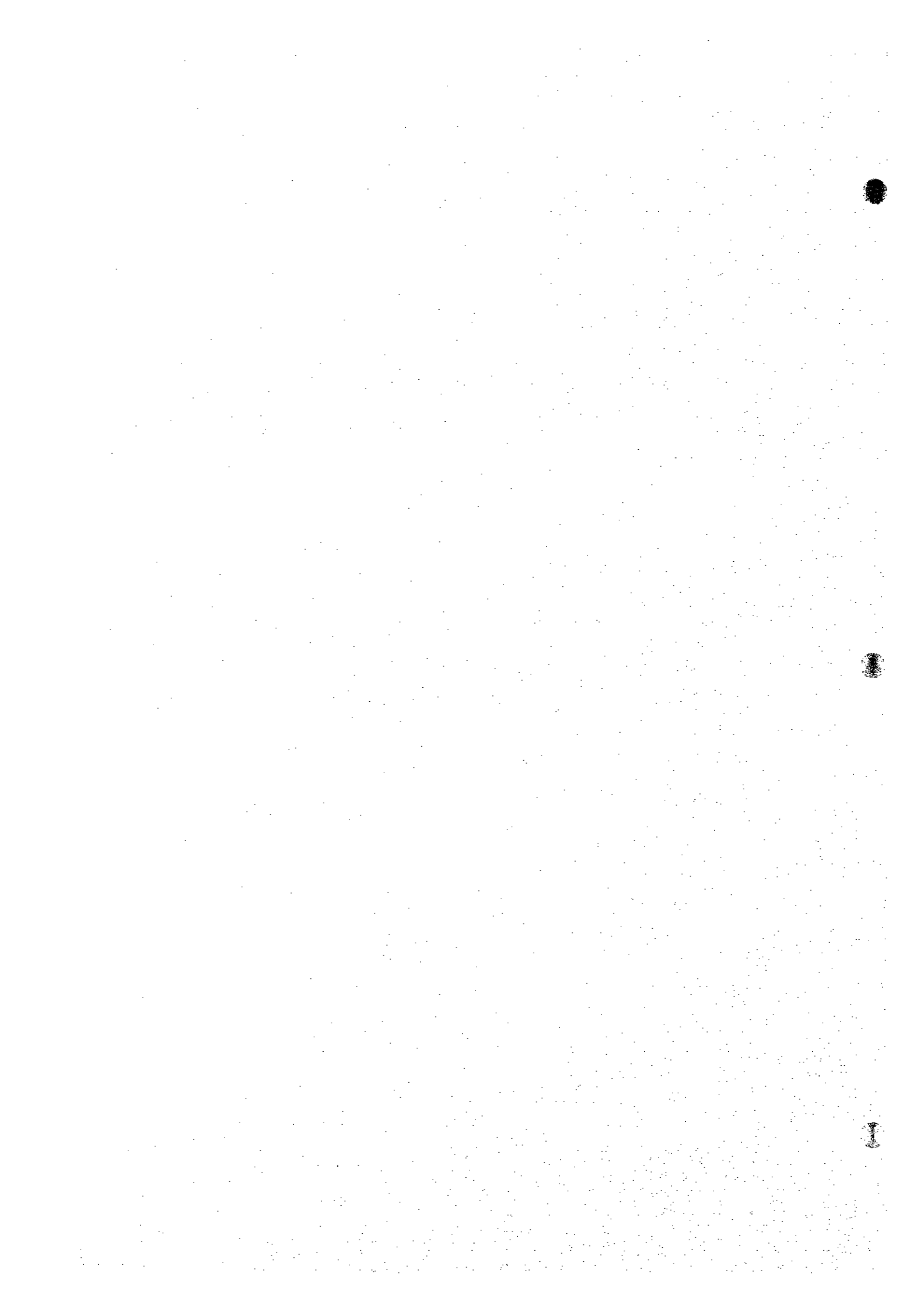
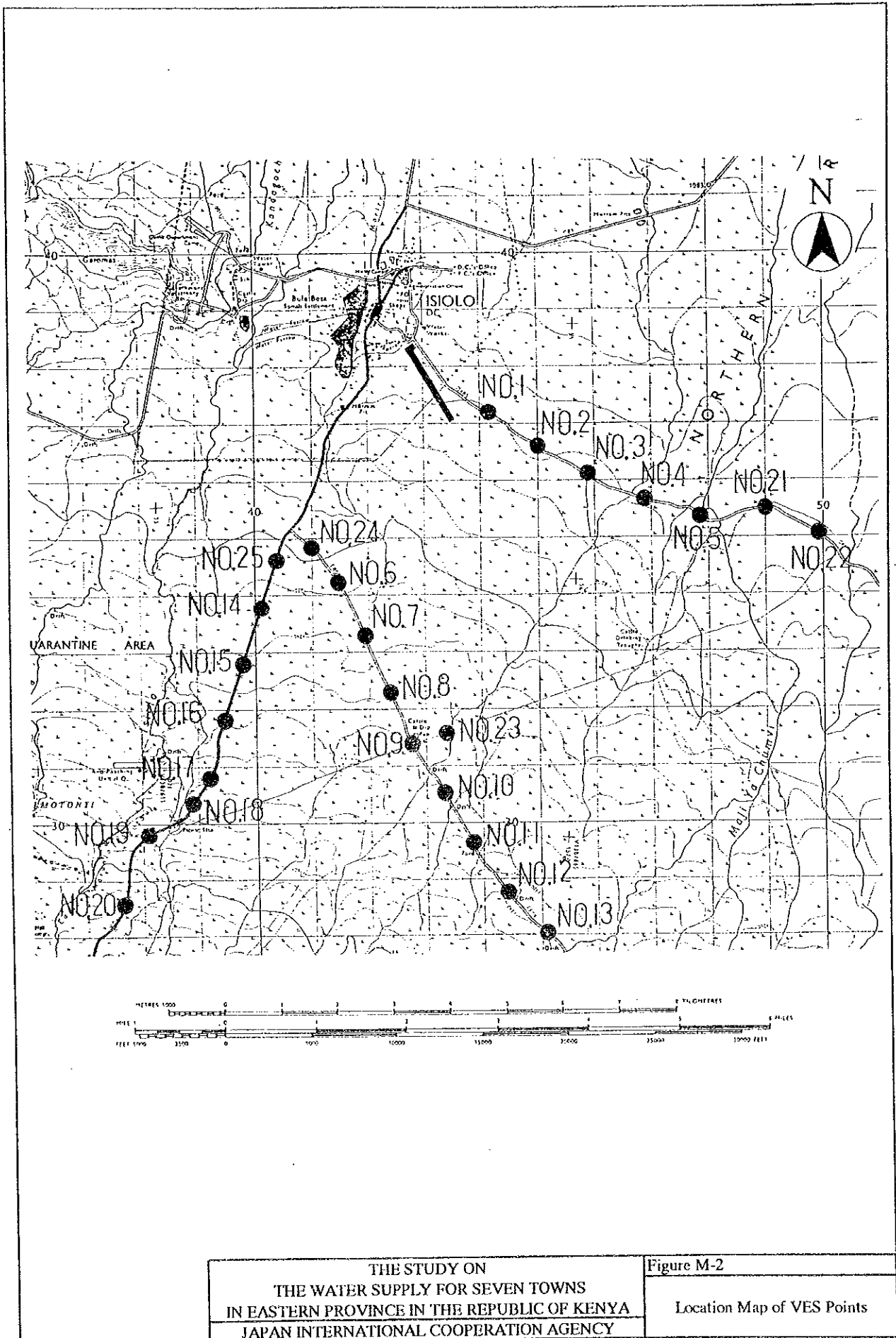


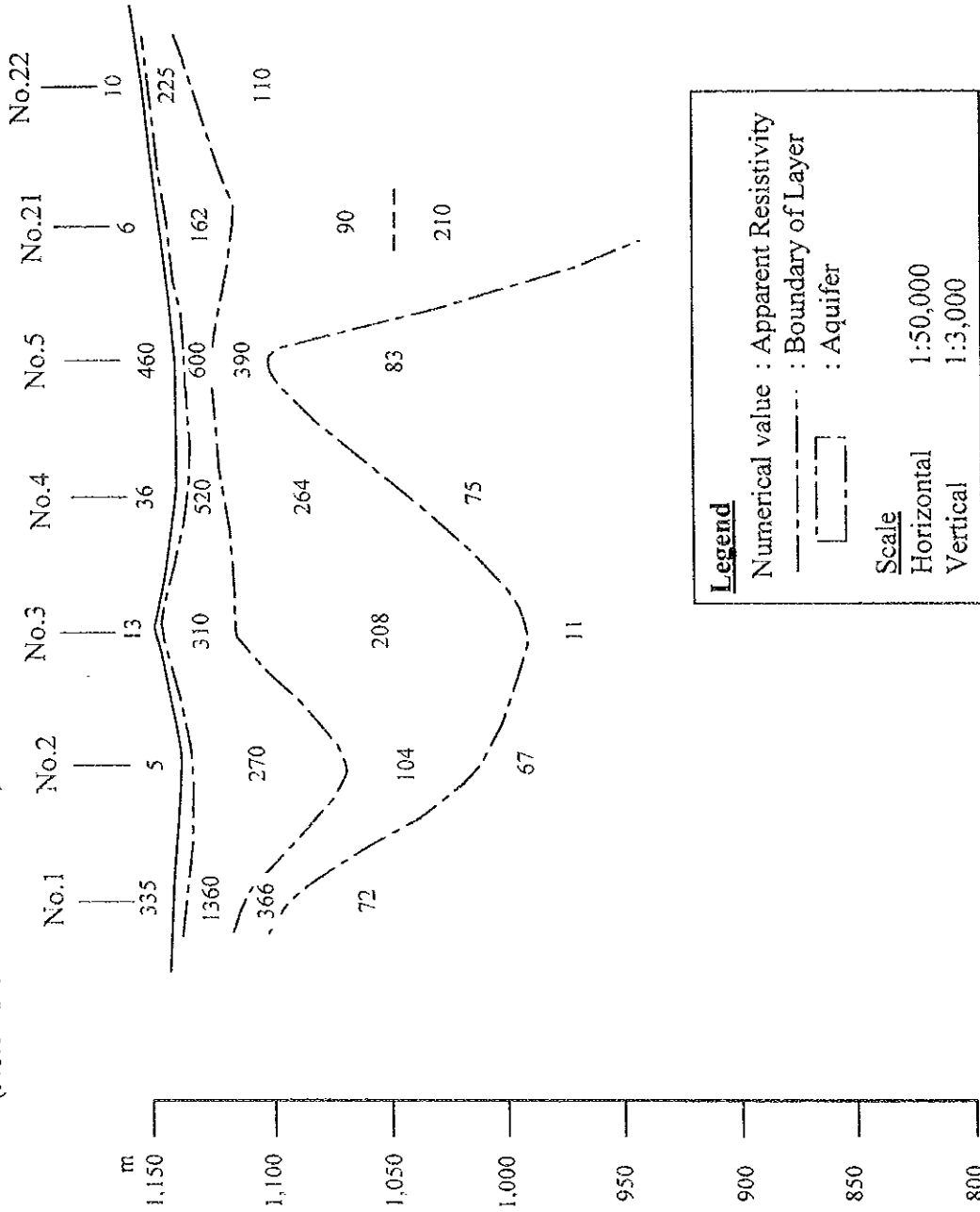
FIGURES





<p>THE STUDY ON THE WATER SUPPLY FOR SEVEN TOWNS IN EASTERN PROVINCE IN THE REPUBLIC OF KENYA JAPAN INTERNATIONAL COOPERATION AGENCY</p>	<p>Figure M-2 Location Map of VES Points</p>
--	--

(No.1 - No.22 Profile Line)



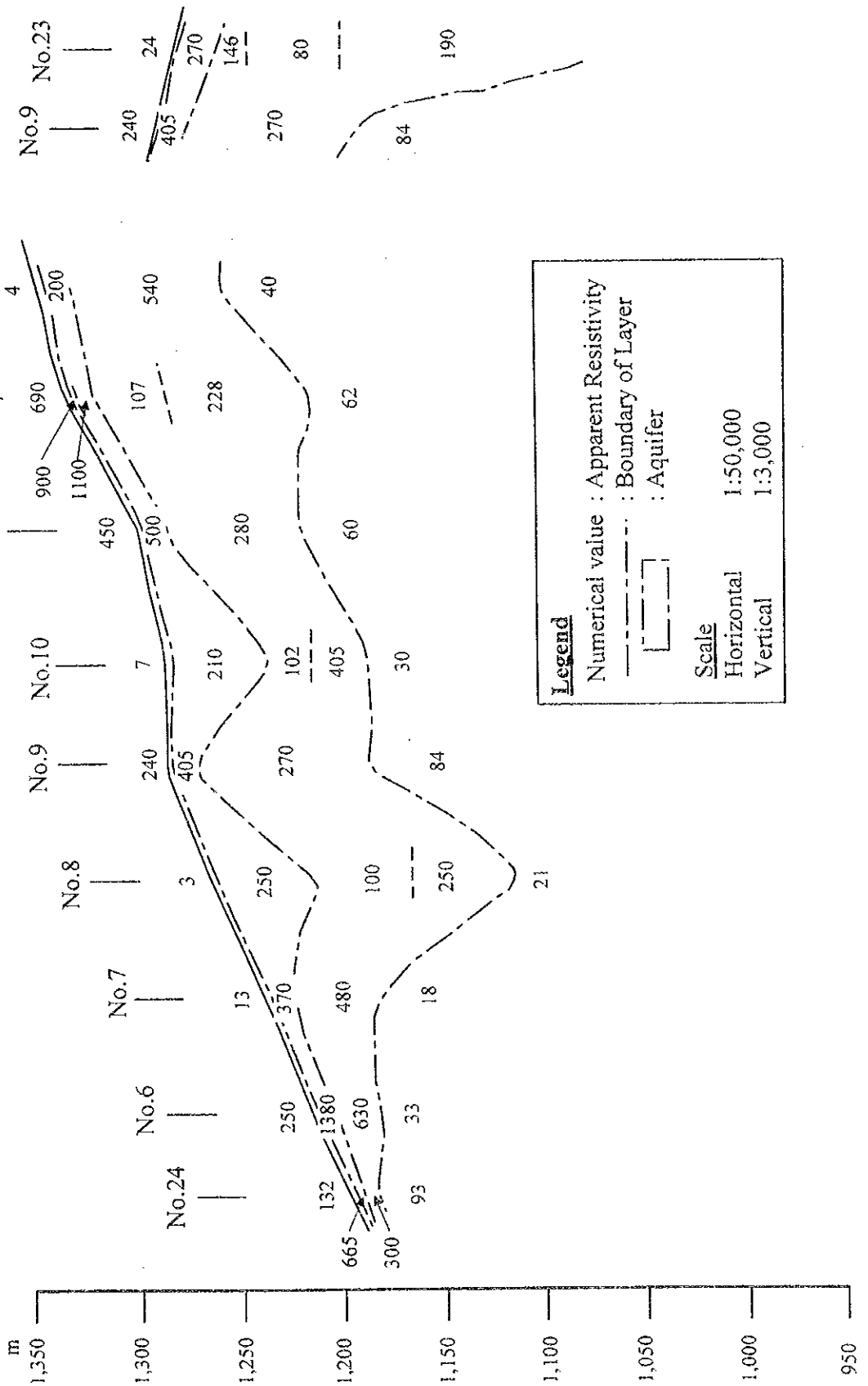
Legend

Numerical value : Apparent Resistivity
 - - - - - : Boundary of Layer
 [] : Aquifer

Scale
 Horizontal 1:50,000
 Vertical 1:3,000

THE STUDY ON THE WATER SUPPLY FOR SEVEN TOWNS IN EASTERN PROVINCE IN THE REPUBLIC OF KENYA JAPAN INTERNATIONAL COOPERATION AGENCY	Figure M-3
	Resistivity Sections (1)

(No.24 - No.13, No.9 - No.23 Profile Line)

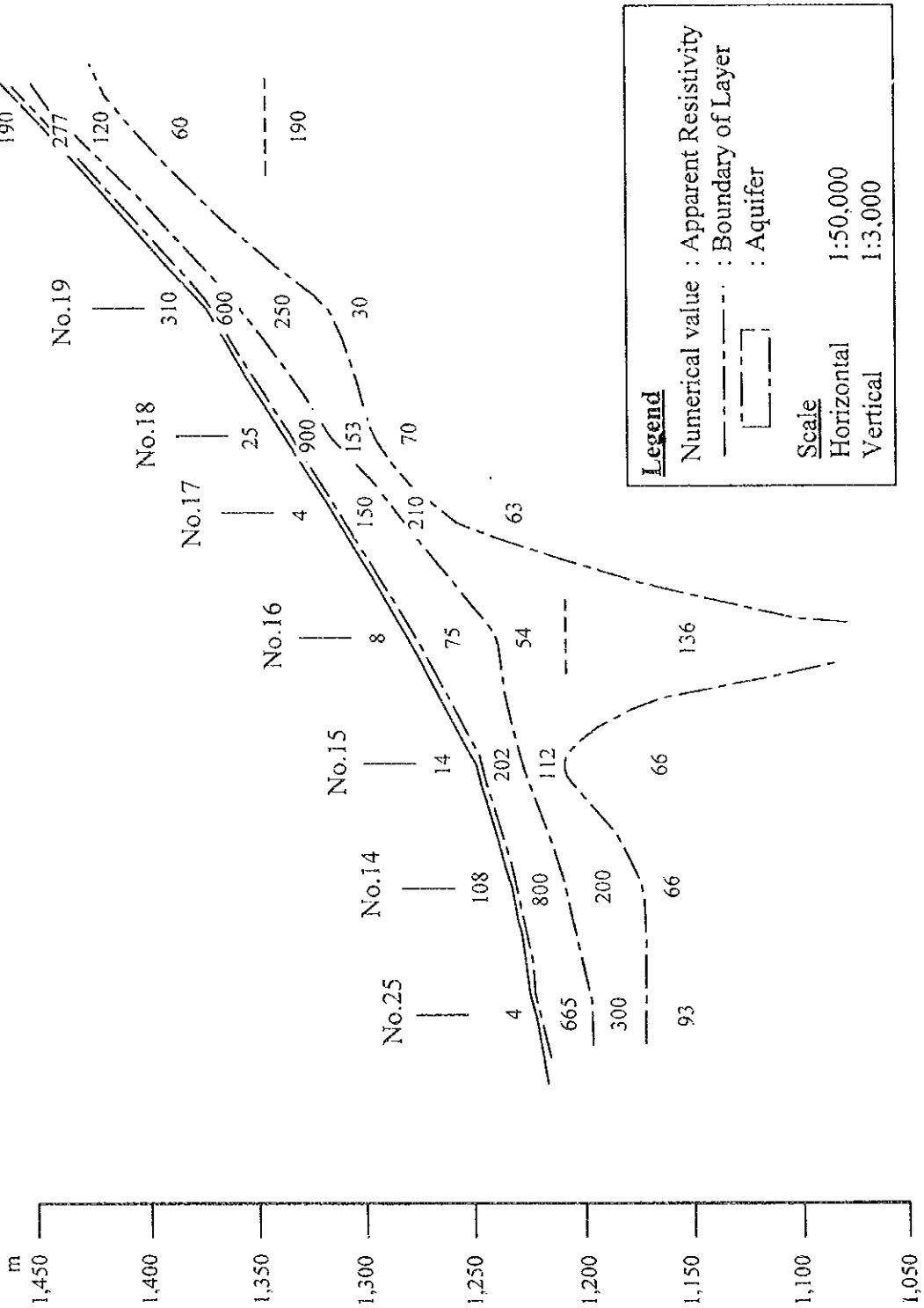


Legend
 Numerical value : Apparent Resistivity
 - - - - - : Boundary of Layer
 [] : Aquifer
 Scale
 Horizontal 1:50,000
 Vertical 1:3,000

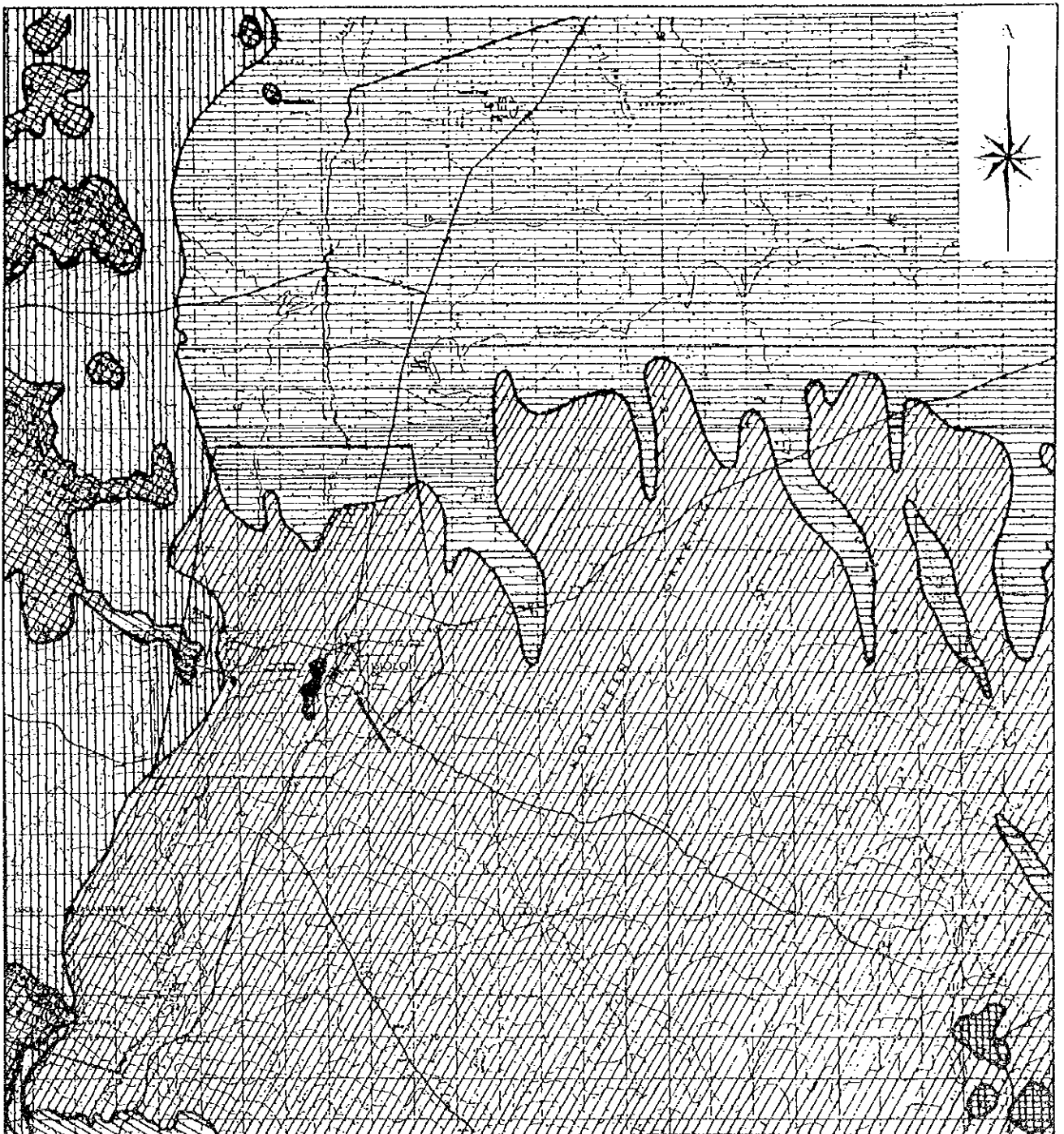
THE STUDY ON
 THE WATER SUPPLY FOR SEVEN TOWNS
 IN EASTERN PROVINCE IN THE REPUBLIC OF KENYA
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Figure M-4
 Resistivity Sections (2)

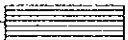


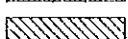
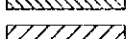

(No.25 - No.20 Profile Line)



<p>THE STUDY ON THE WATER SUPPLY FOR SEVEN TOWNS IN EASTERN PROVINCE IN THE REPUBLIC OF KENYA JAPAN INTERNATIONAL COOPERATION AGENCY</p>	Figure M-5
	Resistivity Sections (3)

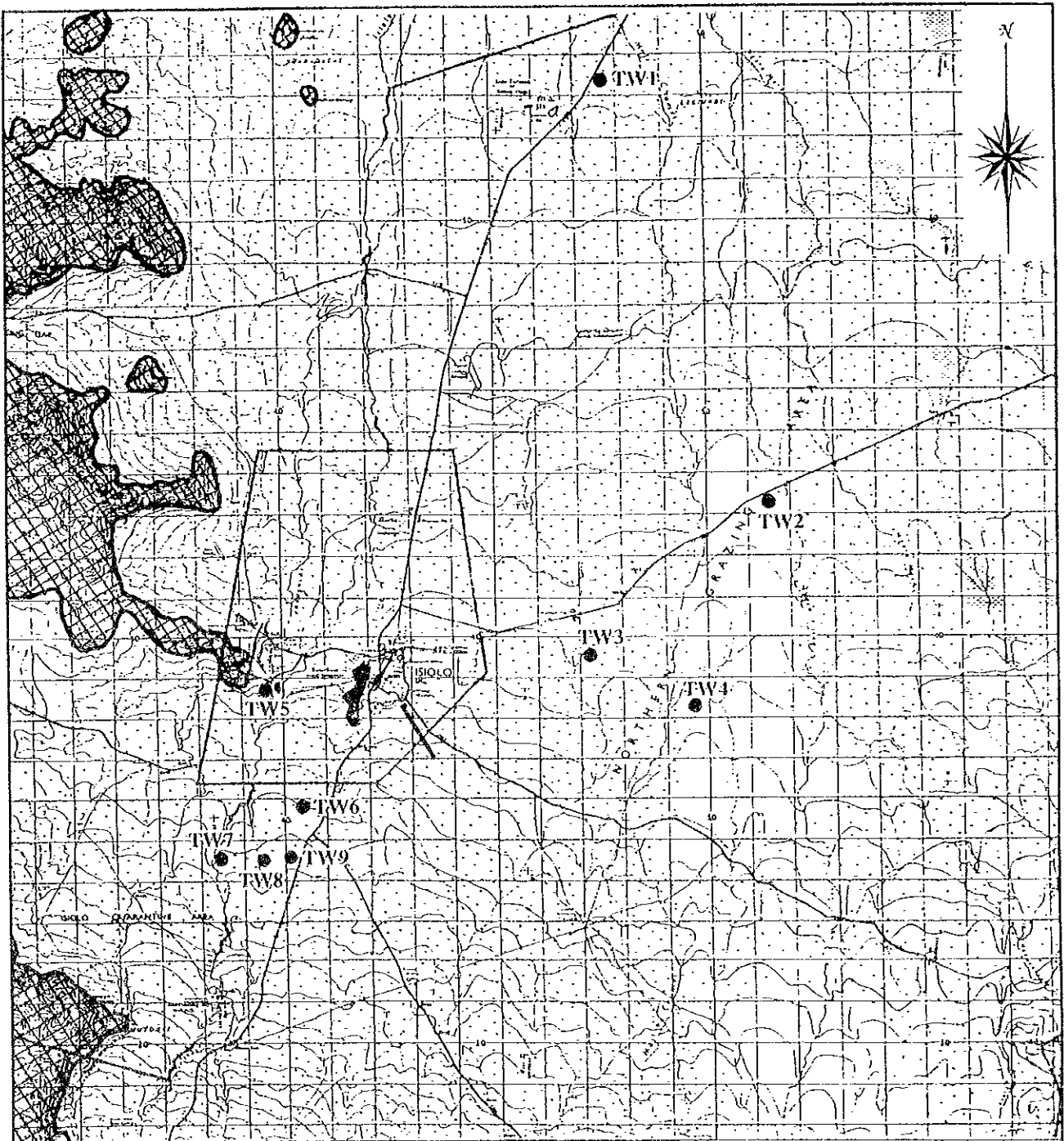


Legend

- | | | |
|--------------|-------------------|--|
| Quaternary | Recent | <ul style="list-style-type: none">  Alluvial  Colluvium |
| | Pleistocene Epoch | <ul style="list-style-type: none">  Parasitic Volcano  Upper Kenya Volcanic Series  Lower Nyambeni Volcanic Series |
| Pre-Cambrian | | <ul style="list-style-type: none">  Basement System |

THE STUDY ON
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Figure M-6
 Geological Map in Isolo Area

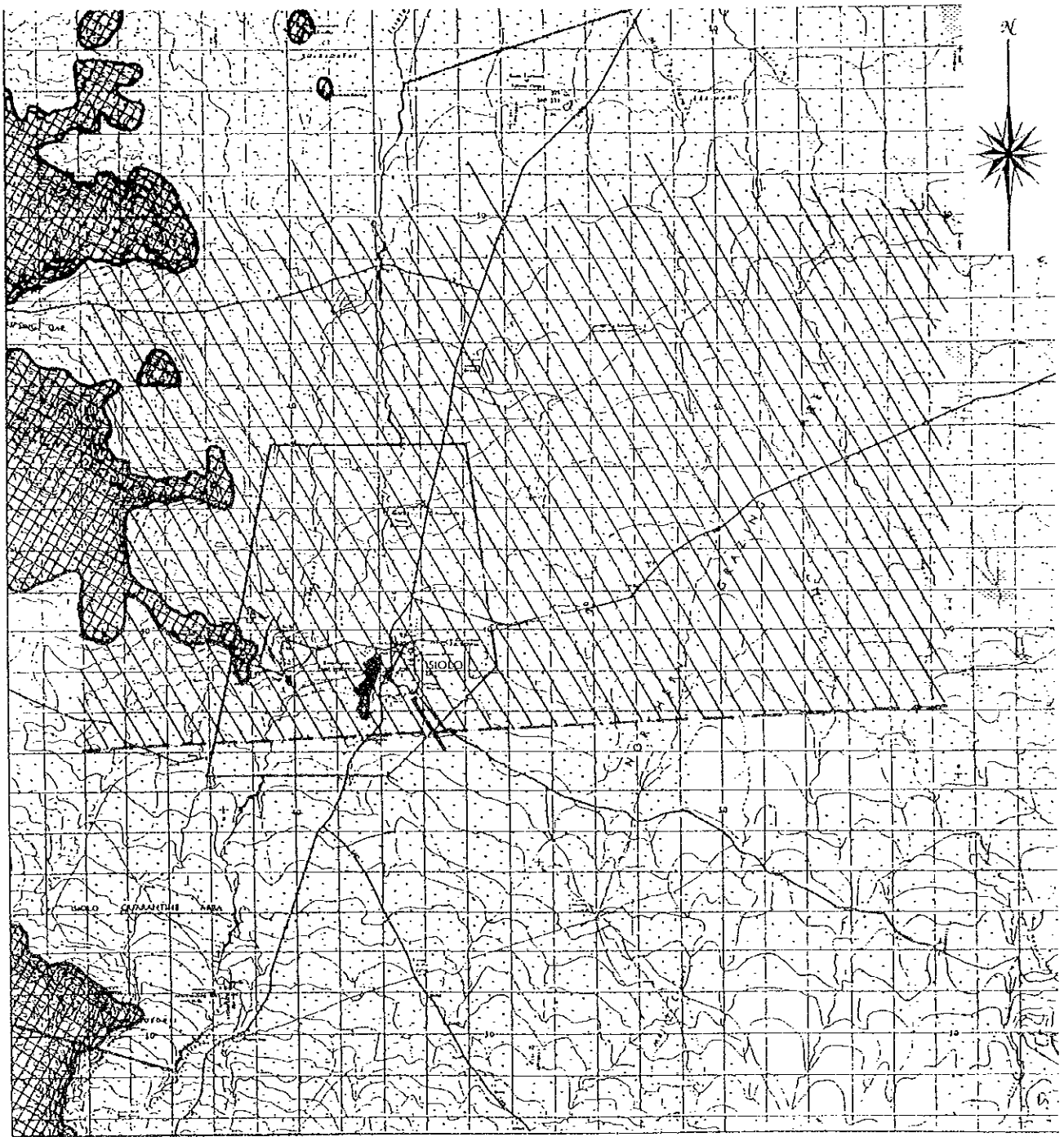


Legend

● TW 1 - TW 9 : Existing Wells


▨ : Basement


<p>THE STUDY ON THE WATER SUPPLY FOR SEVEN TOWNS IN EASTERN PROVINCE IN THE REPUBLIC OF KENYA JAPAN INTERNATIONAL COOPERATION AGENCY</p>	<p>Figure M-7 Location Map of Existing Wells</p>
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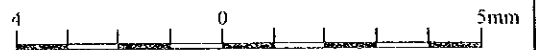


Legend

----- : Estimated Border of Saline Aquifer

 : Saline Aquifer

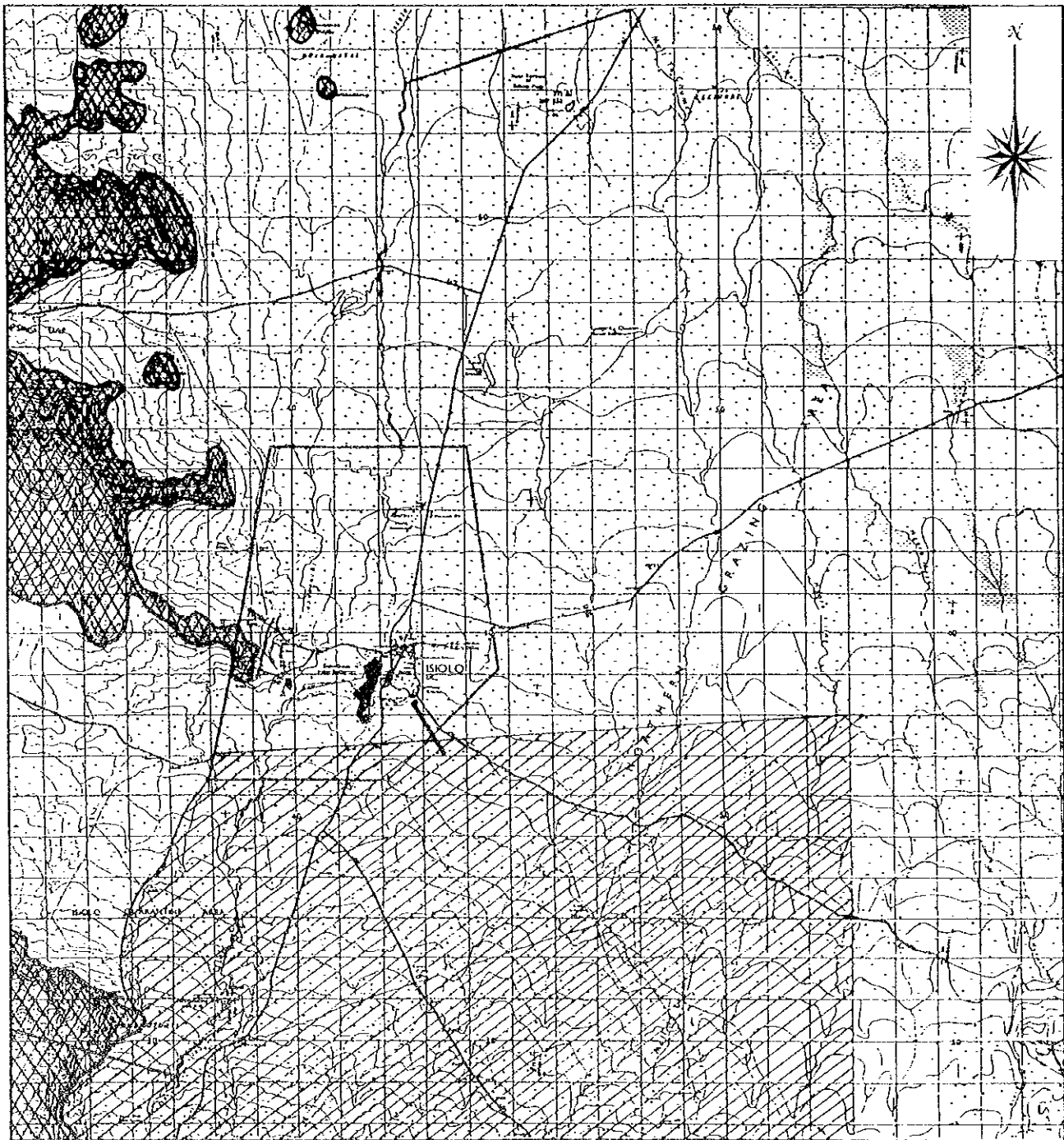
 : Basement System



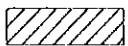

THE STUDY ON
 THE WATER SUPPLY FOR SEVEN TOWNS
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Figure M-8

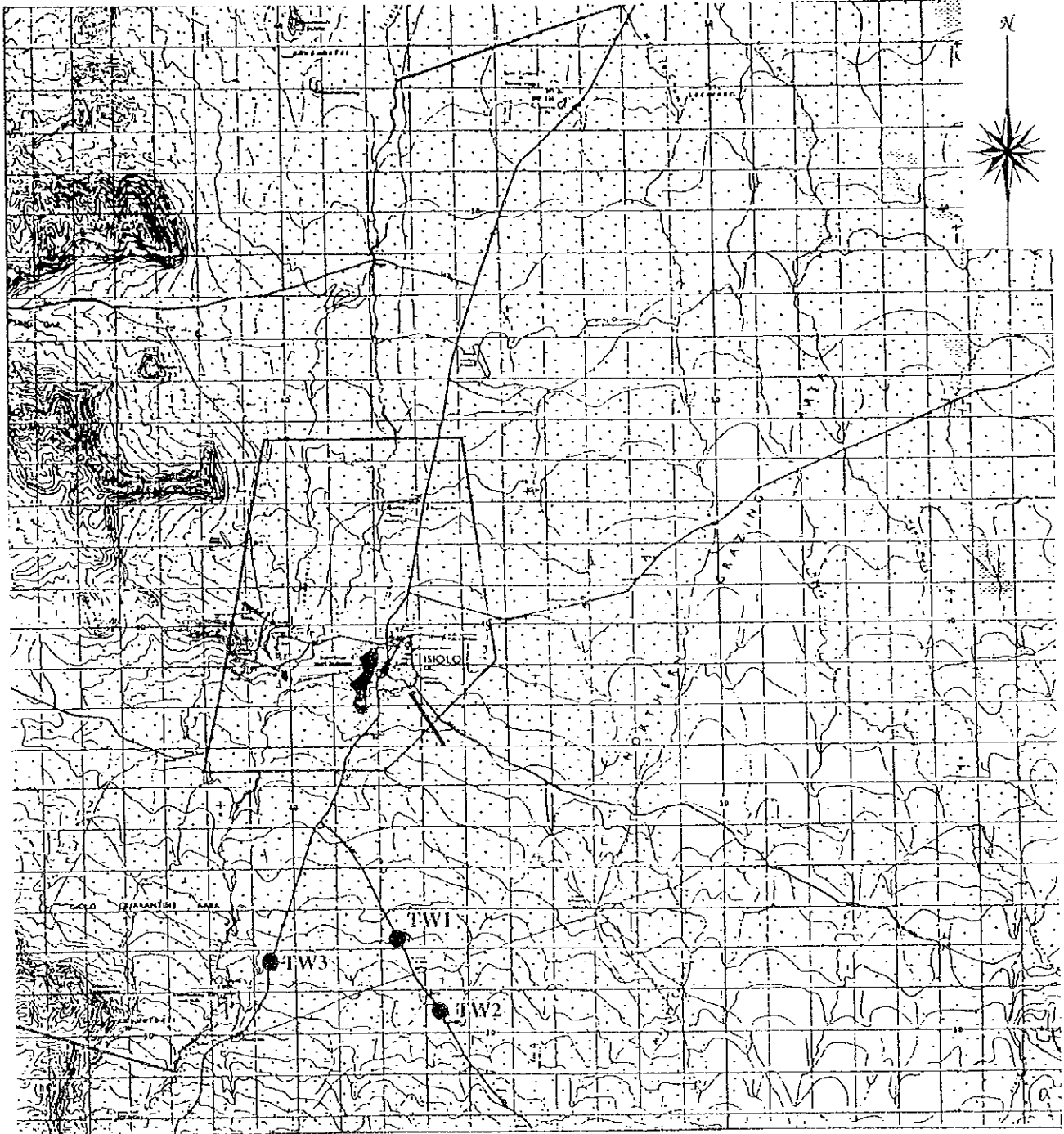
Distribution of Saline Aquifer



Legend

-  : Proposed groundwater development area
-  : Basement

<p>THE STUDY ON THE WATER SUPPLY FOR SEVEN TOWNS IN EASTERN PROVINCE IN THE REPUBLIC OF KENYA JAPAN INTERNATIONAL COOPERATION AGENCY</p>	<p>Figure M-9 Ground Development Area</p>
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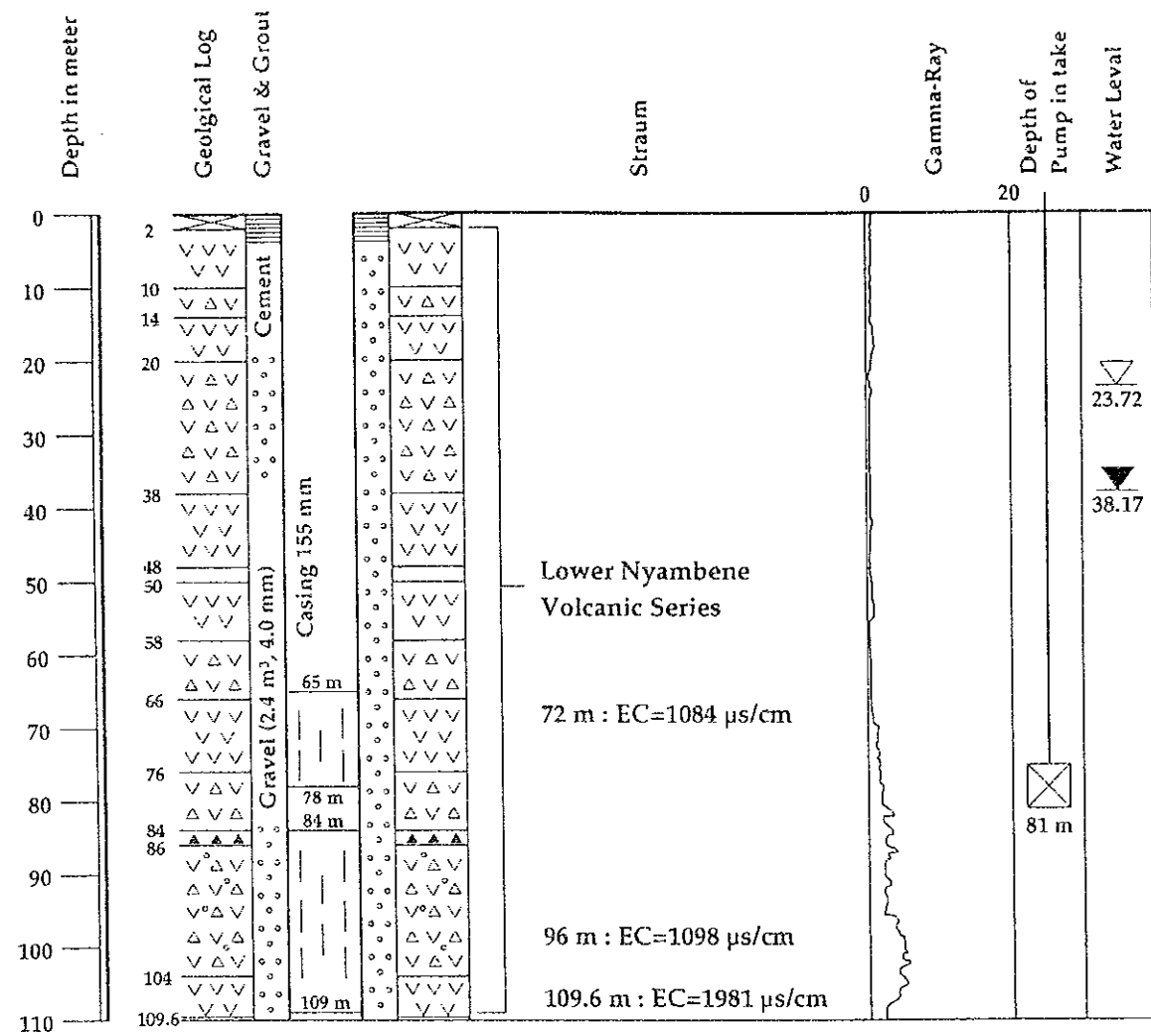
Legend

● TW 2~TW 3 : Exploratory drilling site



<p>THE STUDY ON THE WATER SUPPLY FOR SEVEN TOWNS IN EASTERN PROVINCE IN THE REPUBLIC OF KENYA JAPAN INTERNATIONAL COOPERATION AGENCY</p>	<p>Figure M-10 Location Map of Exploratory drilling site</p>
--	--

TW1 WELL LOG

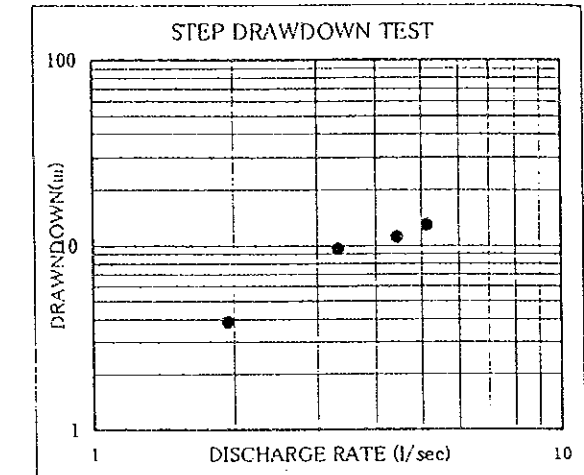


PUMPING TEST WELL NO. TW1

STEP DRAWDOWN TEST

Date: 16/3/97

STEP	Q (l/sec)	Drawdown (m)	Specific Capacity (l/sec/m)
1	1.94	3.85	0.50
2	3.33	9.55	0.35
3	4.44	11.05	0.40
4	5.13	12.85	0.40



TIME DRAWDOWN TEST

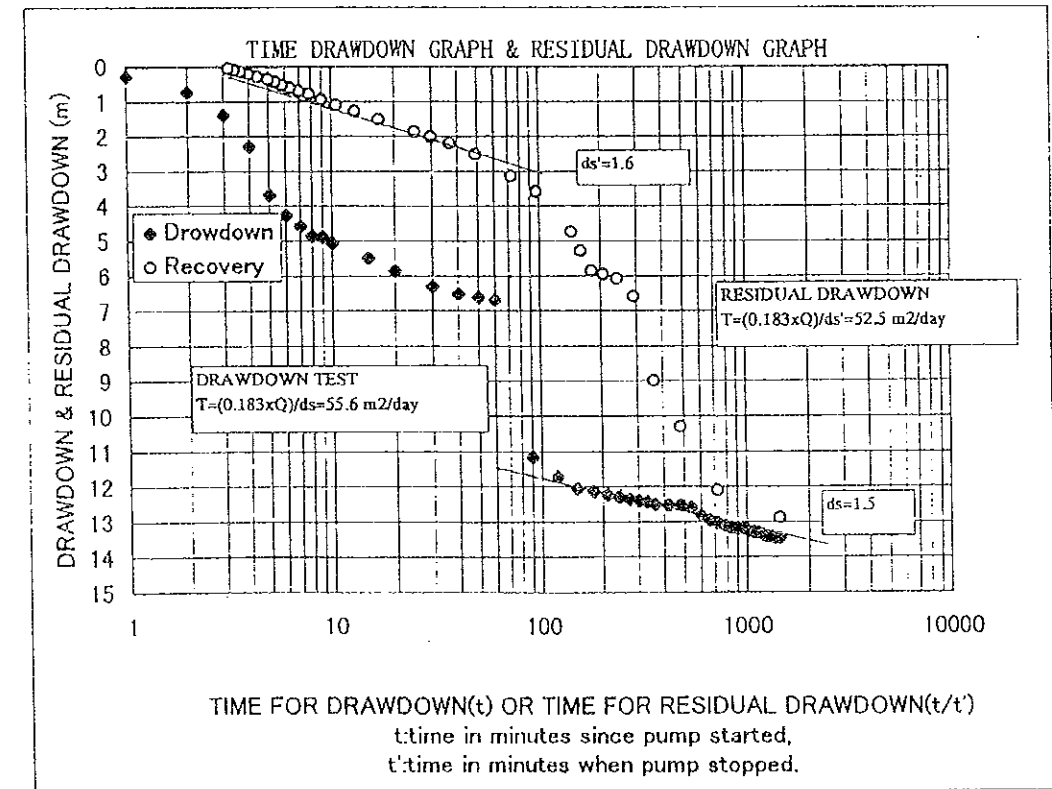
Date: 17/3/97

Static water level: 24.71 m

Discharge rate (Q): 5.28 l/sec 456.2 (m³/day)

Drawdown: 13.46 m

Specific capacity: 0.39 l/s/m 33.9 (m³/day/m)



LEGEND

	Topsoil		Basalt
	Clay		Cataclastic Tuft Breccia and Basalt
	Silt		Tuff Breccia
	Gravel		Tuff
	Sand		

Drilling starts on: 26-2-97
 Drilling finishes on: 5-3-97
 Well completed: 8-3-97
 Drilling rig: Drill Tech
 Drilling method: Air Hammer
 Driller: F. KAKA

WATER QUALITY

IN-SITU TEST

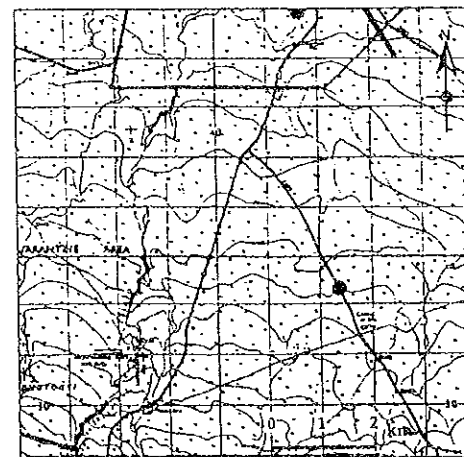
EC (MS/cm) 1981 pH -
 Temperature 27.4 (C°)

LABORATORY TEST

Unit in mg/l

Na K
 Ca Mg
 Cl SO₄
 HCO₃ SiO₂
 NO₂ NO₃
 Fe Mn
 NH₄ TDS

LOCATION MAP

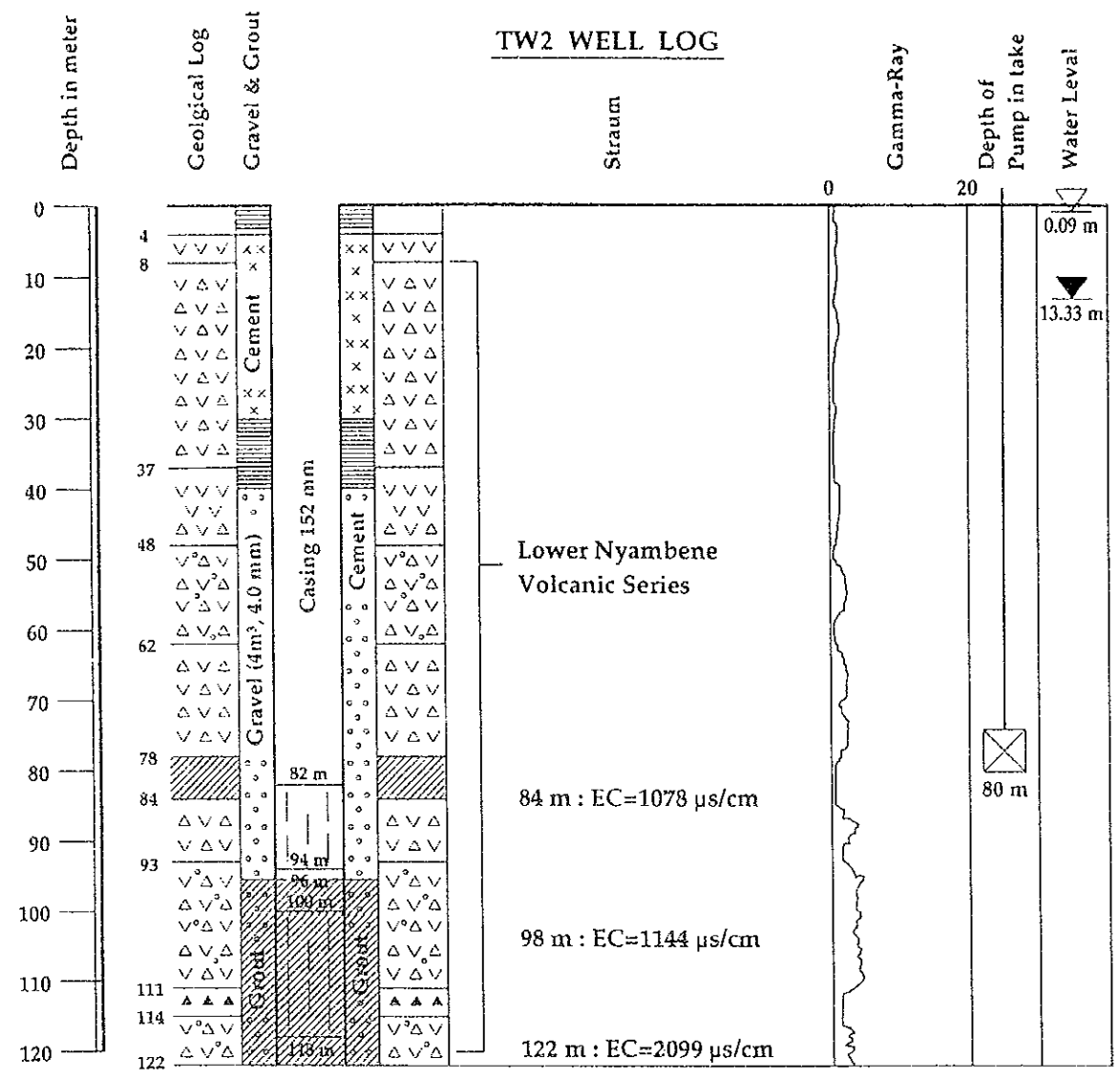


Well No. TW1
 Location: MERU
 Coordinates: 0°31'99"N, 37°34'23"E
 Elevation: 1254.74 m

THE STUDY ON
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Figure M-11

Composite Well Log of TW 1

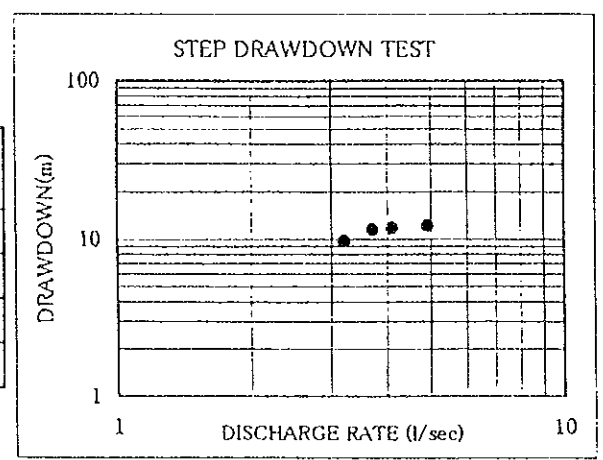


PUMPING TEST WELL NO. TW2

STEP DRAWDOWN TEST

Date : 21/3/97

STEP	Q (l/sec)	Drawdown (m)	Specific Capacity (l/sec/m)
1	3.19	9.70	0.33
2	3.70	11.45	0.32
3	4.10	11.78	0.35
4	4.90	12.12	0.40



TIME DRAWDOWN TEST

Date : 23/3/97

Static water level : 0.90 m

Discharge rate (Q) : 4.90 l/sec 423.4 (m³/day)

Drawdown : 12.43 m

Specific capacity : 0.39 l/s/m 33.7 (m³/day/m)

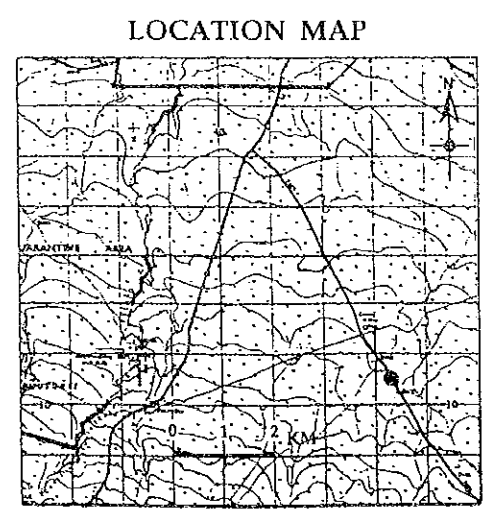
LEGEND

	Topsoil		Basalt
	Clay		Cataclastic Tuft Breccia and Basalt
	Silt		Tuff Breccia
	Gravel		Tuff
	Sand		

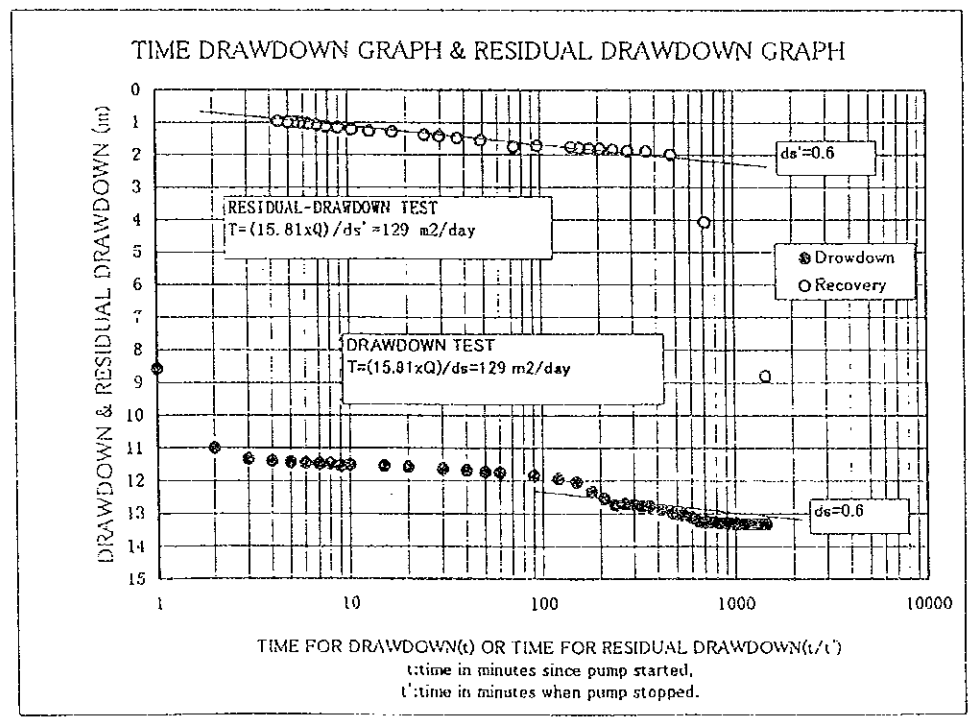
WATER QUALITY

IN-SITU TEST	
EC (MS/cm)	2099 pH -
Temperature	27.6 (C°)

LABORATORY TEST		Unit in mg/l
Na	K	
Ca	Mg	
Cl	SO4	
HCO3	SiO2	
NO2	NO3	
Fe	Mn	
NH4	TDS	

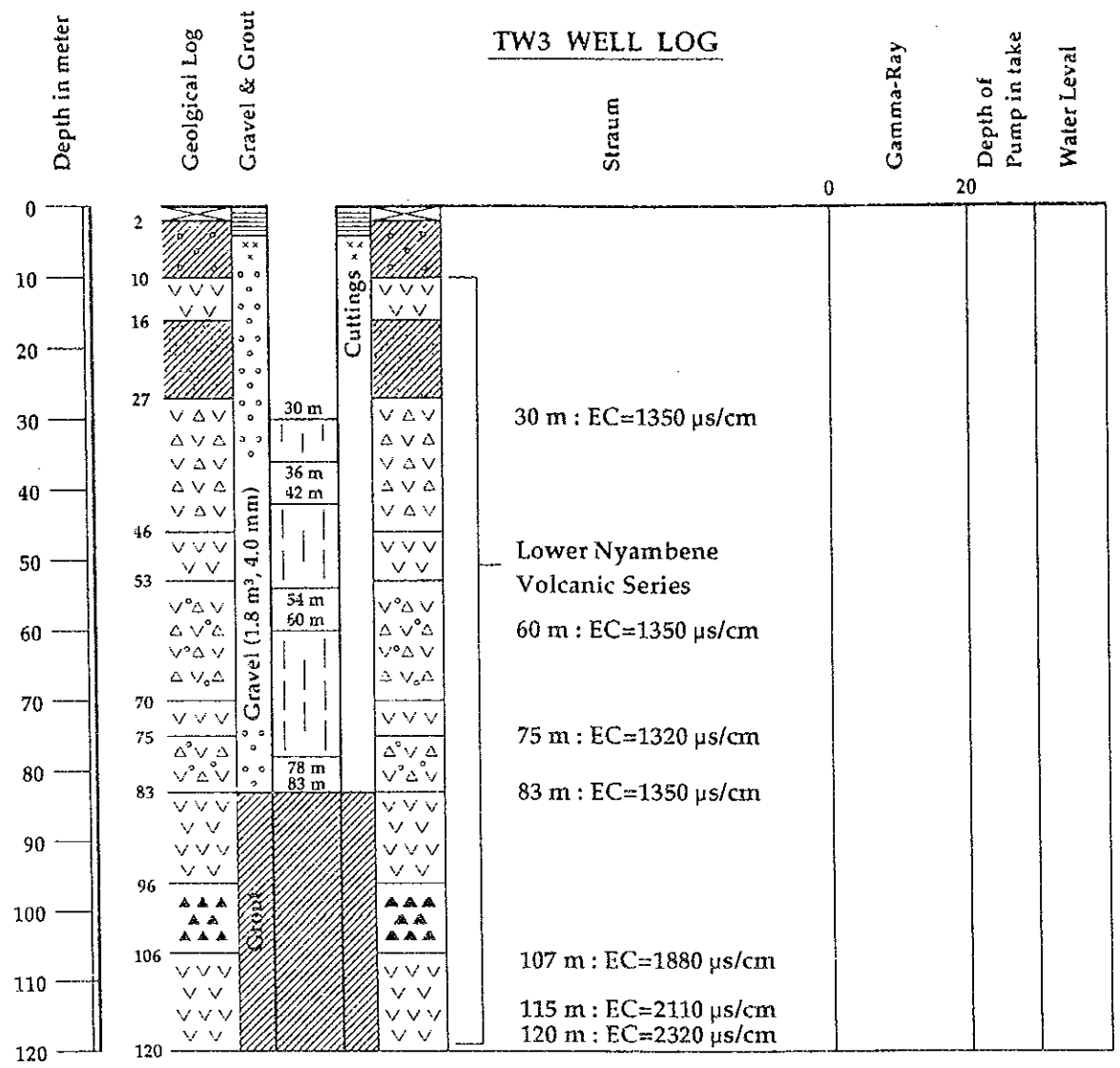


Well No.	TW2
Location :	MERU
Coordinates :	03°02'36"N, 34°34'81"E
Elevation :	1280.00 m



THE STUDY ON
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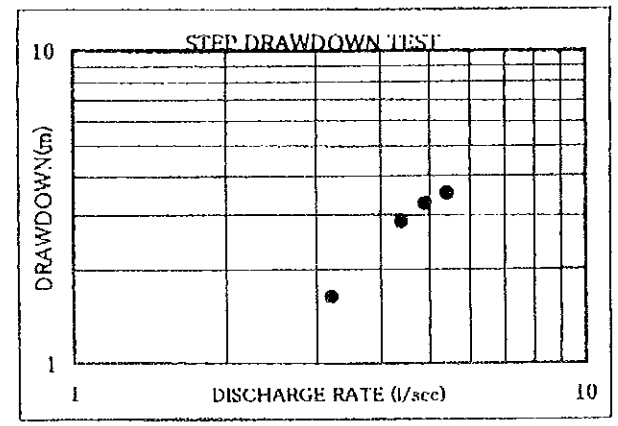
Figure M-12
Composite Well Log of TW 2



PUMPING TEST WELL NO. TW3

STEP DRAWDOWN TEST
DATE: 1997/4/1

STEP	Q (l/sec)	Drawdown (m)	Specific Capacity (l/sec/m)
1	3.20	1.63	1.96
2	4.40	2.86	1.54
3	4.90	3.26	1.50
4	5.40	3.52	1.53



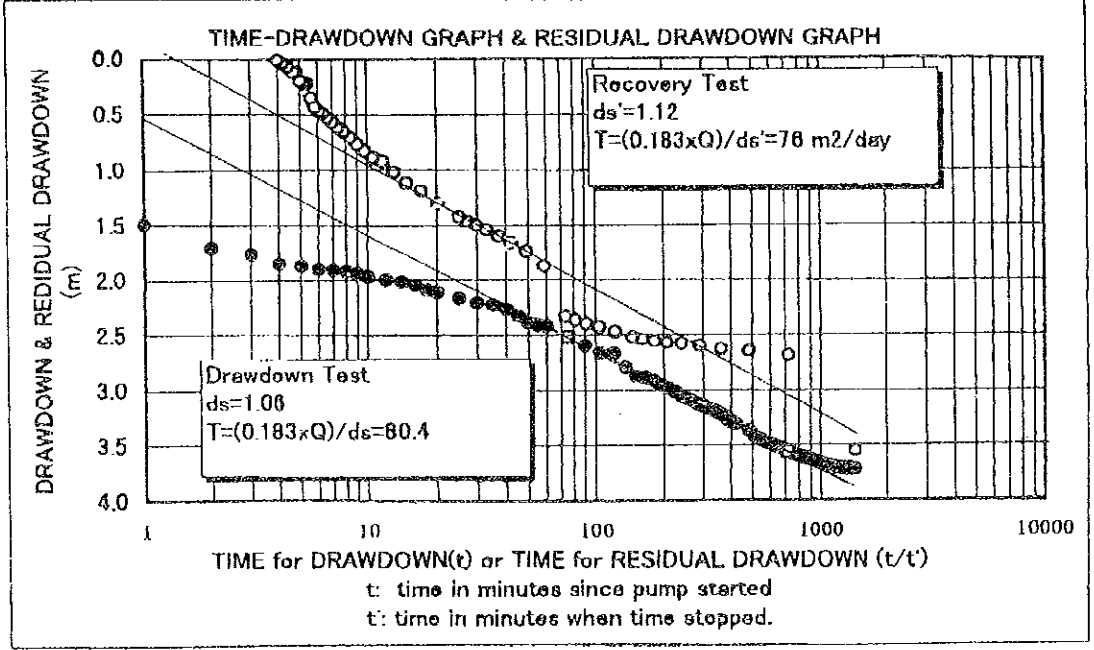
TIME DRAWDOWN TEST
DATE: 1997/4/22

STATIC WATER LEVEL (m): 2.53

DISCHARGE RATE (l/sec): 5.4 466.6 (m³/day)

DRAWDOWN (m): 3.72

SPECIFIC CAPACITY (l/sec/m): 1.45 125.4 (m³/day/m)



LEGEND

	Topsoil		Basalt
	Clay		Cataclastic Tuft Breccia and Basalt
	Silt		Tuff Breccia
	Gravel		Tuff
	Sand		

WATER QUALITY

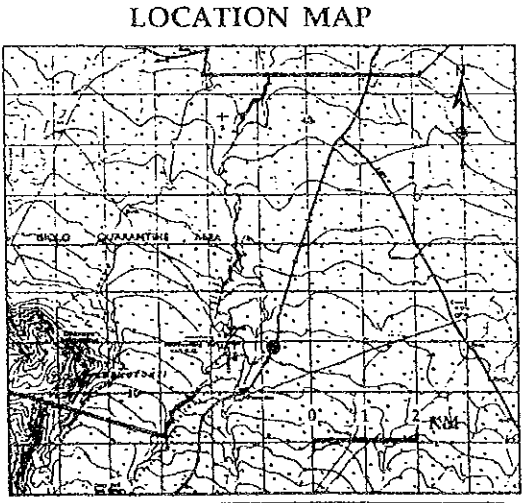
IN-SITU TEST

EC (MS/cm) 2320 pH -

Temperature 27.4 (C°)

LABORATORY TEST
Unit in mg/l

Na	K
Ca	Mg
Cl	SO ₄
HCO ₃	SiO ₂
NO ₂	NO ₃
Fe	Mn
NH ₄	TDS

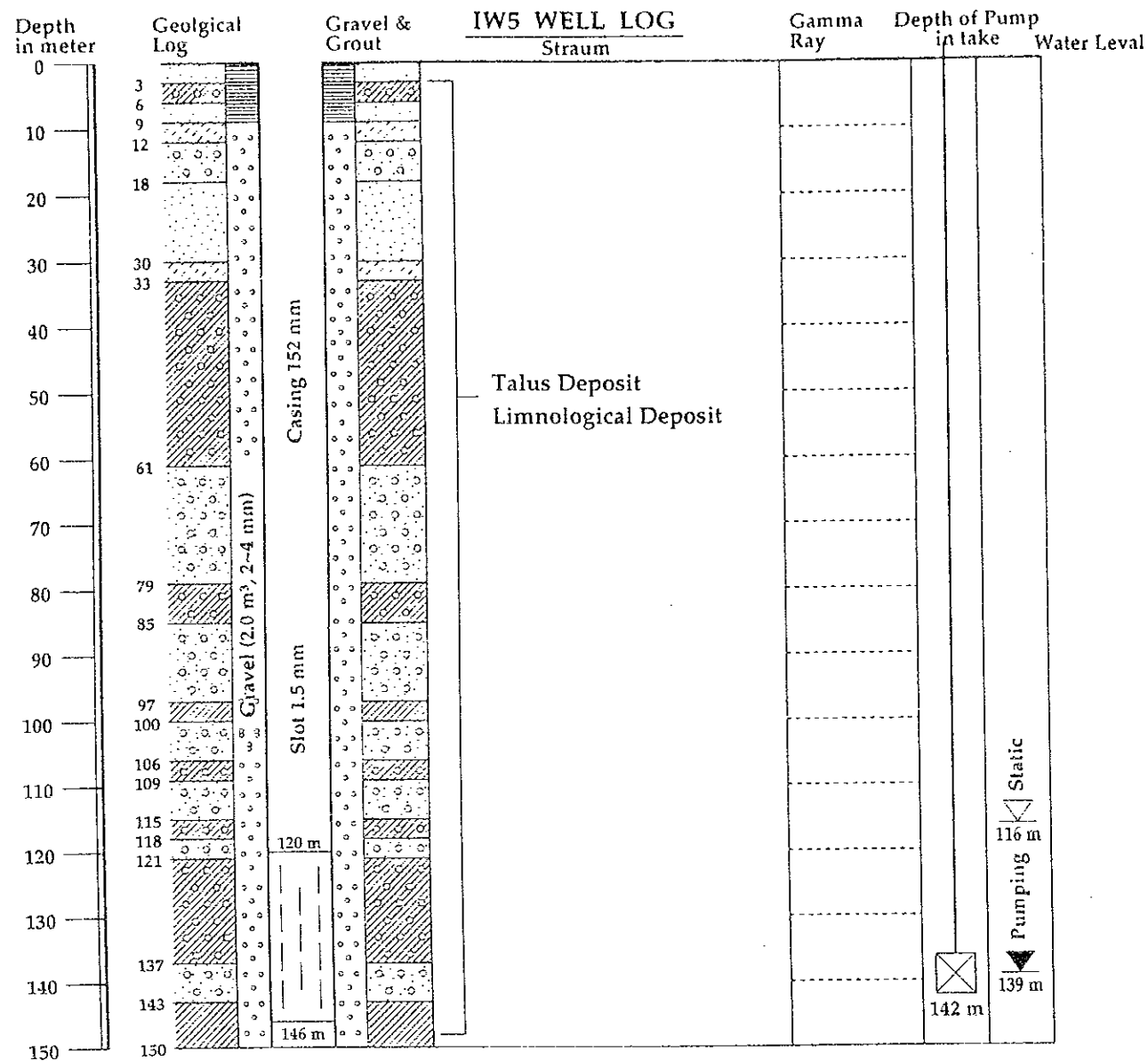


Well No.	TW3
Location	MERU
Coordinates	03°18'53"N, 33°96'21"E
Elevation	1262.51 m

Drilling starts on:	13-3-97
Drilling finishes on:	22-3-97
Well completed:	24-3-97
Drilling rig:	Drill Tech
Drilling method:	Air Hammer
Driller:	F. KAKA

SCALE FOR TIME DRAWDOWN (t) OR SCALE FOR RESIDUAL DRAWDOWN (t'/t')

t: time in minutes since pump started t': time in minutes stopped

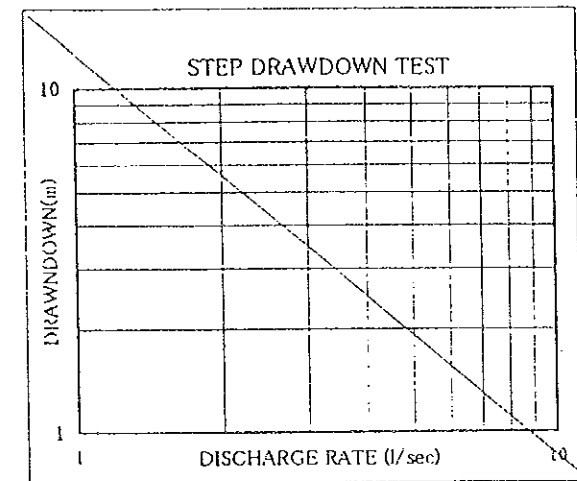


PUMPING TEST WELL NO. IW5 (C10573)

STEP DRAWDOWN TEST

Date: 16/3/97

STEP	Q (l/sec)	Drawdown (m)	Specific Capacity (l/sec/m)
1			
2			
3			
4			



TIME DRAWDOWN TEST

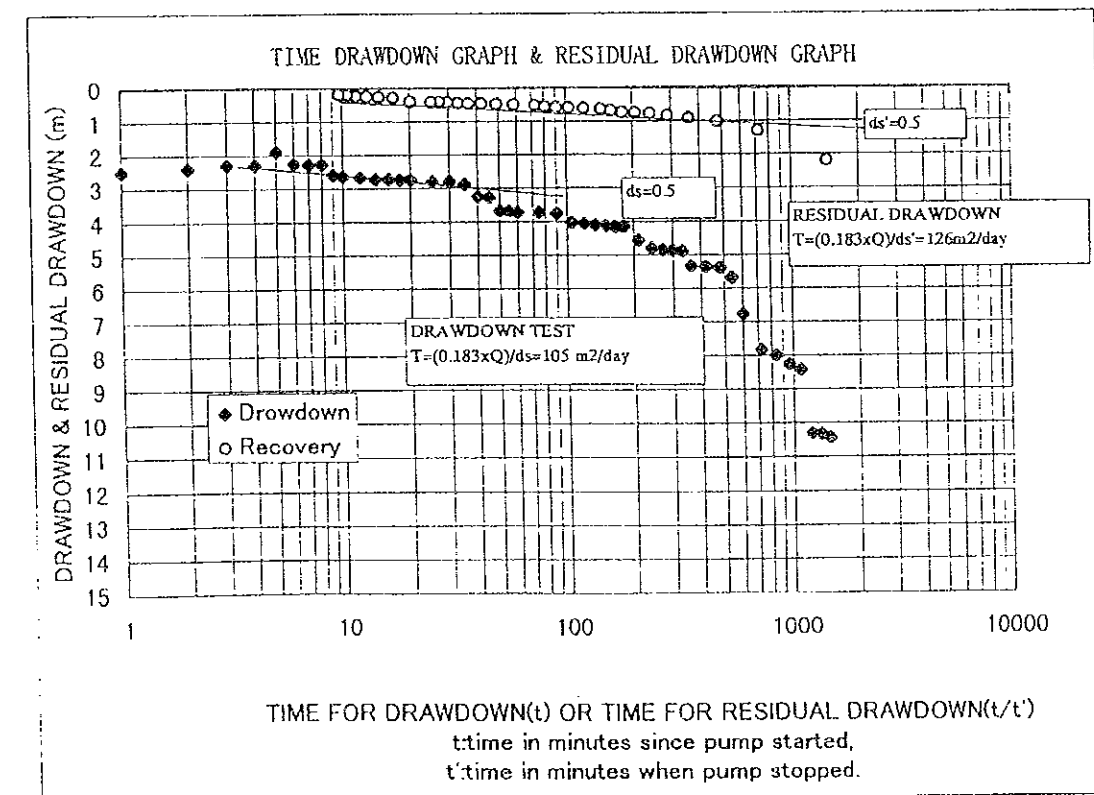
Date: 3/12/93

Static water level: 116.16 m

Discharge rate (Q): 4.0 l/sec 345.6 (m³/day)

Drawdown: 132.05 m

Specific capacity: 0.03 l/s/m 2.6 (m³/day/m)



LEGEND

	Topsoil		Basalt
	Clay		Cataclastic Tuff Breccia and Basalt
	Silt		Tuff Breccia
	Gravel		Tuff
	Sand		

Drilling starts on: 12-11-93
 Drilling finishes on: 19-11-93
 Well completed: 6-12-93
 Drilling rig: Dando 200
 Drilling method: Direct Rotary
 Driller:

WATER QUALITY

IN-SITU TEST

EC (MS/cm) 1800 pH 00
 Temperature 38 (C°)

LABORATORY TEST

Unit in mg/l

Na 00 K 00

Ca Mg

Cl SO4

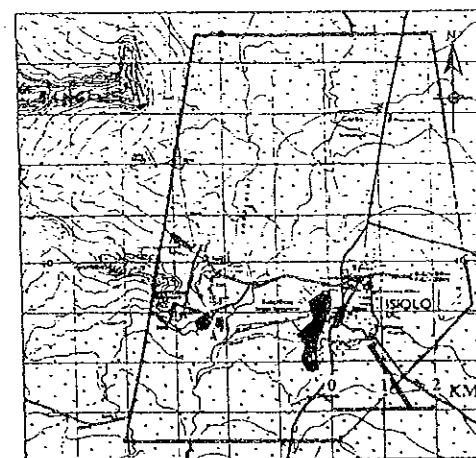
HCO3 SiO2

NO2 NO3

Fe Mn

NH4 TDS

LOCATION MAP



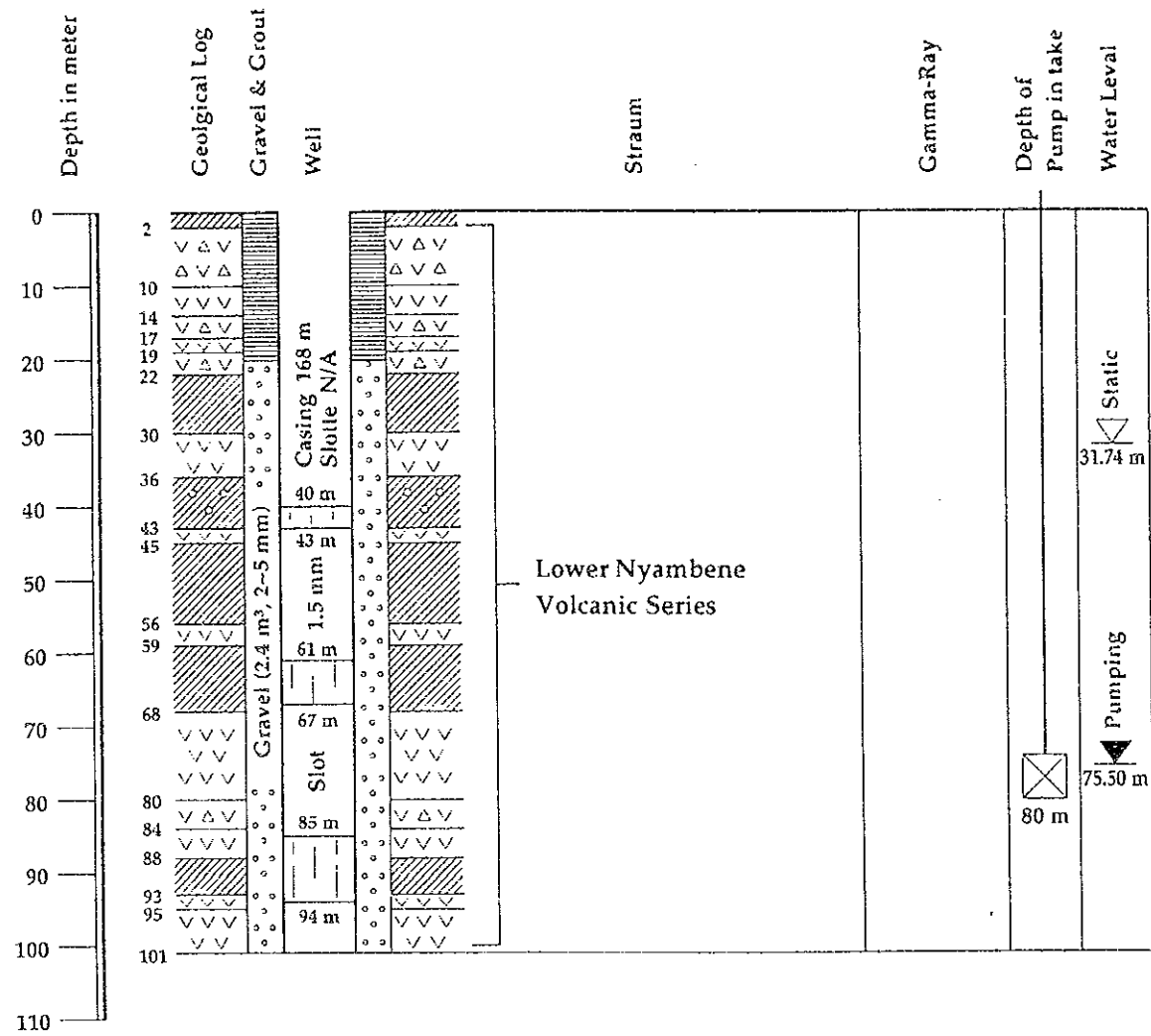
Well No. 5 (C-10573)
 Location: HABASWEIN
 Coordinates: 1°60'00"N, 39°30'01"E
 Elevation: 1080 m

THE STUDY ON
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Figure M-14

Composite Well Log of TW 5
 (C10573)

IW6 WELL LOG

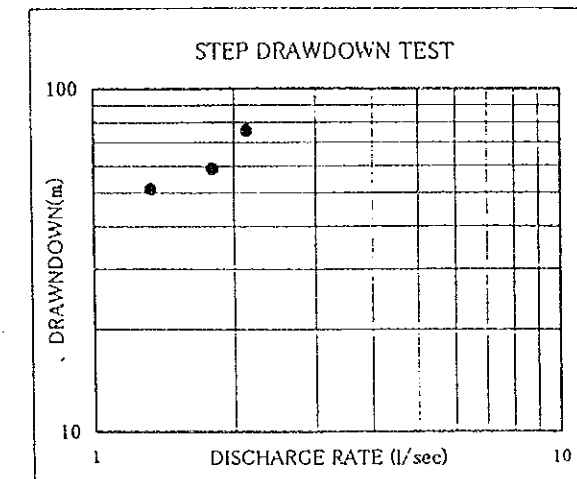


PUMPING TEST WELL NO. IW6 (C10558)

STEP DRAWDOWN TEST

Date :

STEP	Q (l/sec)	Drawdown (m)	Specific Capacity (l/sec/m)
1	1.33	51.30	0.03
2	1.80	58.80	0.03
3	2.13	75.50	0.03
4			



TIME DRAWDOWN TEST

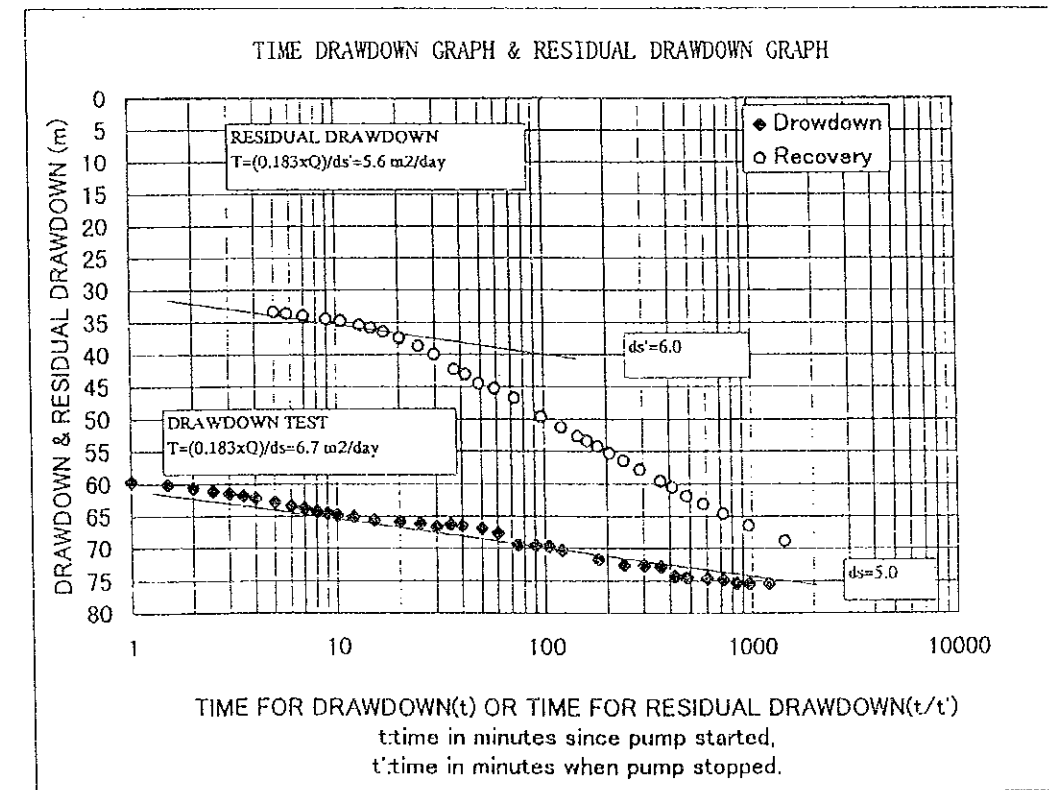
Date : 29/7/93

Static water level : 31.74 m

Discharge rate (Q) : 2.13 l/sec 184.0 (m³/day)

Drawdown : 75.50 m

Specific capacity : 0.03 l/s/m 2.4 (m³/day/m)



LEGEND

	Topsoil		Basalt
	Clay		Cataclastic Tuft Breccia and Basalt
	Silt		Tuff Breccia
	Gravel		Tuff
	Sand		

Drilling starts on : 13-7-93
 Drilling finishes on : 23-7-93
 Well completed : 23-7-93
 Drilling rig : Dando 250
 Drilling method : Direct Rotary
 Driller :

WATER QUALITY

IN-SITU TEST

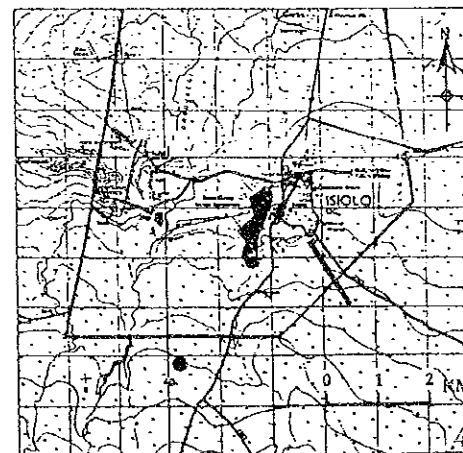
EC (MS/cm) 00 pH
 Temperature 000 (C°)

LABORATORY TEST

Unit in mg/l

Na K
 Ca Mg
 Cl SO4
 HCO3 SiO2
 NO2 NO3
 Fe Mn
 NH4 TDS

LOCATION MAP



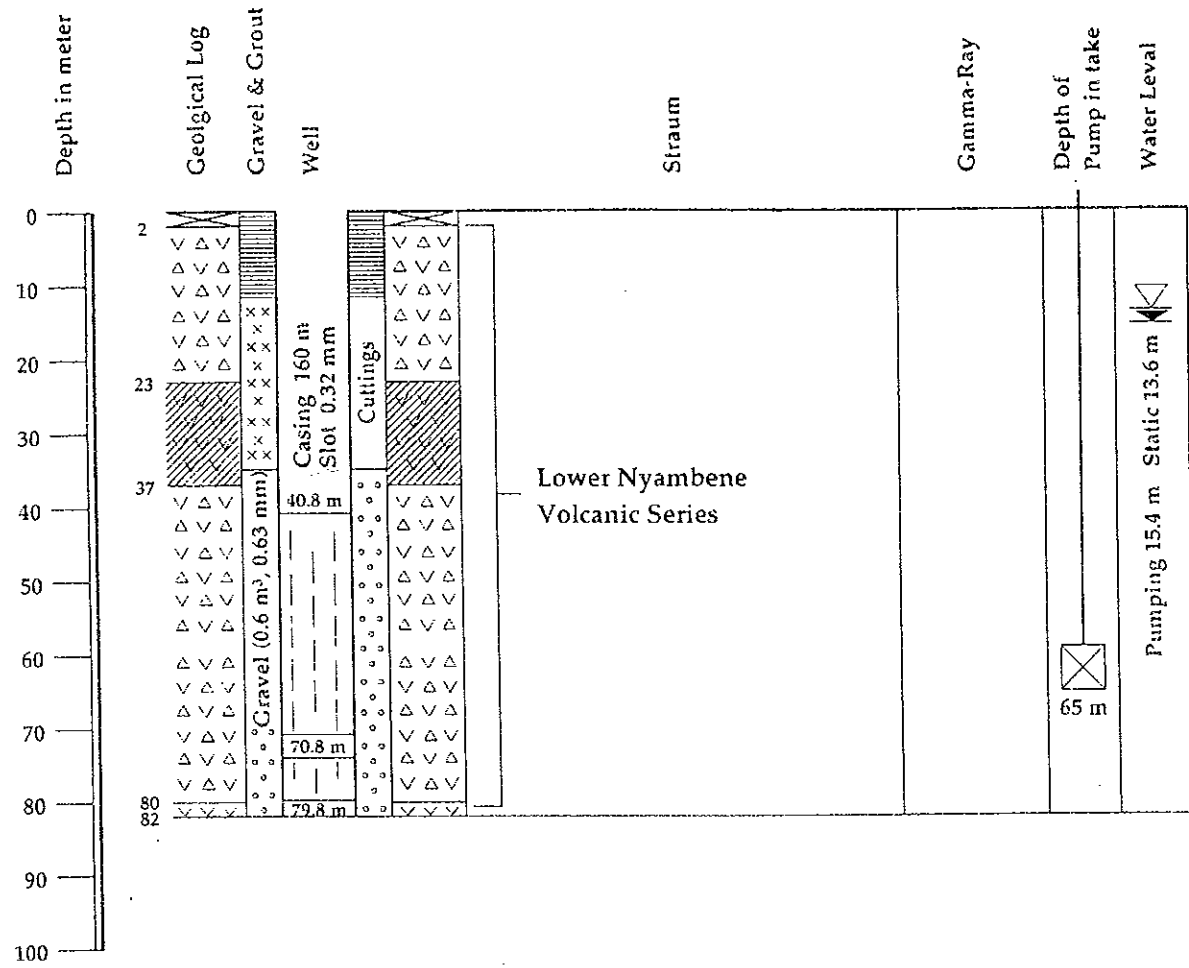
Well No. 6 (C-10558)
 Location : RUIRU
 Coordinates : 00°18'59"N, 37°33'50"E
 Elevation : 1180 m

THE STUDY ON
 THE WATER SUPPLY FOR SEVEN TOWNS
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Figure M-15

Composite Well Log of IW 6
 (C10558)

IW7 WELL LOG

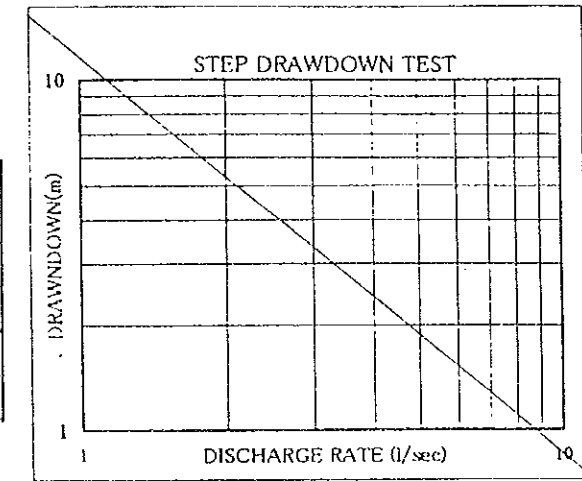


PUMPING TEST
WELL NO. IW7 (C10575)

STEP DRAWDOWN TEST

Date :

STEP	Q (l/sec)	Drawdown (m)	Specific Capacity (l/sec/m)
1			
2			
3			
4			



TIME DRAWDOWN TEST

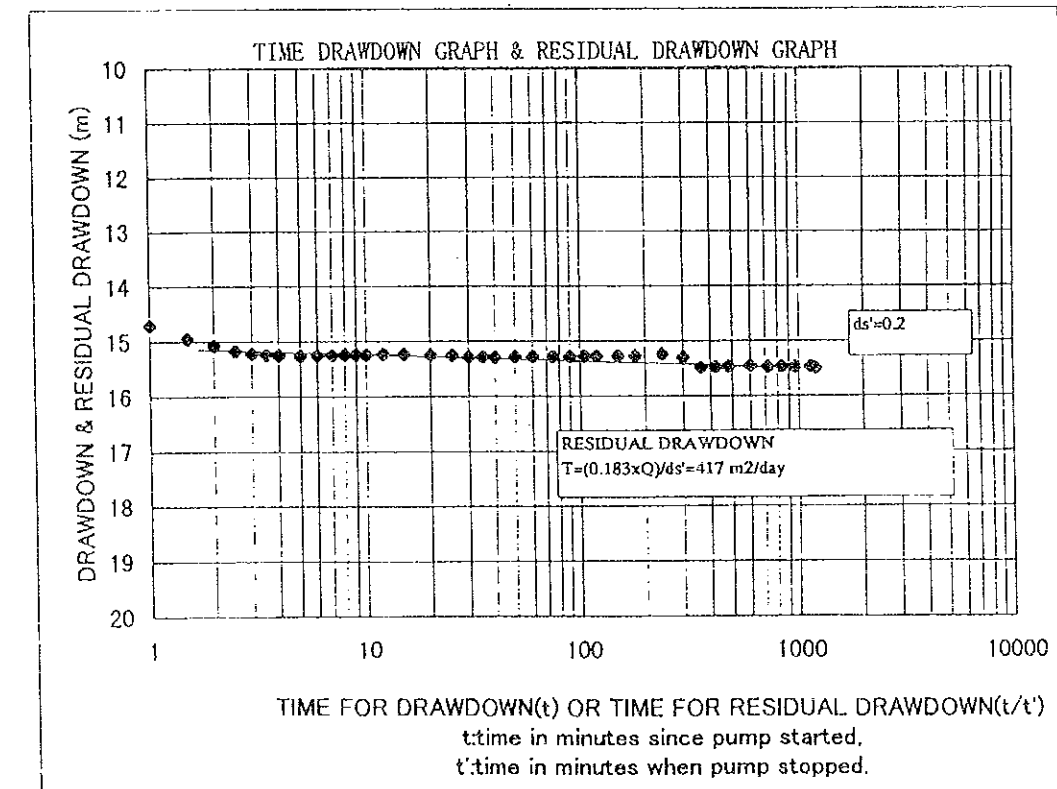
Date : 16/10/93

Static water level : 13.60 m

Discharge rate (Q) : 3.20 l/sec 276.5 (m³/day)

Drawdown : 15.48 m

Specific capacity : 0.21 l/s/m 18.1 (m³/day/m)



LEGEND

	Topsoil		Basalt
	Clay		Cataclastic Tuft Breccia and Basalt
	Silt		Tuft Breccia
	Gravel		Tuff
	Sand		

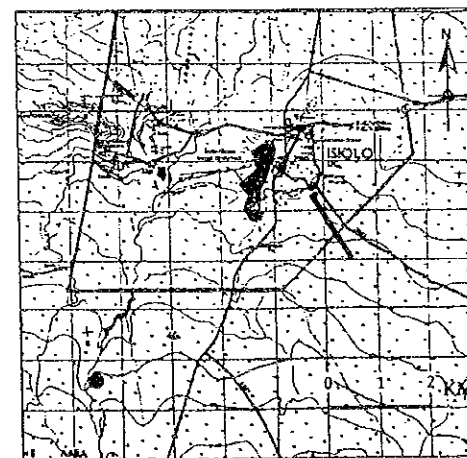
Drilling starts on : 2-8-93
 Drilling finishes on : 4-8-93
 Well completed : 6-8-93
 Drilling rig : Scramm
 Drilling method : Direct Rotary
 Driller :

WATER QUALITY

IN-SITU TEST
 EC (MS/cm) 610 pH 6.7
 Temperature (C°)

LABORATORY TEST
 Unit in mg/l
 Na K
 Ca Mg
 Cl SO4
 HCO3 SiO2
 NO2 NO3
 Fe Mn
 NH4 TDS

LOCATION MAP



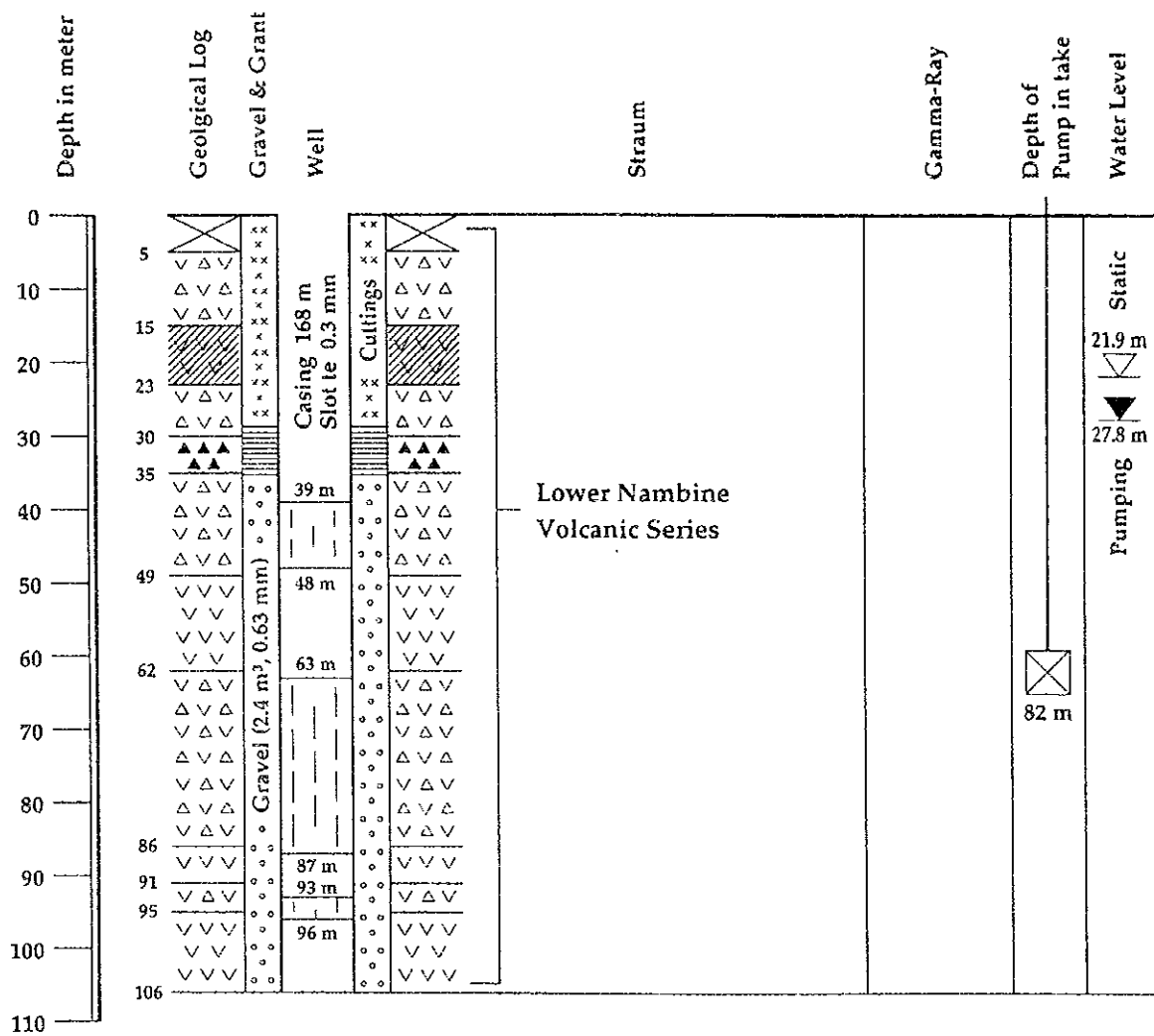
Well No. 7 (C-10575)
 Location : ISILO
 Coordinates : 0°18'05"N, 37°33'09"E
 Elevation : 1220 m

THE STUDY ON
 THE WATER SUPPLY FOR SEVEN TOWNS
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Figure M-16

Composite Well Log of IW 7
 (C10575)

IW8 WELL LOG

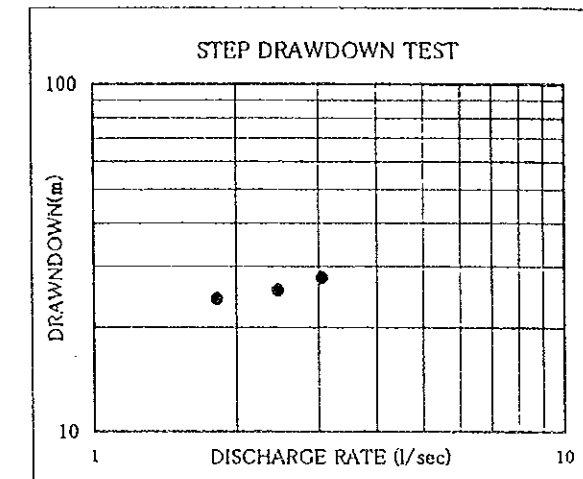


PUMPING TEST
WELL NO. IW8 (C10576)

STEP DRAWDOWN TEST

Date: 19/10/93

STEP	Q (l/sec)	Drawdown (m)	Specific Capacity (l/sec/m)
1	1.82	24.20	0.08
2	2.46	25.60	0.10
3	3.05	27.82	0.11
4			



TIME DRAWDOWN TEST

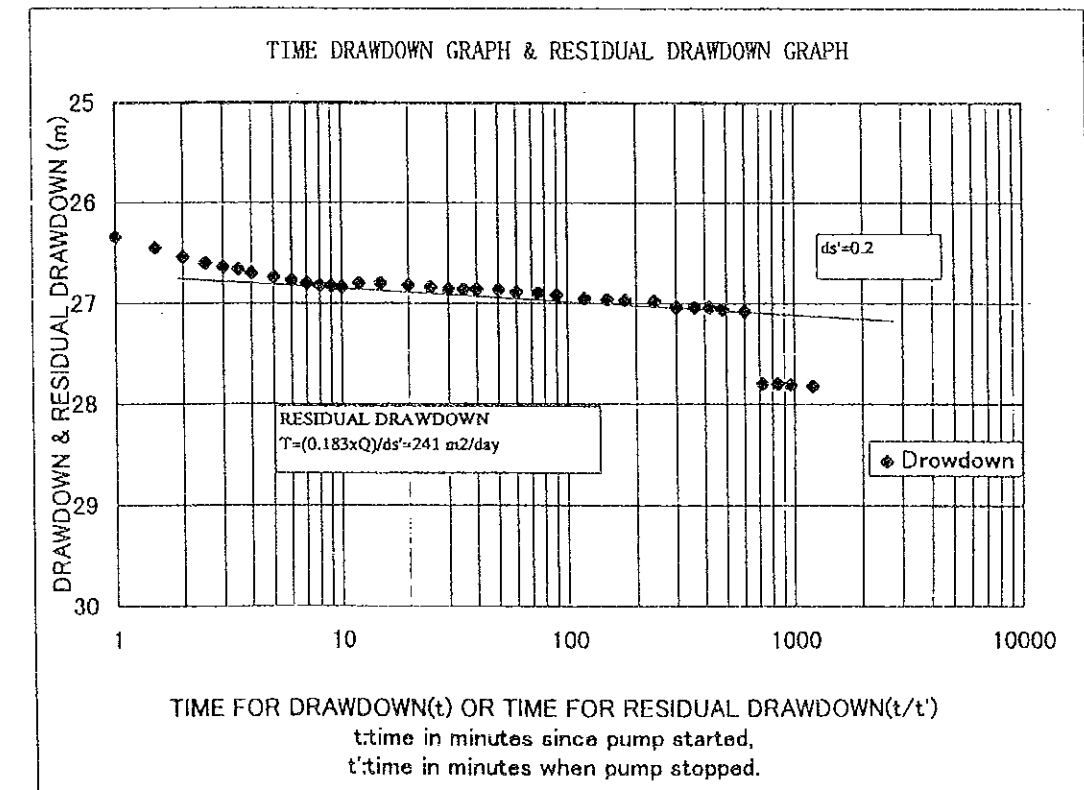
Date: 19/10/93

Static water level: 21.94 m

Discharge rate (Q): 3.05 l/sec 263.5 (m³/day)

Drawdown: 27.82 m

Specific capacity: 0.11 l/s/m 9.5 (m³/day/m)



LEGEND

	Topsoil		Basalt
	Clay		Cataclastic Tuft Breccia and Basalt
	Silt		Tuft Breccia
	Gravel		Tuft
	Sand		

Drilling starts on : 20-8-93
 Drilling finishes on : 22-8-93
 Well completed : 23-8-93
 Drilling rig : Dando 200
 Drilling method : Direct Rotary
 Driller :

WATER QUALITY

IN-SITU TEST

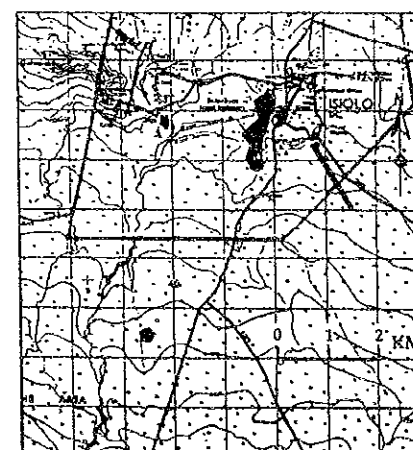
EC (MS/cm) 860 pH 7.5
 Temperature 24.5 (C°)

LABORATORY TEST

Unit in mg/l

Na	92	K	
Ca	63	Mg	48
Cl		SO4	17
HCO3		SiO2	
NO2		NO3	
Fe		Mn	
NH4		TDS	516

LOCATION MAP



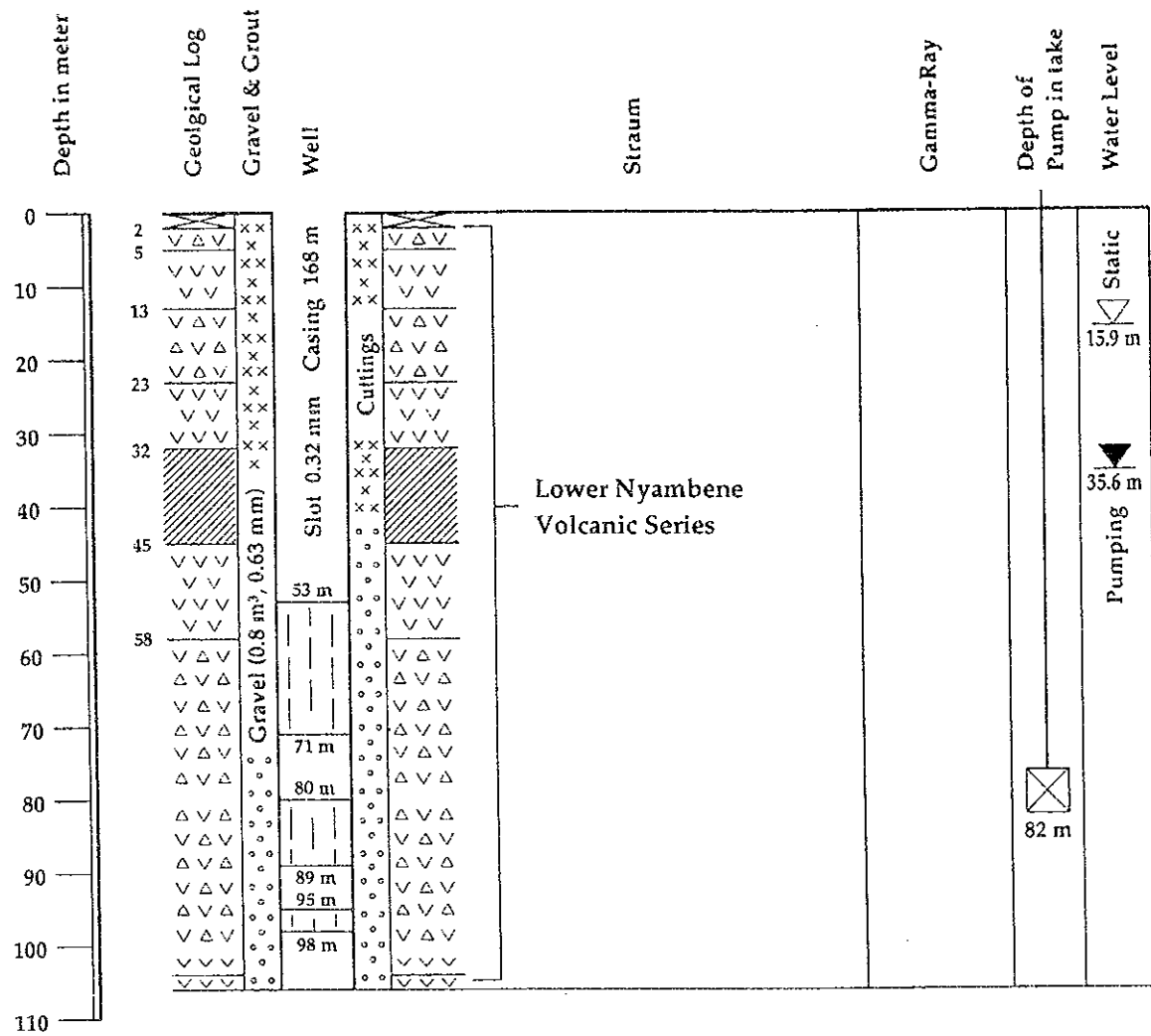
Well No. 8 (C-10576)
 Location : ISIOLO
 Coordinates : 0°19'00"N, 37°34'45"E
 Elevation : 1220 m

THE STUDY ON
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 JAPAN INTERNATIONAL COOPERATION AGENCY

Figure M-17

Composite Well Log of IW 8
 (C10576)

IW9 WELL LOG

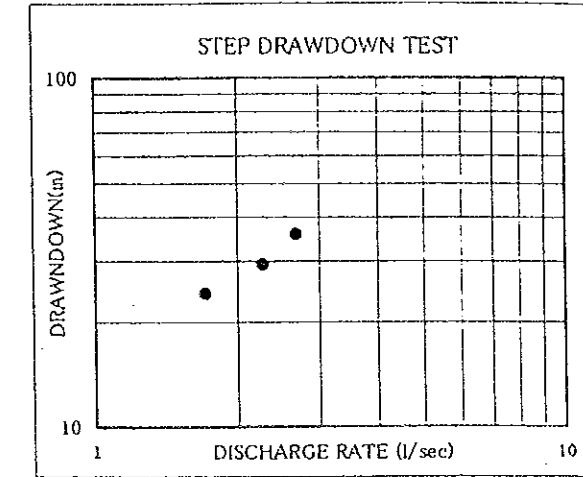


PUMPING TEST
WELL NO. IW9 (C10574)

STEP DRAWDOWN TEST

Date: 12/10/93

STEP	Q (l/sec)	Drawdown (m)	Specific Capacity (l/sec/m)
1	1.70	24.20	
2	2.27	29.27	
3	2.67	35.67	
4			



TIME DRAWDOWN TEST

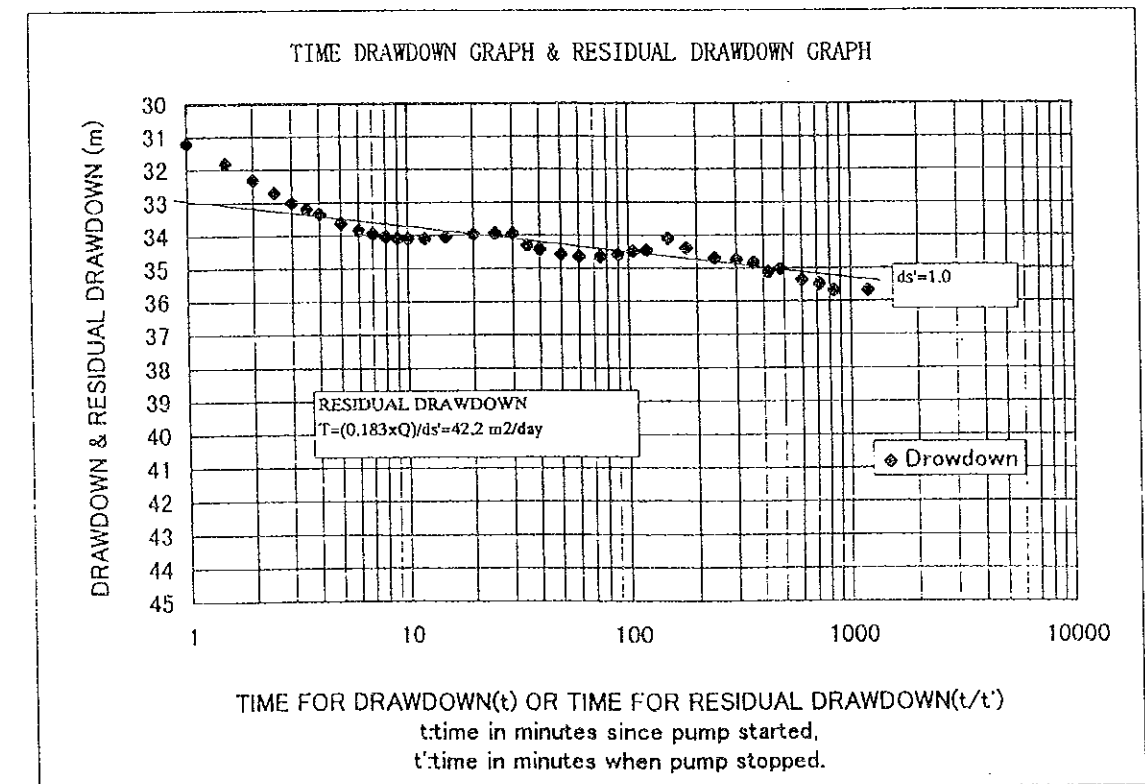
Date: 12/10/93

Static water level: 15.88 m

Discharge rate (Q): 2.67 l/sec 230.7 (m³/day)

Drawdown: 35.67 m

Specific capacity: 0.07 l/s/m 6.5 (m³/day/m)



LEGEND

	Topsoil		Basalt
	Clay		Cataclastic Tuff Breccia and Basalt
	Silt		Tuff Breccia
	Gravel		Tuff
	Sand		

Drilling starts on: 20-7-93
 Drilling finishes on: 22-7-93
 Well completed: 26-7-93
 Drilling rig: Schramm
 Drilling method: Direct Rotary
 Driller:

WATER QUALITY

IN-SITU TEST

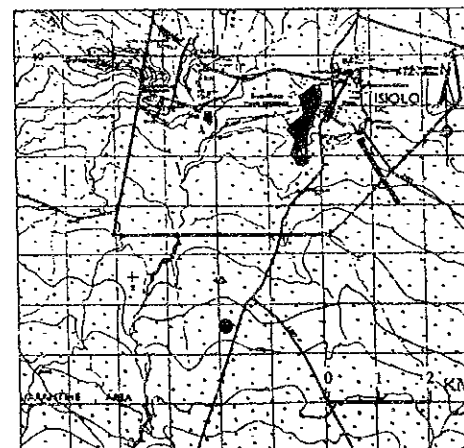
EC (MS/cm) pH
 Temperature (C°)

LABORATORY TEST

Unit in mg/l

Na K
 Ca Mg
 Cl SO4
 HCO3 SiO2
 NO2 NO3
 Fe Mn
 NH4 TDS

LOCATION MAP



Well No. 9 (C-10574)
 Location: ISILOLO
 Coordinates: 0°18'00"N, 37°33'45"E
 Elevation: 1220 m

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Figure M-18

Composite Well Log of IW 9
 (C10574)