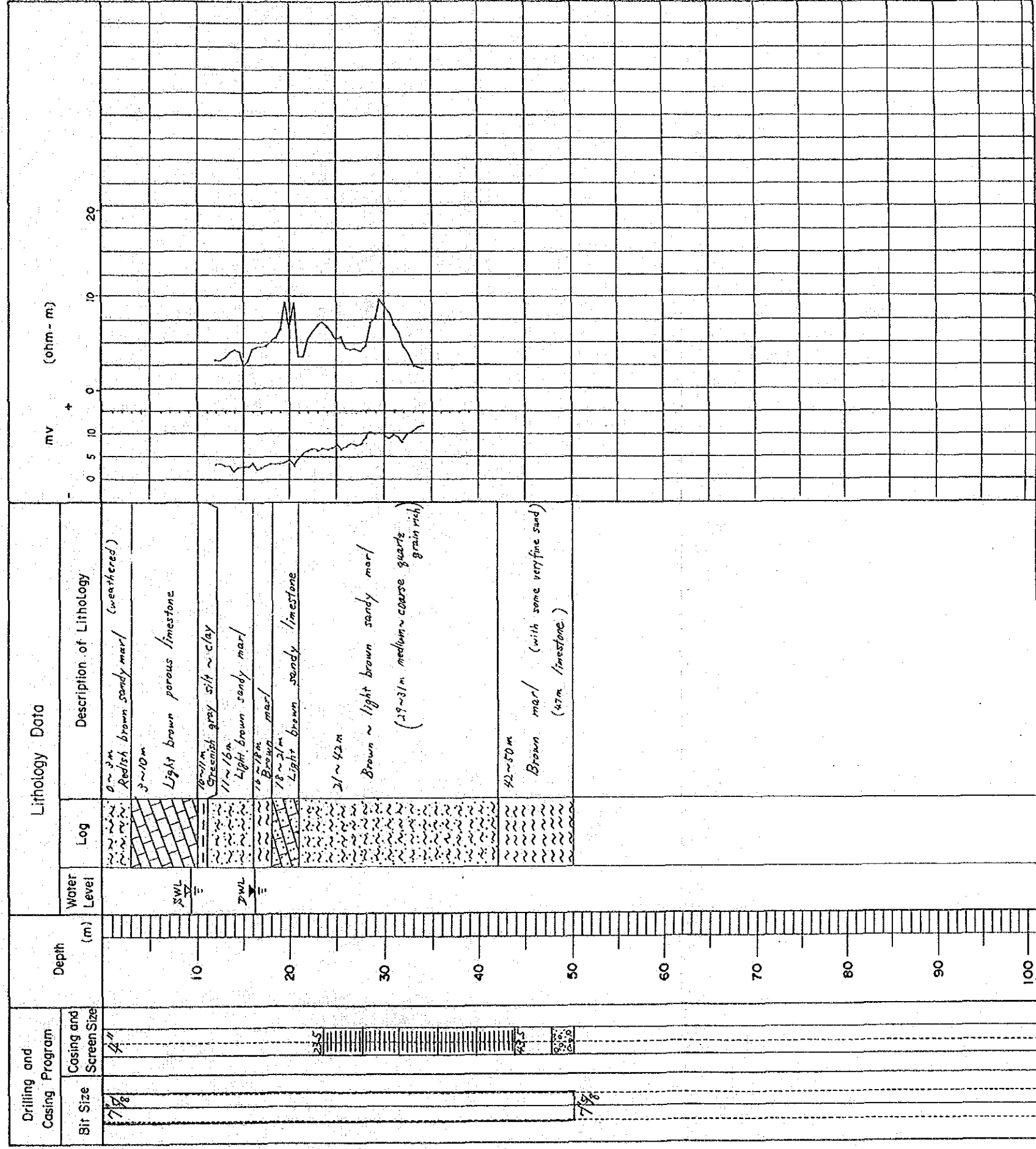


# WELL LOG

PROJECT NAME		Groundwater Development Study In South Western Region of the Democratic Republic of MADAGASCAR		WELL NO. 55	
AREA AND LOCATION		Ampasikibo (Toliara Pre.)			
ELEVATION	175.0 m	LATTITUDE			
TOTAL DEPTH	50.0 m	DRILLING RIG	SANKYO SM-200		
DRILLING STARTED	01. August 1990	DRILLED BY	MIEM & JICA Study Team		
WELL COMPLETED	06. August 1990	LOGGED BY	dmtb		

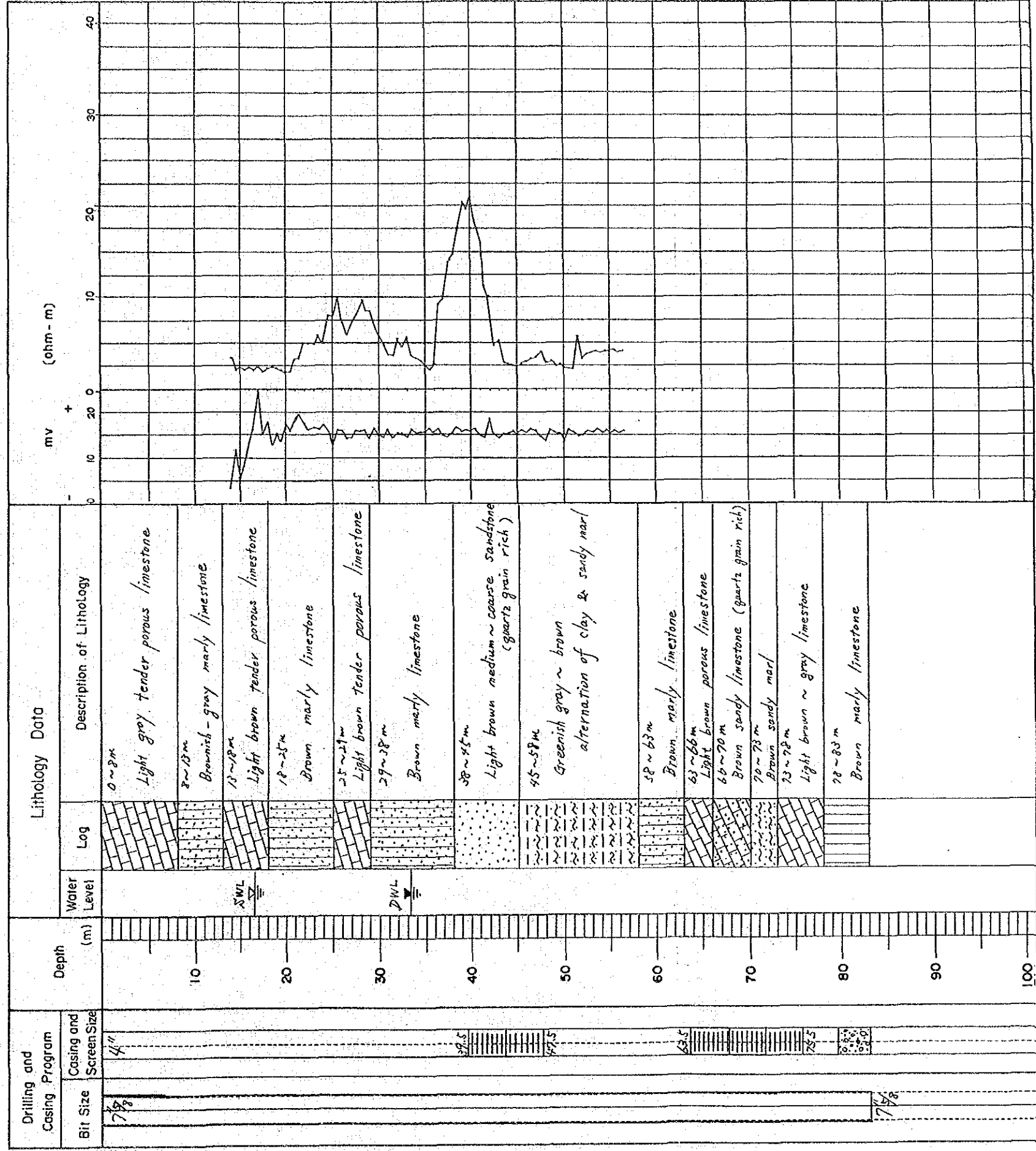
STATIC WATER LEVEL	GL - 9.16 m	WATER TEMPERATURE	27.9 °C
DYNAMIC WATER LEVEL	GL - 16.12 m	CONDUCTIVITY	817 $\mu S/cm$
PUMPING RATE	280 (~287) $l/min$	pH	7.2
SPECIFIC CAPACITY	40.23 $l/min/m$	TOTAL HARDNESS	308 $mg/l$ as $CaCO_3$



# WELL LOG

PROJECT NAME Groundwater Development Study in South Western Region of the Democratic Republic of MADAGASCAR		WELL NO. 56	
AREA AND LOCATION Namaboha (Toliara Pre.)		LATITUDE	LONGITUDE
ELEVATION	164.0 m	DRILLING RIG	SANKYO SM-200
TOTAL DEPTH	83.0 m	DRILLED BY	MIEM & JICA Study Team
DRILLING STARTED	08. August 1990	LOGGED BY	d/Ho
WELL COMPLETED	12. August 1990		

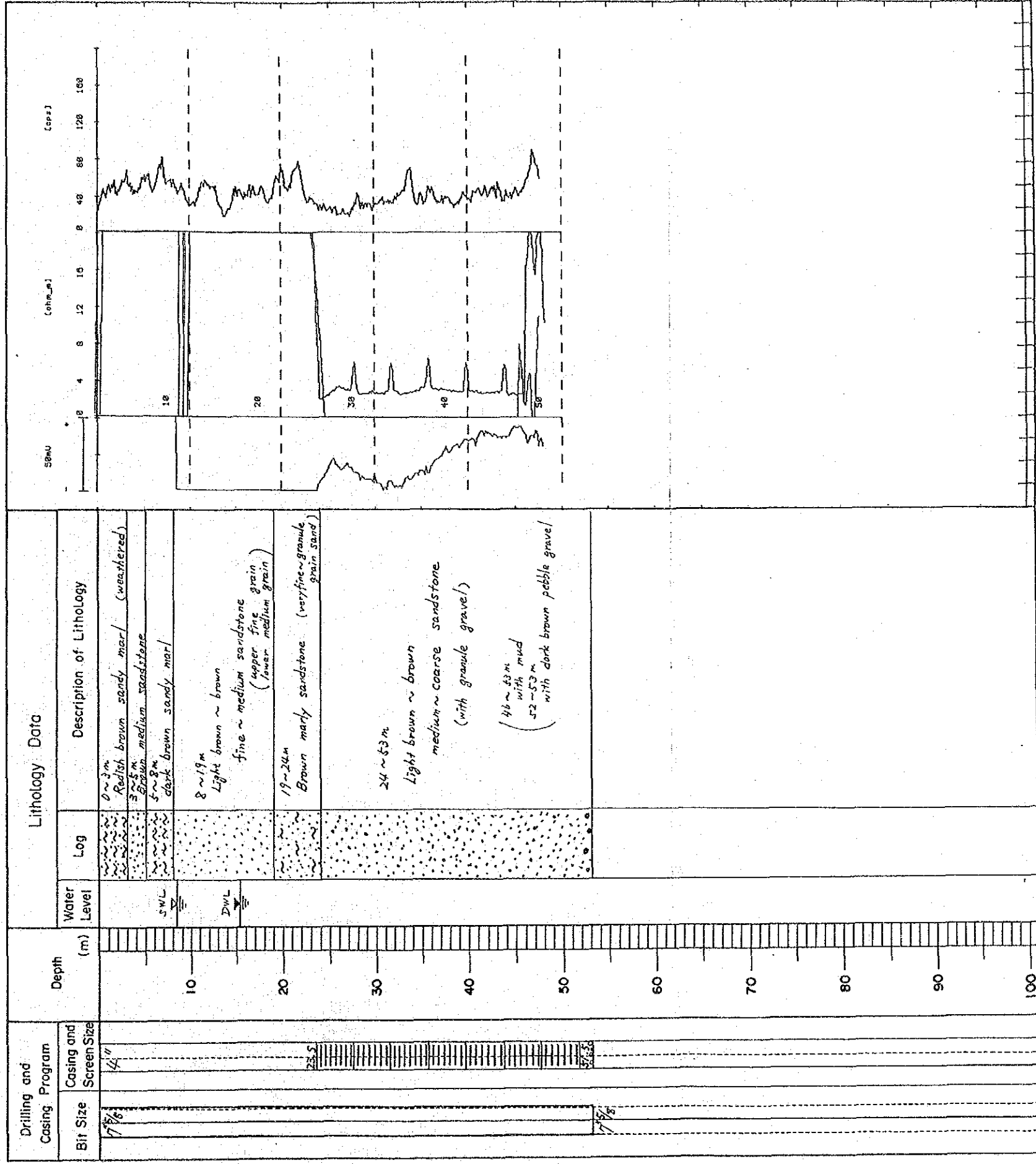
STATIC WATER LEVEL	GL- 16.50 m	WATER TEMPERATURE	27.5 °C
DYNAMIC WATER LEVEL	GL- 33.17 m	CONDUCTIVITY	975 $\mu\text{mho/cm}$
PUMPING RATE	247 (~218) $\frac{\text{m}^3}{\text{min}}$	PH	7.3
SPECIFIC CAPACITY	14.82 $\frac{\text{m}^3/\text{min}}{\text{m}}$	TOTAL HARDNESS	298 $\frac{\text{mg CaCO}_3}{\text{l}}$



# WELL LOG

PROJECT NAME		Groundwater Development Study In South Western Region of the Democratic Republic of MADAGASCAR		WELL NO. 59	
AREA AND LOCATION		Ampihamy (Toliara Pre.)			
ELEVATION	122.0 m	LATITUDE			
TOTAL DEPTH	53.0 m	DRILLING RIG	SANKYO SM-200		
DRILLING STARTED	07 October 1990	DRILLED BY	MIEM & JICA Study Team		
WELL COMPLETED	14 October 1990	LOGGED BY	dhtb		

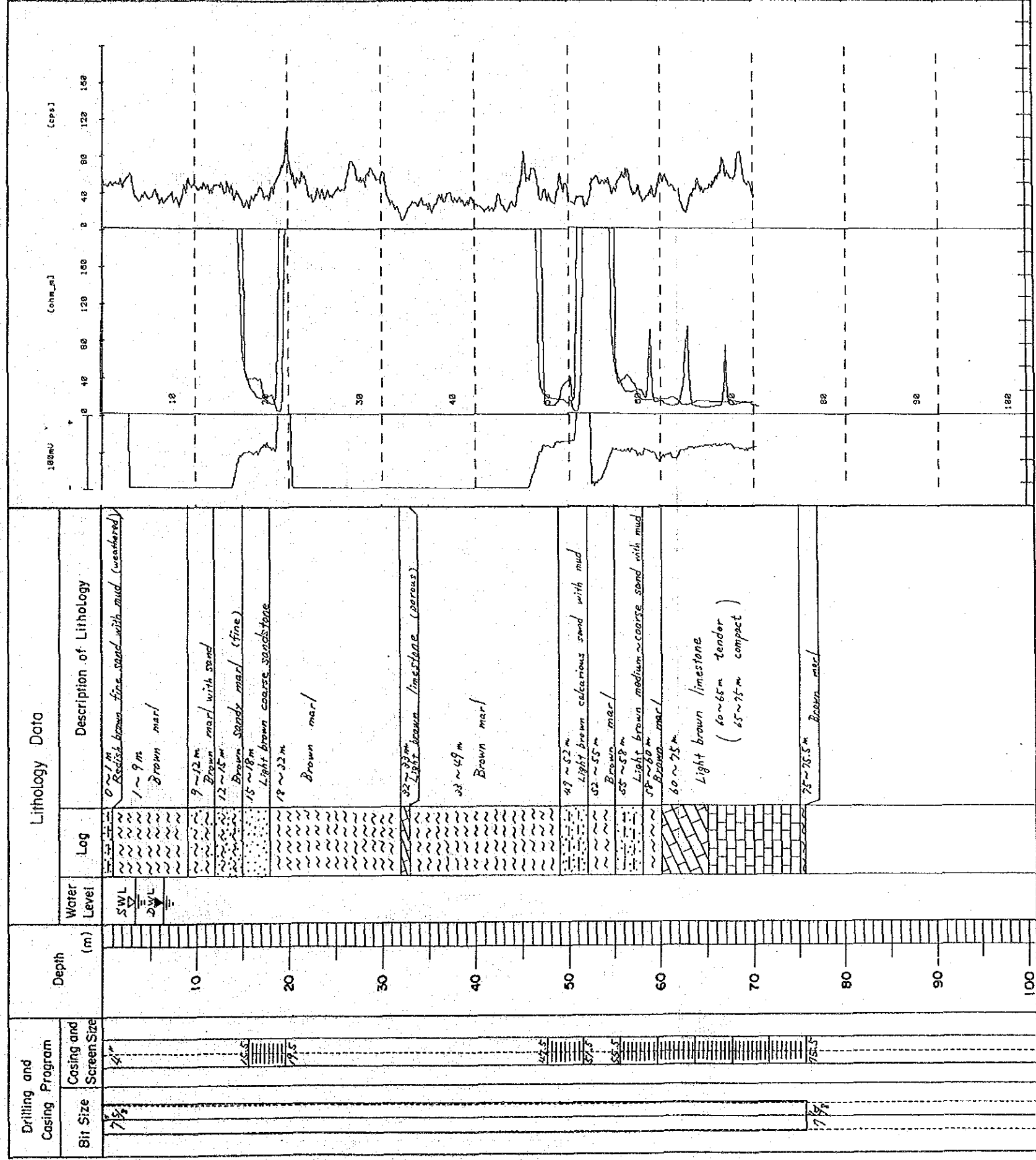
STATIC WATER LEVEL	GL - 8.30 m	WATER TEMPERATURE	27.8 °C
DYNAMIC WATER LEVEL	GL - 15.33 m	CONDUCTIVITY	996 $\mu S/cm$
PUMPING RATE	296 (315) $l/min$	pH	7.2
SPECIFIC CAPACITY	42.11 $l/min/m$	TOTAL HARDNESS	296 $mg/l$ as $CaCO_3$



# WELL LOG

PROJECT NAME	Groundwater Development Study in South Western Region of the Democratic Republic of MADAGASCAR		WELL NO.	65
AREA AND LOCATION	Ankarobato (Toliara Pre.)			
ELEVATION	80 m	LATITUDE	LONGITUDE	
TOTAL DEPTH	75.5 m	DRILLING RIG	SANKYO SM-200	
DRILLING STARTED	25 June 1990	DRILLED BY	MIEM & JICA Study Team	
WELL COMPLETED	2 July 1990	LOGGED BY	ditto	

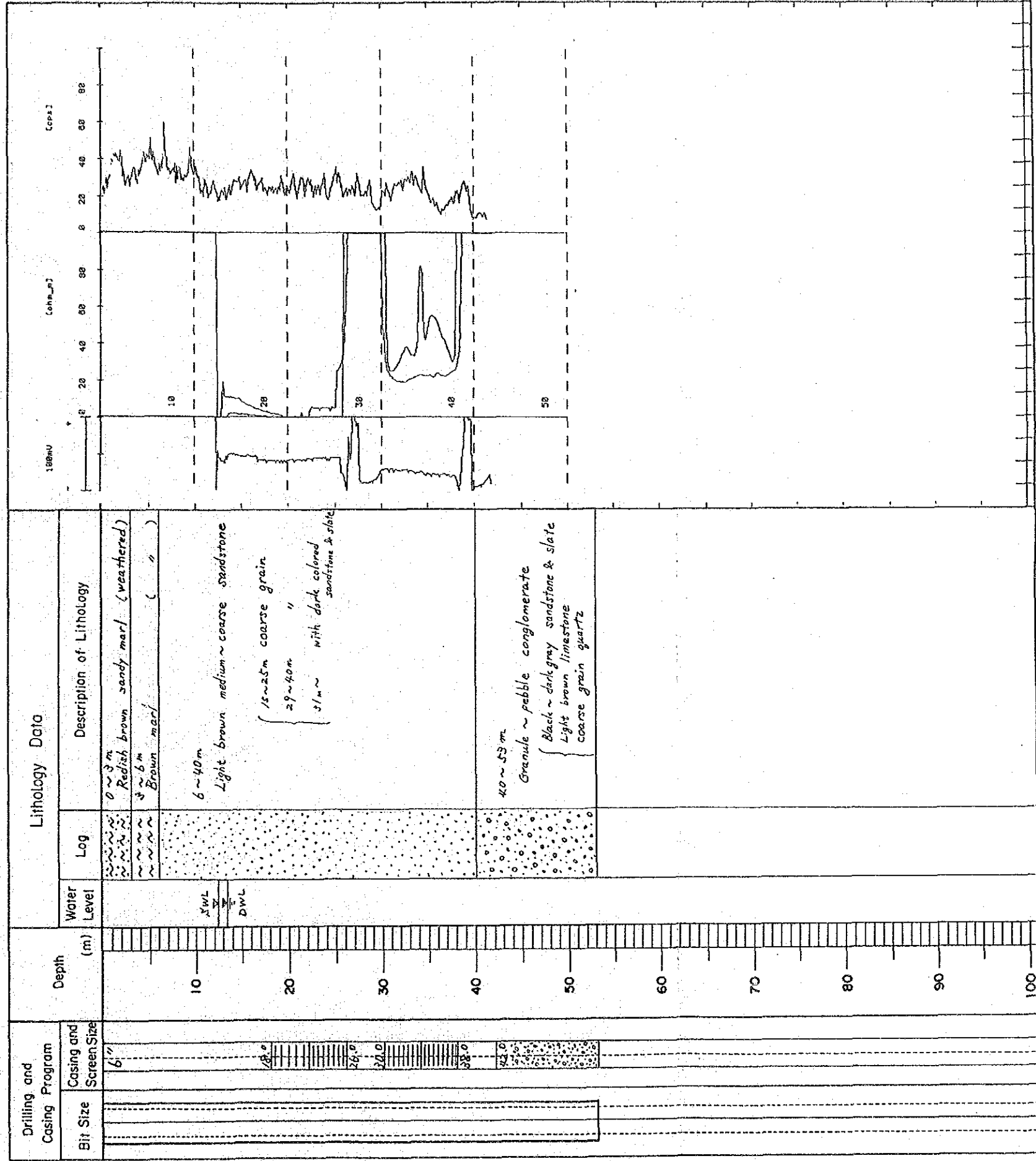
STATIC WATER LEVEL	GL -- 3.40 m	WATER TEMPERATURE	27.8 °C
DYNAMIC WATER LEVEL	GL -- 6.33 m	CONDUCTIVITY	849 $\mu S/cm$
PUMPING RATE	339 (~38l) $\frac{l}{min}$	pH	7.2
SPECIFIC CAPACITY	15.7 $\frac{l}{min/m}$	TOTAL HARDNESS	320 $\frac{mg}{l} CaCO_3$



# WELL LOG

PROJECT NAME		Groundwater Development Study in South Western Region of the Democratic Republic of MADAGASCAR		WELL NO. —	
AREA AND LOCATION		Befandriana (Morombe Pre.)			
ELEVATION	152 m	LATTUDE	LONGITUDE		
TOTAL DEPTH	53.0 m	DRILLING RIG	SANKYO SM-200		
DRILLING STARTED	19. September 1990	DRILLED BY	MIEM & JICA Study Team		
WELL COMPLETED	22. September 1990	LOGGED BY	dtho		

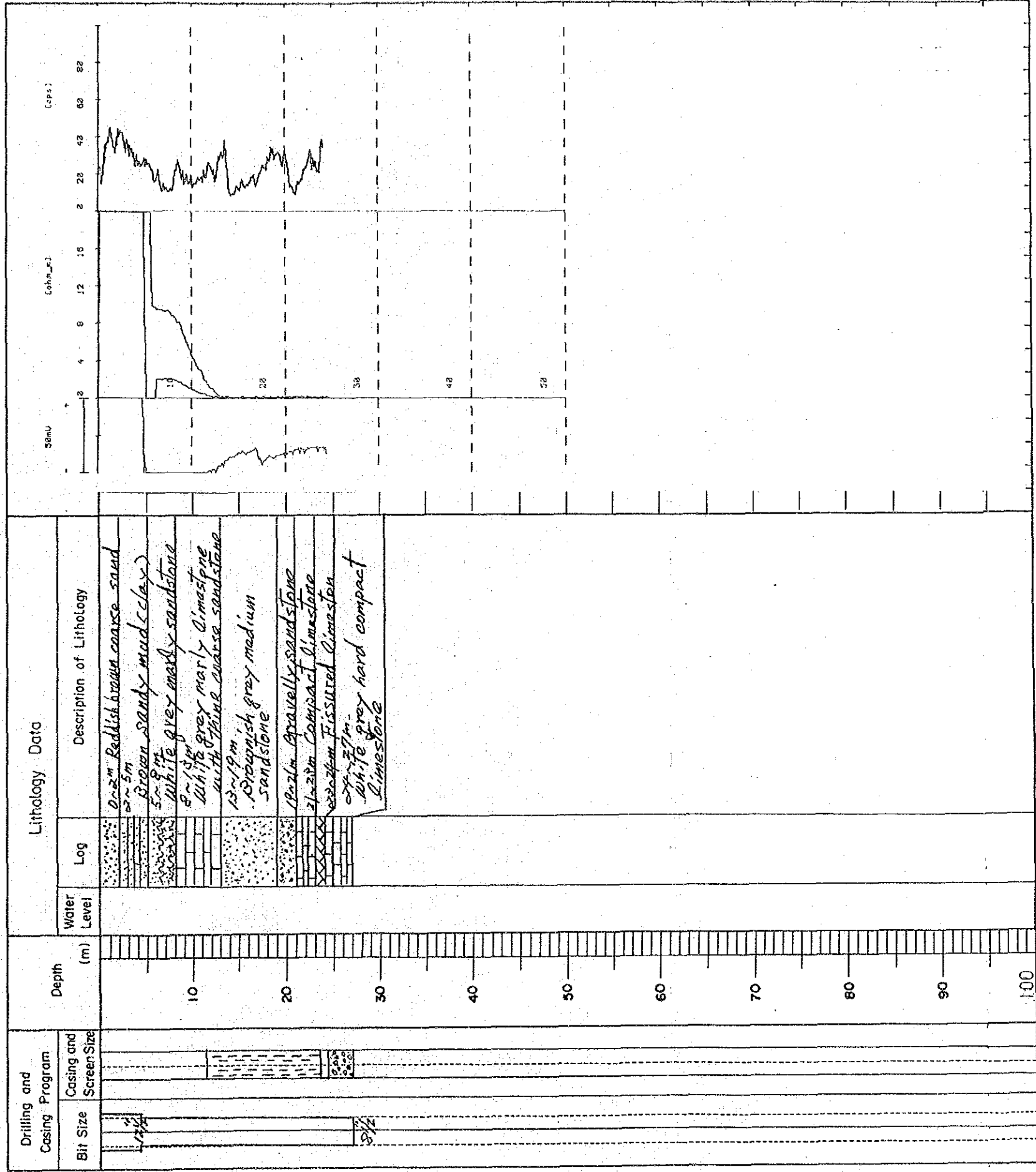
STATIC WATER LEVEL	GL - 12.30 m	WATER TEMPERATURE	28.3 °C
DYNAMIC WATER LEVEL	GL - 13.285 m	CONDUCTIVITY	565 $\mu S/cm$
PUMPING RATE	300 $l/min$	pH	7.1
SPECIFIC CAPACITY	304.57 $l/min/m$	TOTAL HARDNESS	>60 $mg/l$ as $CaCO_3$



# WELL LOG

Groundwater Development Study in South Western Region of the Democratic Republic of MADAGASCAR		WELL NO. 63
PROJECT NAME		
AREA AND LOCATION <i>Manombo-Atm</i>		
ELEVATION	15 m	LATTUDE
TOTAL DEPTH	27 m	DRILLING RIG <i>KOKEN</i>
DRILLING STARTED	<i>26 September 1990</i>	DRILLED BY <i>MIEMBETIGA Study Team</i>
WELL COMPLETED	<i>30 September 1990</i>	LOGGED BY <i>DITTE</i>

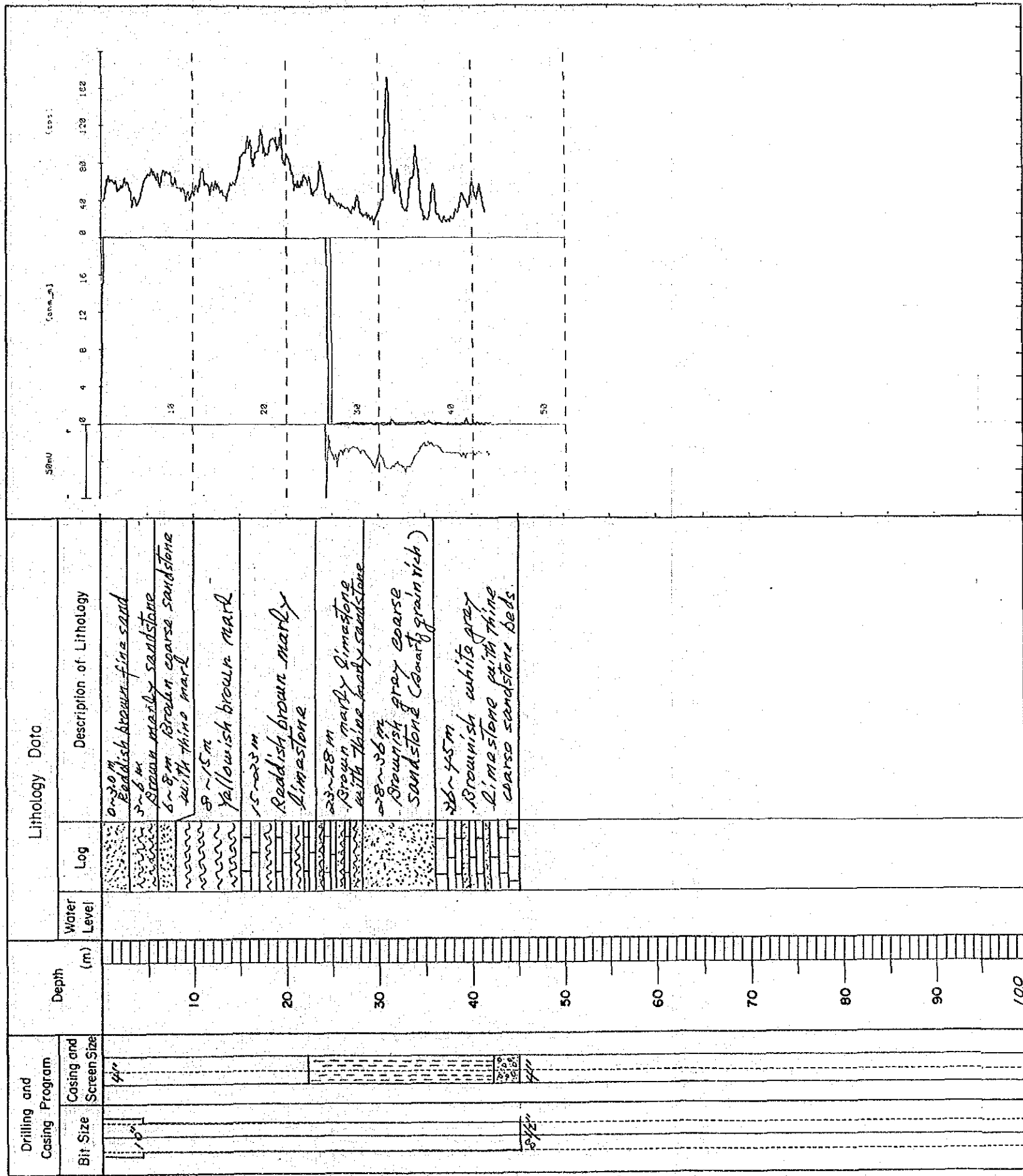
STATIC WATER LEVEL	<i>GL - 4.53 m</i>	WATER TEMPERATURE	<i>28.5 °C</i>
DYNAMIC WATER LEVEL	<i>GL - 4.92 m</i>	CONDUCTIVITY	<i>1,000 <math>\mu\text{S/cm}</math></i>
PUMPING RATE	<i>165 (-2263) <math>\text{l}/\text{min}</math></i>	PH	<i>7.2</i>
SPECIFIC CAPACITY	<i>423.08 <math>\text{l}/\text{min}/\text{m}</math></i>	TOTAL HARDNESS	<i>406 <math>\text{mg as CaCO}_3</math></i>



# WELL LOG

PROJECT NAME		Groundwater Development Study In South Western Region of the Democratic Republic of MADAGASCAR		WELL NO. 67	
AREA AND LOCATION		Tsefanoka			
ELEVATION	104 m	LATTUDE			
TOTAL DEPTH	45 m	DRILLING RIG	KOKEN		
DRILLING STARTED	8 October 1990				
WELL COMPLETED	102 October 1990				
DRILLED BY		MIEM & IICA Study Team			
LOGGED BY		Ditto			

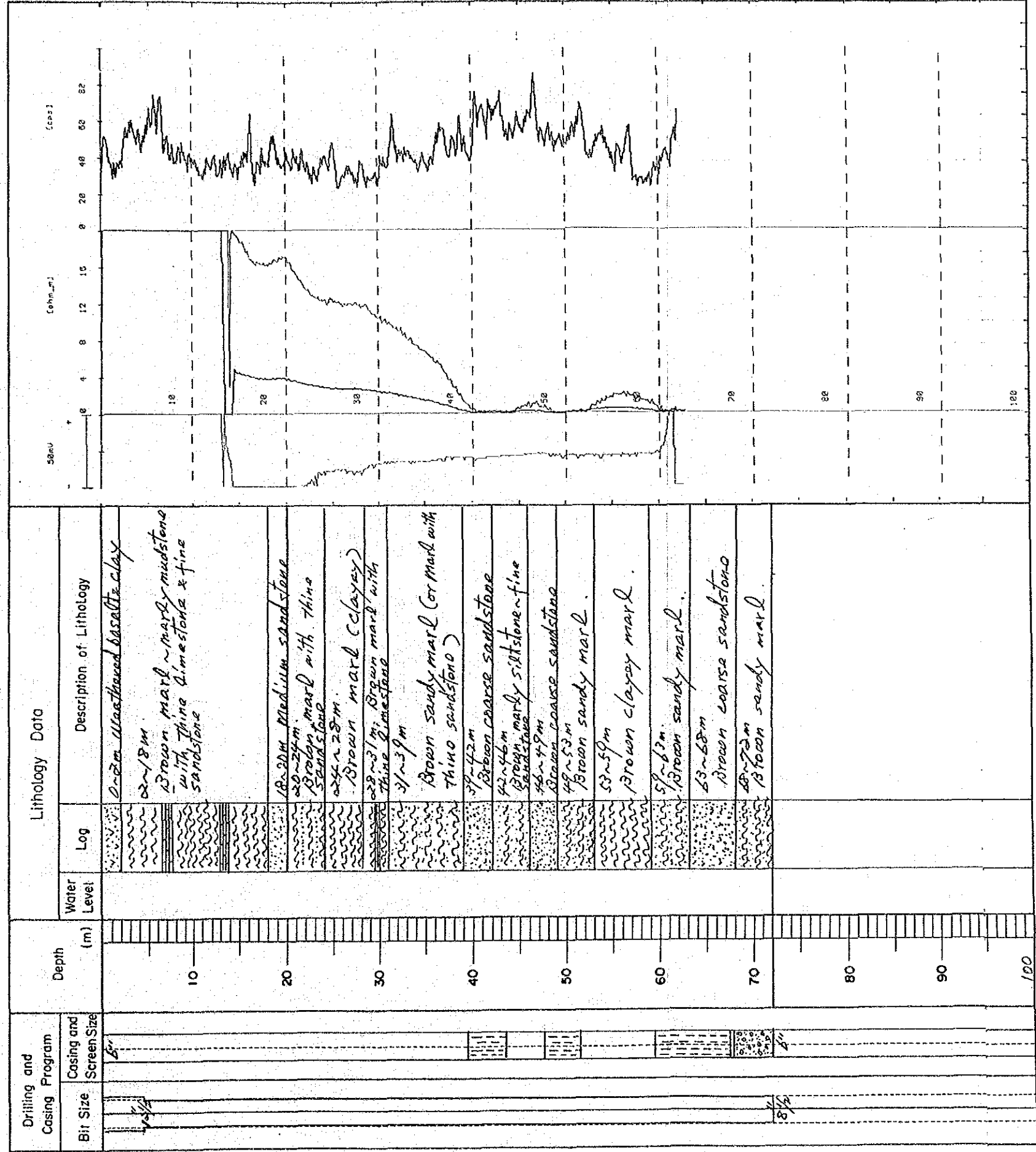
STATIC WATER LEVEL	GL - 24.30 m	WATER TEMPERATURE	28.5 °C
DYNAMIC WATER LEVEL	GL - 27.35 m	CONDUCTIVITY	602 $\mu\text{S/cm}$
PUMPING RATE	142 ( $\sim 142$ ) $\text{g/min}$	pH	7.4
SPECIFIC CAPACITY	46.56 $\text{g/min/m}$	TOTAL HARDNESS	182 $\text{mg CaCO}_3$



# WELL LOG

PROJECT NAME		Groundwater Development Study in South Western Region of the Democratic Republic of MADAGASCAR		WELL NO. 68	
AREA AND LOCATION		Benetsy			
ELEVATION		39 m		LONGITUDE	
TOTAL DEPTH		72 m		DRILLING RIG KOKEN	
DRILLING STARTED		7 October 1990		DRILLED BY MIEM & IICA Study Team	
WELL COMPLETED		5 October 1990		LOGGED BY D.ITE	

STATIC WATER LEVEL	GL - 13.51 m	WATER TEMPERATURE	27.5 °C
DYNAMIC WATER LEVEL	GL - 15.525 m	CONDUCTIVITY	977 $\mu S/cm$
PUMPING RATE	158 (-161) $l/min$	pH	7.4
SPECIFIC CAPACITY	78.41 $l/min/m$	TOTAL HARDNESS	140 $mg/l$ as $CaCO_3$

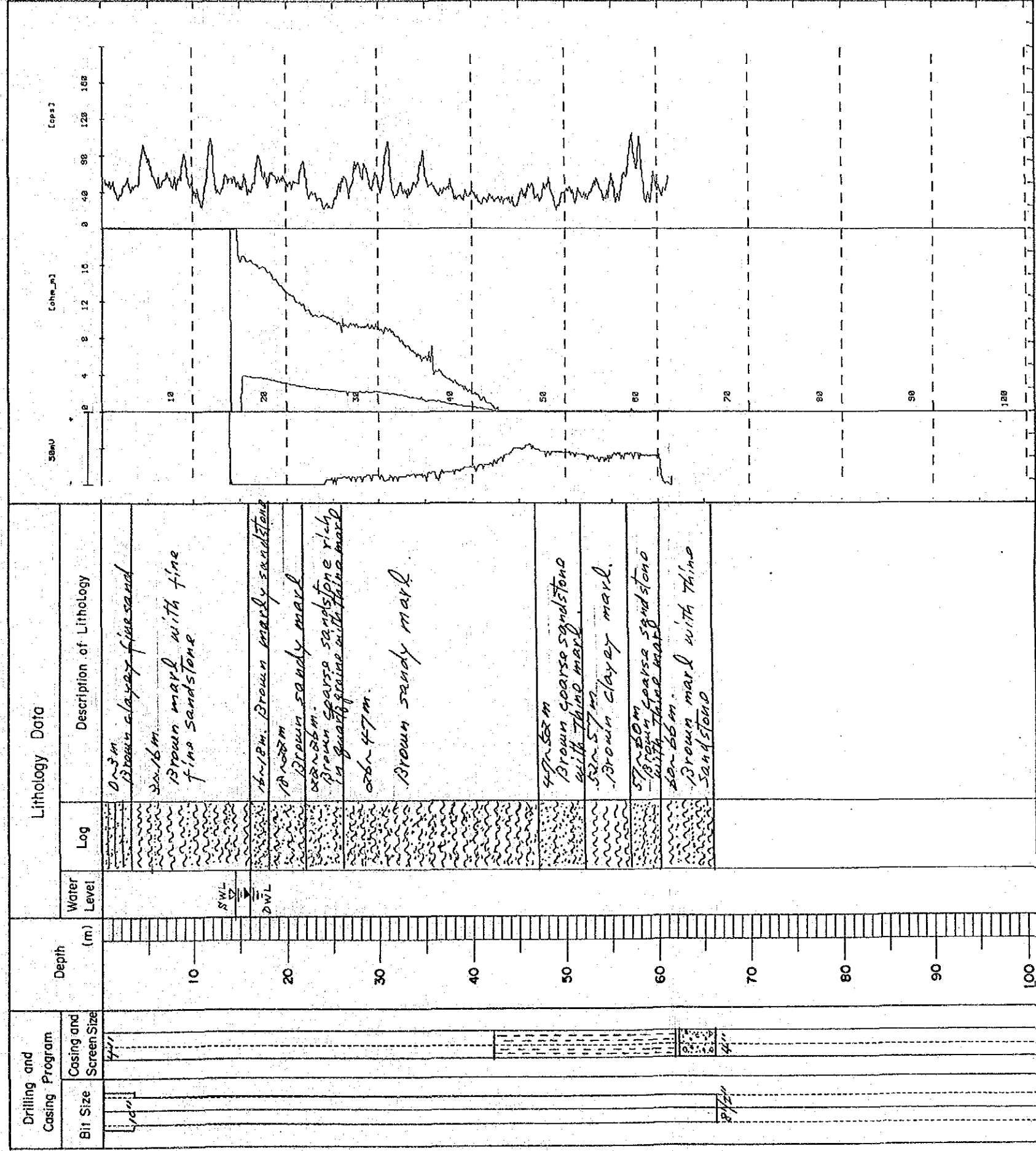




# WELL LOG

PROJECT NAME		Groundwater Development Study in South Western Region of the Democratic Republic of MADAGASCAR		WELL NO. 101	
AREA AND LOCATION		Antilimalinika (Toliara Pre.)			
ELEVATION	30 m	LATITUDE	LONGITUDE		
TOTAL DEPTH	66 m	DRILLING RIG	KOKEN		
DRILLING STARTED	22. October 1990	DRILLED BY	MIEMETICA Study Team		
WELL COMPLETED	28. October 1990	LOGGED BY	DITTO		

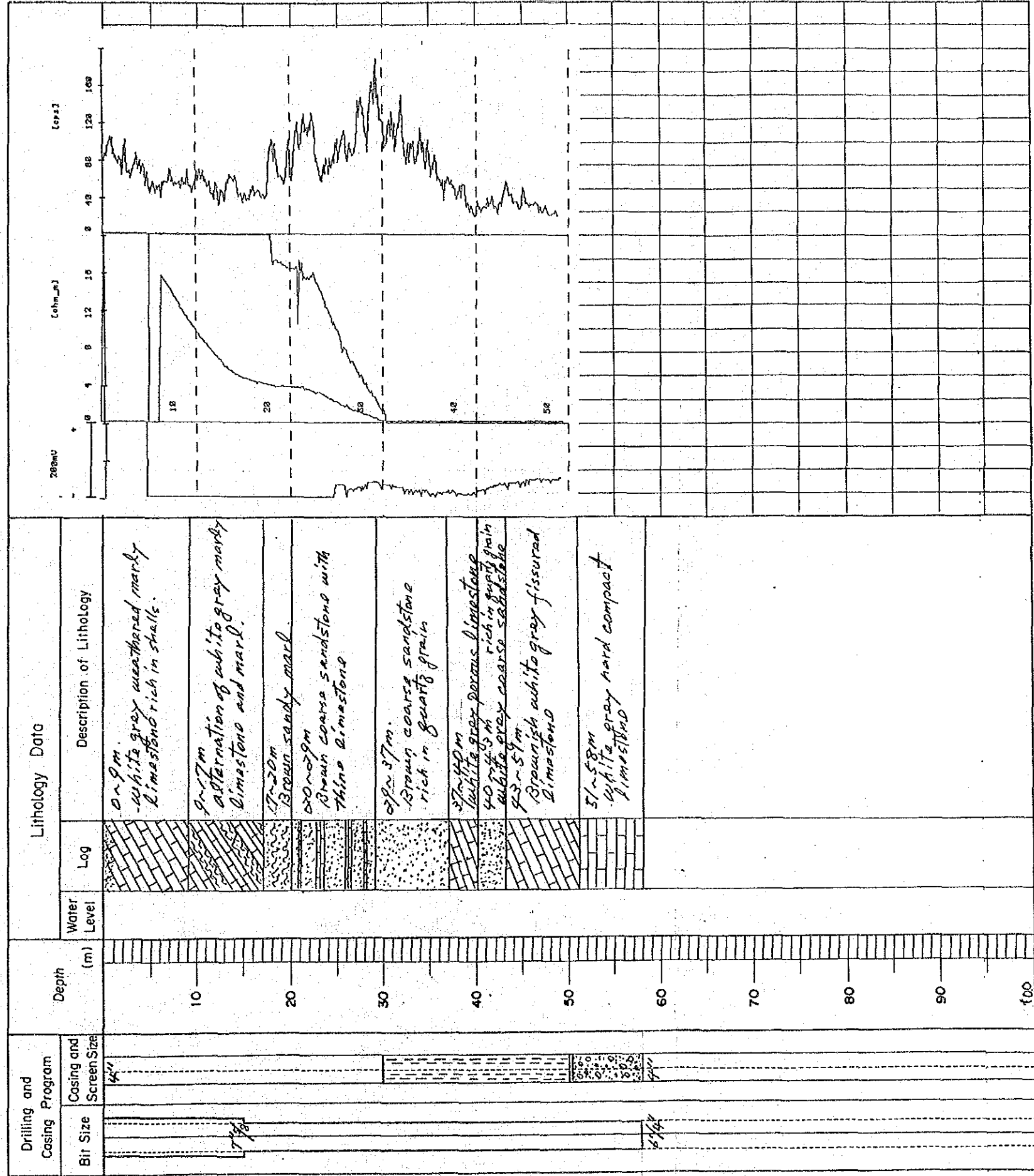
STATIC WATER LEVEL	GL - 14.36 m	WATER TEMPERATURE	28.4 °C
DYNAMIC WATER LEVEL	GL - 16.02 m	CONDUCTIVITY	2450 $\mu S/cm$
PUMPING RATE	152 (~155) $l/min$	PH	7.5
SPECIFIC CAPACITY	131.14 $m^3/day/m$	TOTAL HARDNESS	134 $mg/l CaCO_3$



# WELL LOG

PROJECT NAME		Groundwater Development Study In South Western Region of the Democratic Republic of MADAGASCAR		WELL NO. 81	
AREA AND LOCATION		MANDYOKA		LATTITUDE	
ELEVATION		20 m		LONGITUDE	
TOTAL DEPTH		58.0 m		DRILLING RIG	
DRILLING STARTED		15 October 1990		KOKEN	
WELL COMPLETED		20 October 1990		DRILLED BY	
				MIEM & JIGA Study Team	
				LOGGED BY	
				Dito	

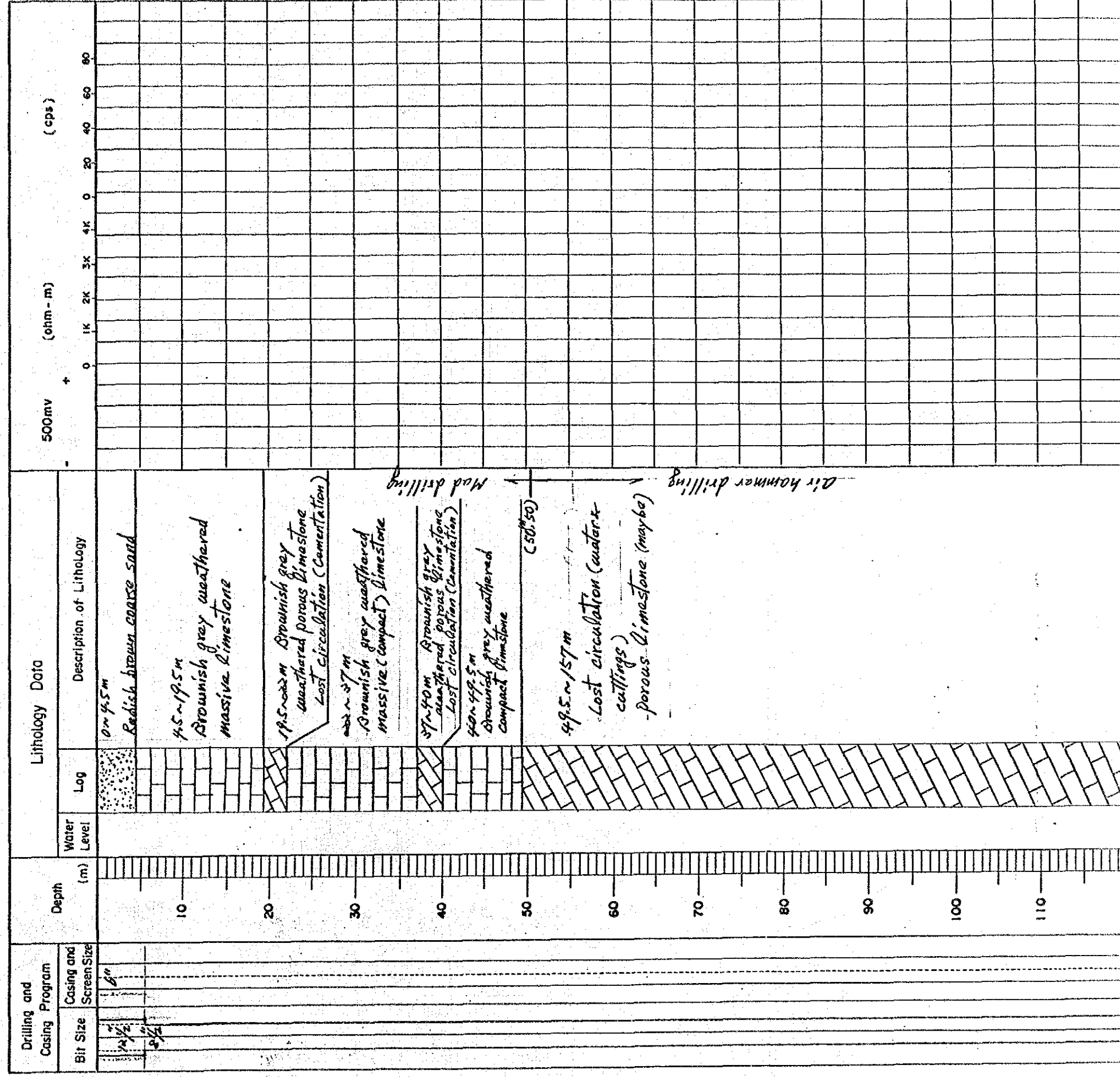
STATIC WATER LEVEL	GL - 5.23 m	WATER TEMPERATURE	23.0 °C
DYNAMIC WATER LEVEL	GL - 5.23 m	CONDUCTIVITY	95
PUMPING RATE	15 October 1990	PH	7.4
SPECIFIC CAPACITY	20 October 1990	TOTAL HARDNESS	246 mg/l as CaCO <sub>3</sub>

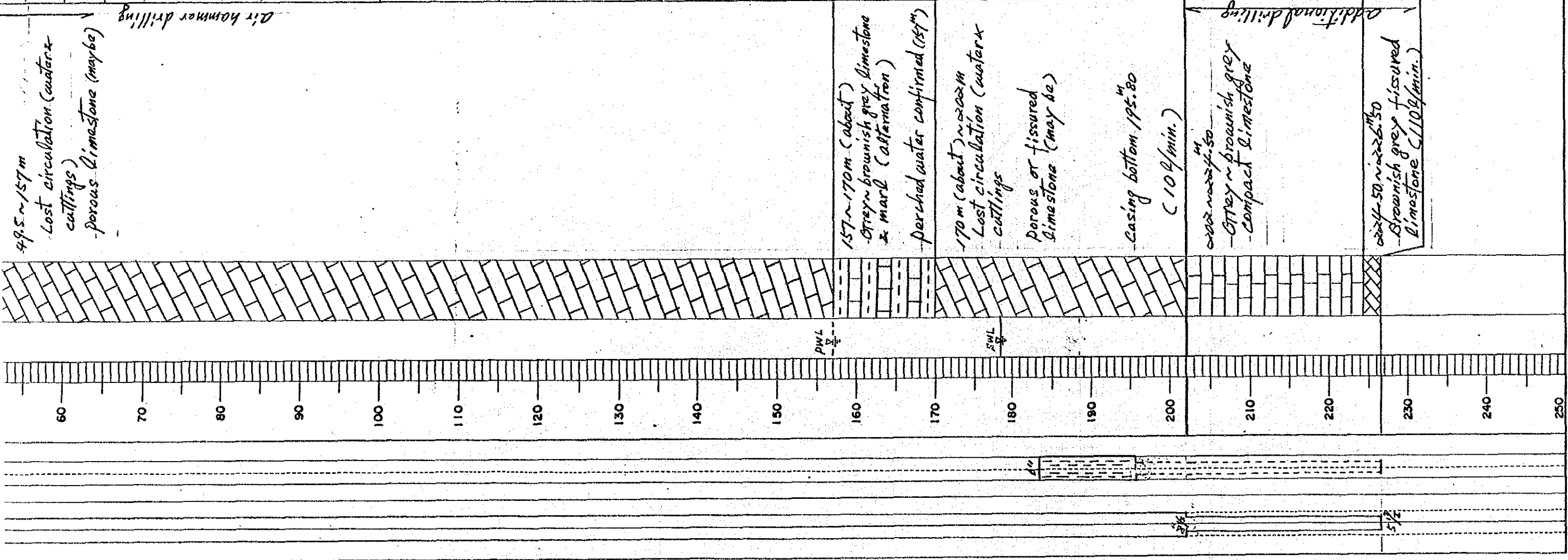
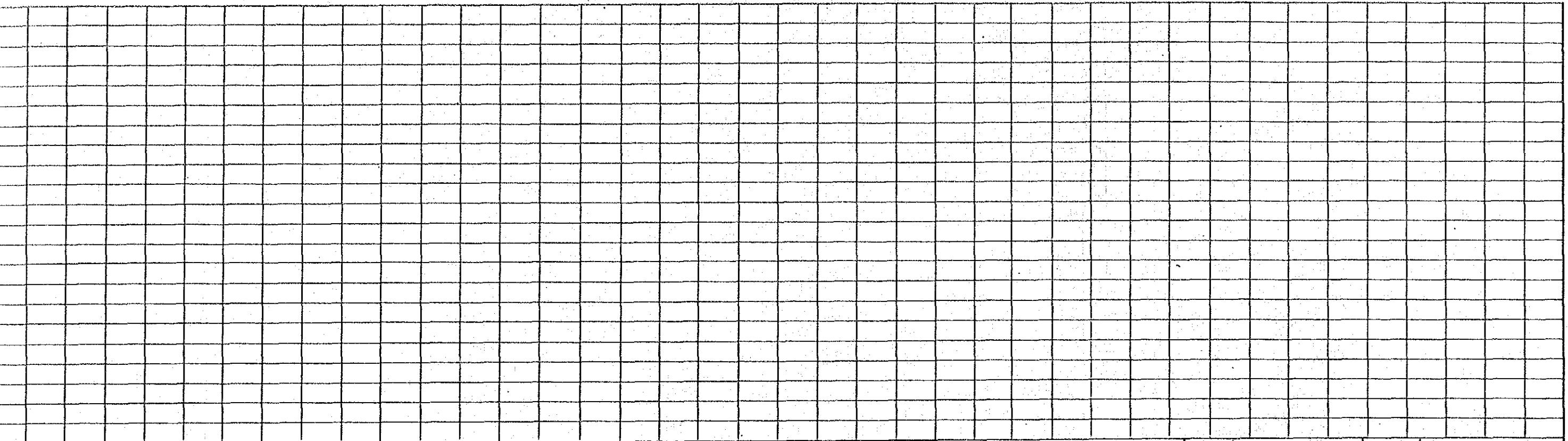


# WELL LOG

PROJECT NAME	Groundwater Development Study In South Western Region of the Democratic Republic of MADAGASCAR		WELL NO. 78
AREA AND LOCATION	Sefoly (Toliara Pre.)		
ELEVATION	200.0 m	LATITUDE	LONGITUDE
TOTAL DEPTH	226.50 m	DRILLING RIG	TONE TOP-200
DRILLING STARTED	19 June 1990	DRILLED BY	MIEM&JICA Study Team
WELL COMPLETED	15 September 1990	LOGGED BY	Ditto

STATIC WATER LEVEL	GL - 178.56 m	WATER TEMPERATURE	°C
DYNAMIC WATER LEVEL	_____ m	CONDUCTIVITY	403 $\mu$ S/cm
PUMPING RATE	110 l/min (air lifting)	pH	7.8
SPECIFIC CAPACITY	_____	TOTAL HARDNESS	194 $\mu$ g/l as CaCO <sub>3</sub>

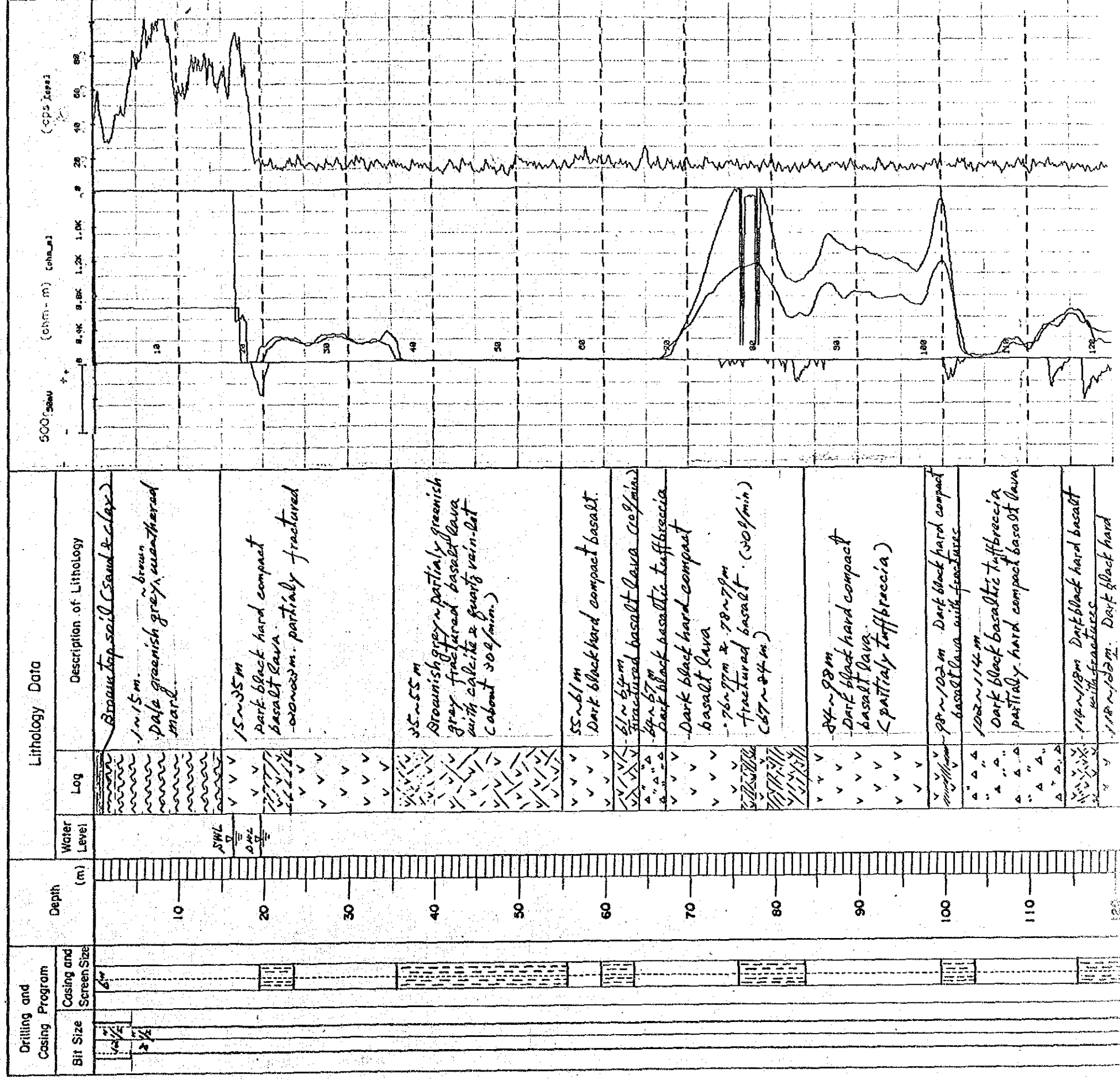


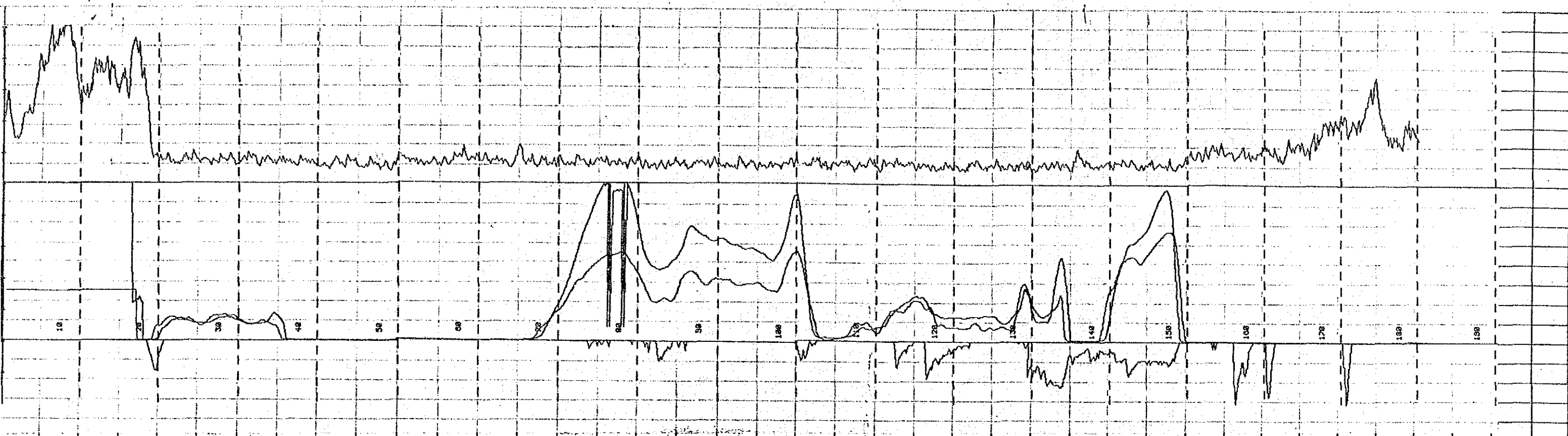


# WELL LOG

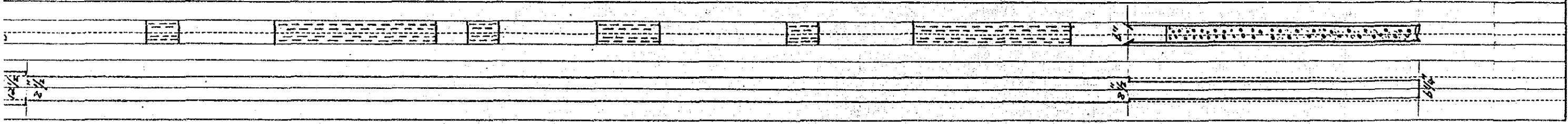
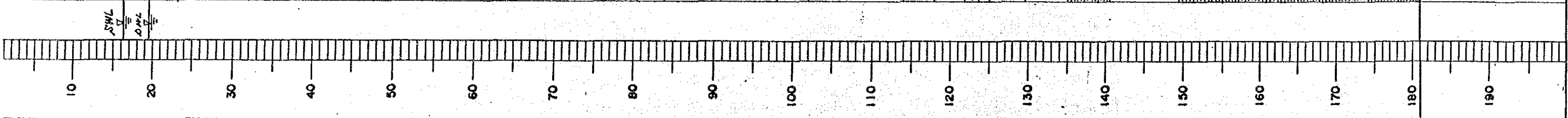
PROJECT NAME		Groundwater Development Study in South Western Region of the Democratic Republic of MADAGASCAR		WELL NO. 95	
AREA AND LOCATION		Tranokaky (Sakaraha Pre.)			
ELEVATION	430 m	LATITUDE	LONGITUDE		
TOTAL DEPTH	181.1 m	DRILLING RIG	TONE TOP-200		
DRILLING STARTED	14 July 1990	DRILLED BY	MIEM & JICA Study Team		
WELL COMPLETED	23 July 1990	LOGGED BY	Ditto		

STATIC WATER LEVEL	GL - 16.29 m	WATER TEMPERATURE	25 °C
DYNAMIC WATER LEVEL	GL - 19.61 m	CONDUCTIVITY	894 $\mu$ S/cm
PUMPING RATE	38.7 (2110) l/min.	PH	7.5
SPECIFIC CAPACITY	1.65 l/min/m	TOTAL HARDNESS	358 mg/l as CaCO <sub>3</sub>





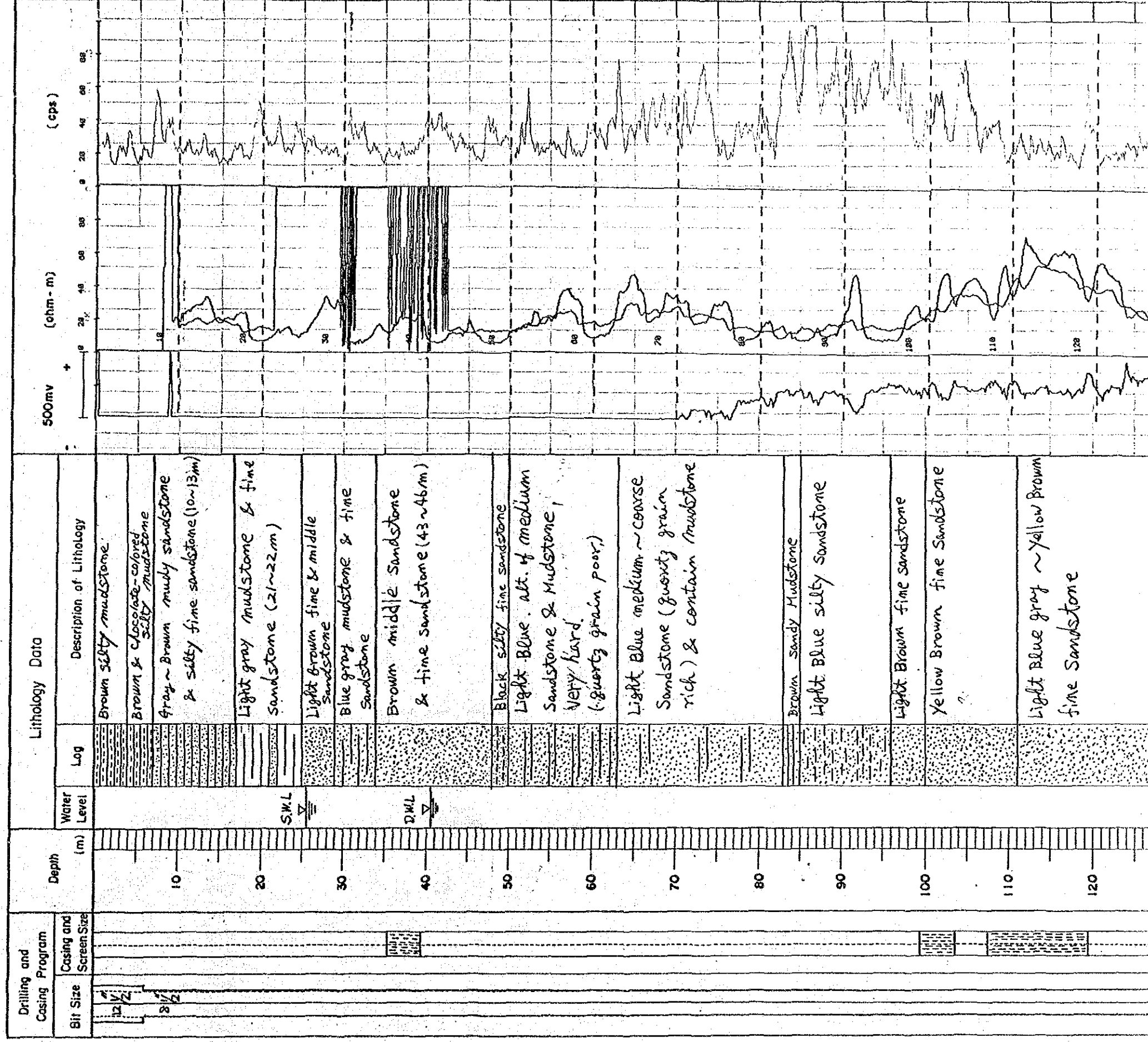
10-15 m	Brown top soil (sand & clay) ~ brown pale greenish grey, weathered mark.
15-35 m	Dark black hard compact basalt lava - somewhat partially fractured
35-55 m	Brownish grey - partially greenish grey fractured basalt lava with calcite & quartz vein-let (about 300 ft/m)
55-61 m	Dark black hard compact basalt.
61-64 m	Fractured basalt lava (20 ft/m)
64-67 m	Dark black basaltic tuffbreccia
67-77 m	Dark black hard compact basalt lava
77-84 m	fractured basalt (20 ft/m) (67-84 m)
84-98 m	Dark black hard compact basalt lava (partially tuffbreccia)
98-102 m	Dark black hard compact basalt lava with fractures
102-114 m	Dark black basaltic tuffbreccia partially hard compact basalt lava
114-118 m	Dark black hard basalt with fractures
118-120 m	Dark black hard compact basalt lava
120-125 m	Dark black fractured basalt (300 ft/m)
125-129.5 m	Dark black hard compact basalt lava
129.5-135 m	Brown fine sandstone with fossils
135-140.80 m	Dark black shale (~ mudstone) with thin sandstone
140.80-149.50 m	Dark black hard compact basalt lava.
149.50-181 m	Dark black shale (~ mudstone)



# WELL LOG

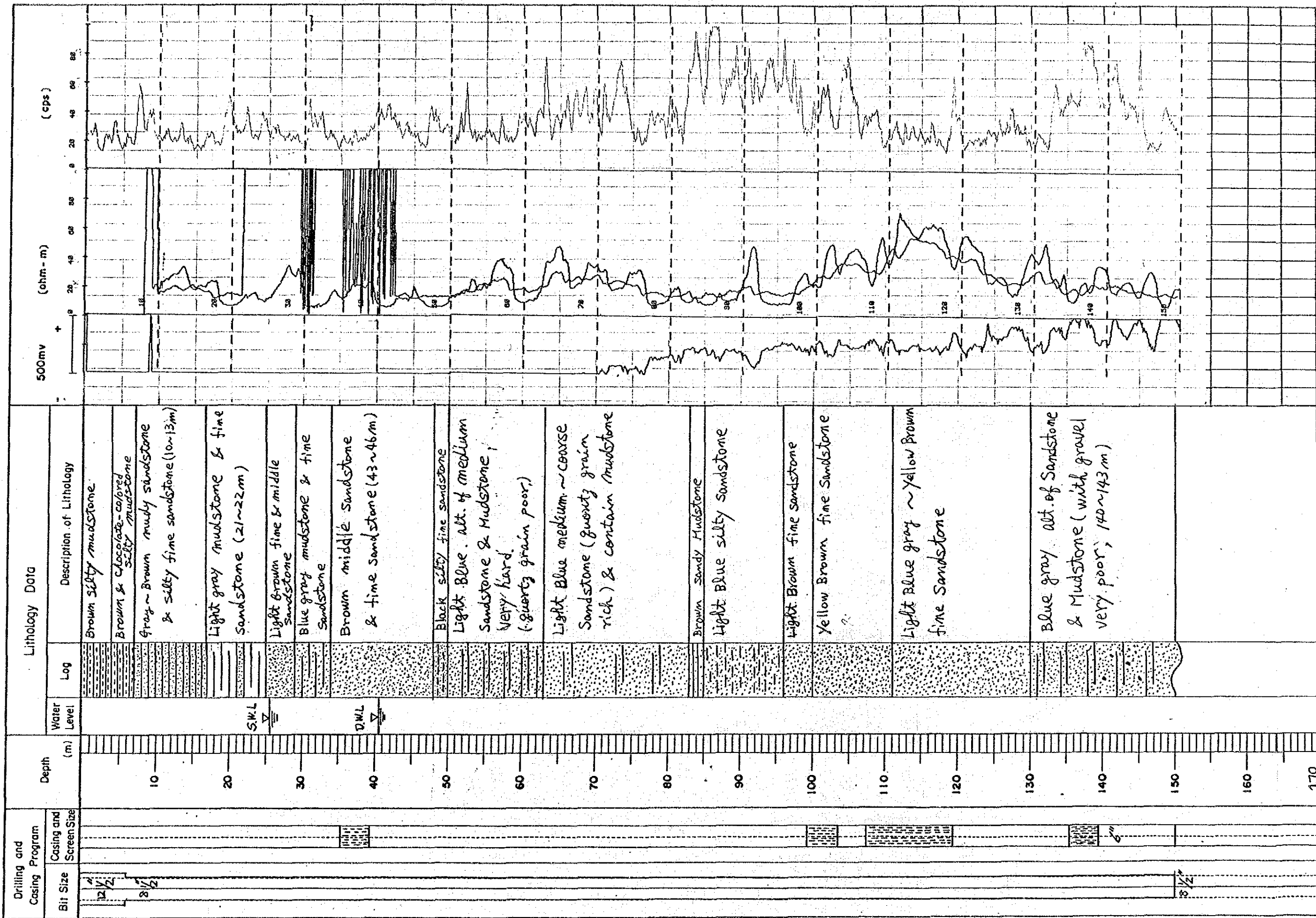
PROJECT NAME		Groundwater Development Study in South Western Region of the Democratic Republic of MADAGASCAR		WELL NO. 34	
AREA AND LOCATION		Tandrano (ANKAZOABO PRE.)			
ELEVATION	400 m	LATITUDE			
TOTAL DEPTH	150.1 m	DRILLING RIG	TOME TOP-200		
DRILLING STARTED	16 August 1990	DRILLED BY	MIEM & JICA study Team		
WELL COMPLETED	28 August 1990	LOGGED BY			

STATIC WATER LEVEL	GL-32.72 m	WATER TEMPERATURE	29.4 °C
DYNAMIC WATER LEVEL	GL-39.92 m	CONDUCTIVITY	410 $\mu$ S/cm
PUMPING RATE	360 (~650) l/min	pH	7.4
SPECIFIC CAPACITY	41.67 l/min/cm	TOTAL HARDNESS	162 $\text{mg/l}$ as CaCO <sub>3</sub>



17.7

DYNAMIC WATER LEVEL	GL-39.92 m	CONDUCTIVITY	410 $\mu\text{S}/\text{cm}$
PUMPING RATE	360 (~650) $\text{l}/\text{min}$	pH	7.4
SPECIFIC CAPACITY	41.67 $\text{l}/\text{min}/\text{m}$	TOTAL HARDNESS	162 $\text{mg}/\text{l}$ as $\text{CaCO}_3$

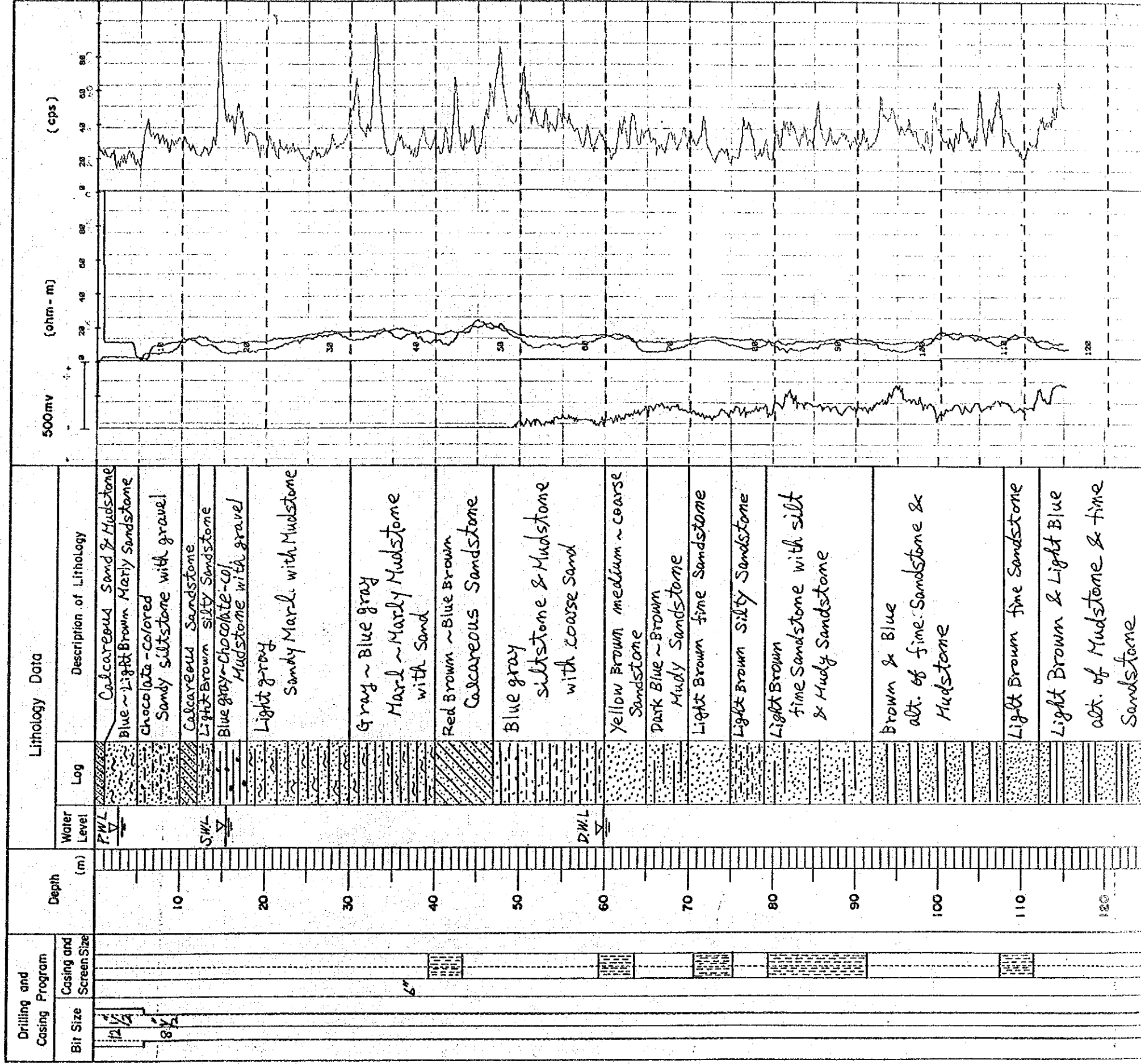




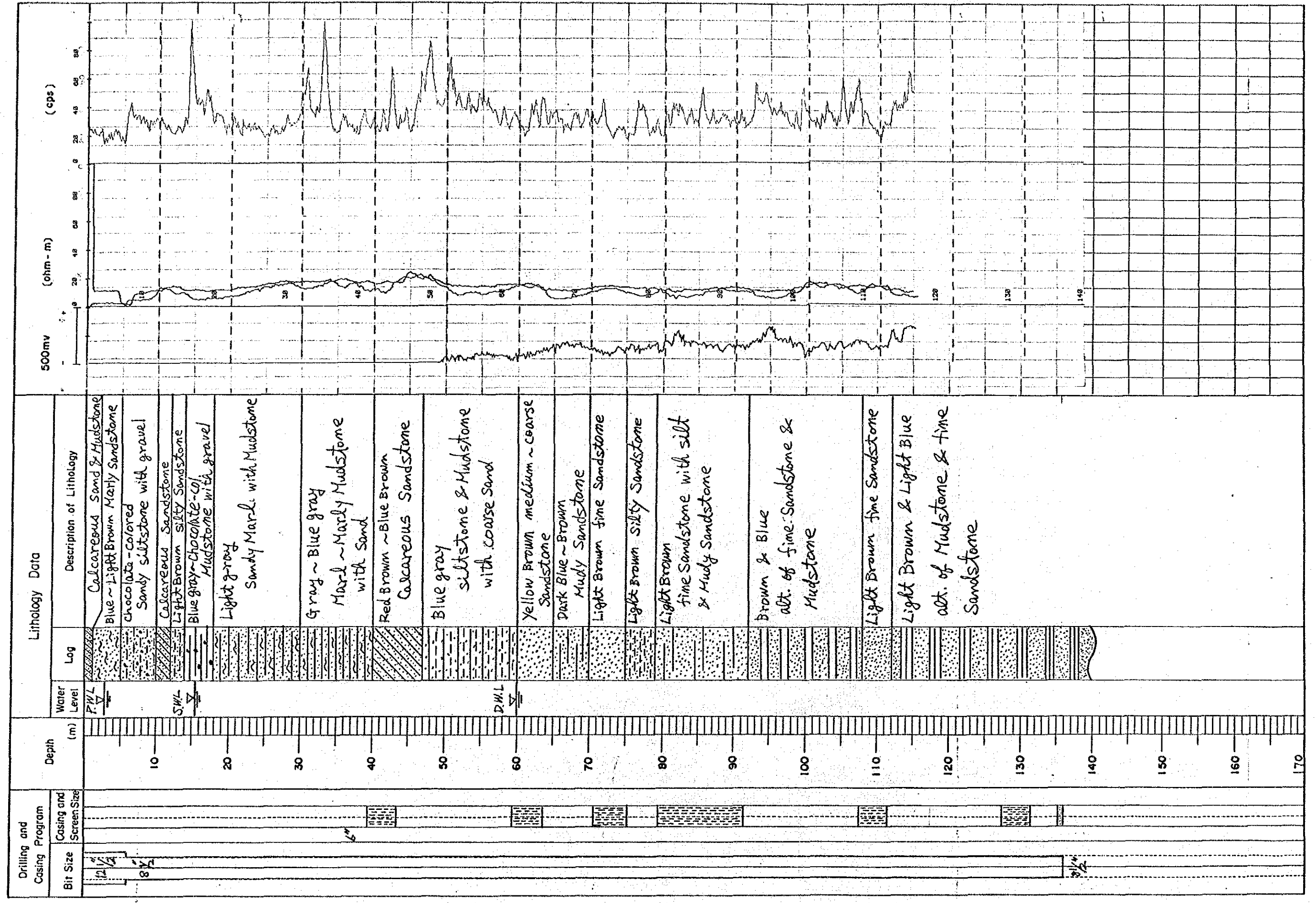
# WELL LOG

PROJECT NAME		Groundwater Development Study In South Western Region of the Democratic Republic of MADAGASCAR		WELL NO. 46	
AREA AND LOCATION		Berenty (ANKAZOABO pre.)			
ELEVATION	380 m	LATITUDE	LONGITUDE		
TOTAL DEPTH	140 m	DRILLING RIG	TONE TOP-200		
DRILLING STARTED	29 August 1990				
DRILLED BY	MIEM & JICA Study Team				
WELL COMPLETED	7 September 1990				
LOGGED BY					

STATIC WATER LEVEL	91 - 15.54 m	WATER TEMPERATURE	24.9 °C
DYNAMIC WATER LEVEL	61 - 59.99 m	CONDUCTIVITY	2190 $\mu S/cm$
PUMPING RATE	68 (~80) $l/min$	PH	8.4
SPECIFIC CAPACITY	2.53 $l/min/m$	TOTAL HARDNESS	20 $mg/l$ as $CaCO_3$



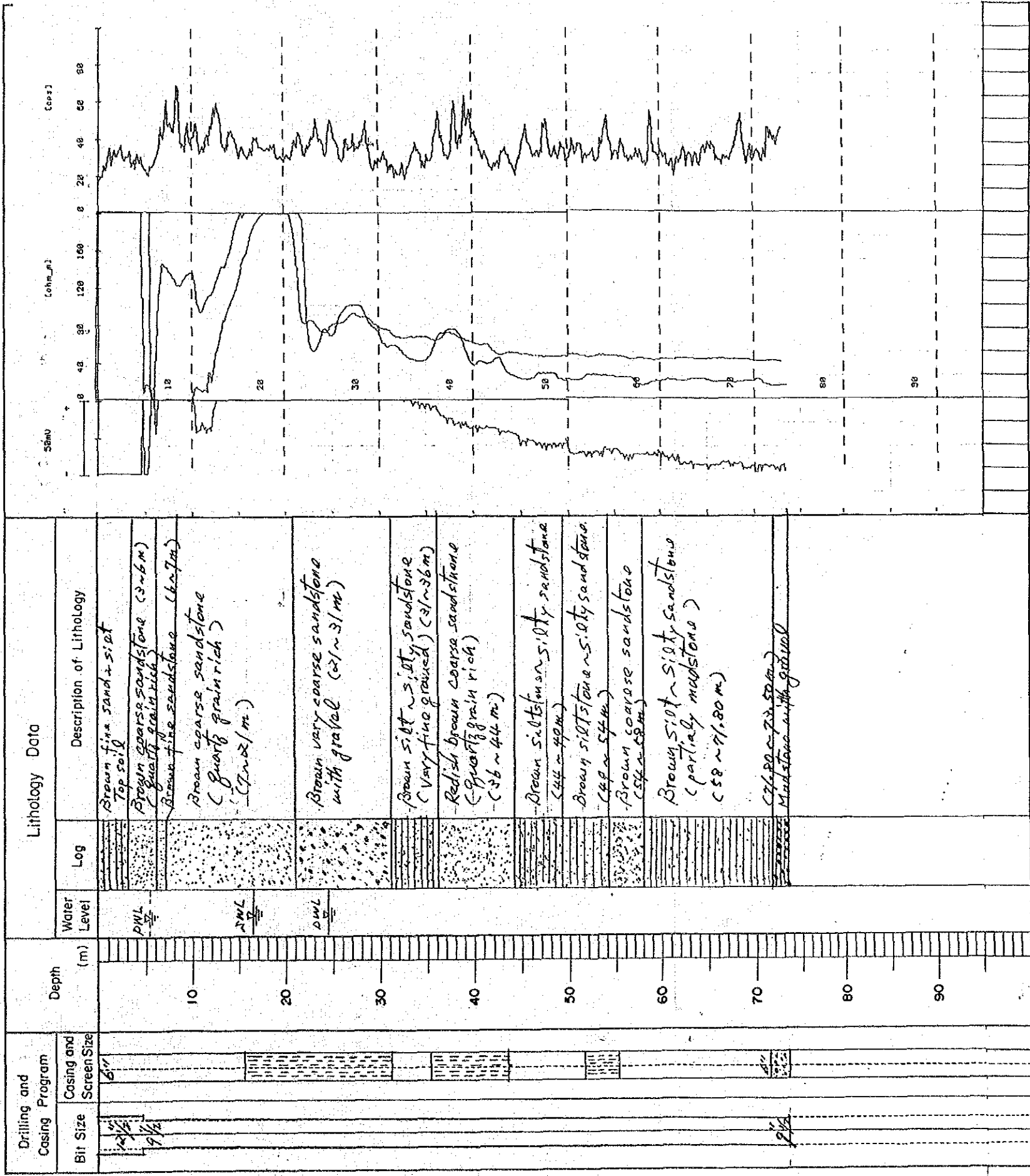
WATER TEMPERATURE	24.9 °C
DYNAMIC WATER LEVEL	91-59.99 m
PUMPING RATE	68 (~80) l/min
SPECIFIC CAPACITY	7.53 l/min/cm
CONDUCTIVITY	2,190 µS/cm
PH	8.4
TOTAL HARDNESS	20 mg/l as CaCO <sub>3</sub>



# WELL LOG

PROJECT NAME		Groundwater Development Study in South Western Region of the Democratic Republic of MADAGASCAR		WELL NO. 88	
AREA AND LOCATION		Maninjay (Sakaraha Pre.)			
ELEVATION		600 m		LONGITUDE	
TOTAL DEPTH		73.50 m			
DRILLING STARTED		25 July 1990			
WELL COMPLETED		31 July 1990			
		DRILLING RIG		TOME TD0-200	
		DRILLED BY		MIEM & IICA study team	
		LOGGED BY		D. Tho	

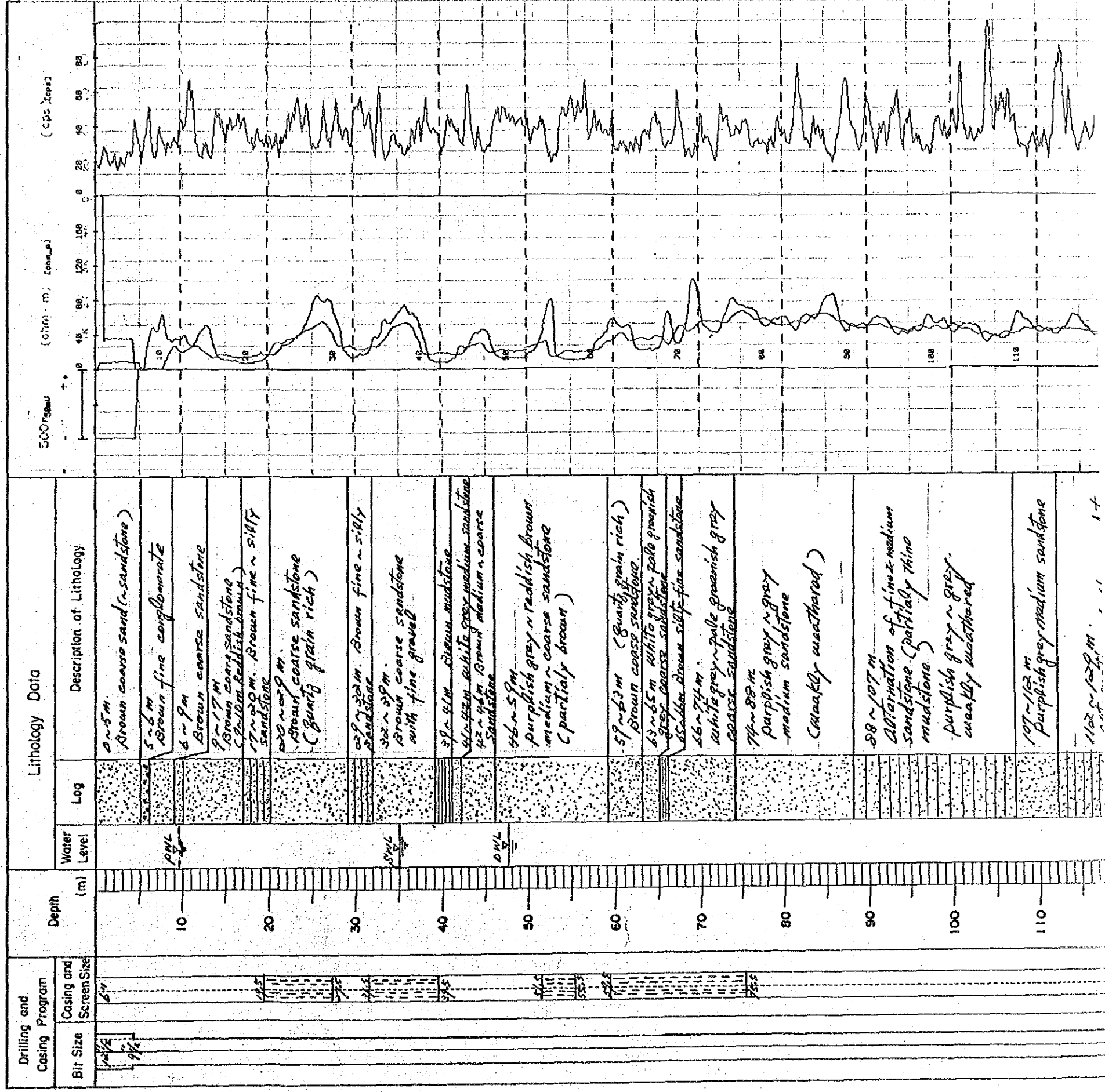
STATIC WATER LEVEL	GL-16.29 m	WATER TEMPERATURE	23.5 °C
DYNAMIC WATER LEVEL	GL-24.56 m	CONDUCTIVITY	106 µS/cm
PUMPING RATE	360 (~480) g/min	pH	6.9
SPECIFIC CAPACITY	43.53 l/min/m	TOTAL HARDNESS	20 mg CaCO <sub>3</sub>

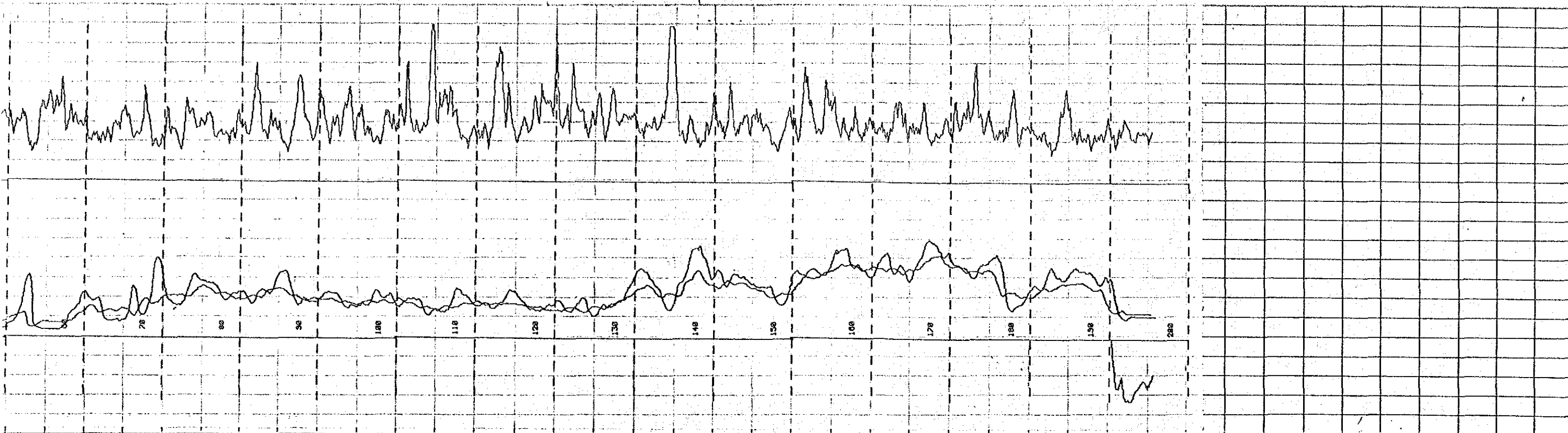


# WELL LOG

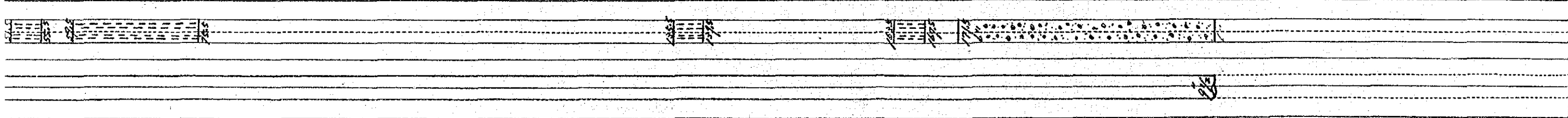
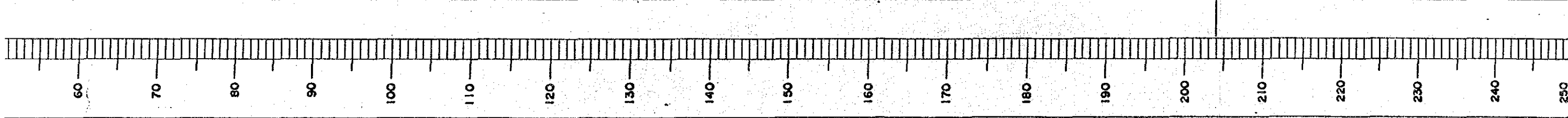
PROJECT NAME	Groundwater Development Study in South Western Region of the Democratic Republic of MADAGASCAR		WELL NO. 96
AREA AND LOCATION	Analamary (Sakaraha pr.)		
ELEVATION	534 m	LATITUDE	
TOTAL DEPTH	204 m	DRILLING RIG	TONE TOP-200
DRILLING STARTED	21 August 1990		
WELL COMPLETED	10 August 1992		
	DRILLED BY		MIEMA TEA Study Team
	LOGGED BY		Ditto

STATIC WATER LEVEL	97 - 35.00 m	WATER TEMPERATURE	25.6 °C
DYNAMIC WATER LEVEL	97 - 47.62 m	CONDUCTIVITY	142 µS/cm
PUMPING RATE	360 (2.600) l/min	PH	6.1
SPECIFIC CAPACITY	4.76 l/min/m	TOTAL HARDNESS	30 mg CaCO <sub>3</sub> /l





<p>60</p> <p>59 ~ 63 m (Quartz grain rich) Brown coarse sandstone</p> <p>63 ~ 65 m white gray ~ pale greenish grey coarse sandstone</p> <p>65 ~ 66 m brown silt. fine sandstone</p> <p>66 ~ 74 m white grey ~ pale greenish grey coarse sandstone</p> <p>74 ~ 88 m purplish grey ~ grey medium sandstone (Markedly weathered)</p> <p>88 ~ 107 m Alternation of fine &amp; medium sandstone (partially thin mudstone) - purplish grey ~ grey - markedly weathered</p> <p>107 ~ 112 m purplish grey medium sandstone</p> <p>112 ~ 122 m Alternation of fine sandstone &amp; silty sandstone (or mudstone) (purplish grey ~ grey)</p> <p>122 ~ 134 m purplish grey medium sandstone</p> <p>134 ~ 136 m mudstone &amp; siltstone</p> <p>136 ~ 141 m Grey ~ white grey coarse sandstone</p> <p>141 ~ 155 m Alternation of coarse sandstone &amp; silty sandstone (or mudstone) purplish grey ~ grey</p> <p>155 ~ 191 m - Alternation of coarse - sandstone &amp; fine sandstone (purplish grey ~ grey) - Coarse grain portion: 160 ~ 183 m, 185 ~ 171 m, 174 ~ 177 m, etc</p> <p>191 ~ 204 m Grey ~ dark grey mudstone with thin sandstone</p>
---



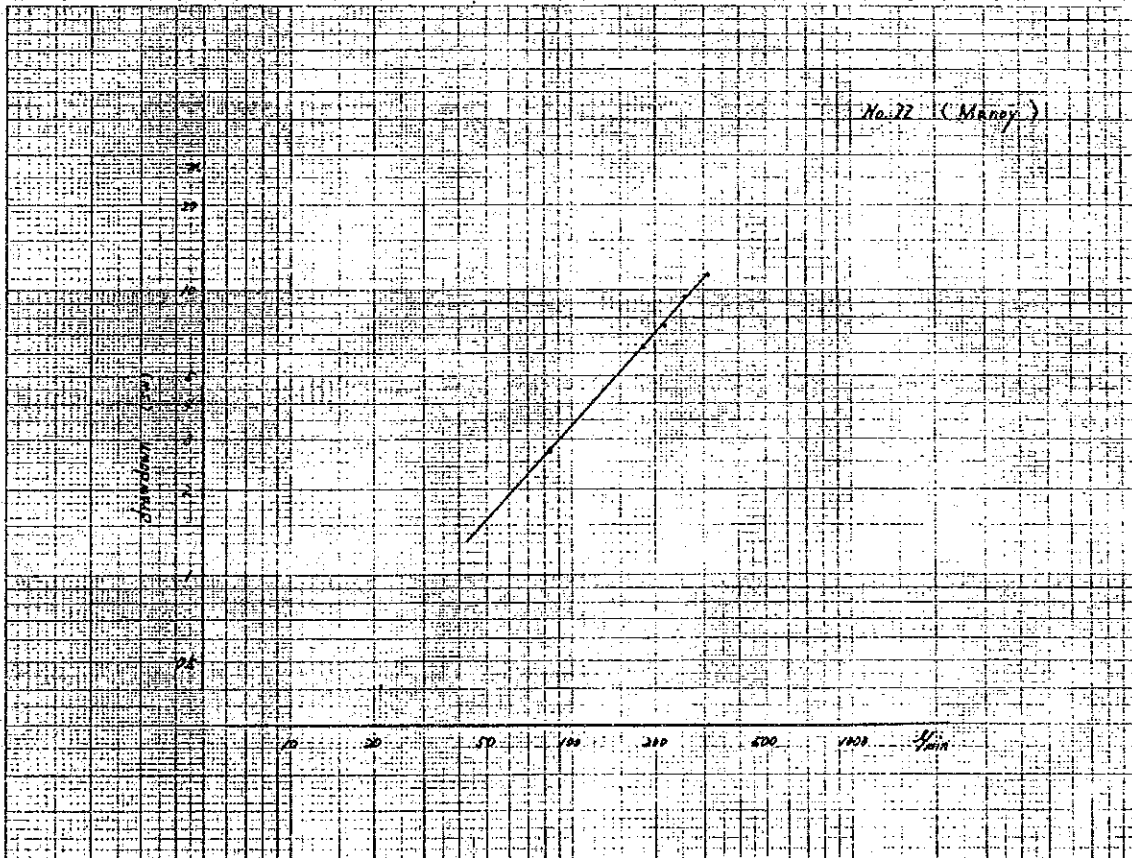
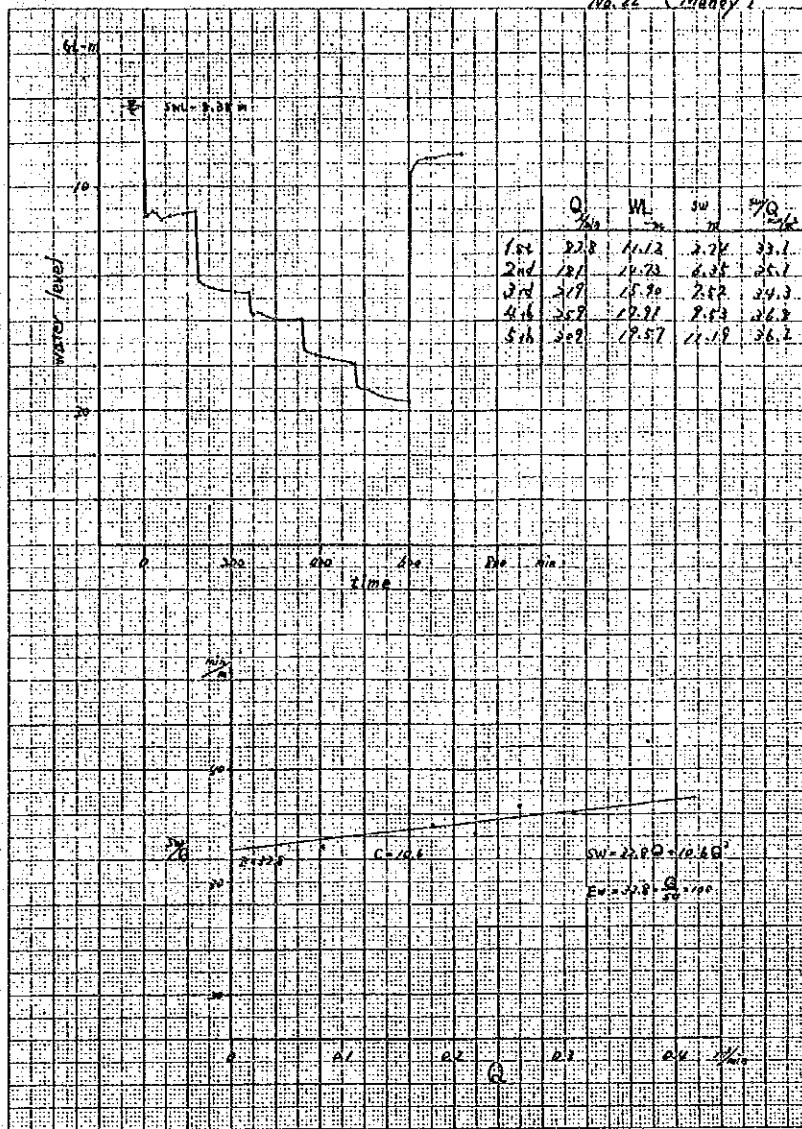


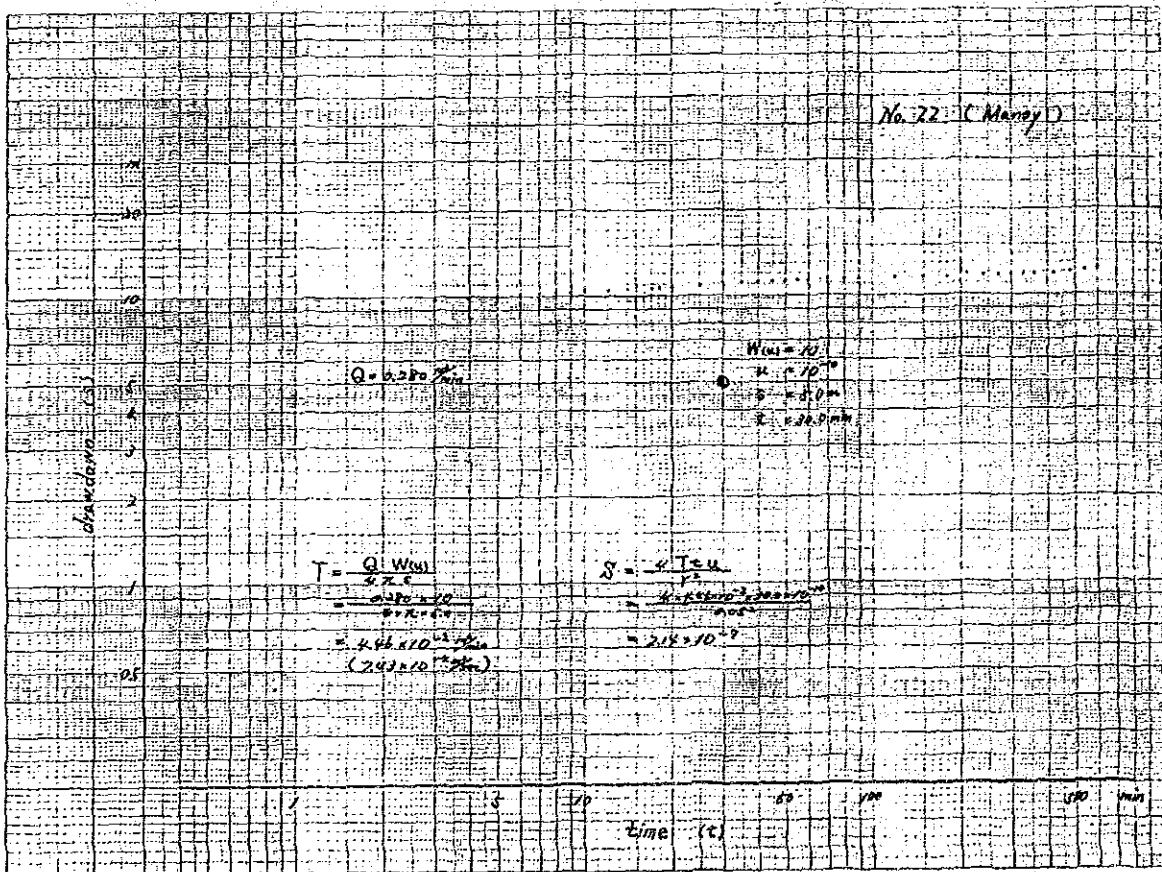
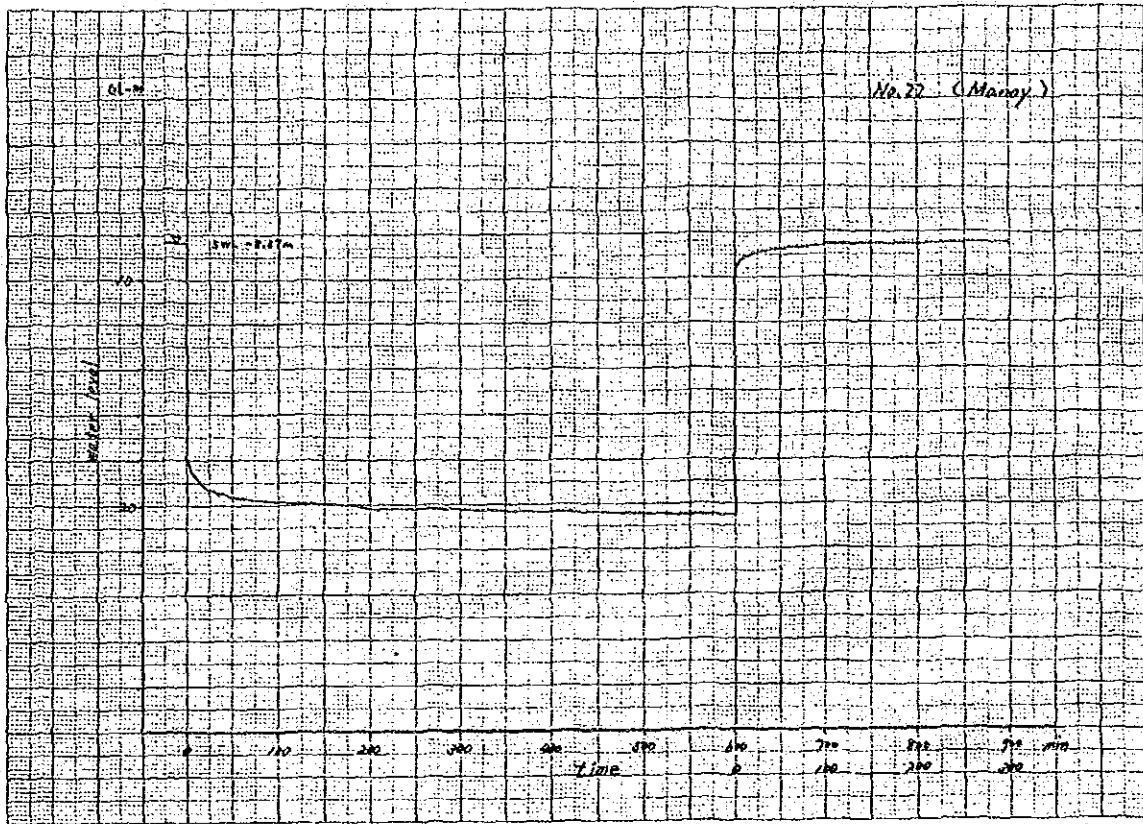
No. 22 Manoy

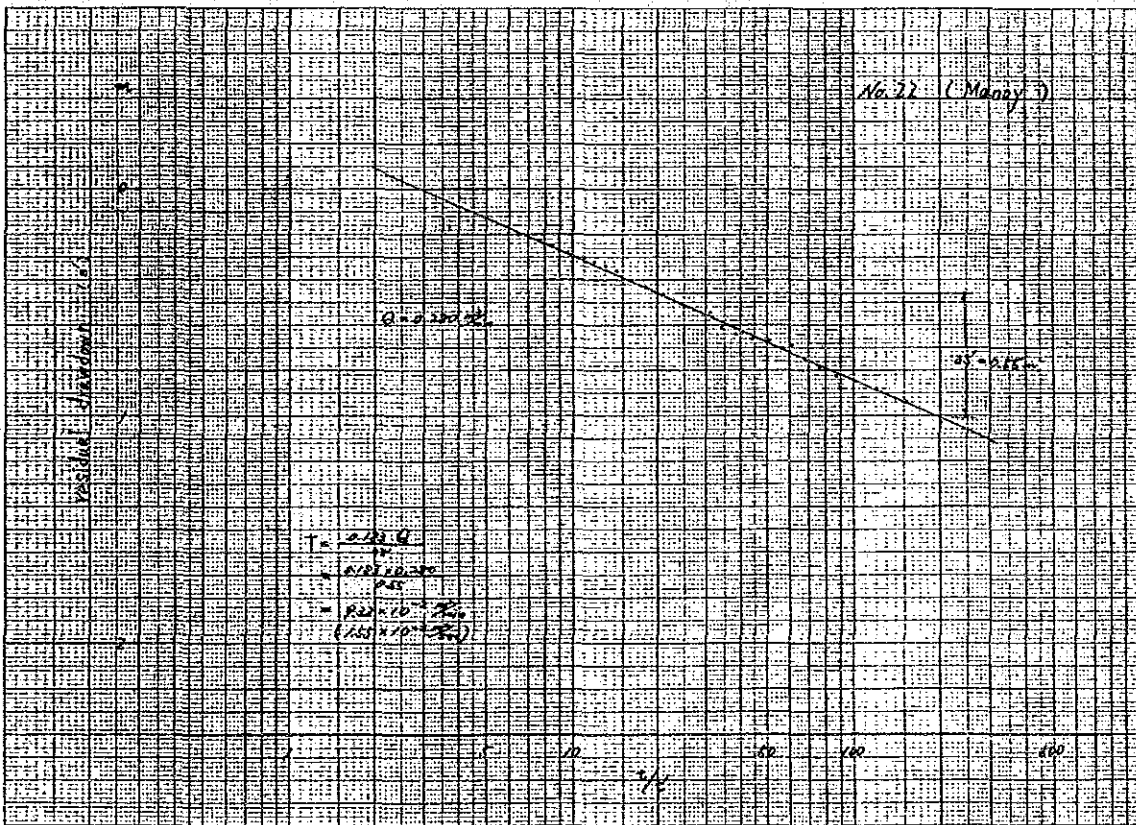
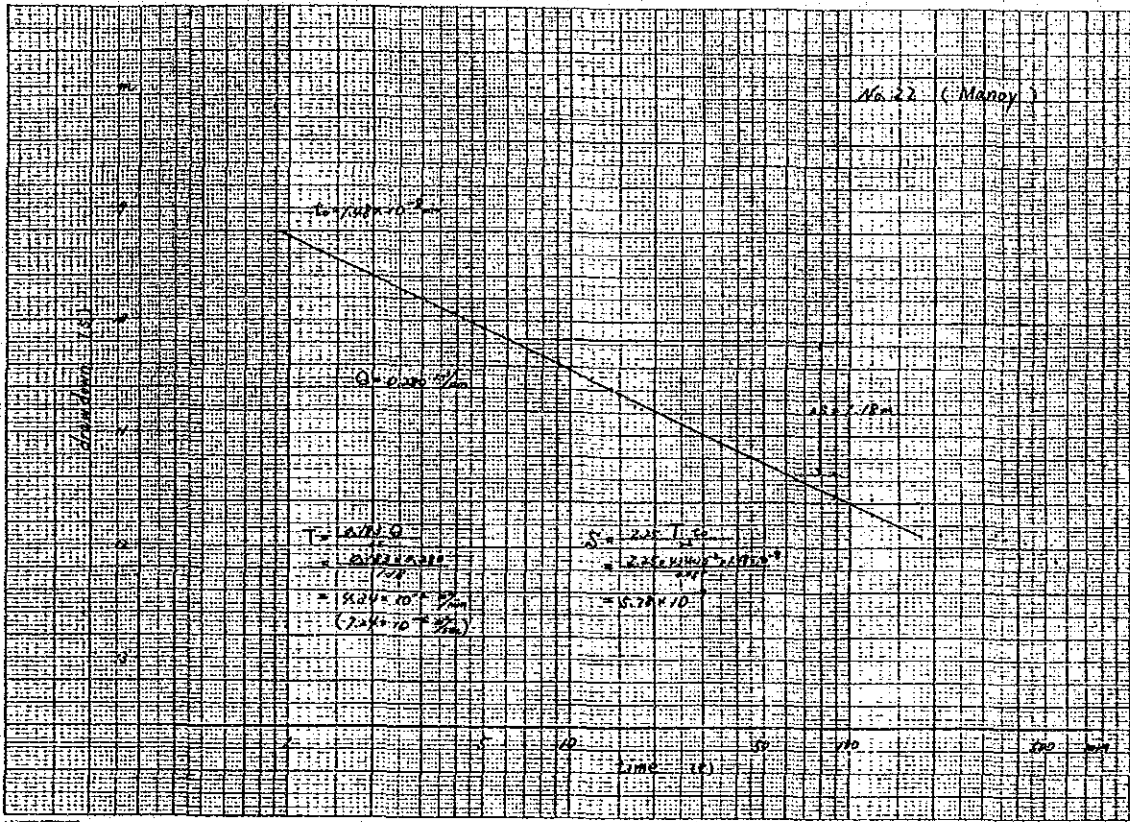




No. 22 (Marey)









No. 23 Ampoza

