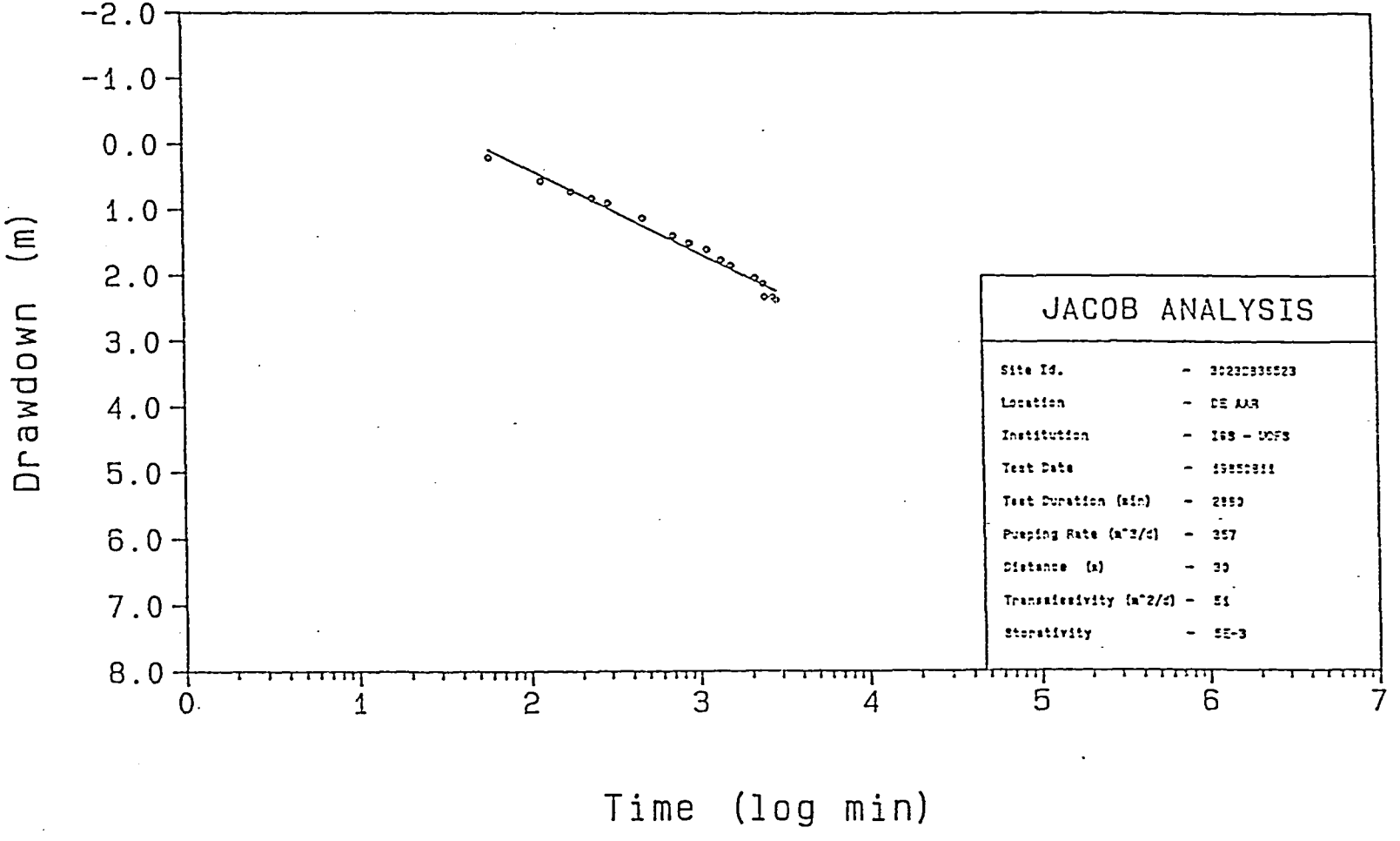

THEIS ANALYSIS
Site Id. - 30230636497
Location - De Aar
Institution - IGS - UOFS
Test Date - 19850717
Test Duration (min) - 3720
Pumping Rate (m^3/d) - 110
Distance (m) - 290
Transmissivity (m^2/d) - 70
Storativity - 5E-3
W(u)
1/u
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
-2
-1
0
1
2
3
4
5
6
7

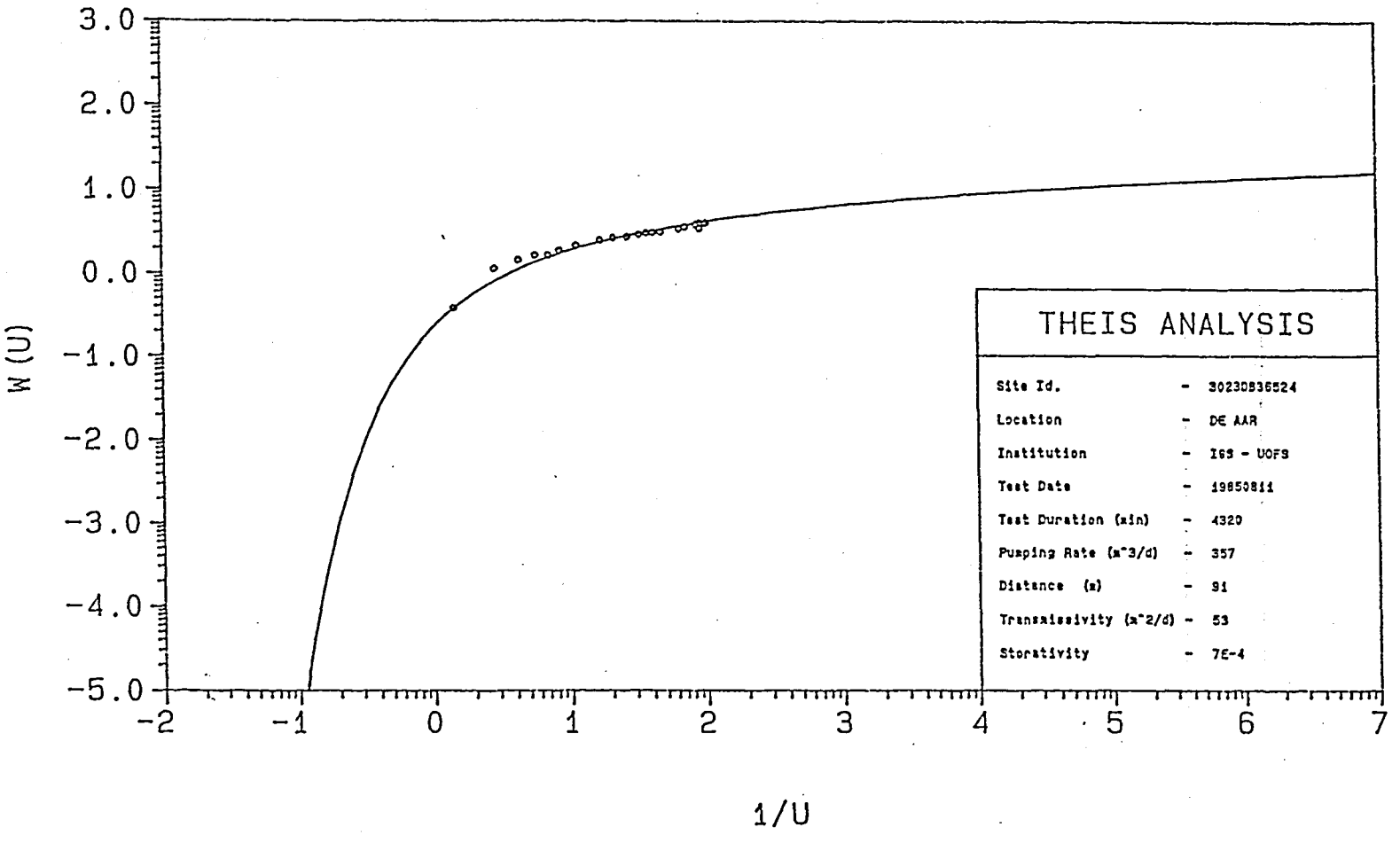

Drawdown (m)
0.0
0.0
0.0
0.0
0.1
0.1
0.1
0.1
0.1
0
1
2
3
4
5
6
7
Time (log min)
JACOB ANALYSIS
Site Id. - 3023S036437
Location - De Aar
Institution - ISS - UOFS
Test Date - 19950717
Test Duration (min) - 3720
Pumping Rate (m^3/d) - 113
Distance (m) - 290
Transmissivity (m^2/d) - 170
Storativity - 4E-3

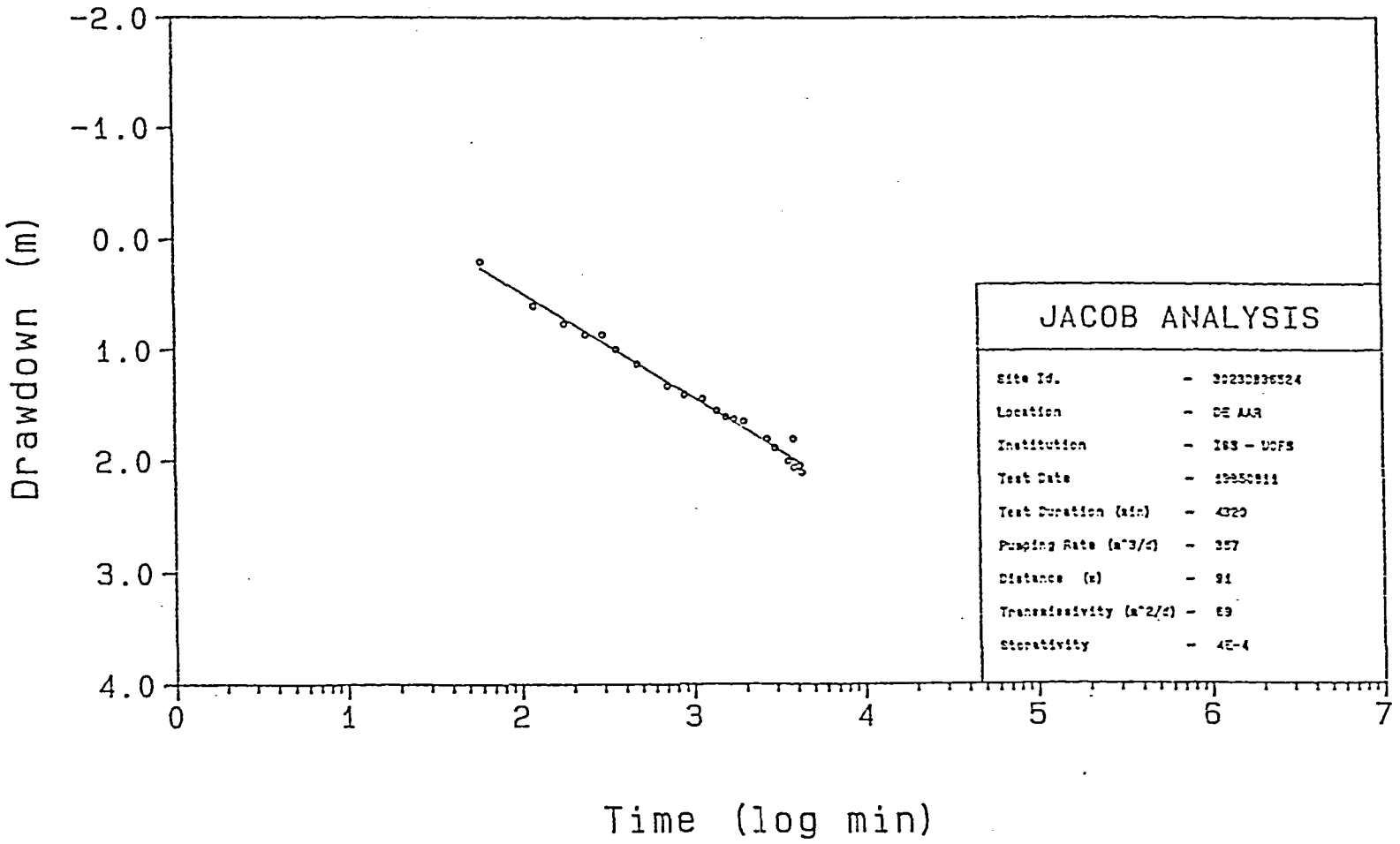

3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
W(u)
-2
-1
0
1
2
3
4
5
6
7
1/u
THEIS ANALYSIS
Site Id. - 3023C836498
Location - De Aar
Institution - IGS - UCFS
Test Date - 19850717
Test Duration (min) - 3420
Pumping Rate (m^3/d) - 110
Distance (m) - 99
Transmissivity (m^2/d) - 59
Storativity - 5E-3

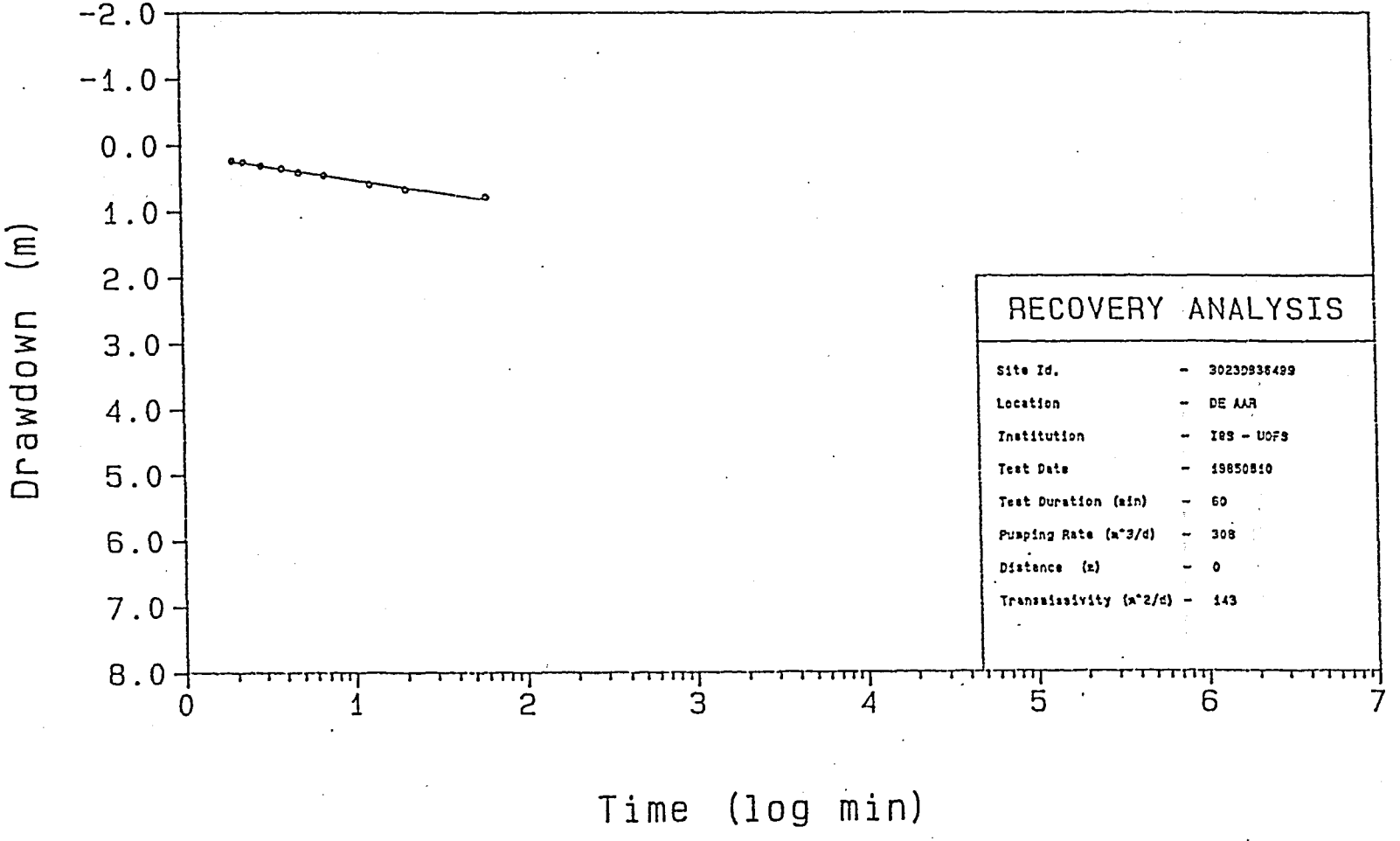

Drawdown (m)
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
0
1
2
3
4
5
6
7
Time (log min)
JACOB ANALYSIS
Site Id. - 3023036438
Location - De Aar
Institution - IGS - UOFS
Test Date - 19850717
Test Duration (min) - 3420
Pumping Rate (m^3/d) - 110
Distance (m) - 99
Transmissivity (m^2/d) - 61
Storativity - 4E-3

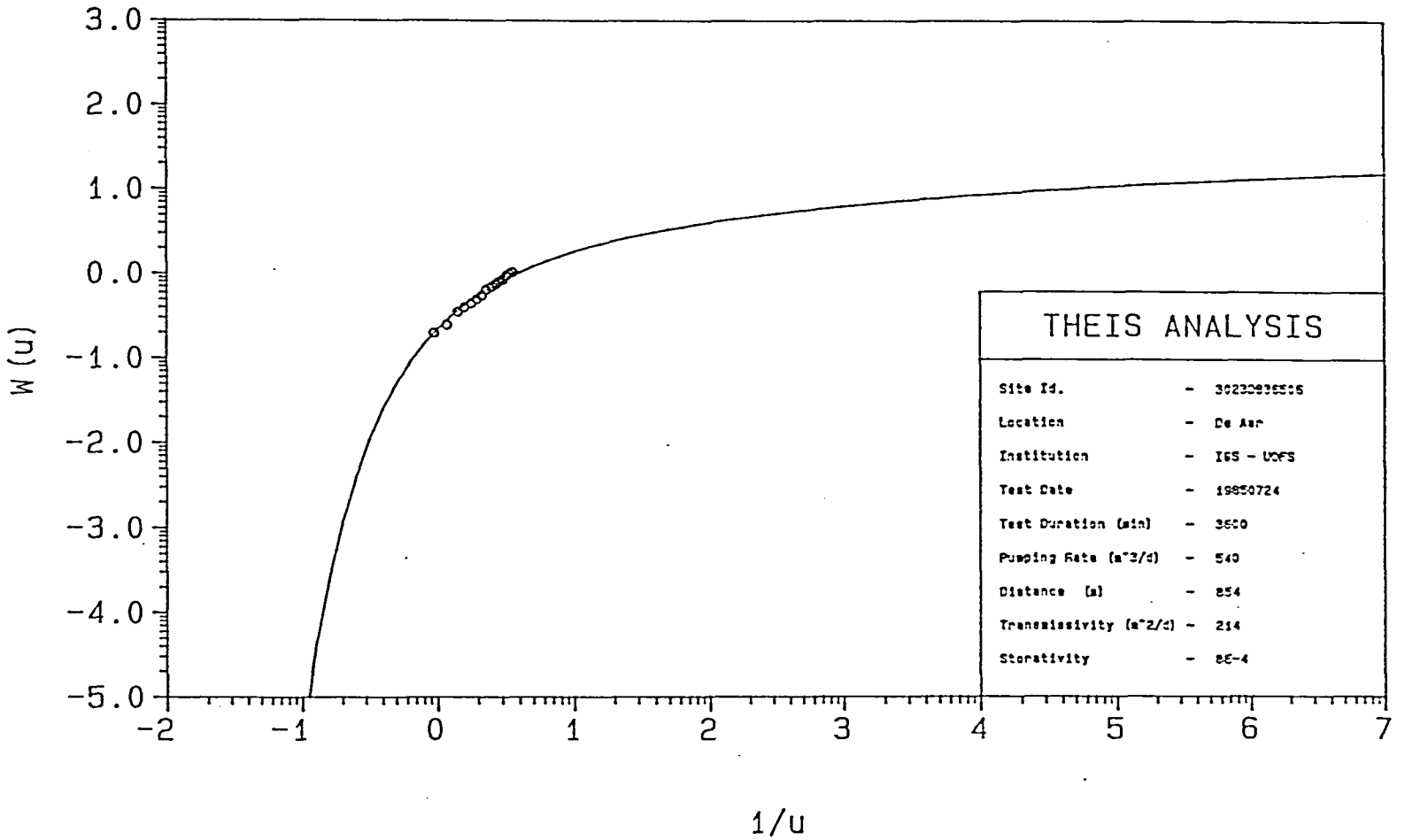

3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
W(U)
-2
-1
0
1
2
3
4
5
6
7
1/U
THEIS ANALYSIS
Site Id. - 3023DB36523
Location - DE AAR
Institution - IGS - UOFS
Test Date - 19850811
Test Duration (min) - 2880
Pumping Rate (m^3/d) - 357
Distance (m) - 30
Transmissivity (m^2/d) - 44
Storativity - 7E-3

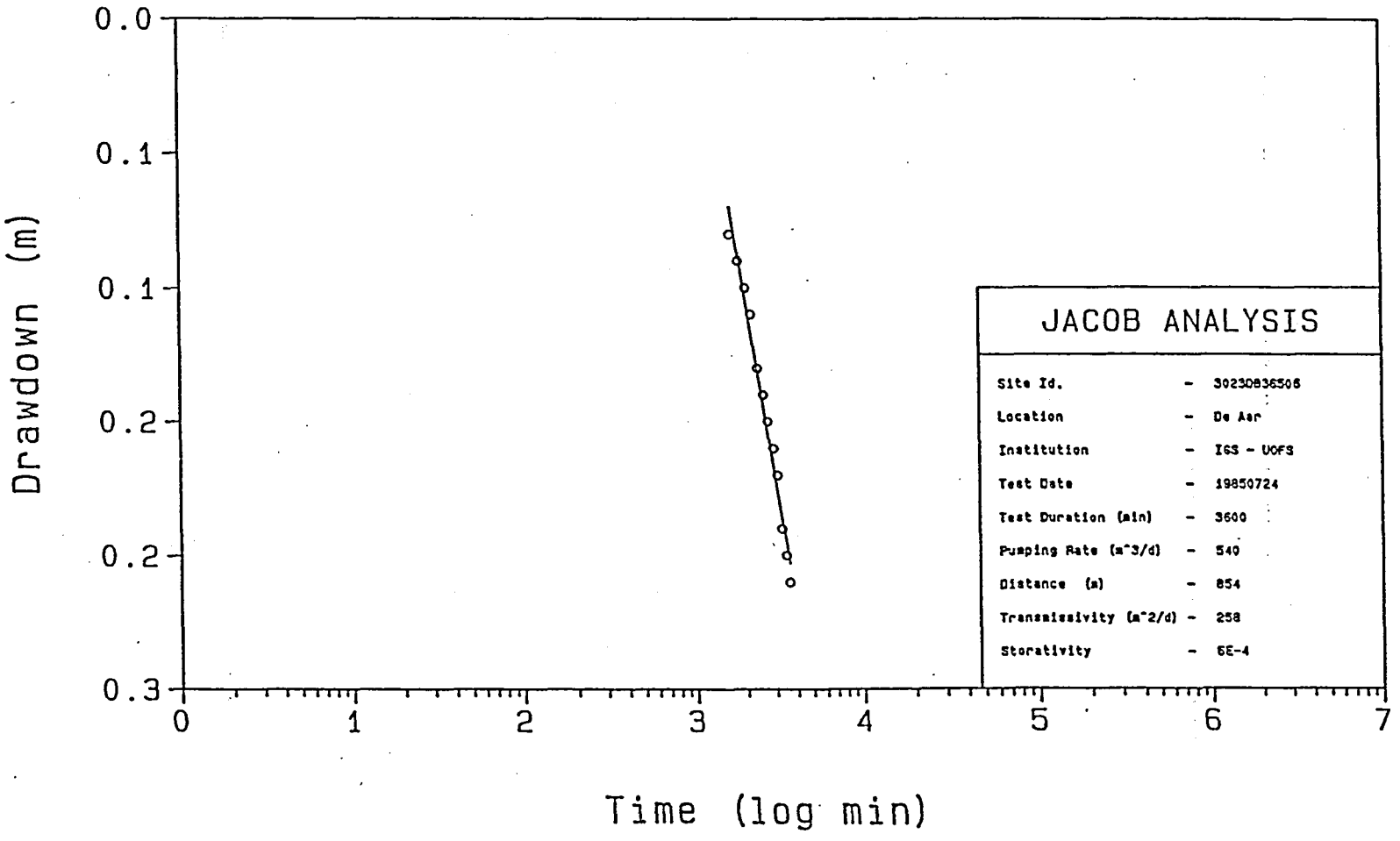

-2.0
-1.0
0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
Drawdown (m)
0
1
2
3
4
5
6
7
Time (log min)
JACOB ANALYSIS
Site Id. - 3023C335523
Location - DE AAR
Institution - 193 - UOFS
Test Date - 19951011
Test Duration (min) - 2993
Pumping Rate (m^3/d) - 357
Distance (m) - 39
Transmissivity (m^2/d) - 51
Storativity - 5E-3

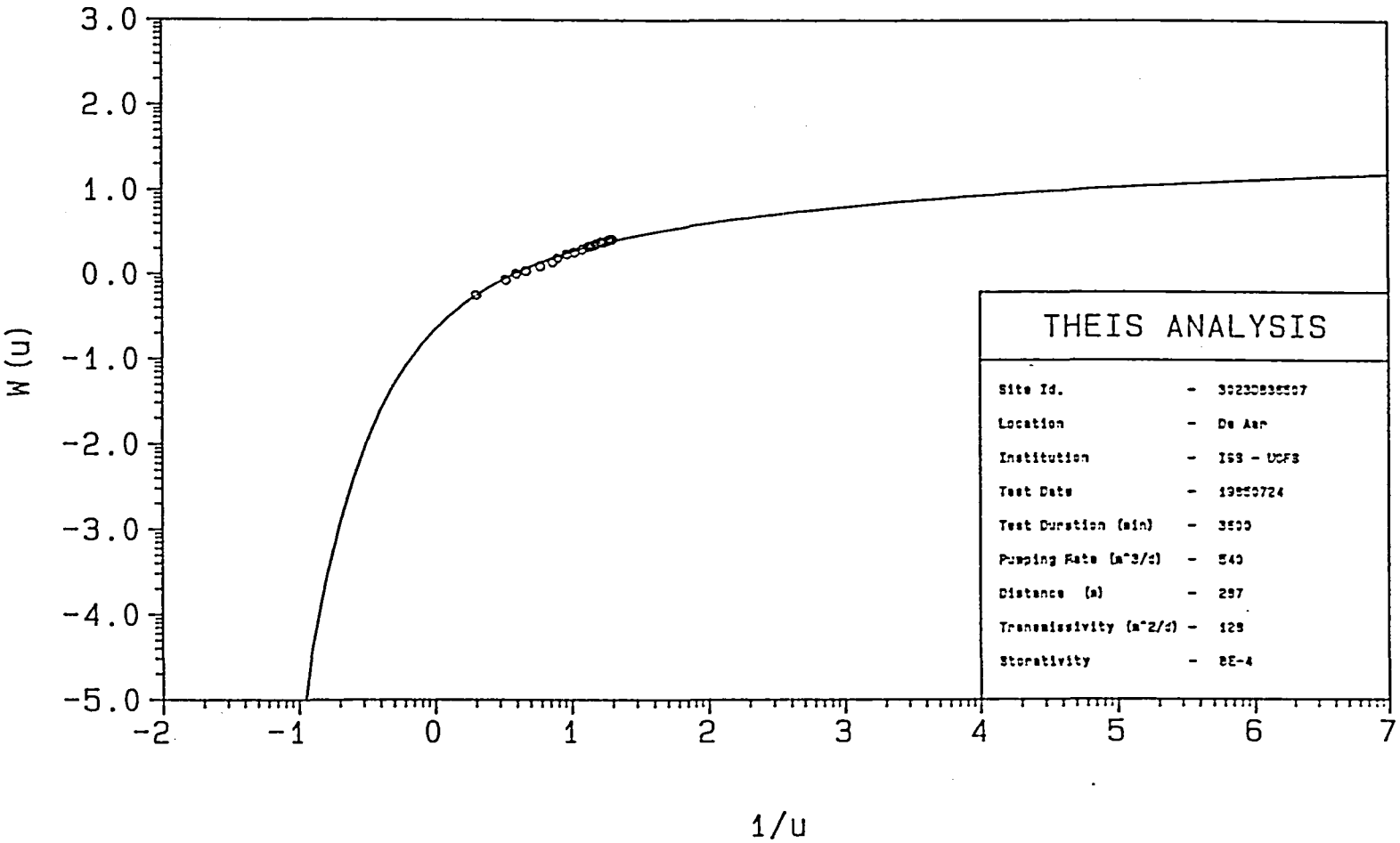

3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
W (U)
-2
-1
0
1
2
3
4
5
6
7
1/U
THEIS ANALYSIS
Site Id. - 30230936524
Location - DE AAR
Institution - IGS - UOFS
Test Date - 19850811
Test Duration (min) - 4320
Pumping Rate (m^3/d) - 357
Distance (m) - 91
Transmissivity (m^2/d) - 53
Storativity - 7E-4

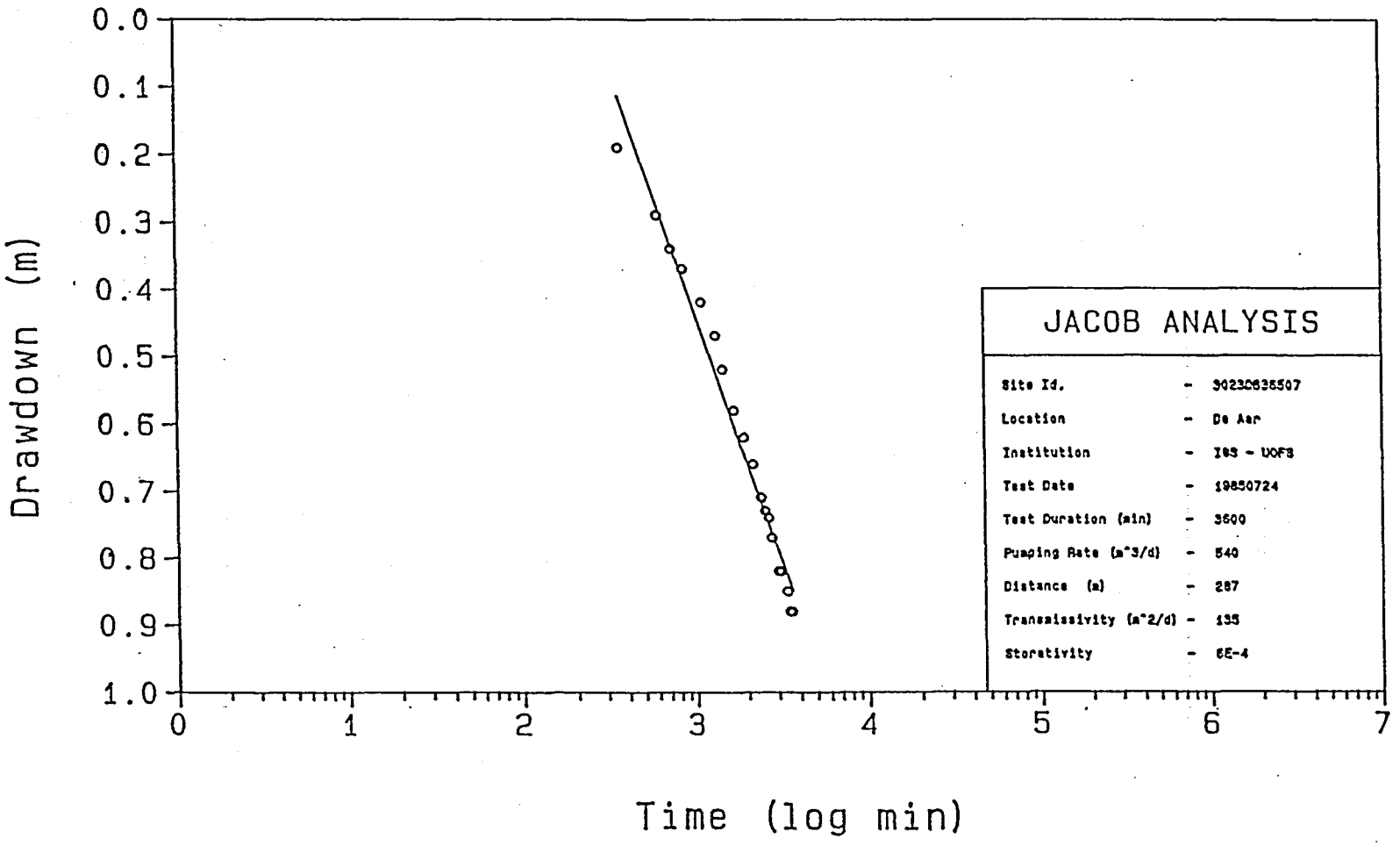

-2.0
-1.0
0.0
1.0
2.0
3.0
4.0
Drawdown (m)
0
1
2
3
4
5
6
7
Time (log min)
JACOB ANALYSIS
Site Id. - 302302936524
Location - DE AAR
Institution - IGS - UOFS
Test Date - 19950811
Test Duration (min) - 4320
Pumping Rate (m^3/d) - 357
Distance (m) - 91
Transmissivity (m^2/d) - 69
Storativity - 4E-4

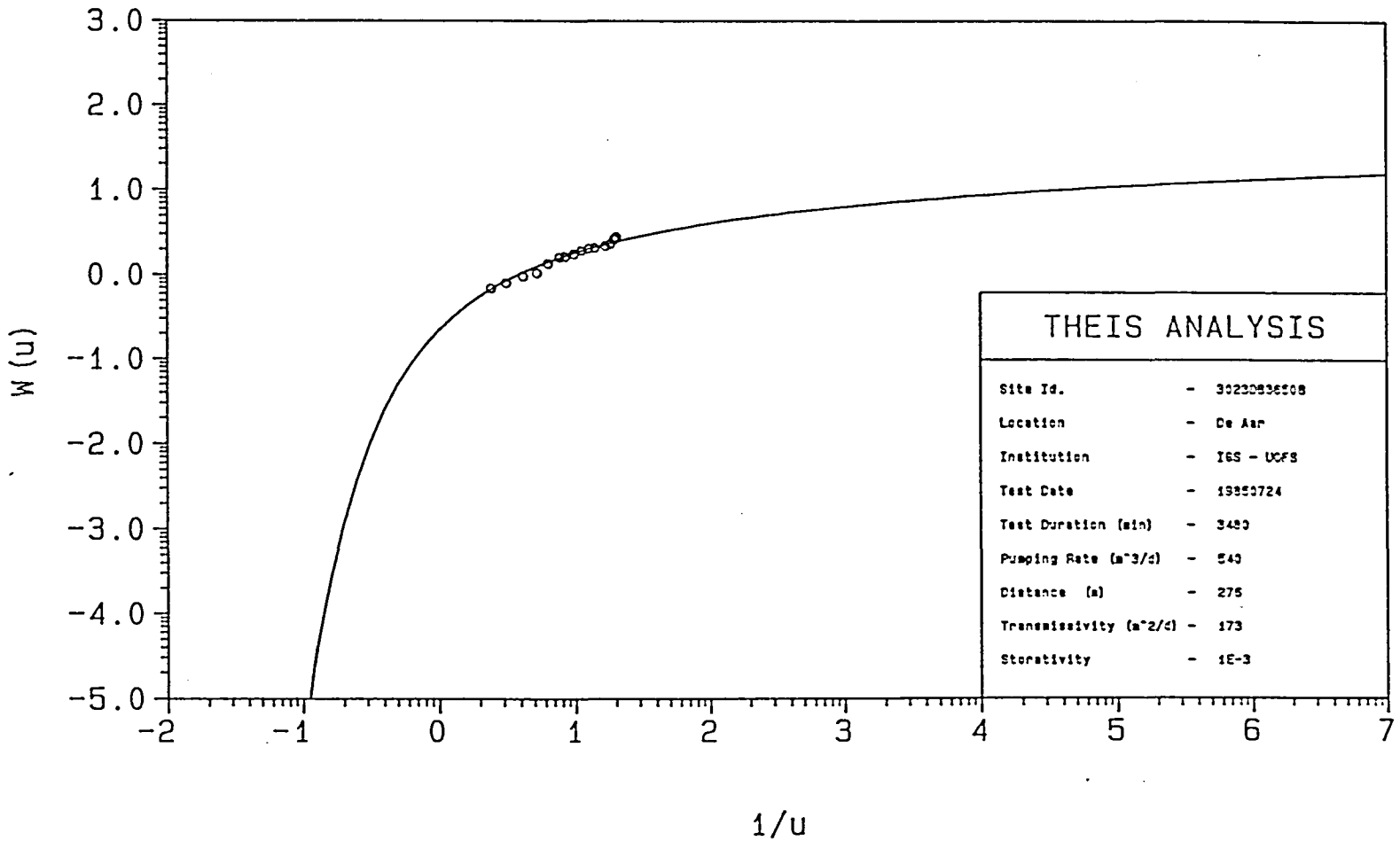

-2.0
-1.0
0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
8.0
Drawdown (m)
0
1
2
3
4
5
6
7
Time (log min)
RECOVERY ANALYSIS
Site Id. - 30230936499
Location - DE AAR
Institution - IGS - UOFS
Test Date - 19850810
Test Duration (min) - 60
Pumping Rate (m^3/d) - 308
Distance (m) - 0
Transmissivity (m^2/d) - 143

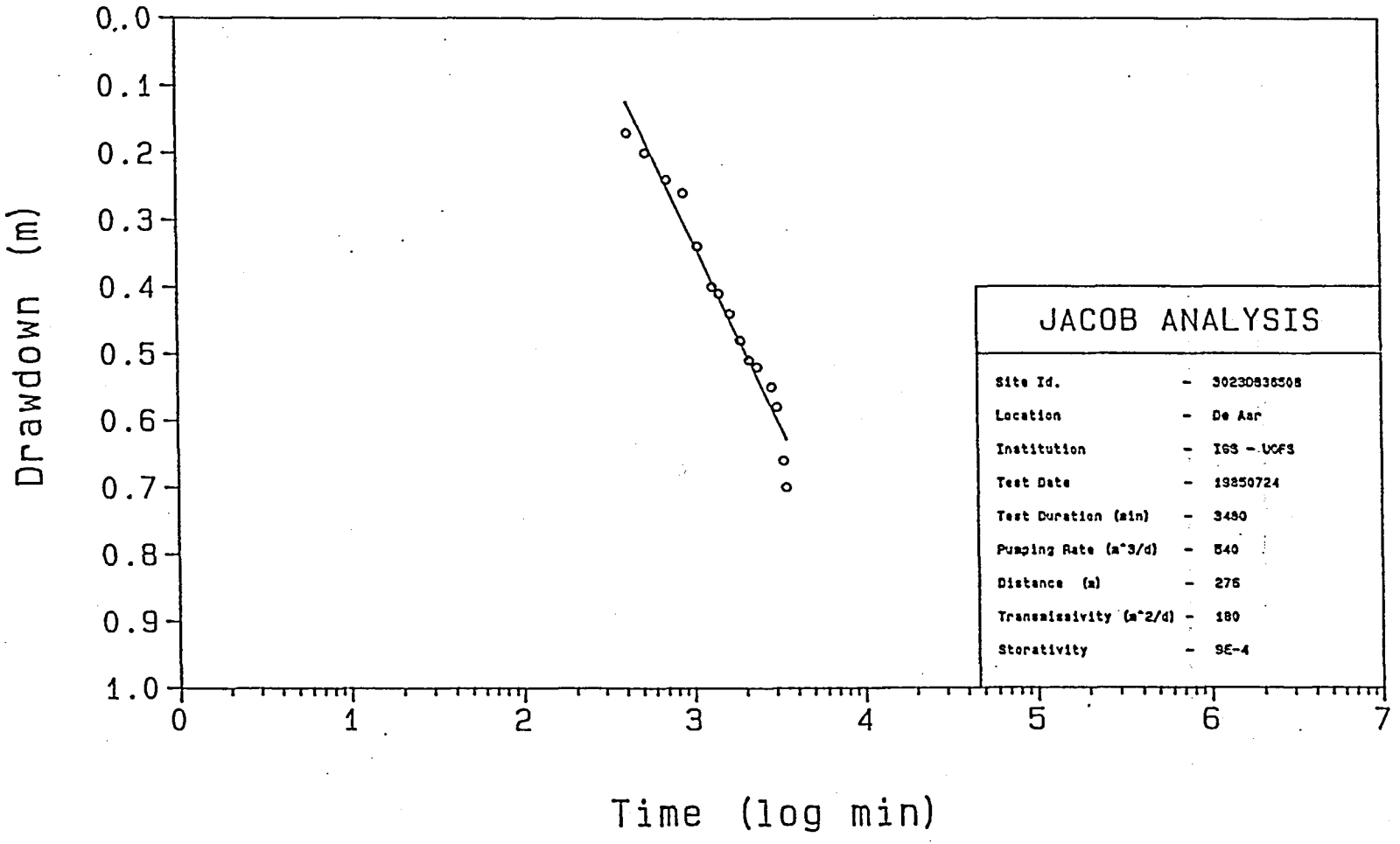

3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
W(u)
-2
-1
0
1
2
3
4
5
6
7
1/u
THEIS ANALYSIS
Site Id. - 3023083S5S
Location - De Aar
Institution - IGS - UOFS
Test Date - 19850724
Test Duration (min) - 3600
Pumping Rate (m^3/d) - 540
Distance (m) - 854
Transmissivity (m^2/d) - 214
Storativity - 8E-4

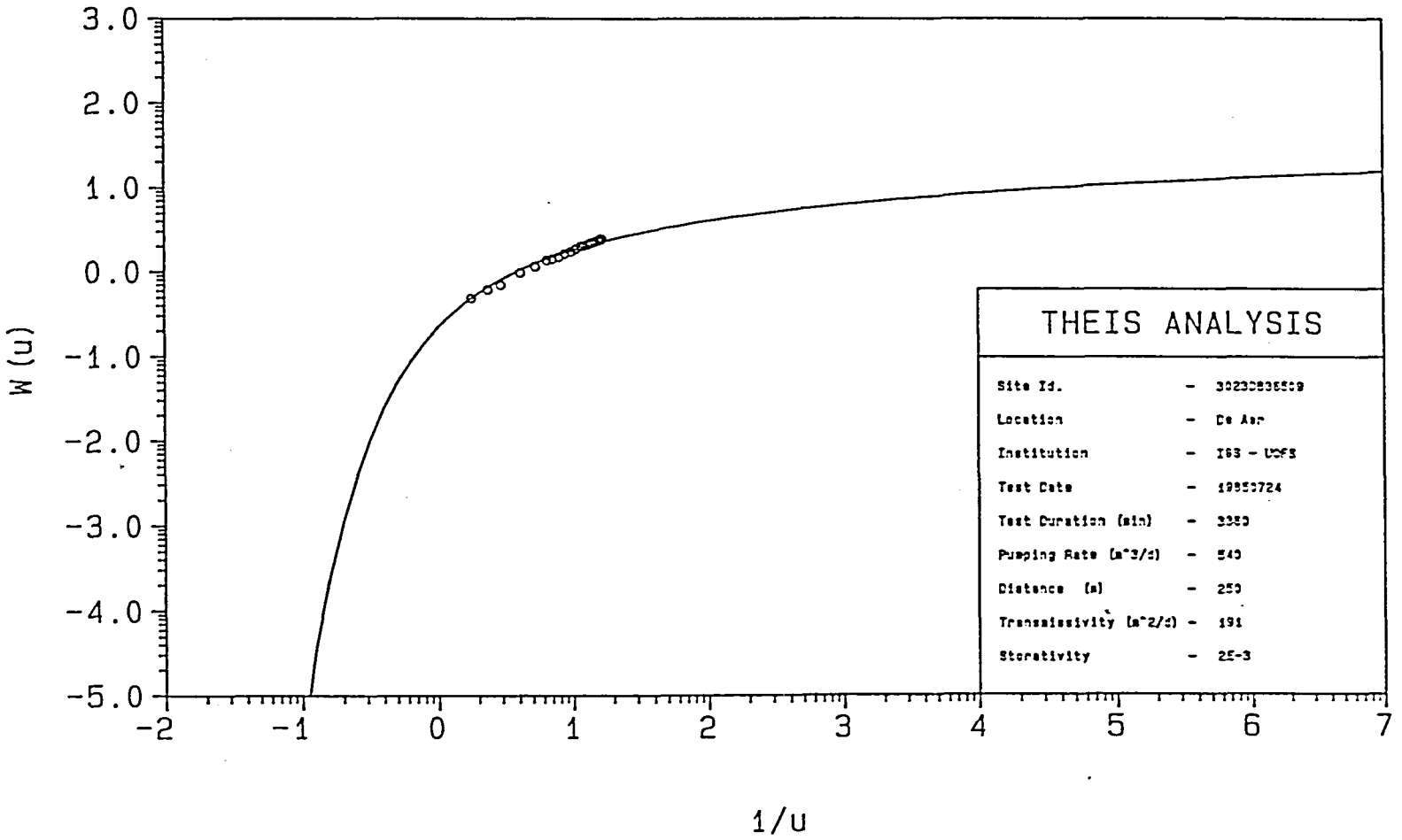

0.0
0.1
0.1
0.2
0.2
0.3
Drawdown (m)
0
1
2
3
4
5
6
7
Time (log min)
JACOB ANALYSIS
Site Id. - 30230836506
Location - De Aar
Institution - IGS - UOFS
Test Date - 19850724
Test Duration (min) - 3600
Pumping Rate (m^3/d) - 540
Distance (m) - 854
Transmissivity (m^2/d) - 258
Storativity - 6E-4

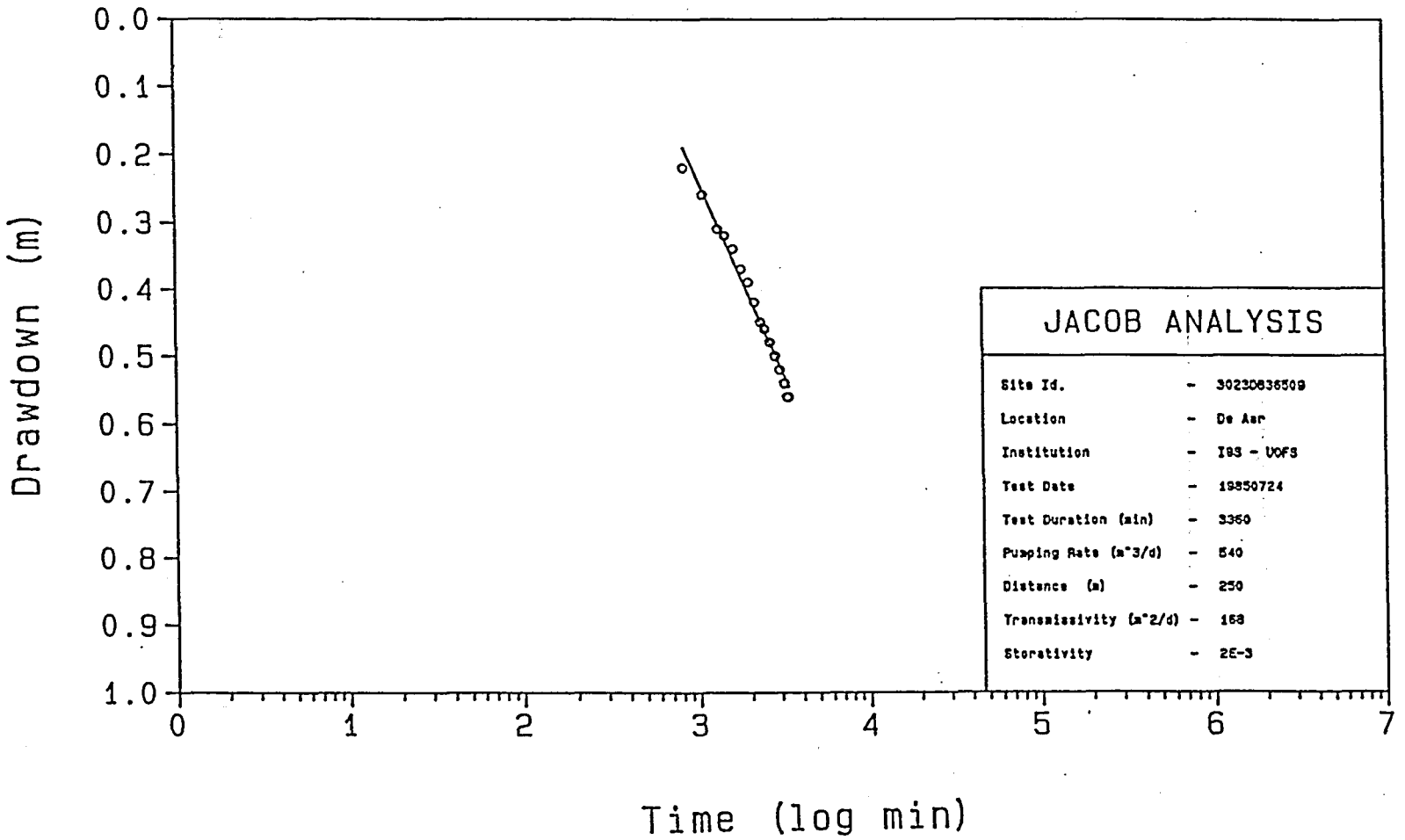

3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
W(u)
-2
-1
0
1
2
3
4
5
6
7
1/u
THEIS ANALYSIS
Site Id. - 3023D836507
Location - De Aar
Institution - ISS - UOFS
Test Date - 19950724
Test Duration (min) - 3600
Pumping Rate (m^3/d) - 540
Distance (m) - 297
Transmissivity (m^2/d) - 128
Storativity - 8E-4

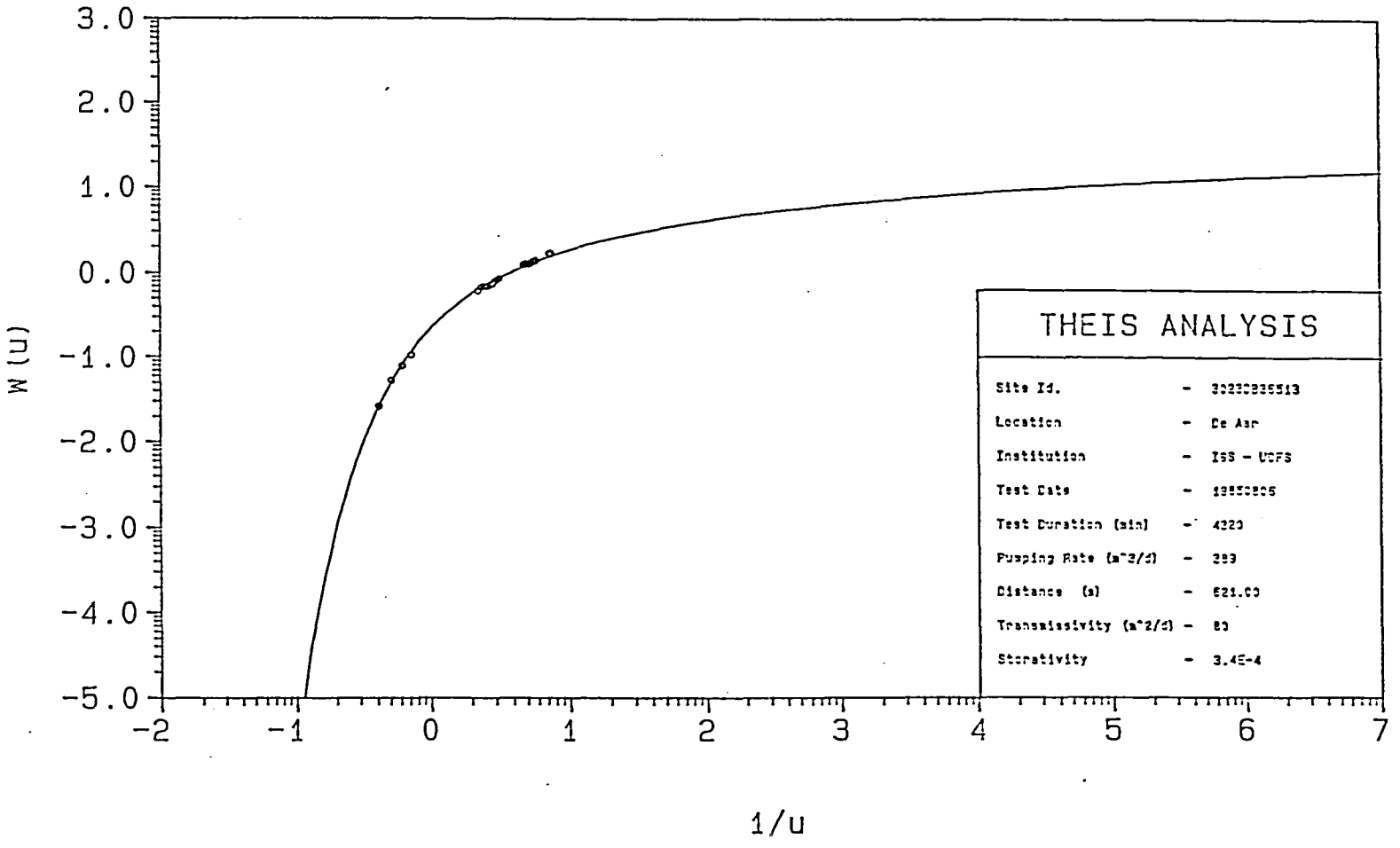

Drawdown (m)
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
0
1
2
3
4
5
6
7
Time (log min)
JACOB ANALYSIS
Site Id. - 3023D836507
Location - De Aar
Institution - IWS - UOFS
Test Date - 19850724
Test Duration (min) - 3600
Pumping Rate (m^3/d) - 540
Distance (m) - 287
Transmissivity (m^2/d) - 135
Storativity - 6E-4

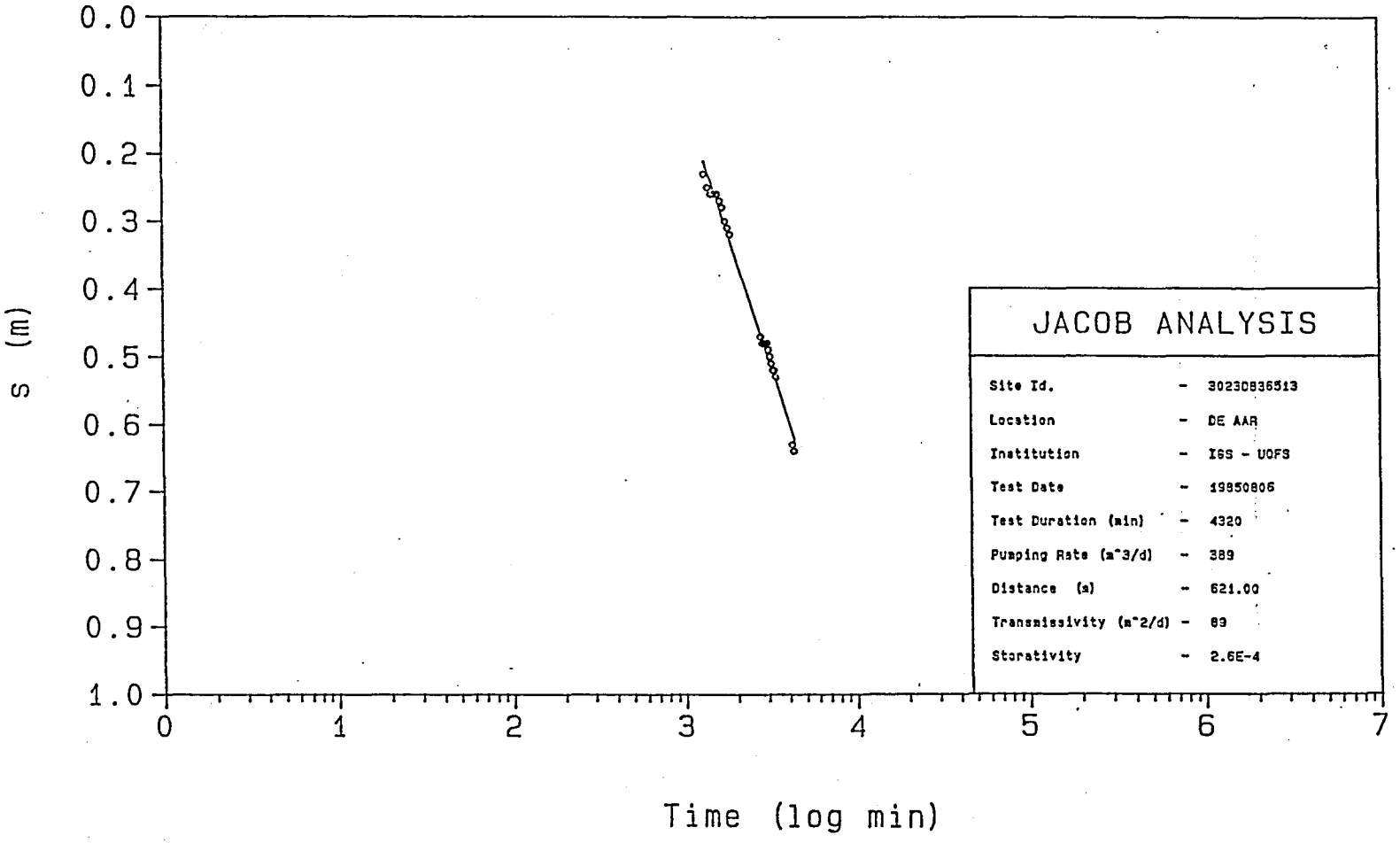

3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
W(u)
-2
-1
0
1
2
3
4
5
6
7
1/u
THEIS ANALYSIS
Site Id. - 302300306508
Location - De Aar
Institution - IGS - UOFS
Test Date - 19950724
Test Duration (min) - 3480
Pumping Rate (m^3/d) - 540
Distance (m) - 275
Transmissivity (m^2/d) - 173
Storativity - 1E-3

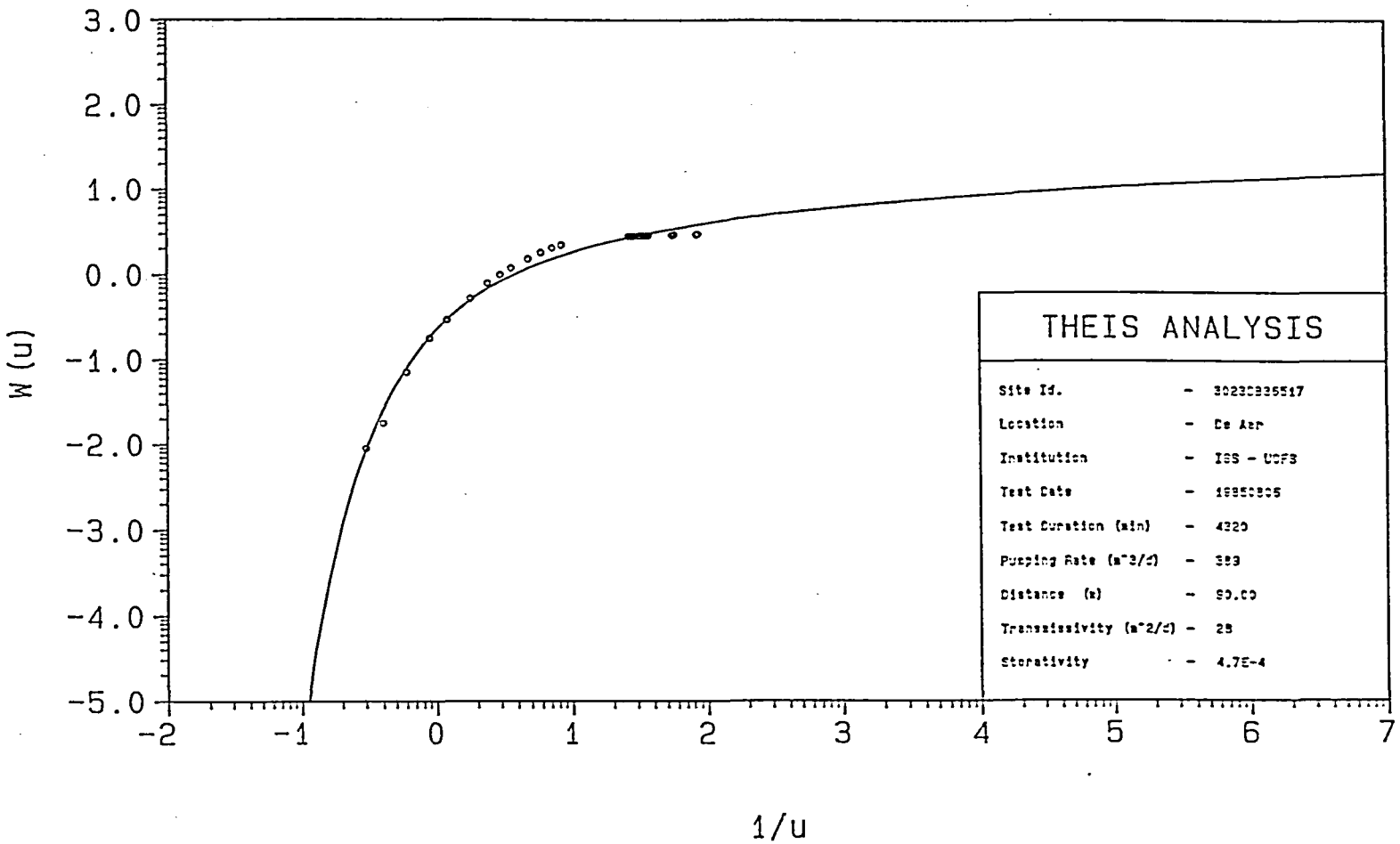

Drawdown (m)
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
0
1
2
3
4
5
6
7
Time (log min)
JACOB ANALYSIS
Site Id. - 302308336508
Location - De Aar
Institution - IGS - UOFS
Test Date - 19850724
Test Duration (min) - 3450
Pumping Rate (m^3/d) - 540
Distance (m) - 276
Transmissivity (m^2/d) - 180
Storativity - 9E-4

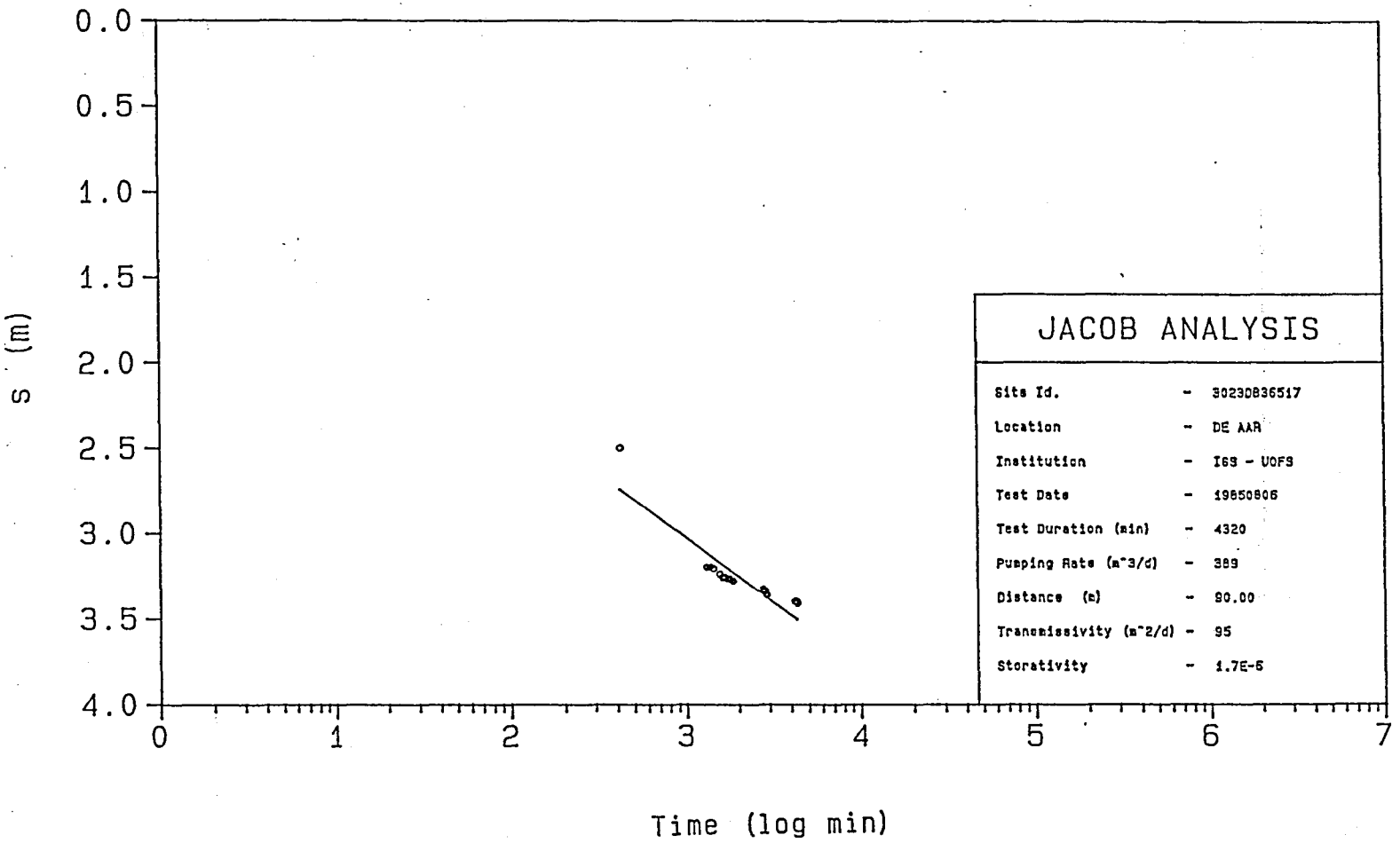

3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
W(u)
-2
-1
0
1
2
3
4
5
6
7
1/u
THEIS ANALYSIS
Site Id. - 3023D836S19
Location - De Aar
Institution - IGS - UOFS
Test Date - 19950724
Test Duration (min) - 3359
Pumping Rate (m^3/d) - 540
Distance (m) - 259
Transmissivity (m^2/d) - 191
Storativity - 2E-3

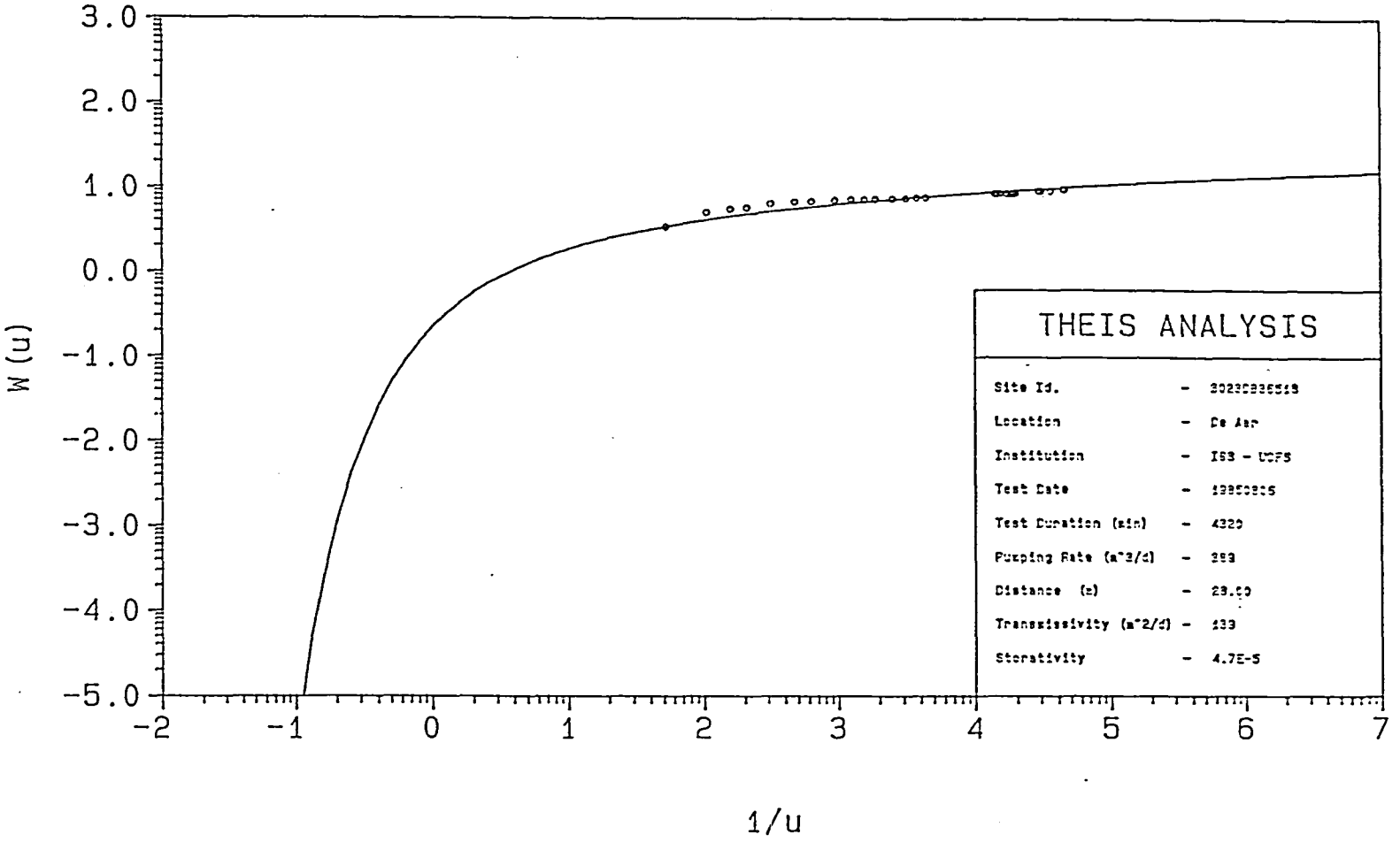

Drawdown (m)
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
0
1
2
3
4
5
6
7
Time (log min)
JACOB ANALYSIS
Site Id. - 30230636509
Location - De Aar
Institution - IWS - UOFS
Test Date - 19850724
Test Duration (min) - 3360
Pumping Rate (m^3/d) - 540
Distance (m) - 250
Transmissivity (m^2/d) - 168
Storativity - 2E-3

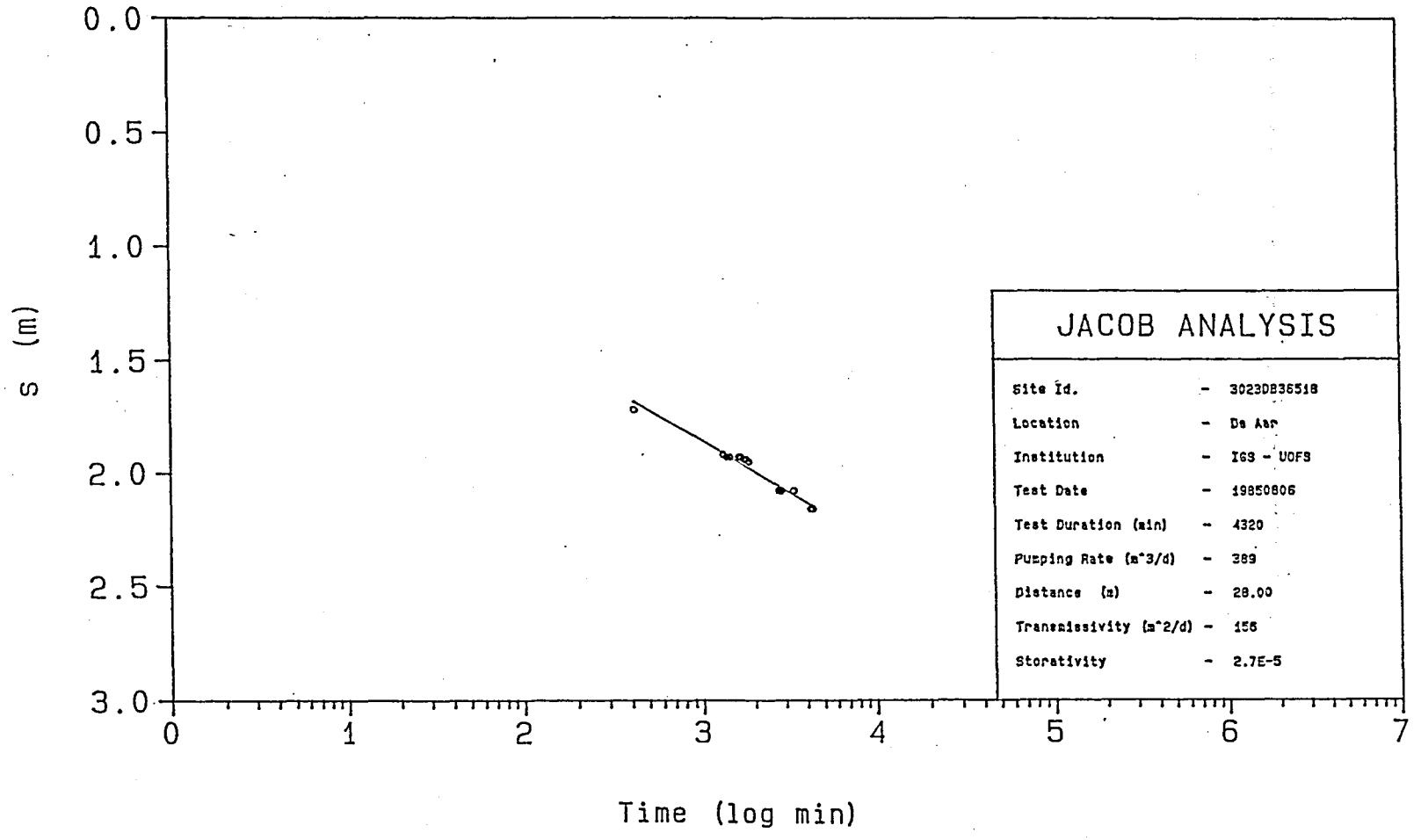

3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
W(u)
-2
-1
0
1
2
3
4
5
6
7
1/u
THEIS ANALYSIS
Site Id. - 30230335513
Location - De Aar
Institution - ISS - UOFS
Test Date - 19950905
Test Duration (min) - 4320
Pumping Rate (m^3/d) - 288
Distance (m) - 621.00
Transmissivity (m^2/d) - 83
Storativity - 3.4E-4

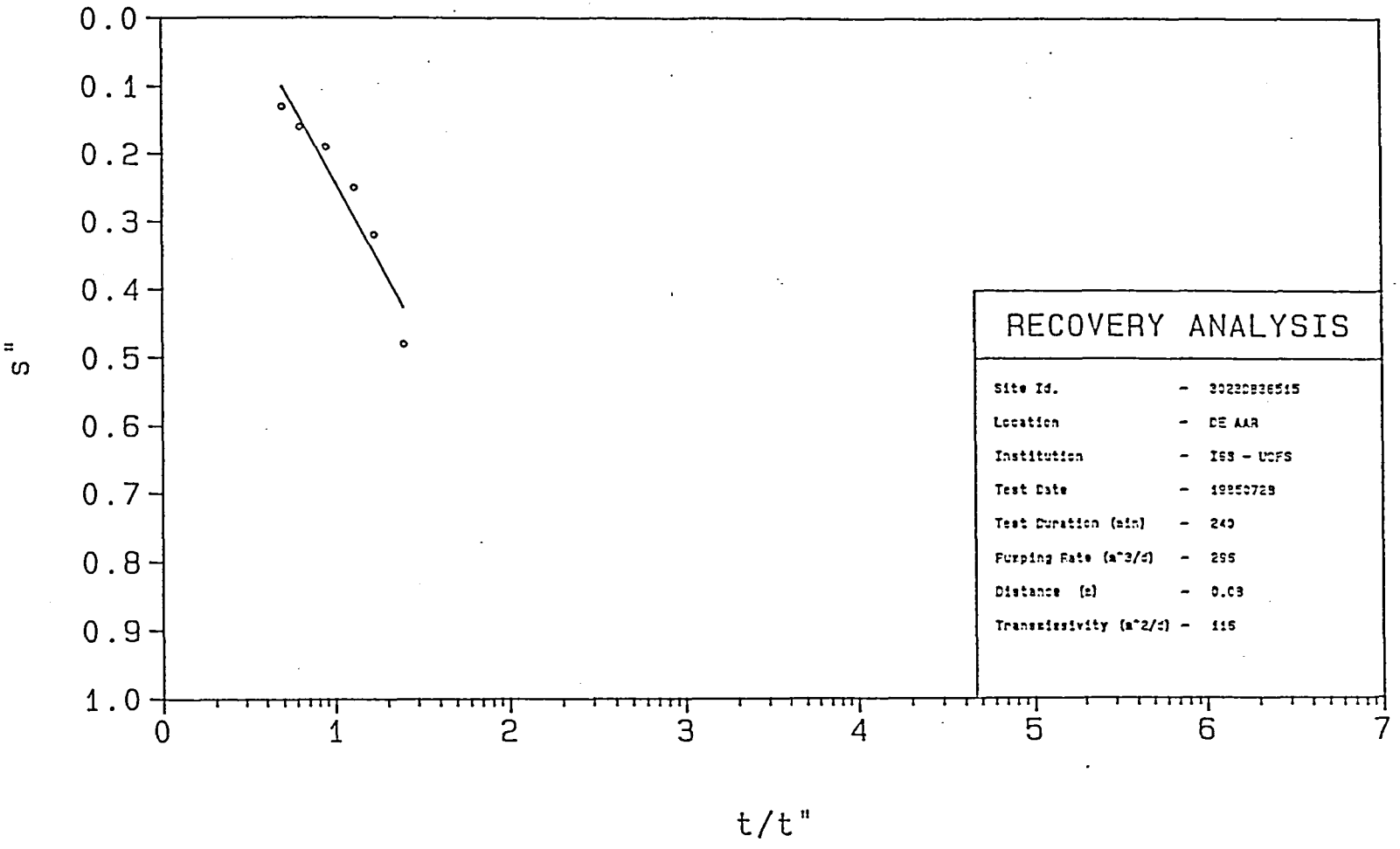

0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
s (m)
0
1
2
3
4
5
6
7
Time (log min)
JACOB ANALYSIS
Site Id. - 30230836513
Location - DE AAR
Institution - IGS - UOFS
Test Date - 19850806
Test Duration (min) - 4320
Pumping Rate (m^3/d) - 389
Distance (m) - 621.00
Transmissivity (m^2/d) - 69
Storativity - 2.6E-4


3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
W(u)
-2
-1
0
1
2
3
4
5
6
7
1/u
THEIS ANALYSIS
Site Id. - 302303335517
Location - De Aar
Institution - IGS - UOFS
Test Date - 19950305
Test Duration (min) - 4320
Pumping Rate (m^3/d) - 389
Distance (m) - 90.00
Transmissivity (m^2/d) - 28
Storativity - 4.7E-4


0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
s (m)
0
1
2
3
4
5
6
7
Time (log min)
JACOB ANALYSIS
Site Id. - 3023D836517
Location - DE AAR
Institution - IGS - UOFS
Test Date - 19650806
Test Duration (min) - 4320
Pumping Rate (m^3/d) - 389
Distance (m) - 90.00
Transmissivity (m^2/d) - 95
Storativity - 1.7E-5


3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
-4.0
-5.0
W(u)
-2
-1
0
1
2
3
4
5
6
7
1/u
THEIS ANALYSIS
Site Id. - 3023033551S
Location - De Aar
Institution - ISS - UOFS
Test Date - 19950915
Test Duration (min) - 4320
Pumping Rate (m^3/d) - 288
Distance (m) - 29.00
Transmissivity (m^2/d) - 133
Storativity - 4.7E-5


0.0
0.5
1.0
1.5
2.0
2.5
3.0
s (m)
0
1
2
3
4
5
6
7
Time (log min)
JACOB ANALYSIS
Site Id. - 3023DB36518
Location - De Aar
Institution - IGS - UOFS
Test Date - 19850806
Test Duration (min) - 4320
Pumping Rate (m^3/d) - 389
Distance (m) - 28.00
Transmissivity (m^2/d) - 156
Storativity - 2.7E-5


0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
s"
0
1
2
3
4
5
6
7
t/t"
RECOVERY ANALYSIS
Site Id. - 3023D836515
Location - DE AAR
Institution - ISS - UOFS
Test Date - 19850729
Test Duration (min) - 240
Purping Rate (m^3/d) - 295
Distance (m) - 0.09
Transmissivity (m^2/d) - 115

* G-BASE * CHEMISTRY REPORT * Date printed : 16 May 1989
Generated for : DE AAR - IGS/WRC PROJECT

Nr. on map	Date	Depth m	EC mS/m	TDS mg/L	ALK. mg/L	Ca mg/L	Mg mg/L	Na mg/L	K mg/L	Si mg/L	SO4 mg/L	Cl mg/L	NO3 mg/L	F mg/L
ZS1	19841030		89	705	248	62	44	58	1.6	22.3	88	83	9.7	0.5
G23202	19730831		145	1055	262	80	12	308			173	213	0.0	0.7
G23202	19730831		145	1058	440	90	7	306			173	213	0.0	0.7
G23202A	19841101		121	856	299	24	18	203	0.5	21.7	117	87	4.3	0.8
G23202A	19890120		95	635	348	66	53	98			110	96	0.0	0.2
G27703	19720818		150	1080	416	56	46	286			226	213	0.0	0.4
G27703	19720818		150	1088	438	60	46	286			216	213	0.0	0.5
G27702G	19731121		75	563	333	55	47	91			102	65	0.0	0.4
G27702G	19841106		146	1074	214	43	62	184	1.1	23.7	169	193	30.6	0.5
G27702G	19890120		95	661	350	72	61	90			106	118	0.0	0.5
G27708D	19730911		160	1295	505	44	54	370			271	248	0.0	0.6
G27708D	19730914		170	1196	504	120	6	333			173	248	0.0	0.6
G23203A	19720829		95	635	348	66	53	98			110	96	0.0	0.1
G23203A	19841026		190	1346	337	48	70	273	0.4	22.7	284	236	0.0	0.5
VK1 (W)	19730102		225	1347	321	190	123	133			91	593	4.3	0.0
VK1 (W)	19841031		261	1716	304	71	82	380	3.2	18.9	373	400	3.7	0.8
G23204D	19720721		135	945	373	18	33	299			163	204	0.0	1.3
G23204D	19841031		282	1836		48						488	1.4	1.1
G23205C	19720706		135	915	383	24	30	270			163	0	0.0	1.2
G23205C	19720706		135	901	361	38	39	250			168	186	0.0	0.8
G23205F	19730330		110	708	338	55	50	146			85	163	0.7	0.4
G23205F	19841031		149	963	228	64	62	140	1.8	24.0	188	2	2.5	0.5
G23205B	19841031		269	1704	227	73	115	330	0.8	22.9	406	473	0.2	0.6
G23205B	19890120		135	915	383	24	30	270			163	195	0.0	1.2
G23205B	19890120		135	901	361	38	39	250			168	186	0.0	0.8
G27715G	19730521		85	601	330	67	53	83			82	96	4.3	0.5
G27715G	19841031		143	945	207	85	68	118	3.5	25.9	177	199	3.1	0.4
VP 1	19730718		119	745	350	114	85	33			53	172	16.7	0.2
VP 1	19841031		91	616	192	67	53	37	2.5	29.1	60	96	8.6	0.4
G23206A	19730205		90	633	338	13	25	201			82	106	0.0	1.9
G23206A	19730208		105	743	370	21	29	229			94	142	0.0	1.8
G23206A	19841105		313	2044	354	55	108	484	3.2	24.8	380	552	1.3	1.4
RT 2	19730402		75	472	285	75	50	35			60	78	0.0	0.4
RT 2	19841101		102	737	211	54	55	66	3.5	20.9	115	122	9.7	0.3
RT 3	19730718		250	1915	405	254	181	154			259	628	43.4	
RT 3	19841101		229	113	279	113	112	124	2.8	20.5	248	367	8.2	0.8
RT 1	19841101		109	752	228	59	60	73	5.4	21.6	99	124	7.4	0.4
G27719I	19730716		135	830	345	88	79	144			168	240	0.0	
G27719I	19730719		125	834	345	84	75	124			91	249	0.0	0.2
G27719I	19871031		148	1009	227	60	66	150	1.8	21.4	196	212	5.3	0.5
BN 1	19841030		78	591	185	41	48	46	1.7	21.6	59	106	9.1	1.1
BN 2	19841030		39	280	78	8	1	70	2.4	10.1	15	73	1.1	0.0
G23204	19890120		130	853	330	18	24	294			111	204	0.0	1.8
G27704	19730123		130	853	330	18	24	294			111	204	0.0	1.8
G27704	19841031		227	1442	274	38	49	312	0.5	20.0	294	312	4.5	1.1
G27707	19730306		110	645	295	76	60	84			48	188	2.0	0.4
G27707	19841031		231	1398	194	137	127	143	1.4	22.7	270	447	0.7	0.6
G27723	19841030		90	5752	180	56	47	53	2.2	19.3	64	80	7.1	0.8
G28402	19841030		272	1657	282	57	102	366	14.4	22.4	283	471	1.9	1.3
G28405	19841030		307	1993	276	55	162	376	3.8	25.3	430	601	0.4	1.1

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Nr. on map	Date	Depth m	EC mS/m	TDS mg/L	ALK. mg/L	Ca mg/L	Mg mg/L	Na mg/L	K mg/L	Si mg/L	SO4 mg/L	Cl mg/L	NO3 mg/L	F mg/L
G36474	19850226	12.00	76	519	172	49	37	43	8.9	7.4	76	59	6.5	0.8
G36477	19850227	25.00	79	566	218	62	36	46	7.3	10.4	57	56	5.6	0.9
G36479	19850227	31.00	71	485	170	31	35	59	5.8	11.8	41	61	7.9	0.8
G36482	19850304	48.00	36	246	96	9	3	61	8.4	4.8	8	27	0.5	6.7
G36483	19850307	23.00	74	528	174	54	41	32	8.9	16.1	70	50	9.8	0.7
G36483	19850307	127.00	76	544	209	65	38	35	6.1	15.8	51	46	7.0	0.8
G36484	19850308	40.00	69	475	148	37	32	43	19.1	13.2	55	58	8.9	0.9
G36485	19850308	42.00	69	508	177	53	40	32	3.7	17.3	62	49	7.9	0.5
G36491	19850312	31.00	77	523	204	46	36	41	9.8	13.9	72	55	0.0	0.8
G36491	19850312	60.00	66	478	146	25	38	40	4.9	16.6	80	53	9.1	0.5
G36492	19850312	42.00	76	524	167	32	38	45	11.9	13.2	81	55	9.7	1.0
G36496	19850319	30.00	71	529	210	36	33	59	3.3	12.2	53	54	5.1	0.5
G36496	19850319	94.00	113	850	286	44	27	126	37.8	12.7	150	103	0.0	0.6
G36497	19850318	96.00	56	409	173	23	20	56	9.4	8.1	31	35	3.3	1.7
G36499	19850327	52.00	65	388	68	6	2	120	6.8	4.3	9	149	0.0	8.1
G36499	19850327	68.00	61	353	48	4	0	119	1.0	9.7	12	141	0.0	7.9
G36499	19850327	81.00	63	367	59	9	3	110	8.6	6.1	6	151	0.0	1.5
G36501	19850325	40.00	115	734	153	33	41	112	24.3	7.1	93	225	1.1	1.3
G36502	19850325	25.00	82	497	100	24	11	113	18.3	4.7	24	172	0.2	5.0
G36502	19850325	42.00	82	514	96	26	10	116	23.5	4.0	33	180	0.0	5.0
G36504	19850329	18.00	136	896	230	45	82	92	2.4	17.8	149	215	2.3	0.8
G36505	19850329	12.00	147	957	185	73	84	106	3.6	16.6	168	267	2.6	0.9
G36505	19850329	42.00	149	1042	199	110	85	107	3.7	17.0	180	286	2.3	0.9
G36507	19850329	14.00	107	761	188	87	57	63	5.5	17.0	126	166	2.2	0.5
G36507	19850329	40.00	105	722	173	80	53	68	6.6	15.3	116	157	3.1	0.5
G36508	19850329	25.00	126	807	230	40	72	92	7.1	15.8	142	153	1.0	0.6
G36508	19850329	30.00	123	832	212	70	71	83	6.2	16.4	126	187	2.8	0.5
G36509	19850330	18.00	137	880	144	68	77	103	4.9	18.3	165	259	2.4	0.8
G36509	19850330	30.00	144	909	196	55	79	100	3.3	17.8	166	237	2.6	0.8
G36511	19850330	24.00	88	601	182	40	24	101	12.2	11.1	26	161	0.0	4.2
G36515	19850401	34.00	95	659	228	26	58	65	2.2	18.3	96	115	0.0	0.7
G36515	19850401	50.00	88	610	199	15	58	62	4.4	19.7	93	110	0.6	0.6

```
C*****************************************************************
C      PROGRAM TO CALCULATE:                                     *
C      1.  THE MEAN WATER LEVEL OF AN AQUIFER ON A MONTHLY BASIS*
C      2.  THE RECHARGE (INFILTRATION) INTO THE AQUIFER          *
C      PROGRAM DEVELOPED AT THE I.G.S., BOX 339, BLOEMFONTEIN    *
C*****************************************************************
C                                                                *
C      INPUT                                                     *
C      -----                                                     *
C      1. N,NTYE,AREA                                            *
C                N=NUMBER OF BOREHOLES                           *
C             NTYE=NUMBER OF MONTHS                              *
C             AREA=AREA IN SQUARED METRES                        *
C      2. GROUND-WATER LEVEL INFORMATION:  A,X,Y,Z               *
C          WHERE A=BOREHOLE NUMBER                               *
C                X=X-COORDINATE OF BOREHOLE                      *
C                Y=Y-COORDINATE OF BOREHOLE                      *
C                Z=GROUND-WATER LEVELS (NMON OF THEM)            *
C      3. RAINFALL AND ABSTRACTION RATES: RAIN,QP                *
C         RAIN IN MM/MONTH  AND QP IN CUB.M/DAY                  *
C      4. MEAN WL                                                *
C         FOR THE FIRST RUN OF THE PROGRAM THESE DATA CAN        *
C         BE OMIT. THE MEAN WL NEEDED FOR                        *
C         THE INFILTRATION CALCULATIONS ARE WRITTEN TO FILE      *
C         8.TXT BY PROGRAM GLF                                   *
C         ADD THIS 8.TXT FILE AFTER THE DATA OF POINT 3 ABOVE    *
C*****************************************************************
C
$LARGE
      CHARACTER*20 FNAME
      CHARACTER*1 TYPE,TE
      CHARACTER*6 A(72)
      DIMENSION X(72),Y(72),Z(72,34)
      DIMENSION WLMEAN(600),SATVOL(34),RAIN(34),FILT(34),QP(34)
      OPEN(7,FILE='7.TXT',STATUS='UNKNOWN')
      OPEN(8,FILE='8.TXT',STATUS='UNKNOWN')
      OPEN(9,FILE='9.TXT',STATUS='UNKNOWN')
      WRITE(*,*)'ENTER FILE NAME'
      READ(*,113)FNAME
113   FORMAT(A20)
      OPEN(5,FILE=FNAME)
      WRITE(*,*)'   MEAN WL CAL. =  V  '
      WRITE(*,*)'  RECHARGE CAL. =  I  '
      READ(*,700)TYPE
700   FORMAT(A1)
      IF(TYPE.EQ.'I')THEN
      WRITE(*,*)' ARE THE MEAN WL ALREADY CALULATED (Y/N)'
      READ(*,112)TE
112   FORMAT(A1)
      ELSE
      ENDIF
      WRITE(*,*)' INTERVAL SIZE IN MONTHS'
      READ(*,*)IM
C
      READ(5,*)N,NTYE,AREA
C
C     INPUT WATER LEVEL INFORMATION
C
      DO 3 I=1,N
      READ(5,50)A(I),X(I),Y(I)
50    FORMAT(A6,2F10.0)
      READ(5,*)(Z(I,J),J=1,NTYE)
3     CONTINUE
```

```
C
C       RAINFALL INPUT IN MM/MAAND AND ABSTRACTION INPUT IN M**3/DAY
C
        READ(5,*)(RAIN(I),QP(I),I=1,NTYE)
C
        IF(TE.EQ.'Y')THEN
        READ(5,*)(L,WLMEAN(I),I=1,NTYE)
        ELSE
        ENDIF
        WRITE(*,*)' FINISH WITH DATA READING'
C       START PROGRAM LOOP
C
        IF(TE.EQ.'Y')GO TO 2000
        IT=0
        DO 100 L=1,NTYE
        SUM=0.
        DO 29 I=1,N
        SUM=SUM+Z(I,L)
   29   CONTINUE
        WLMEAN(L)=SUM/FLOAT(N)
        WRITE(8,291)L,WLMEAN(L)
        WRITE(*,291)L,WLMEAN(L)
291     FORMAT(I5,E15.6)
100     CONTINUE
C
C
        IF(TYPE.EQ.'V')THEN
        WRITE(*,*)'FINISH WITH MEAN WL CALCULATION'
        WRITE(*,*)' DATA ARE IN FILE 8.TXT'
        WRITE(*,*)'  '
        GO TO 3000
        ELSE
        ENDIF
C
C
C       IF TYPE = I STARTS RECHARGE CALCULATIONS
C       ----------------------------------------
2000    IF(TYPE.EQ.'V')GO TO 3000
C
        COEF=1000000.
        DO 301 I=1,NTYE
        SATVOL(I)=WLMEAN(I)*AREA
301     CONTINUE
C
C       CALCULATE MINIMUM S NOW
C
        IT=0
        ALOW=COEF
        COEF1=AREA/1000./(FLOAT(IM)*30.)
        DO 300 I=IM+1,NTYE
        IT=IT+1
        A3=(SATVOL(I)/COEF-SATVOL(I-IM)/COEF)/(FLOAT(IM)*30.)
        IF(A3.EQ.0.0)A3=.001
        IF(A3.LT.ALOW)THEN
                    ALOW=A3
                    QQP=QP(I)
                    SMIN=ABS(QQP/(A3*COEF))
                    ELSE
                    ENDIF
300     CONTINUE
C
        WRITE(*,*)'  '
C
C
```

```
C       CALCULATE S-VALUE FROM LARGEST DECREASE IN SAT. VOLUME
C
        STOR=ABS(  -QQP/(ALOW*COEF)    )
        WRITE(*,*)'FOR DELV= ',ALOW*FLOAT(IM)*30., '  MILLION M**3'
        WRITE(*,*)'-------------------------------------------------'
        WRITE(*,*)'     '
        WRITE(*,*)'S-VALUE    = ',STOR
        WRITE(*,*)'  '
        WRITE(*,*)' ENTER S-VALUE '
        READ(*,*)STOR
C
C       START INFILTRATION CALCULATION IF TYPE='I'
C       -----------------------------------------
C
        SOM=0.
        CALL GR(SATVOL,STOR,AREA,IM,RAIN,NTYE,FILT,QP,WLMEAN)
        WRITE(*,*)' '
        WRITE(*,*)'  FILE 8.TXT  = INFILTRATION VALUES'
        WRITE(*,*)'  FILE 9.TXT  = RAIN AND INFILTRATION'
C
3000    STOP
        END
C*****************************************************************
      SUBROUTINE GR(VOL,STOR,AREA,IM,R,N,FILTM,QP,WL)
C*****************************************************************
C
C       PROGRAM TO CALCULATE GR=S*VOL +QP
C
        DIMENSION R(34),VOL(34),RAIN(34),FILTM(34)
        DIMENSION WL(34),QP(34),QPOM(34),DIF(34)
C
        COEF=1000000.
        K=0
        DO 2 I=IM+1,N
        K=K+1
        DIF(K)=VOL(I)/COEF-VOL(I-IM)/COEF
        A3=(VOL(I)/COEF-VOL(I-IM)/COEF)/(FLOAT(IM)*30.)
        SOM=0.
        SOMP=0.
        DO 5 J=I-IM+1,I
        SOM=SOM+R(J)
        SOMP=SOMP+QP(J)
5       CONTINUE
        RAIN(K)=SOM
        QPOM(K)=SOMP*30.
        QQP=SOMP/FLOAT(IM)
        RCUBM=SOM*.001*AREA
        FILT=(QQP +COEF*A3*STOR )*(FLOAT(IM)*30.)
        IF(RCUBM.EQ.0.)THEN
        RPER=0.
        ELSE
        RPER=(FILT/RCUBM)*100.
        ENDIF
        FILTM(K)=FILT*1000./AREA
        WRITE(8,200)I,DIF(K),FILTM(K),RAIN(K),WL(I),QPOM(K)
200     FORMAT(I5,F10.3,F15.1,4F10.3)
        WRITE(7,330)RAIN(K),FILTM(K),rper
        WRITE(9,330)RAIN(K),FILTM(K)
330     FORMAT(3F10.2)
2       CONTINUE
        RETURN
        END
```

```
C                        PROGRAM SVF
C                        -----------
C*************************************************************
C      PROGRAM TO CALCULATE:                                  *
C      1.  THE SATURATED VOLUME OF AN AQUIFER ON A MONTHLY BASIS*
C      2.  THE RECHARGE (INFILTRATION) INTO THE AQUIFER.      *
C            PROGRAM DEVELOPED BY G.J. VAN TONDER             *
C              I.G.S., BOX 339, BLOEMFONTEIN                  *
C*************************************************************
C                                                             *
C      THE SVF-METHOD EQUATION TO BE SOLVED:                  *
C      GR + A1*Ti - A2*To - Q = A3*S                          *
C      -----------------------------                         *
C      WHERE  GR = GROUND-WATER RECHARGE                      *
C             A1 = INFLOW LENTH * GRADIENT                    *
C             Ti = INFLOW TRANSMISSIVITY                      *
C             A2 = OUTFLOW LENTH * GRADIENT                   *
C             To = OUTFLOW TRANSMISSIVITY                     *
C              Q = NET ABSTRACTION + ET, ETC.                 *
C             A3 = dV/dt = CHANGE IN SATURATED VOLUME FOR TIME *
C                  dt                                         *
C      INPUT                                                  *
C      -----                                                  *
C      1. NN,NE,N,NMON,NIN,NOUT,BASE,ICODE                    *
C         WHERE  NN=NUMBER OF NODES                           *
C                NE=NUMBER OF ELEMENTS                        *
C                 N=NUMBER OF BOREHOLES                       *
C              NMON=NUMBER OF MONTHS                          *
C               NIN=NUMBER OF INFLOW NODES                    *
C              NOUT=NUMBER OF OUTFLOW NODES                   *
C              BASE=ANY VALUE LESS THAN THE SMALLEST WATER LEVEL*
C             ICODE=1 IF S-VALUES ARE READ IN AT EVERY NODE   *
C      2. INFLOW NODE NUMBERS  (ONLY IF NIN.NE.0)             *
C         OUTFLOW NODE NUMBERS ("    "   "   "  )             *
C         COMMENT:                                            *
C         THE PROGRAM CALCULATES THE GROUND-WATER GRADIENT AT *
C         THESE NODES AS WELL AS THE INFLOW AND OUTFLOW AMOUNT.*
C         THE NET LATERAL INFLOW-OUTFLOW CAN BE CALCULATED    *
C         BY THE USER, IN WHICH CASE NIN=0=NOUT. THIS NET FLOW*
C         MUST THEN BE INCORPORATED IN THE QP-TERM AT 6. BELOW*
C      3. NODAL COORDINATES: L,XX,YY,(SYIELD,ONLY IF ICODE=1) *
C         WHERE  L=NODE NUMBER                                *
C               XX=X-COORDINATE                               *
C               YY=Y-COORDINATE                               *
C           SYIELD=S-VALUE AT EVERY NODE IF ICODE=1           *
C      4. ELEMENT INCIDENCES: LL,IN(I,J) (COUNTER CLOCKWISE)  *
C          WHERE LL=ELEMENT NUMBER                            *
C           IN(I,J)=THREE NODE NUMBERS OF ELEMENT LL          *
C      5. GROUND-WATER LEVEL INFORMATION:  A,X,Y,Z            *
C          WHERE A=BOREHOLE NUMBER                            *
C                X=X-COORDINATE OF BOREHOLE                   *
C                Y=Y-COORDINATE OF BOREHOLE                   *
C                Z=GROUND-WATER LEVELS (NMON OF THEM)         *
C      6. RAINFALL AND ABSTRACTION RATES: RAIN,QP             *
C         RAIN IN MM/MONTH  AND QP IN CUB.M/DAY               *
C      7. SATURATED VOLUME INFORMATION.                       *
C         FOR THE FIRST RUN OF THE PROGRAM THESE DATA CAN     *
C         BE OMIT. THE SATURATED VOLUME RESULTS NEEDED FOR    *
C         THE INFILTRATION CALCULATIONS ARE WRITTEN TO FILE   *
C         8.TXT BY PROGRAM SVF                                *
C         ADD THIS 8.TXT FILE AFTER THE DATA OF POINT 6 ABOVE *
C         IF ICODE=1 THE VOLUME OF GROUND WATER IS CALCULATED *
C         AND NOT THE SATURATED VOLUME                        *
C*************************************************************
```

```
$LARGE
C
C
C       N1 = NUMBER OF NODES
C       N2 = NUMBER OF ELEMENTS
C       N3 = NUMBER OF BOREHOLES
C       N4 = NUMBER OF MONTHS
C
      PARAMETER (N1=600,N2=1000,N3=72,N4=100)
      CHARACTER*20 FNAME
      CHARACTER*1 TYPE,TE
      CHARACTER*6 A(N3)
      DIMENSION X(N3),Y(N3),Z(N3,N4),ZZ(N3),XX(N1),YY(N1)
      DIMENSION IN(N2,3),X1(N3),Y1(N3),WL(N4),QP(N4)
      DIMENSION VAL(N1),SATVOL(N4),RAIN(N4),FILT(N4)
      DIMENSION IIN(N4),IOUT(N4),GRADI(N4),GRADO(N4)
      DIMENSION SA1(N4),SA2(N4),SA3(N4),SYIELD(N1)
C
      OPEN(8,FILE='8.TXT',STATUS='UNKNOWN')
      OPEN(9,FILE='9.TXT',STATUS='UNKNOWN')
      OPEN(10,FILE='10.TXT',STATUS='UNKNOWN')
      OPEN(12,FILE='12.TXT',STATUS='UNKNOWN')
C
C     SCREEN INPUT
C

      WRITE(*,*)'ENTER FILE NAME'
      READ(*,113)FNAME
  113 FORMAT(A20)
      OPEN(5,FILE=FNAME)
      WRITE(*,*)'   VOLUME CAL. =  V  '
      WRITE(*,*)'   INFILT CAL. =  I  '
      READ(*,700)TYPE
 700  FORMAT(A1)
      IF(TYPE.EQ.'I'.OR.TYPE.EQ.'i')THEN
      WRITE(*,*)' ARE THE SAT. VOL. ALREADY CALCULATED (Y/N)'
      READ(*,112)TE
 112  FORMAT(A1)
      ELSE
      ENDIF
      WRITE(*,*)' INTERVAL SIZE IN MONTHS'
      READ(*,*)IM
      COEF=1000000.
      READ(5,*)NN,NE,N,NMON,NIN,NOUT,BASE,ICODE
C
C     INPUT TRIANGULAR INFORMATION
C
C     FIRT THE INFLOW NODE NUMBERS AND THEN THE OUTFLOW NODE NUMBERS
C
      IF(NIN.NE.0)THEN
      READ(5,*)(IIN(I),I=1,NIN)
      ELSE
      ENDIF
      IF(NOUT.NE.0)THEN
      READ(5,*)(IOUT(I),I=1,NOUT)
      ELSE
      ENDIF
C
C     INPUT THE NODAL COORDINATES
C
      DO 1 I=1,NN
      IF(ICODE.EQ.1)THEN
      READ(5,*)L,XX(I),YY(I),SYIELD(I)
      ELSE
```

```
      READ(5,*)L,XX(I),YY(I)
      ENDIF
    1 CONTINUE
C
C     INPUT INCIDENCES
C
      DO 2 I=1,NE
      READ(5,*)L,(IN(I,J),J=1,3)
    2 CONTINUE
C
C     INPUT WATER LEVEL INFORMATION
C
      DO 3 I=1,N
      READ(5,50)A(I),X(I),Y(I)
   50 FORMAT(A6,2F11.0)
      READ(5,*)(Z(I,J),J=1,NMON)
    3 CONTINUE
C
C     RAINFALL INPUT IN MM/MAAND AND ABSTRACTION INPUT IN M**3/DAY
C
      READ(5,*)(RAIN(I),QP(I),I=1,NMON)
C
C     INPUT SATURATED VOLUM INFORMATION FROM FILE 8.TXT
C
      IF(TE.EQ.'Y'.or.TE.EQ.'y')THEN
      READ(5,*)(L,SATVOL(I),GRADI(I),GRADO(I),WL(I),I=1,NMON)
      READ(5,*)AREA
      ELSE
      ENDIF
      WRITE(*,*)' FINISH WITH DATA READING'
C
C     START PROGRAM LOOP
C
      IF(TE.EQ.'Y'.OR.TE.EQ.'y')GO TO 2000
      IT=0
      DO 100 L=1,NMON
      IT=IT+1
      ITEL=0
      DO 4 I=1,N
      IF(Z(I,L).NE.0.)THEN
      ITEL=ITEL+1
      X1(ITEL)=X(I)
      Y1(ITEL)=Y(I)
      ZZ(ITEL)=Z(I,L)
      ELSE
      ENDIF
    4 CONTINUE
C
C     INTERPOLATION STARTS
C
      SOMWL=0.
      DO 5 I=1,NN
      XP=XX(I)
      YP=YY(I)
      CALL  AGM(X1,Y1,ZZ,ITEL,4,1,XP,YP,SS)
      VAL(I)=SS
      SOMWL=SOMWL+SS
    5 CONTINUE
      WL(L)=SOMWL/NN
C
C     CALCULATE SATURATED VOLUME OF MATERIAL
C     --------------------------------------
      CALL VOL(NN,NE,XX,YY,VAL,IN,SVOL,AREA,BASE,SYIELD,ICODE)
      SATVOL(L)=SVOL
```

```
C     WRITE(*,*)L,SVOL
C
C     CALCULATES GRADIENT DIFFERENCE BETWEEN TWO SIDES
C     ------------------------------------------------------------
      CALL TRAN(NE,IN,XX,YY,VAL,NIN,NOUT,IIN,IOUT,GRI,GRO)
      GRADI(L)=GRI
      GRADO(L)=GRO
      WRITE(8,301)L,SVOL,GRI,GRO,WL(L)
      WRITE(*,301)L,SVOL,GRI,GRO,WL(L)
 301  FORMAT(I5,E20.10,2E15.5,E15.6)
 100  CONTINUE
      WRITE(8,702)AREA
 702  FORMAT(F15.5)
C
      IF(TYPE.EQ.'V'.OR.TYPE.EQ.'v')THEN
      WRITE(*,*)'FINISH WITH VOLUME CALCULATION'
      WRITE(*,*)' DATA ARE IN FILE 8.TXT'
      WRITE(*,*)'  '
      GO TO 3000
      ELSE
      ENDIF
 2000 CONTINUE
C
C
C     IF TYPE = I STARTS RECHARGE CALCULATIONS
C     ----------------------------------------
C     FIRST TRY TO OBTAIN AN ESTIMATE OF THE S-VALUE
C
      DISO=0.
      DISI=0.
      IF(NOUT.EQ.0)THEN
      DISO=0.
      ELSE
      DO 401 I=1,NOUT-1
      D1=( XX(IOUT(I+1))-XX(IOUT(I)) )**2
      D2=( YY(IOUT(I+1))-YY(IOUT(I)) )**2
      DISO=SQRT(D1+D2)+DISO
401   CONTINUE
      ENDIF
      IF(NIN.EQ.0)THEN
      DISI=0.
      ELSE
      DO 451 I=1,NIN-1
      D1=( XX(IIN(I+1))-XX(IIN(I)) )**2
      D2=( YY(IIN(I+1))-YY(IIN(I)) )**2
      DISI=SQRT(D1+D2)+DISI
  451 CONTINUE
      ENDIF
      WRITE(*,*)'INFLOW LENGHT = ',DISI,'  OUTFLOW LENGHT= ',DISO
      WRITE(*,*)'    '
C
C     ENTER T-VALUES AT BOUNDARIES
C
      IF(NIN.NE.0)THEN
      WRITE(*,*)'ENTER T-VALUE AT INFLOW BOUNDARY'
      READ(*,*)TRANSI
      ELSE
      TRANSI=0.
      ENDIF
      IF(NOUT.NE.0)THEN
      WRITE(*,*)'ENTER  T-VALUE AT OUTFLOW BOUNDARY'
      READ(*,*)TRANSO
      ELSE
      TRANSO=0.
```

```
      ENDIF
C
C     CALCULATION OF A PROBABLE MEAN S-VALUE
C
      IF(IM.GT.2.OR.ICODE.EQ.1)GO TO 407
      SOMSY=0.
      LK=0
      DO 310 I=IM+1,NMON
      LK=LK+1
      SA1(LK)=DISI*(GRADI(I)+GRADI(I-IM))/2.
      SA2(LK)=DISO*(GRADO(I)+GRADO(I-IM))/2.
      SA3(LK)=(SATVOL(I)/COEF-SATVOL(I-IM)/COEF)/(FLOAT(IM)*30.)
 310  CONTINUE
      DO 320 J=1,3
      VOLMIN=SA3(1)
      IK=1
      DO 330 I=2,LK
      IF(SA3(I).LT.VOLMIN)THEN
      VOLMIN=SA3(I)
      IK=I
      ELSE
      ENDIF
      SOMP=0.
      DO 256 K=IK,IK+IM -1
      SOMP=SOMP+QP(K+1)
256   CONTINUE
 330  CONTINUE
      SSY=ABS((SA1(IK)*TRANSI-SA2(IK)*TRANSO-QP(IK+1))/(SA3(IK)*COEF))
      AC=FLOAT(IM)*30.*SA3(IK)
      WRITE(*,*)' FOR DELV = ',AC, ' MILLION CBM :   S = ',SSY
      SOMSY=SOMSY+SSY
      SA3(IK)=1.0E+9
 320  CONTINUE
      AMEANS=SOMSY/3.
      WRITE(*,*)'  '
      WRITE(*,*)' PROBABLE MEAN S-VALUE = ',AMEANS
      WRITE(*,*)' ------------------------------------------------'
      WRITE(*,*)'  '
 407  IF(ICODE.NE.1)THEN
      WRITE(*,*)' ENTER S-VALUE '
      READ(*,*)STOR
      ELSE
      ENDIF
C
C     START INFILTRATION CALCULATION
C     ------------------------------
C
      SOM=0.
      CALL INF(SATVOL,STOR,AREA,IM,TRANSI,TRANSO,RAIN,NMON,FILT,
     $ DISI,DISO,GRADI,GRADO,WL,QP,ICODE)
      WRITE(*,*)' AREA = ',AREA
      WRITE(*,*)' '
      WRITE(*,*)'  FILE 8.TXT  = INFILTRATION VALUES'
      WRITE(*,*)'  FILE 9.TXT  = RAIN AND INFILTRATION'
      WRITE(*,*)'  FILE 10.TXT = DATA FOR STATMEN1.EXE'
C
 3000 STOP
      END
C*************************************************************
      SUBROUTINE AGM(X,Y,T,N,NUM,IWEIG,X1,Y1,SS)
C*************************************************************
C
C     SUBROUTINE TO CALULATE A VALUE WITH A WEIGHTED
C     DISTANCE METHOD
```

```
C
C     IWEIG = 1 FOR  1/D
C     IWEIG = 2 FOR  1/D**2
C     IWEIG = 3 FOR  (1-D/1.1*D(MAX))**2/(D/1.1*D(MAX))**2
C
      PARAMETER (N1=600,N2=1000,N3=72,N4=100)
      DIMENSION X(N3),Y(N3),T(N3),XX(20),YY(20),TT(20)
      DIMENSION DIST(N3)
      DO 891 I=1,N
      H=(X(I)-X1)**2+(Y(I)-Y1)**2
      DIST(I)=SQRT(H)
  891 CONTINUE
C
      DO 863 I=1,NUM
      IC=1
      DO 689 KL=2,N
      IF(DIST(KL).LT.DIST(IC))IC=KL
  689 CONTINUE
      XX(I)=X(IC)
      YY(I)=Y(IC)
      TT(I)=T(IC)
      IF(I.EQ.NUM)DM=DIST(IC)
      DIST(IC)=+9.0E+20
  863 CONTINUE
C
       SUM=0.
C
      DO 1 I=1,NUM
      DI=SQRT((XX(I)-X1)**2 + (YY(I)-Y1)**2)
      IF(DI.EQ.0.)THEN
      SS=TT(I)
      RETURN
      ELSE
      ENDIF
      IF(IWEIG.EQ.1)DIST(I)=1./DI
      IF(IWEIG.EQ.2)DIST(I)=1./(DI*DI)
      IF(IWEIG.EQ.3)DIST(I)=(1.-DI/(1.1*DM))**2/(DI/(1.1*DM))**2
      SUM=SUM+DIST(I)
    1 CONTINUE
C
      SS=0.
      DO 2 I=1,NUM
      DIST(I)=DIST(I)/SUM
      SS=DIST(I)*TT(I)+SS
    2 CONTINUE
      RETURN
      END
C*********************************************************************
      SUBROUTINE VOL(NN,NE,X,Y,WL,IN,SVOL,AREA,BASE,SYIELD,ICODE)
C*********************************************************************
C
C     CALCULATION OF SATURATED VOLUME OF MATERIAL
C
      PARAMETER (N1=600,N2=1000,N3=72,N4=100)
      DIMENSION WL(N1),X(N1),Y(N1),B(N1),IN(N2,3)
      DIMENSION SYIELD(N1)
      DO 201 I=1,NN
      B(i)=BASE
      IF(ICODE.NE.1)SYIELD(I)=1.
  201 CONTINUE
      SOM=0.
      SOMVD=0.
      SOM1=0.
      SOM2=0.
```

```
      DO 1 I=1,NE
      IA=IN(I,1)
      IB=IN(I,2)
      IC=IN(I,3)
      SS=(SYIELD(IA)+SYIELD(IB)+SYIELD(IC))/3.
      VD=SS*ABS( WL(IA)+WL(IB)+WL(IC)-B(IA)-B(IB)-B(IC) )
      VD=VD/3.
      IF (VD.LT.0.0) VD = 0.0
      SOMVD=SOMVD+VD
      B1=X(IB)*Y(IC)-X(IC)*Y(IB)
      A1=X(IA)*Y(IB)-X(IA)*Y(IC)-Y(IA)*X(IB)+Y(IA)*X(IC)+B1
      AREA=.5*A1
      VOLW=AREA*VD*SS
      SOM=SOM+VOLW
      SOM1=SOM1 + AREA*VD
      SOM2=SOM2+AREA
    1 CONTINUE
      GVD=SOMVD/NE
      SVOL=SOM1
      AREA=SOM2
      RETURN
      END
C*****************************************************************
      SUBROUTINE INF(VOL,STOR,AREA,IM,TRANSI,TRANSO,R,N,FILTM,DISI,
     $  DISO,GRADI,GRADO,WL,QP,ICODE)
C*****************************************************************
C
C     PROGRAM TO CALCULATE INFILTRATION I= QP + (A2*T2-A1*T1) +A3*S
C
      PARAMETER (N1=600,N2=1000,N3=72,N4=100)
      DIMENSION R(N4),DIF(N4),VOL(N4),RAIN(N4),FILTM(N4)
      DIMENSION GRADI(N4),GRADO(N4),WL(N4),QP(N4),QPOM(N4)
C
      WRITE(8,*)'  #   dV(10**6)  GR(mm)     RAIN    WL       Q(m**3)'
      WRITE(8,398)
  398 FORMAT(1H ,70('-'))
C
      IF(ICODE.EQ.1)STOR=1.
      COEF=1000000.
      K=0
      SUMTI=0.
      SUMTO=0.
      DO 2 I=IM+1,N
      K=K+1
      DIF(K)=VOL(I)/COEF-VOL(I-IM)/COEF
      A1=DISI*(GRADI(I)+GRADI(I-IM))/2.
      A2=DISO*(GRADO(I)+GRADO(I-IM))/2.
      A3=(VOL(I)/COEF-VOL(I-IM)/COEF)/(FLOAT(IM)*30.)
      SUMTI=SUMTI+A1*TRANSI
      SUMTO=SUMTO+A2*TRANSO
      SOM=0.
      SOMP=0.
      DO 5 J=I-IM+1,I
      SOM=SOM+R(J)
      SOMP=SOMP+QP(J)
    5 CONTINUE
      RAIN(K)=SOM
      QPOM(K)=SOMP*30.
      QQP=SOMP/FLOAT(IM)
      RCUBM=SOM*.001*AREA
      FILT=(QQP+(A2*TRANSO-A1*TRANSI) +COEF*A3*STOR )*(FLOAT(IM)*30.)
      IF(RCUBM.EQ.0.)THEN
      RPER=0.
      ELSE
```

```
      RPER=(FILT/RCUBM)*100.
      ENDIF
      FILTM(K)=FILT*1000./AREA
      WRITE(8,200)I,DIF(K),FILTM(K),RAIN(K),WL(I),QPOM(K)
  200 FORMAT(I5,F10.3,F10.1,2F10.3,2E15.6)
      WRITE(9,330)RAIN(K),FILTM(K)
  330 FORMAT(2F10.2)
    2 CONTINUE
C
       SUMTI=SUMTI/FLOAT(K)
       SUMTO=SUMTO/FLOAT(K)
       WRITE(*,*)'  '
       WRITE(*,*)' MEAN LATERAL INFLOW(m**3/d)  = ',SUMTI
       WRITE(*,*)' MEAN LATERAL OUTFLOW(m**3/d) = ',SUMTO
C
C     WRITE TO FILE 10 FOR STATMEN1 CALCULATION FOR LAGS
C
      NN=K
      WRITE(10,22)NN,1
      WRITE(12,22)NN,1
      WRITE(10,600)(DIF(J),J=1,NN)
      WRITE(12,600)(FILTM(J),J=1,NN)
      WRITE(10,22)NN,1
      WRITE(12,22)NN,1
      WRITE(10,600)(RAIN(J),J=1,NN)
      WRITE(12,600)(RAIN(J),J=1,NN)
   22 FORMAT(I5,2X,I1)
  600 FORMAT(F15.3)
      RETURN
      END
C*****************************************************************
      SUBROUTINE TRAN(NE,IN,X,Y,Z,NIN,NOUT,IIN,IOUT,GRI,GRO)
C*****************************************************************
C
C     PROGRAM TO CALCULATE GRADIENT VALUES
C
      PARAMETER (N1=600,N2=1000,N3=72,N4=100)
        DIMENSION X(N1),Y(N1),Z(N1),IN(N2,3),XI(3),YI(3),ZI(3)
        DIMENSION IIN(N4),IOUT(N4)
C
      IF(NIN.NE.0)THEN
      SOM1=0.
      DO 200 II=1,NIN
      DO 100 L=1,NE
      I1=IN(L,1)
      I2=IN(L,2)
      I3=IN(L,3)
      IF(IIN(II).EQ.I1.OR.IIN(II).EQ.I2.OR.IIN(II).EQ.I3)THEN
      DO 51 I=1,3
      J = IN(L,I)
        ZI(I)=Z(J)
      XI(I) = X(J)
   51 YI(I) = Y(J)
      DD=XI(2)*YI(3)-XI(3)*YI(2)-XI(1)*(YI(3)-YI(2))
     & + YI(1)*(XI(3)-XI(2))
      GX=ZI(1)*(YI(2)-YI(3))+ZI(2)*(YI(3)-YI(1))+ZI(3)*(YI(1)-YI(2))
      GY=ZI(1)*(XI(3)-XI(2))+ZI(2)*(XI(1)-XI(3))+ZI(3)*(XI(2)-XI(1))
      GX=-GX/DD
      GY=-GY/DD
      GXY=SQRT(GX*GX+GY*GY)
      SOM1=SOM1+GXY
      GO TO 200
      ELSE
      ENDIF
```

```
100   CONTINUE
200   CONTINUE
      SOM1=SOM1/FLOAT(NIN)
      GRI=SOM1
      ELSE
      GRI=0.
      ENDIF
C
      IF(NOUT.NE.0)THEN
      SOM1=0.
      DO 201 II=1,NOUT
      DO 101 L=1,NE
      I1=IN(L,1)
      I2=IN(L,2)
      I3=IN(L,3)
      IF(IOUT(II).EQ.I1.OR.IOUT(II).EQ.I2.OR.IOUT(II).EQ.I3)THEN
      DO 52 I=1,3
      J = IN(L,I)
        ZI(I)=Z(J)
      XI(I) = X(J)
 52   YI(I) = Y(J)
      DD=XI(2)*YI(3)-XI(3)*YI(2)-XI(1)*(YI(3)-YI(2))
     & + YI(1)*(XI(3)-XI(2))
      GX=ZI(1)*(YI(2)-YI(3))+ZI(2)*(YI(3)-YI(1))+ZI(3)*(YI(1)-YI(2))
      GY=ZI(1)*(XI(3)-XI(2))+ZI(2)*(XI(1)-XI(3))+ZI(3)*(XI(2)-XI(1))
      GX=-GX/DD
      GY=-GY/DD
      GXY=SQRT(GX*GX+GY*GY)
      SOM1=SOM1+GXY
      GO TO 201
      ELSE
      ENDIF
101   CONTINUE
201   CONTINUE
      SOM1=SOM1/FLOAT(NOUT)
      GRO=SOM1
      ELSE
      GRO=0.
      ENDIF
      RETURN
      END
```

```
C                              PROGRAM FORMULA
C                              ---------------
C         THIS PROGRAM ESTIMATES THE EXPLOITATION POTENTIAL OF AN
C         AQUIFER IN THE KAROO. THE RECHARGE ESTIMATE MUST BE SEEN
C         AS THE FIRST STEP IN OBTAINING A RELIABLE VALUE OF THE
C         EXPLOITATION POTENTIAL OF AN AQUIFER. A TRUSTWORTHY ESTIMATE
C         MAY ONLY BE OBTAINED AFTER A NUMBER OF YEARS DURING WHICH THE
C         AQUIFER IS OPERATED AND THOROUGH MEASUREMENTS ARE MADE REGARDING
C         THE GROUND-WATER LEVEL FLUCTUATIONS AND ABSTRACTION IN THE
C         AQUFER.
C         INPUT
C         -----
C         1. ANNUAL RAINFALL VALUES AS OBTAINED FROM THE CCWR (PMB,NATAL)
C            ENTER THIS DATA IN A FILE NAMED "FORMULA.DAT"
C
      DIMENSION X(100),Y(100),R(100)
      OPEN(5,FILE='FORMULA.DAT')
      OPEN(8,FILE='8.txt',STATUS='UNKNOWN')
C
C     SCREEN INPUT
C
      WRITE(*,*)' NUMBER OF YEARS FOR WHICH RECHARGE IS TO BE CALC?'
      READ(*,*)IRET
      WRITE(*,*)'  % OF AREA WITH A THICK SOIL COVER'
      READ(*,*)THICK
      WRITE(*,*)'  % OF AREA WITH A THIN SOIL COVER( < 200 mm)'
      READ(*,*)THIN
      WRITE(*,*)'  % OF AREA WITH A ALLUVIUM COVER'
      READ(*,*)ALL
      INT=IRET/2
      L=0
C
C     READ ANNUAL RAINFALL DATA
C
      DO 2 I=1,100
      READ(5,*,END=10)X(I)
      L=L+1
2     CONTINUE
10    N=L
C
C     RANK DATA
C
      MIDP=L/2
      MAX=0.
      M=1
  3   DO 1 I=1,N
      IF(X(I).GT.MAX)THEN
      MAX=X(I)
      K=I
      ELSE
      ENDIF
1     CONTINUE
      Y(M)=X(K)
      F=FLOAT(M)*100./FLOAT(N+1)
      AN=FLOAT(N)
      AM=FLOAT(M)
      M=M+1
      X(K)=0.
      MAX=0.
      IF(M.NE.N)GO TO 3
      SUM=0.
      DO 20 I=1,IRET
      R(I)=Y(MIDP-INT+I-1)
      GR1=.023*(R(I)-51)*THICK/100.
```

```
      GR2=.06*(R(I)-120)*THIN/100.
      GR3=.12*(R(I)-20)*ALL/100.
      S1=GR1+GR2+GR3
      SUM=SUM+S1
      WRITE(8,50)R(I),S1
50    FORMAT(2F10.2)
20    CONTINUE
      AMEAN=SUM/FLOAT(IRET)
      WRITE(*,*)'   '
      WRITE(*,60)AMEAN
60    FORMAT(1H0,' MEAN RECHARGE FOR THE YEARS = ',F10.2,' mm')
      STOP
      END
```