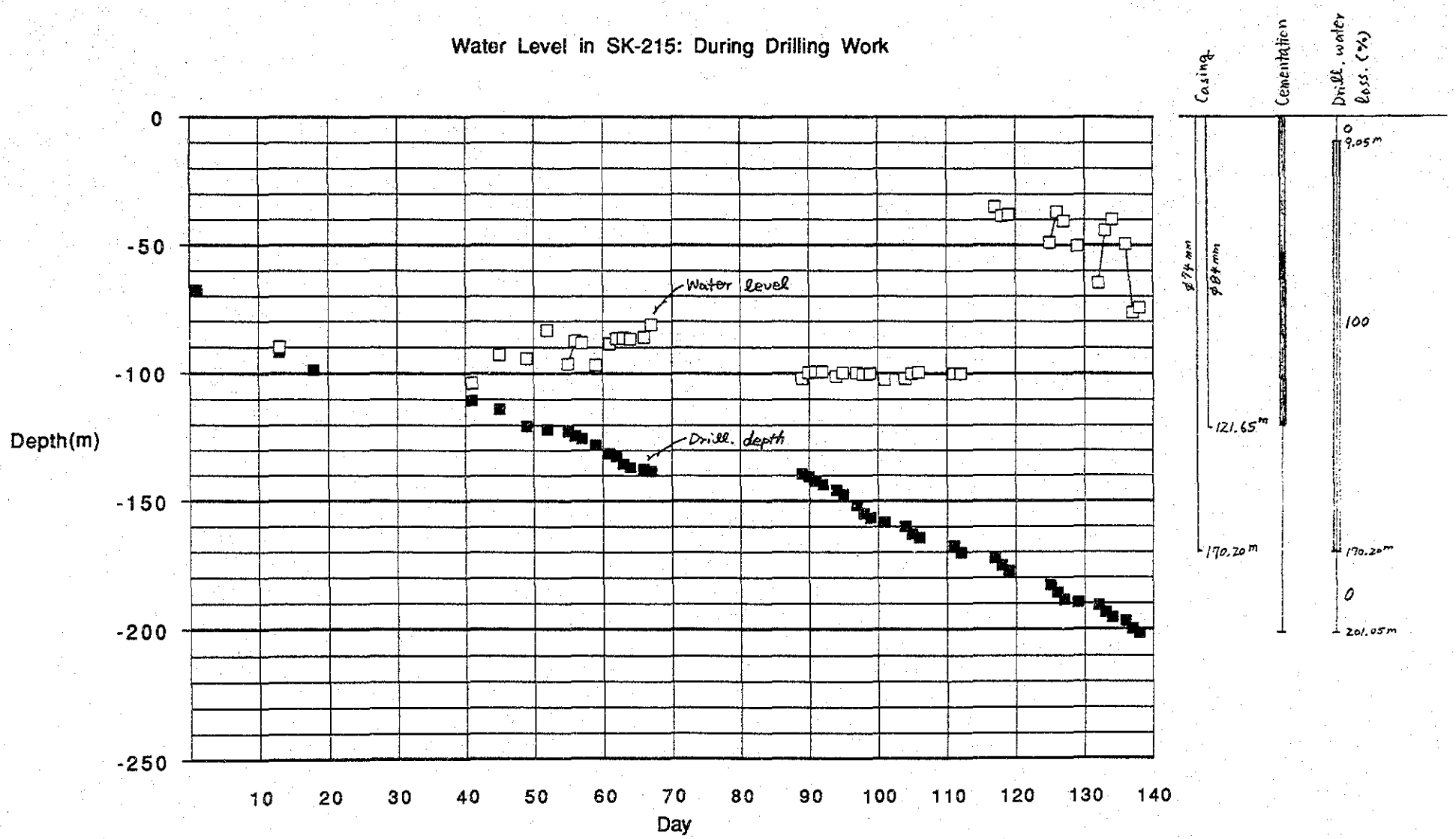
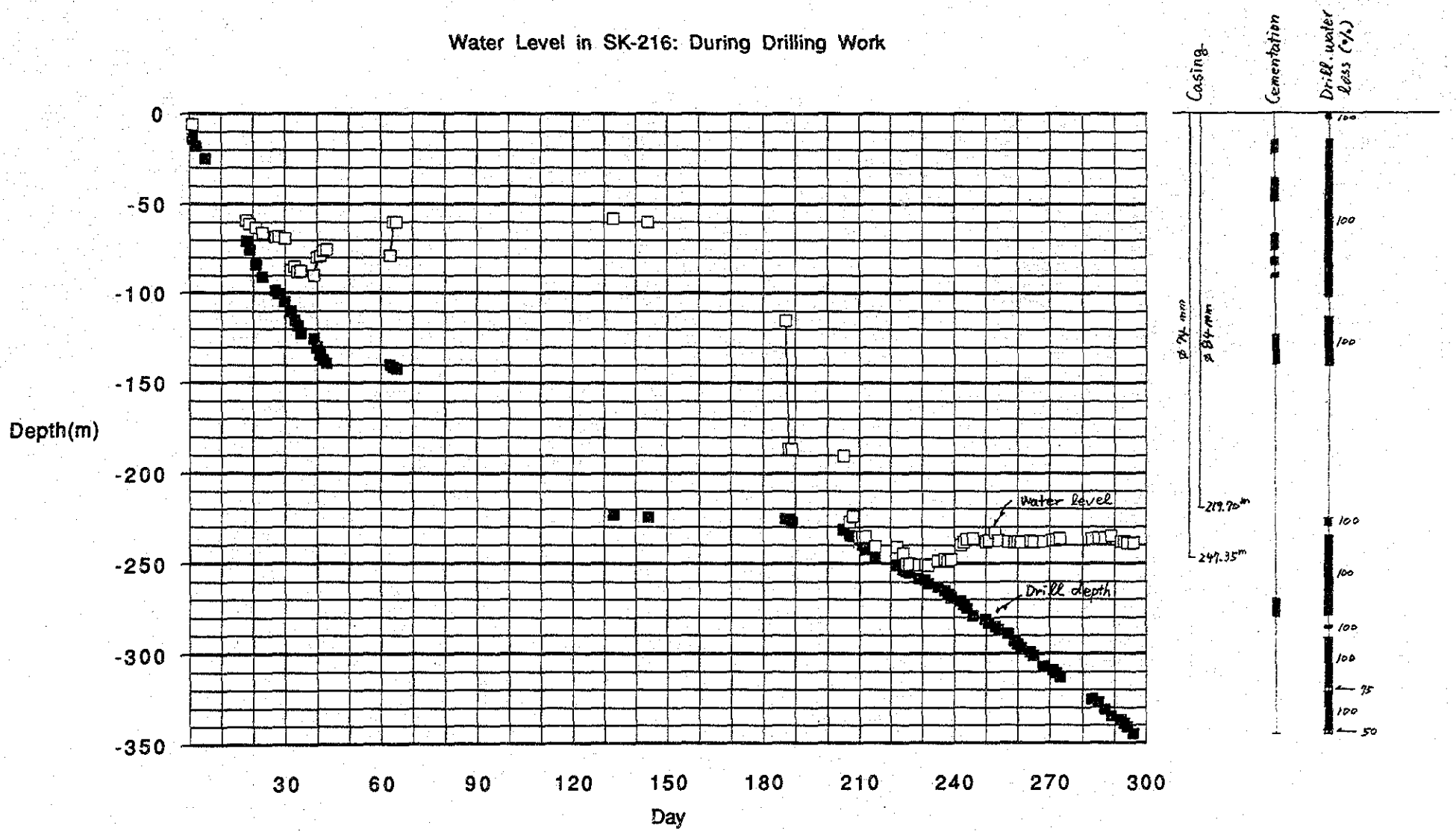
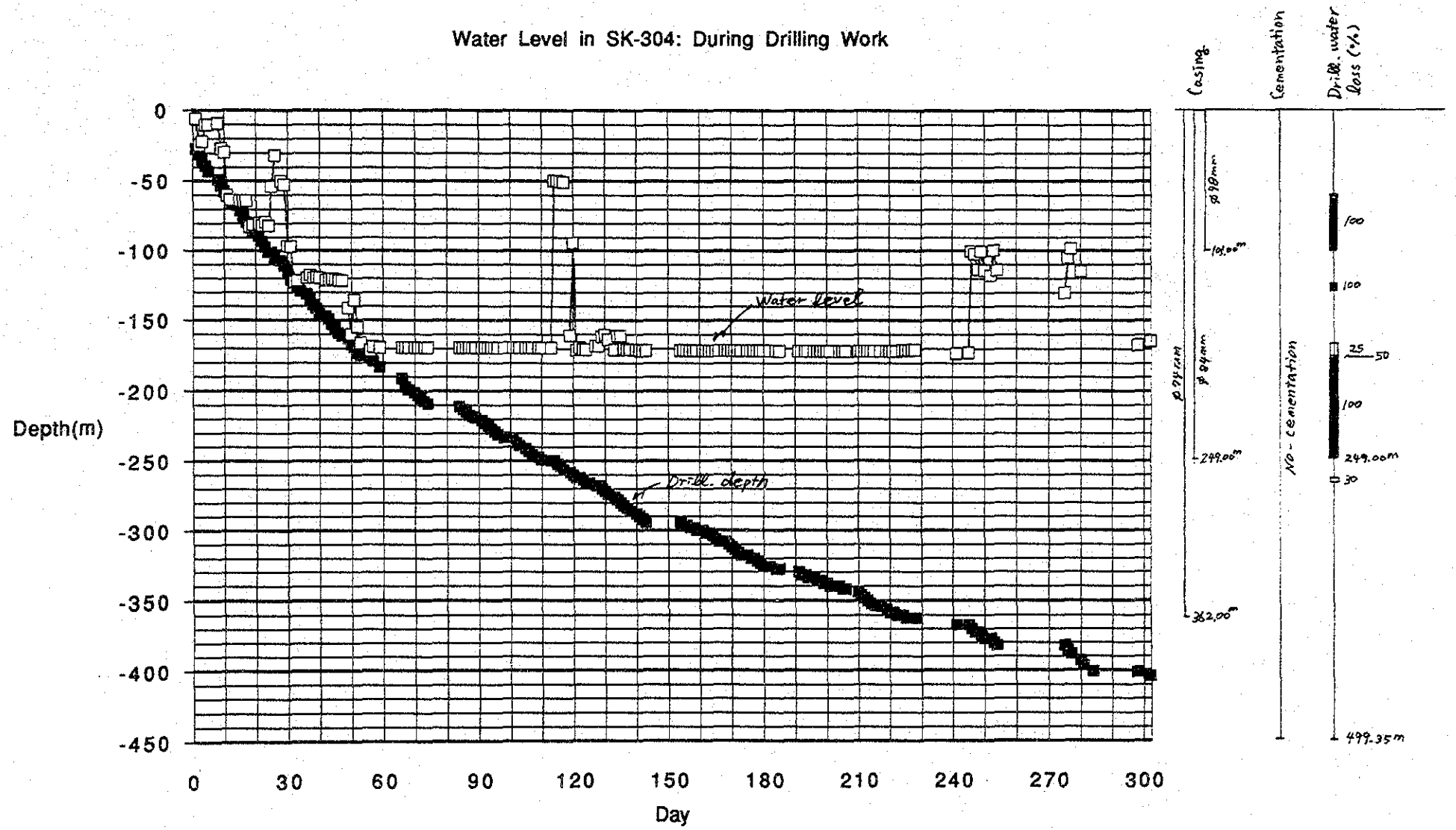
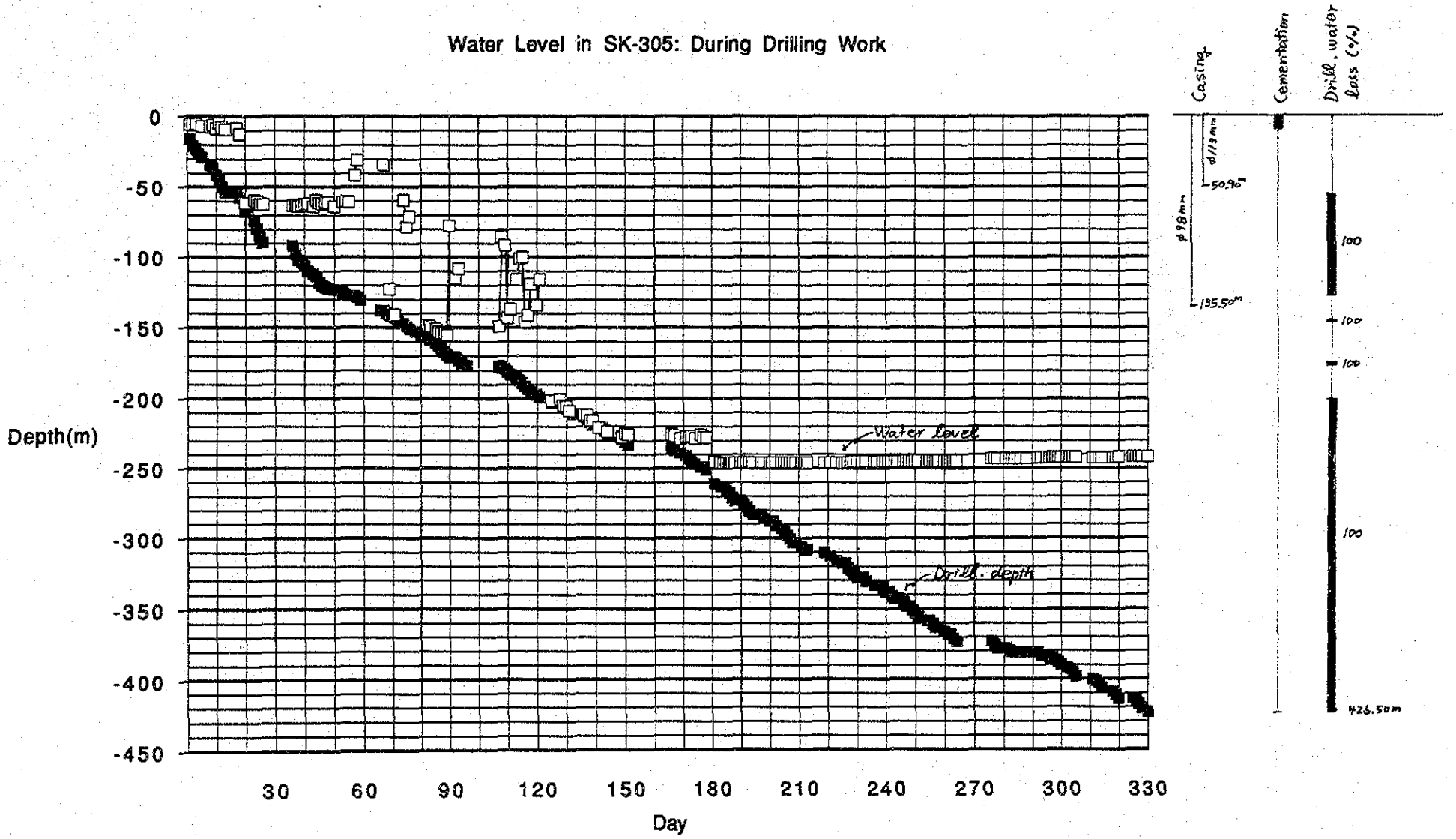
Attachment A2

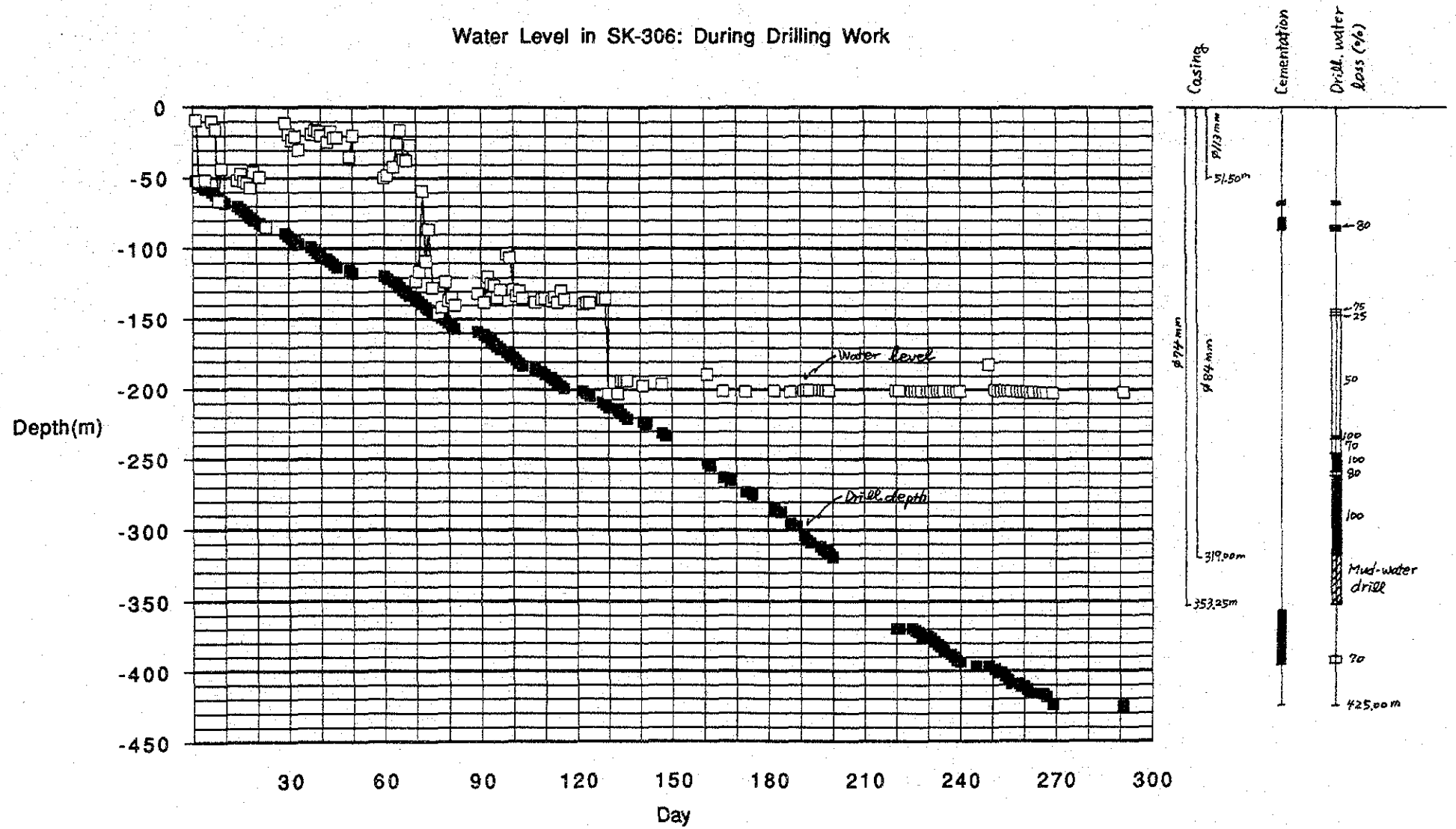
Summary of Water Level in Borehole during Drilling

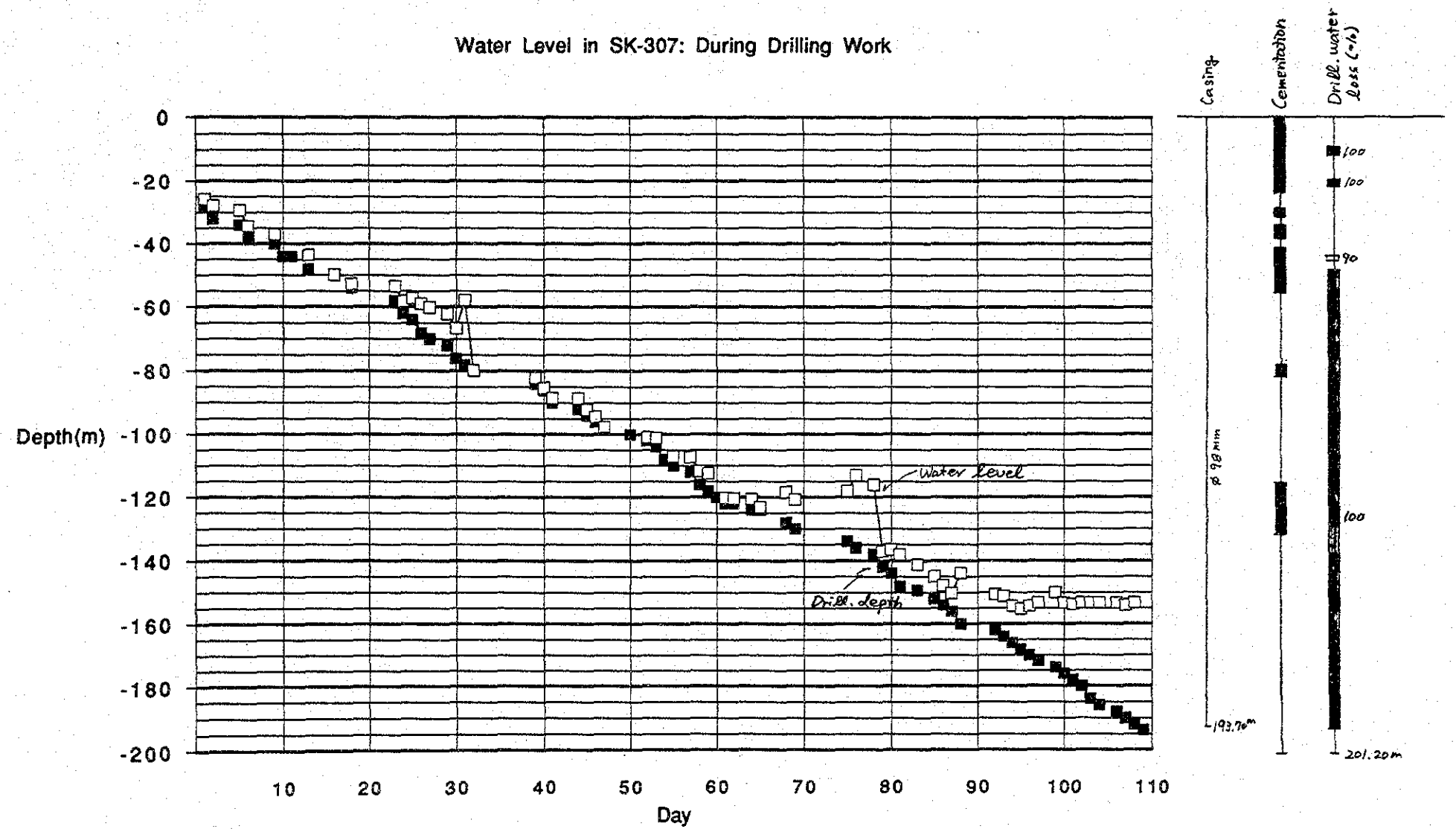

Water Level in SK-215: During Drilling Work
Depth(m)
0
-50
-100
-150
-200
-250
10
20
30
40
50
60
70
80
90
100
110
120
130
140
Day
Water level
Drill. depth
Casing
Cementation
Drill. water loss. (%)
φ114 mm
φ86 mm
121.65m
170.20m
0
9.05m
100
170.20m
0
201.05m

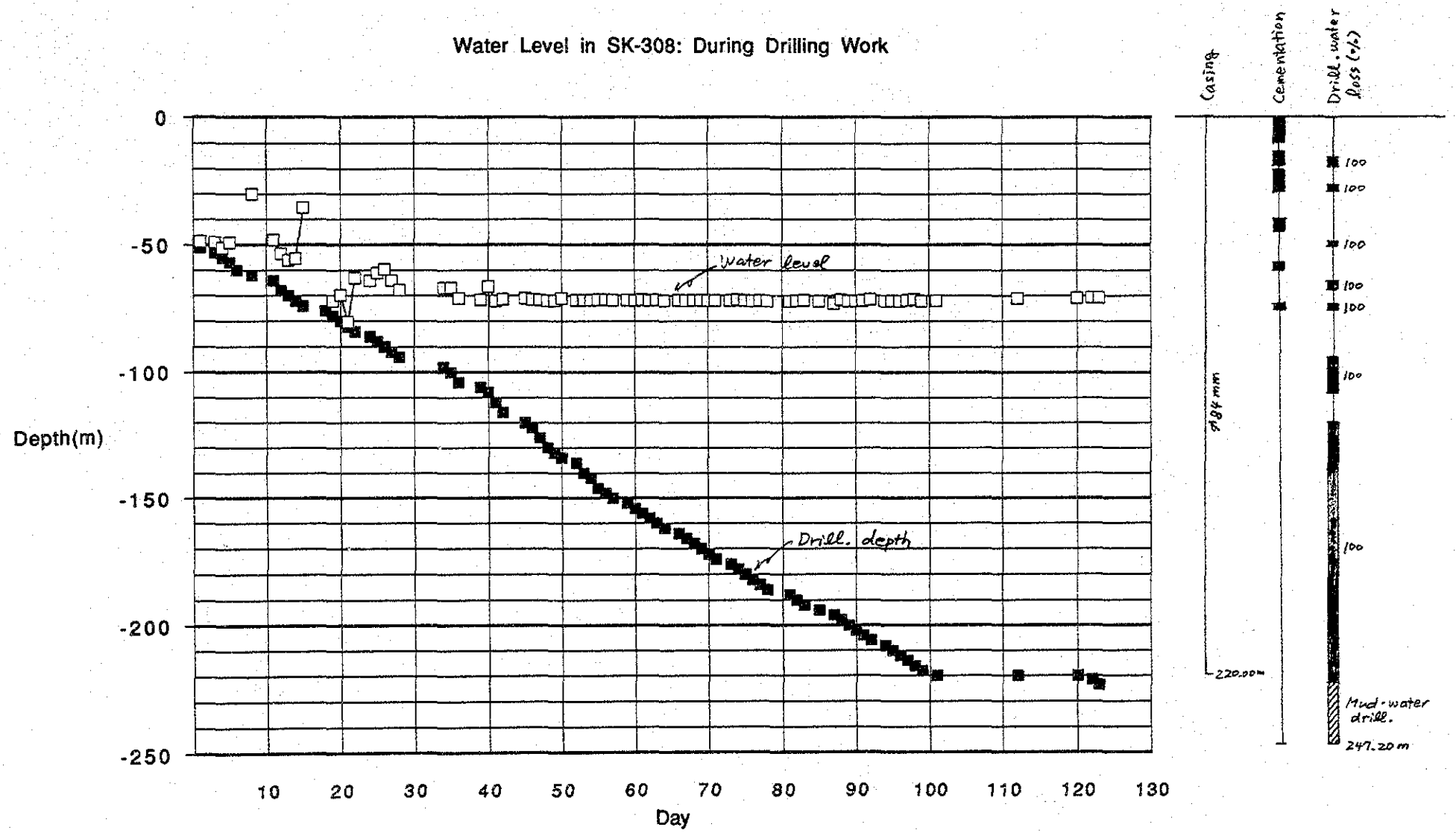

Water Level in SK-216: During Drilling Work
Depth(m)
0
-50
-100
-150
-200
-250
-300
-350
30
60
90
120
150
180
210
240
270
300
Day
Water level
Drill depth
Casing
Cementation
Drill. water loss (%)
ø 114 mm
ø 84 mm
219.70m
247.35m
100
100
100
100
100
100
75
100
50

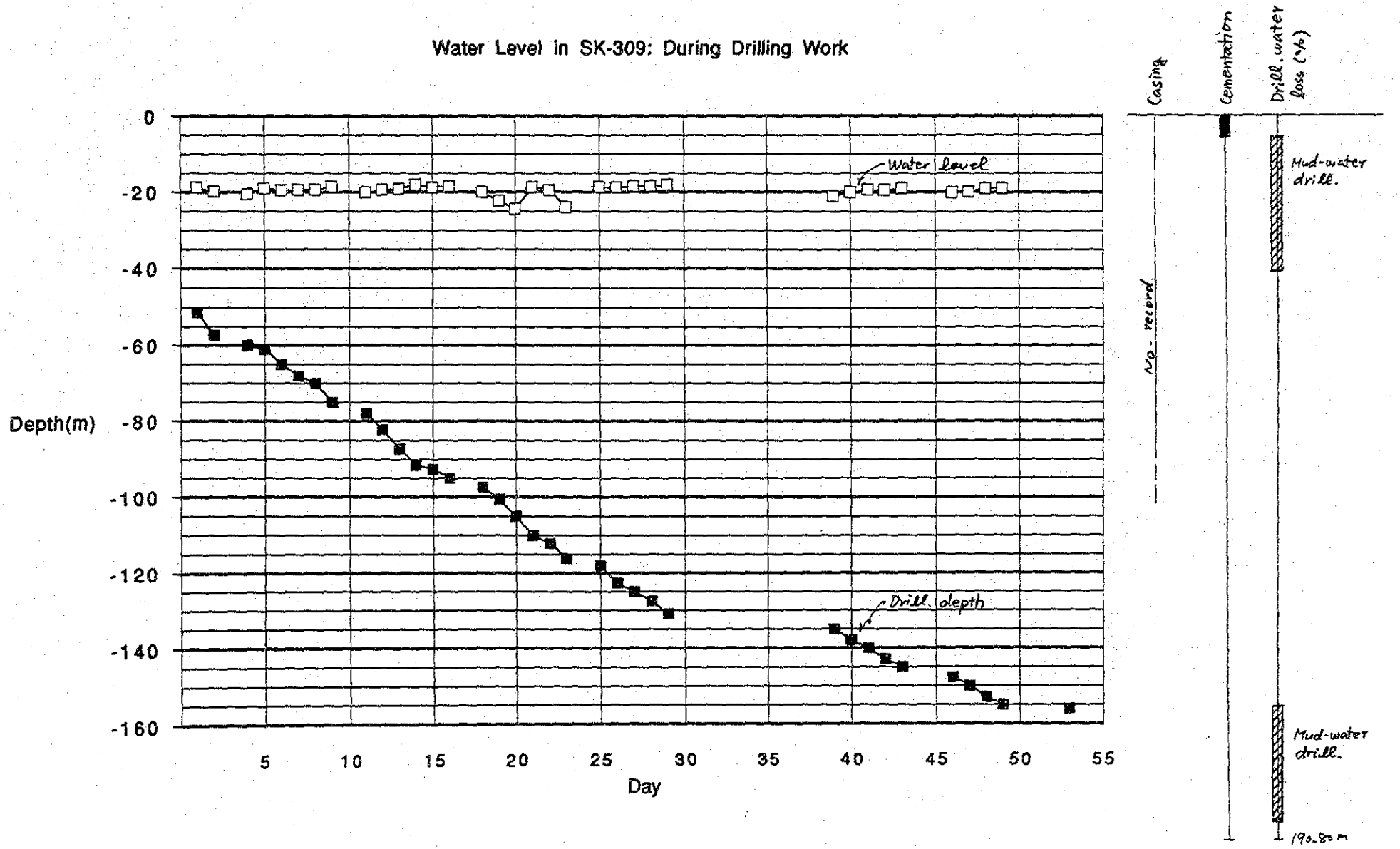

Water Level in SK-304: During Drilling Work
Depth(m)
0
-50
-100
-150
-200
-250
-300
-350
-400
-450
0
30
60
90
120
150
180
210
240
270
300
Day
Water level
Drill. depth
Casing
Cementation
Drill. water loss (%)
ø 139.8mm
101.00m
ø 89mm
249.00m
362.00m
No - cementation
100
100
25
50
100
249.00m
30
499.35m

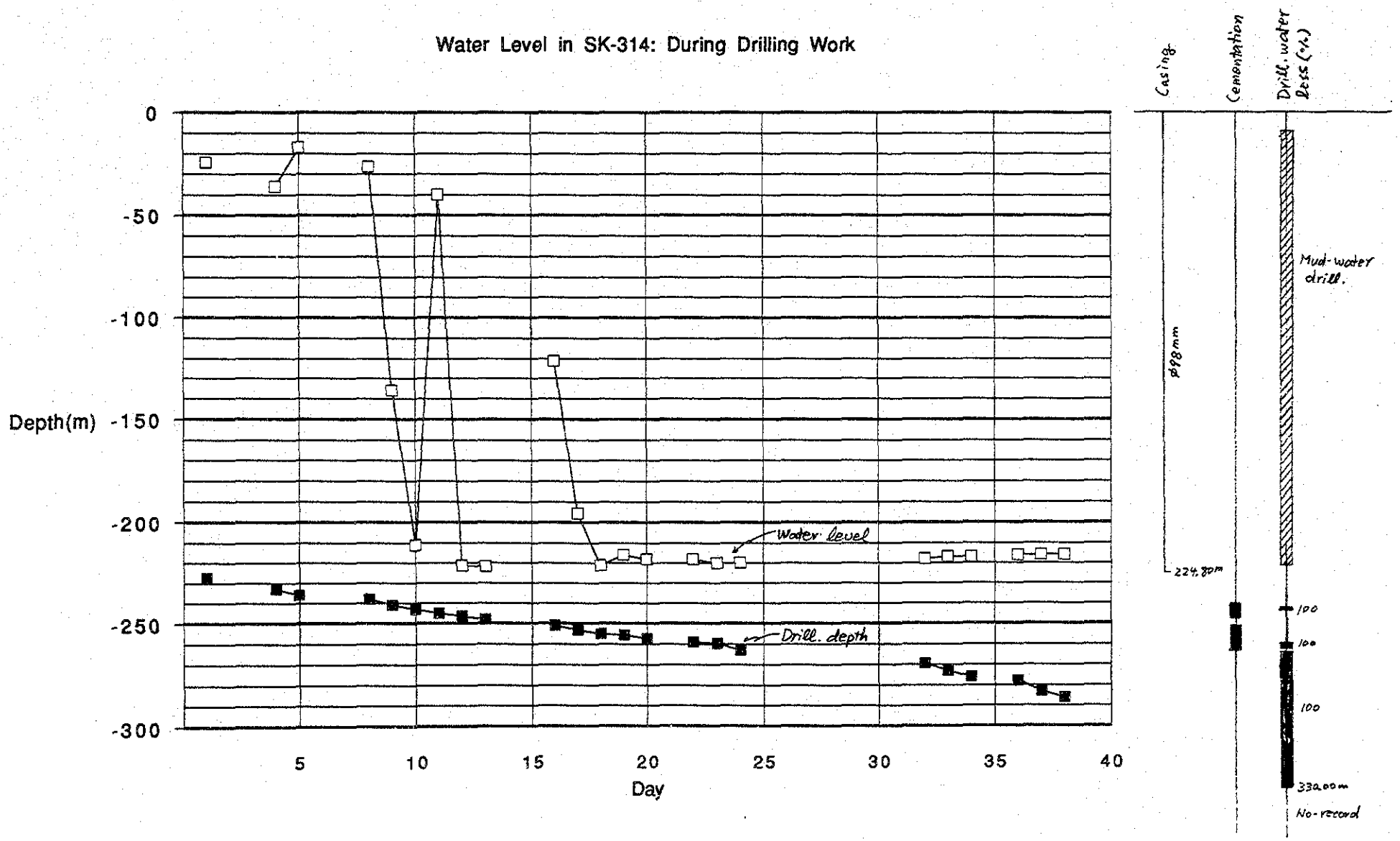

Water Level in SK-305: During Drilling Work
Depth(m)
0
-50
-100
-150
-200
-250
-300
-350
-400
-450
30
60
90
120
150
180
210
240
270
300
330
Day
Water level
Drill. depth
Casing
Cementation
Drill. water loss (%)
φ139mm
50.90m
φ98mm
135.50m
100
100
100
100
426.50m


Water Level in SK-306: During Drilling Work
Depth(m)
0
-50
-100
-150
-200
-250
-300
-350
-400
-450
30
60
90
120
150
180
210
240
270
300
Day
Water level
Drill depth
Casing
Cementation
Drill. water loss (%)
φ139mm
51.50m
φ94mm
φ84mm
319.00m
353.25m
80
75
25
50
100
70
100
80
100
Mud-water drill
70
425.00m


Water Level in SK-307: During Drilling Work
Depth(m)
0
-20
-40
-60
-80
-100
-120
-140
-160
-180
-200
10
20
30
40
50
60
70
80
90
100
110
Day
Water Level
Drill. depth
Casing
Cementation
Drill. water loss (%)
100
100
90
100
φ 98 mm
193.70m
201.20m


Water Level in SK-308: During Drilling Work
Depth(m)
0
-50
-100
-150
-200
-250
10
20
30
40
50
60
70
80
90
100
110
120
130
Day
Water level
Drill. depth
Casing
Cementation
Drill. water loss (%)
100
100
100
100
100
100
484 mm
220.00m
Mud-water drill.
247.20 m


Water Level in SK-309: During Drilling Work
Depth(m)
0
-20
-40
-60
-80
-100
-120
-140
-160
5
10
15
20
25
30
35
40
45
50
55
Day
Water level
Drill. depth
Casing
Cementation
Drill. water loss (%)
No - record
Mud-water drill.
Mud-water drill.
190.80 m

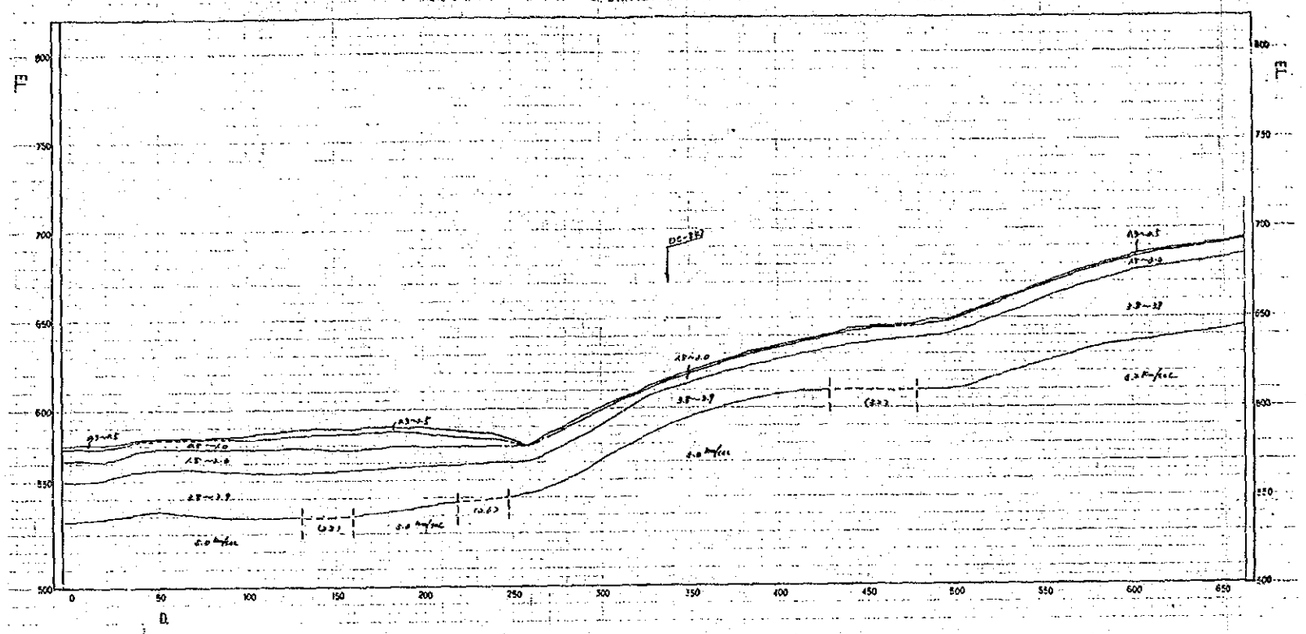

Water Level in SK-314: During Drilling Work
Depth(m)
0
-50
-100
-150
-200
-250
-300
5
10
15
20
25
30
35
40
Day
Water level
Drill. depth
Casing
Cementation
Drill. water loss (%)
Mud-water drill.
ø98mm
224.80m
100
100
100
330.00m
No-record

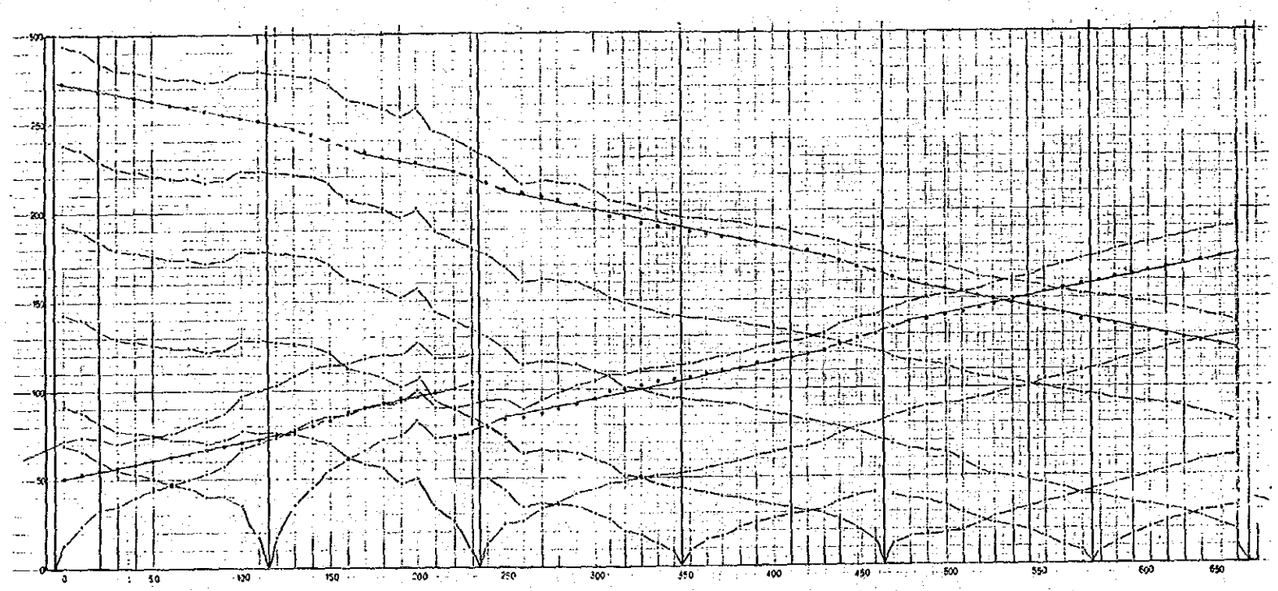
Attachment A3

Results of Seismic Exploration

PLATE NO.

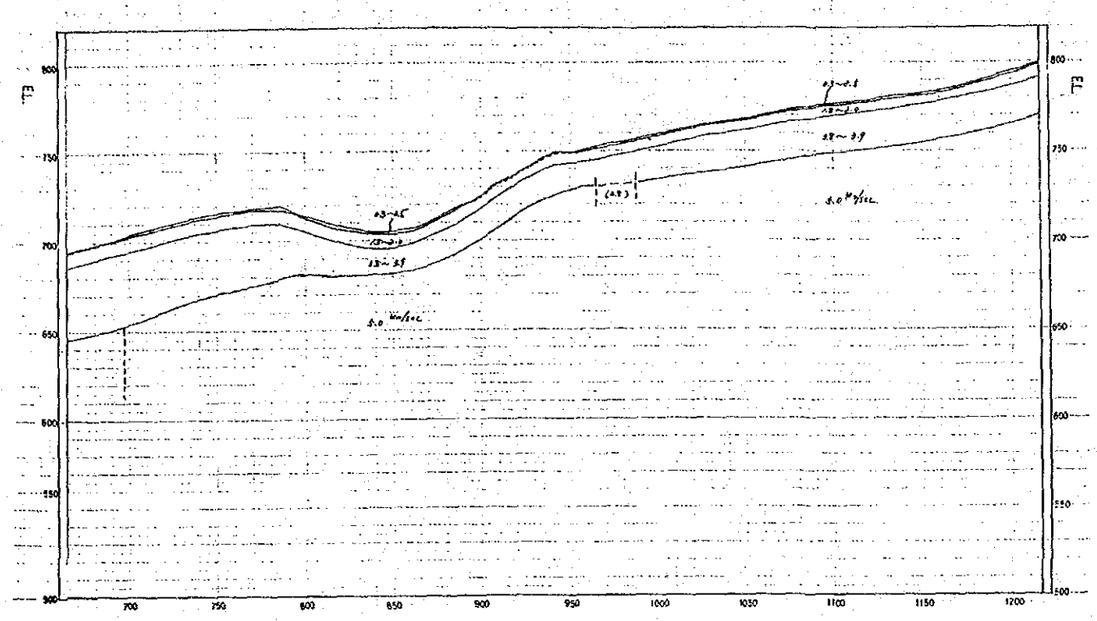
DA...LINE

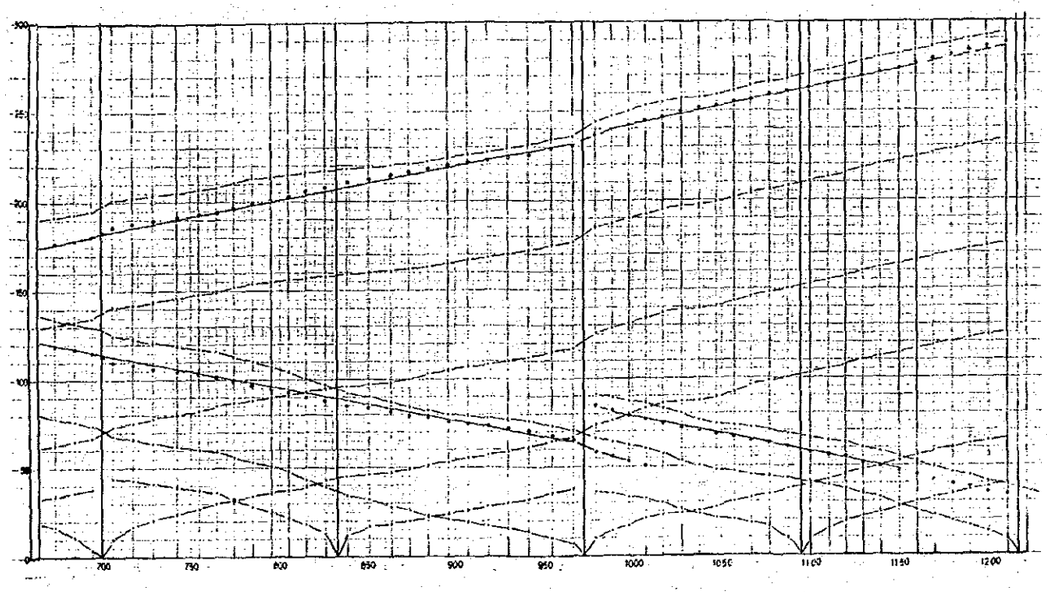




	THE REPUBLIC OF TURKEY ELEKTRİK İŞLERİ ETÜD İDARESİ GENEL MÜDÜRLÜĞÜ	ERMENEK HYDROELECTRIC POWER DEVELOPMENT PROJECT JAPAN INTERNATIONAL COOPERATION AGENCY	TITLE Line DA (1/2)

PLATE NO.

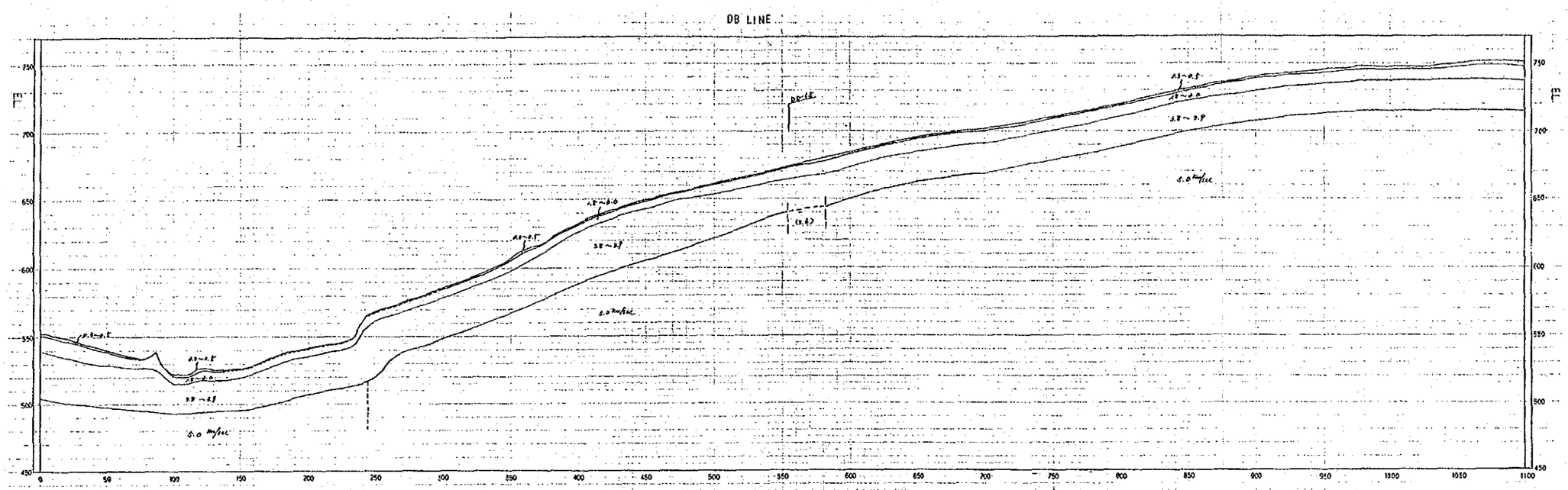




	THE REPUBLIC OF TURKEY ELEKTRİK İŞLERİ ETÜD İDARESİ GENEL MÜDÜRLÜGÜ	ERMENEK HYDROELECTRIC POWER DEVELOPMENT PROJECT JAPAN INTERNATIONAL COOPERATION AGENCY	TITLE Line DA (2/2)

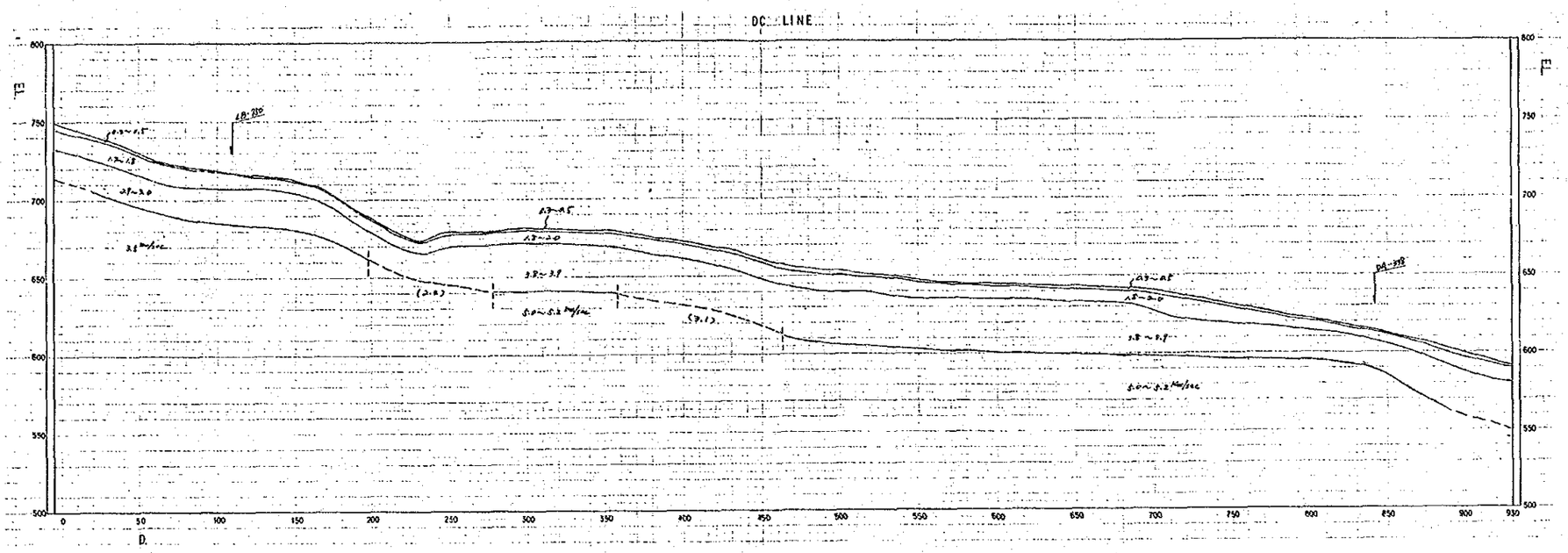
PLATE NO.

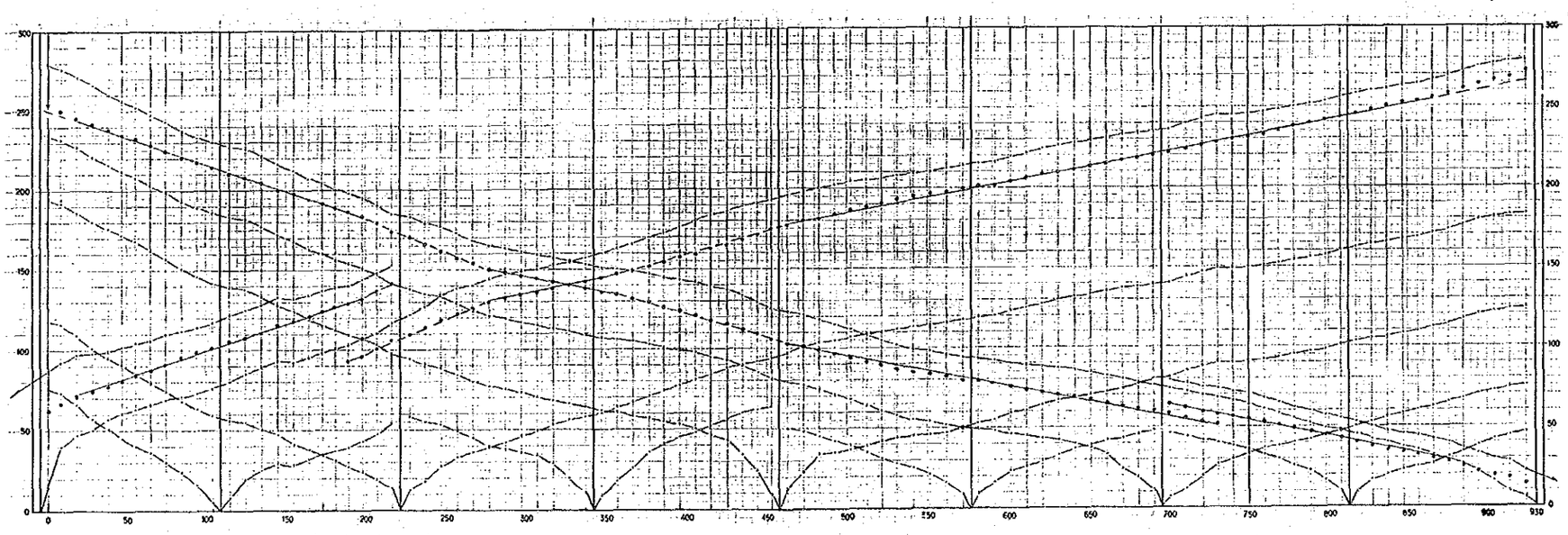
DB LINE



	THE REPUBLIC OF TURKEY ELEKTRİK İŞLERİ ETÜD İDARESİ GENEL MÜDÜRLÜĞÜ	ERMENEK HYDROELECTRIC POWER DEVELOPMENT PROJECT JAPAN INTERNATIONAL COOPERATION AGENCY	TITLE **Line DB**

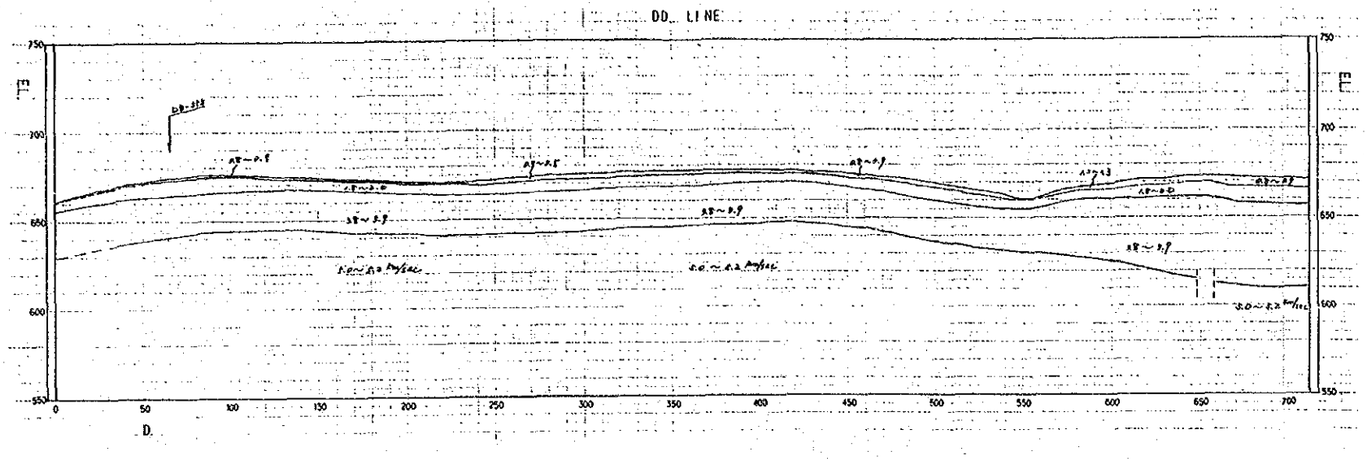
PLATE NO.

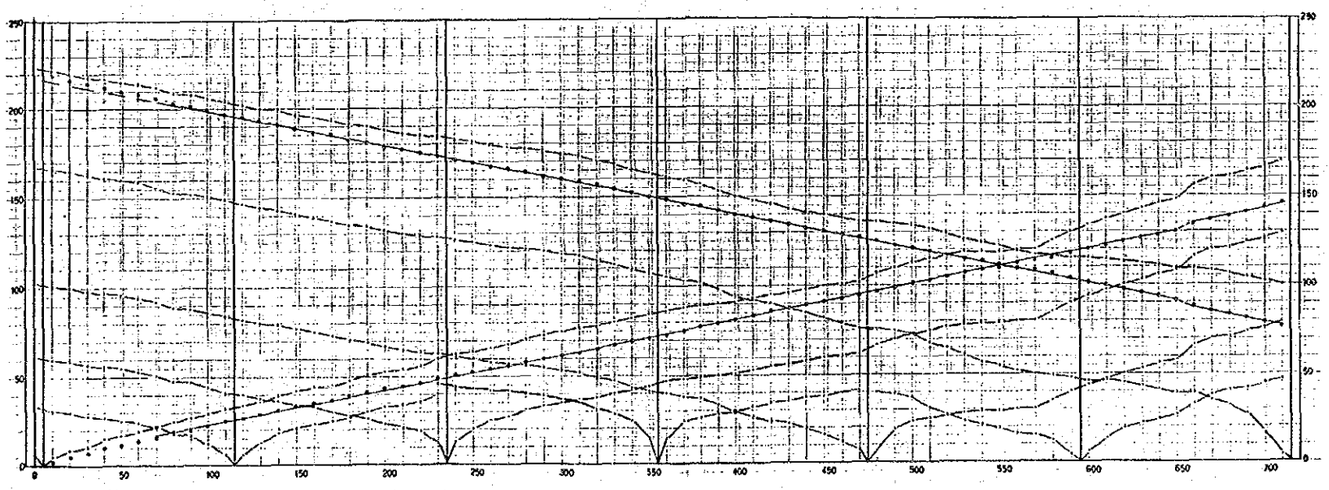




	THE REPUBLIC OF TURKEY ELEKTRİK İŞLERİ ETÜD İDARESİ GENEL MÜDÜRLÜĞÜ	ERMENEK HYDROELECTRIC POWER DEVELOPMENT PROJECT JAPAN INTERNATIONAL COOPERATION AGENCY	TITLE Line DC

PLATE NO.

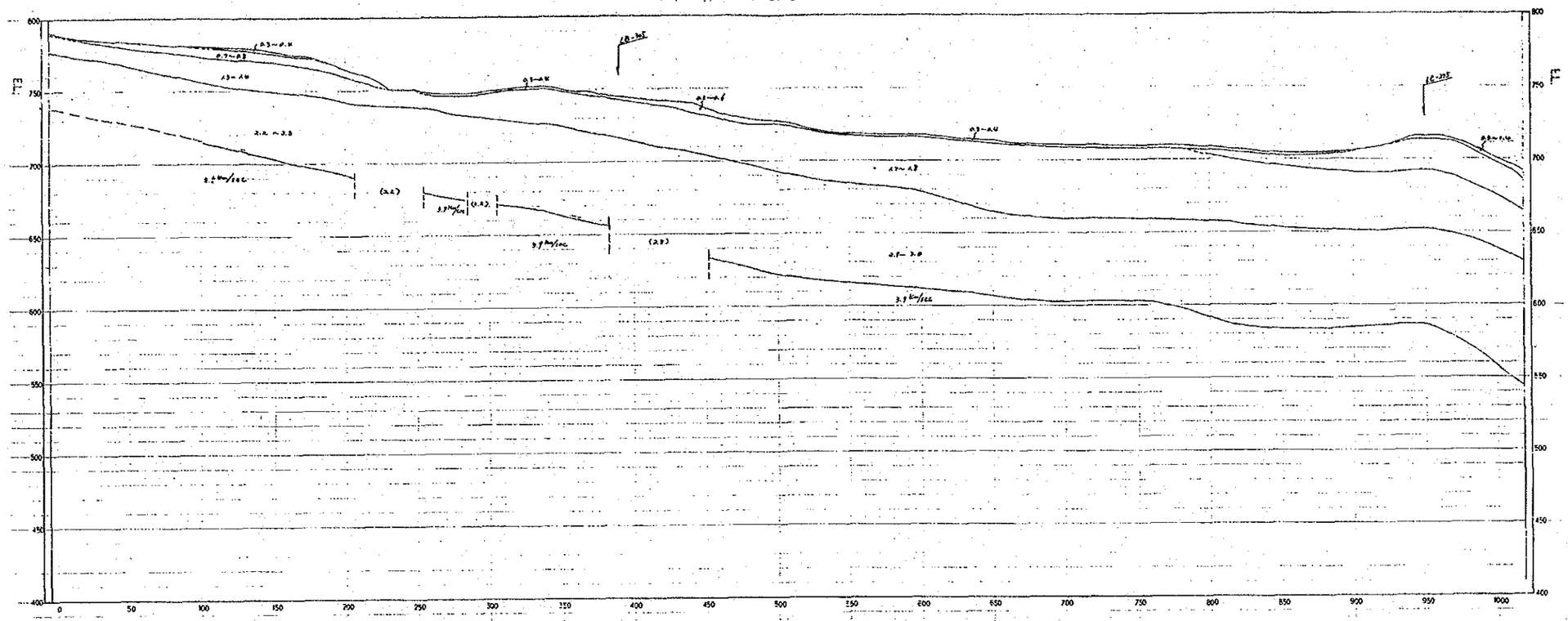




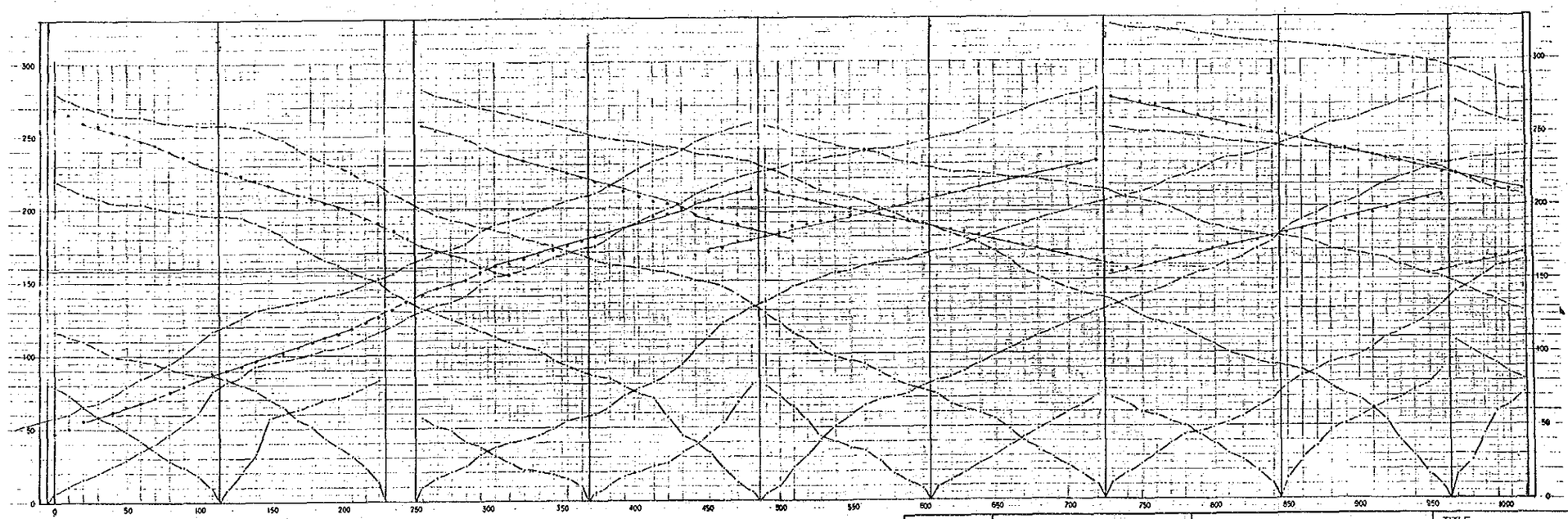
	THE REPUBLIC OF TURKEY ELEKTRİK İŞLERİ ETÜD İDARESİ GENEL MÜDÜRLÜĞÜ	ERMENEK HYDROELECTRIC POWER DEVELOPMENT PROJECT JAPAN INTERNATIONAL COOPERATION AGENCY	TITLE Line DD

PLATE NO.

LA LINE

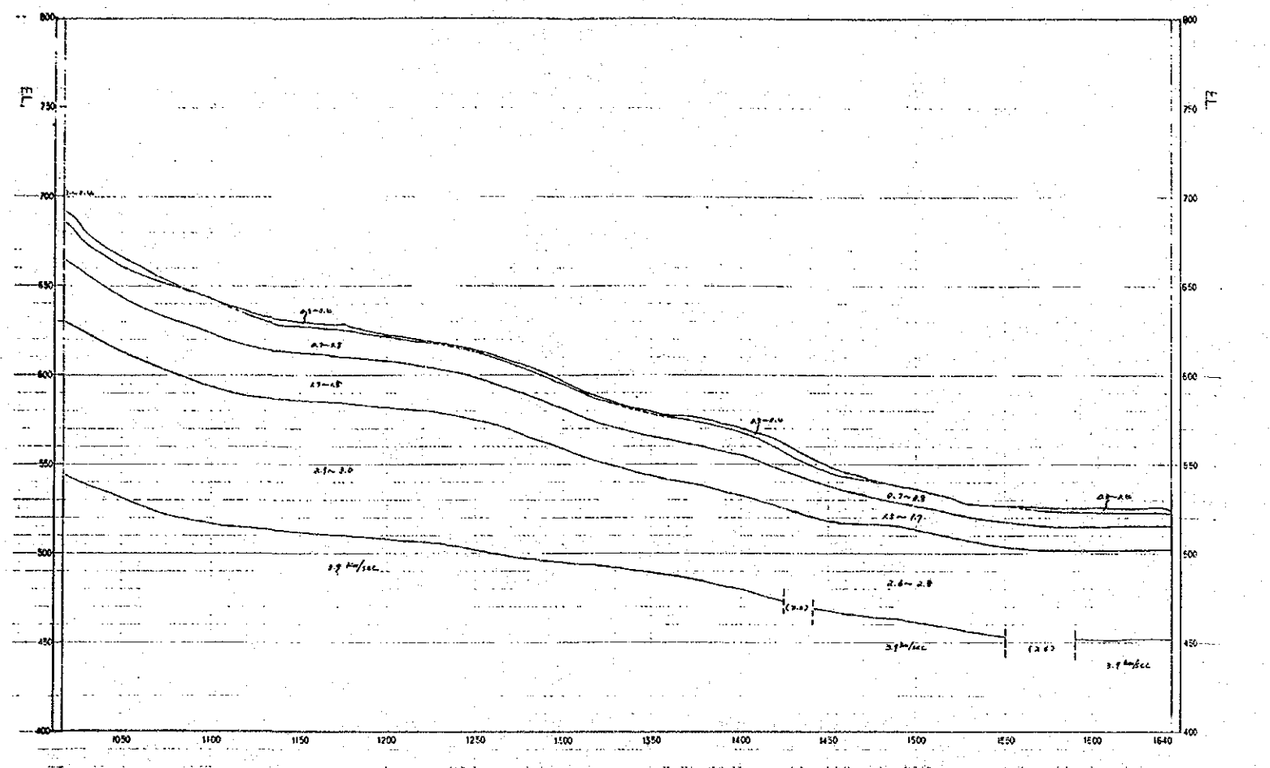


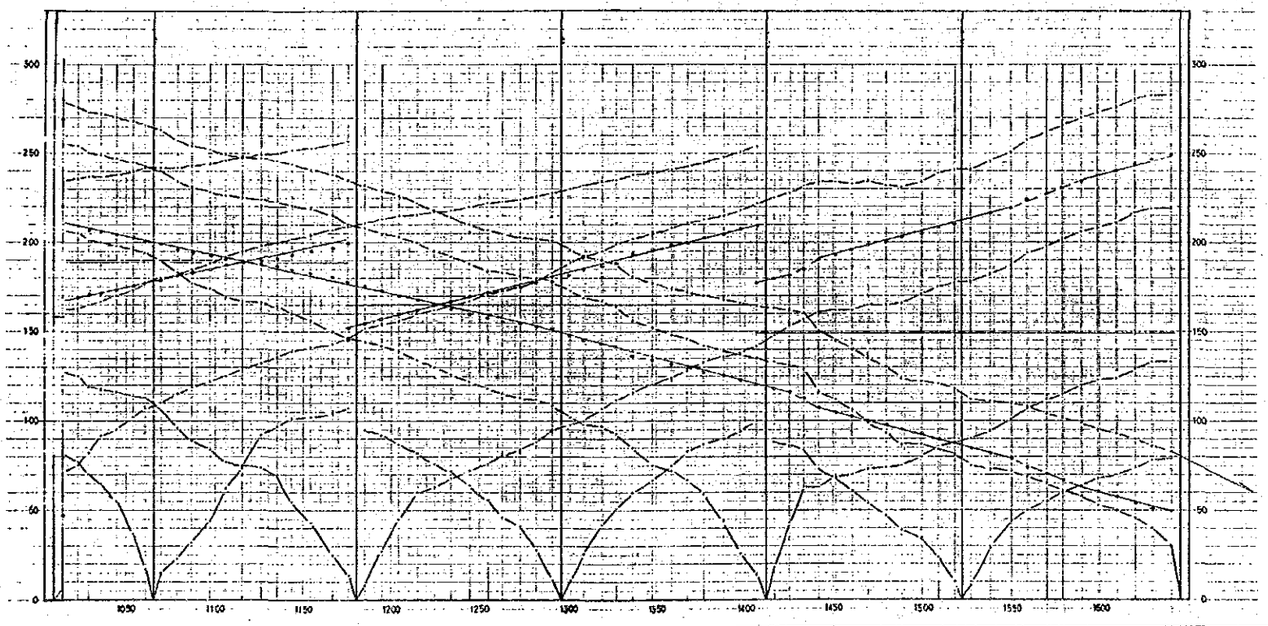
D.



	THE REPUBLIC OF TURKEY ELEKTRİK İŞLERİ ETÜD İDARESİ GENEL MÜDÜRLÜĞÜ	ERMENEK HYDROELECTRIC POWER DEVELOPMENT PROJECT JAPAN INTERNATIONAL COOPERATION AGENCY	TITLE Line LA (1/2)

PLATE NO.

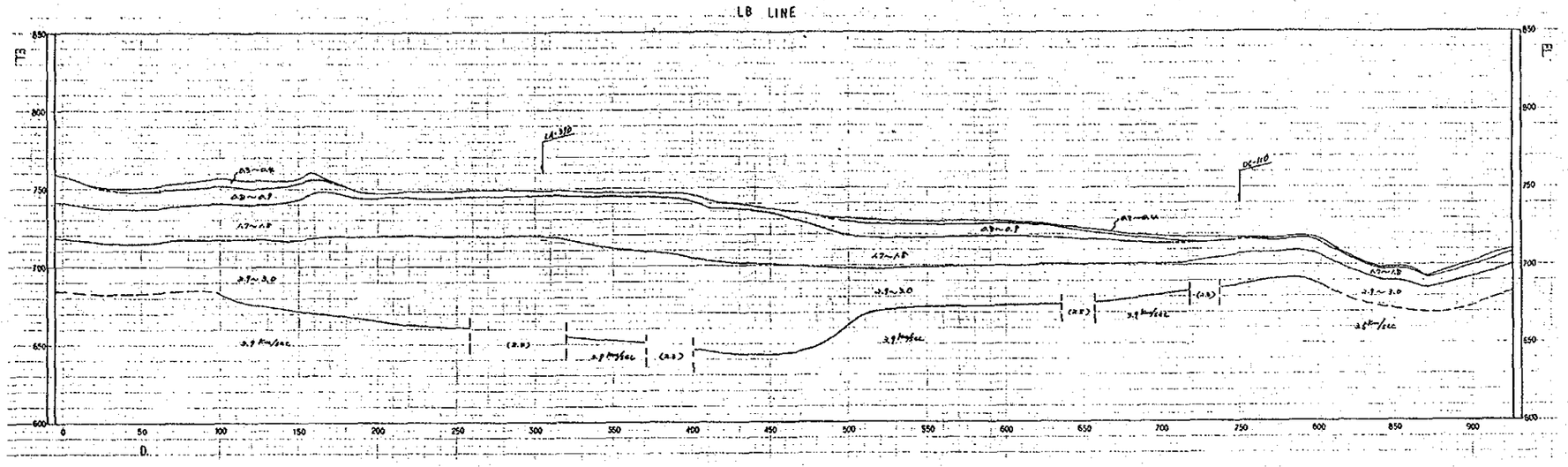


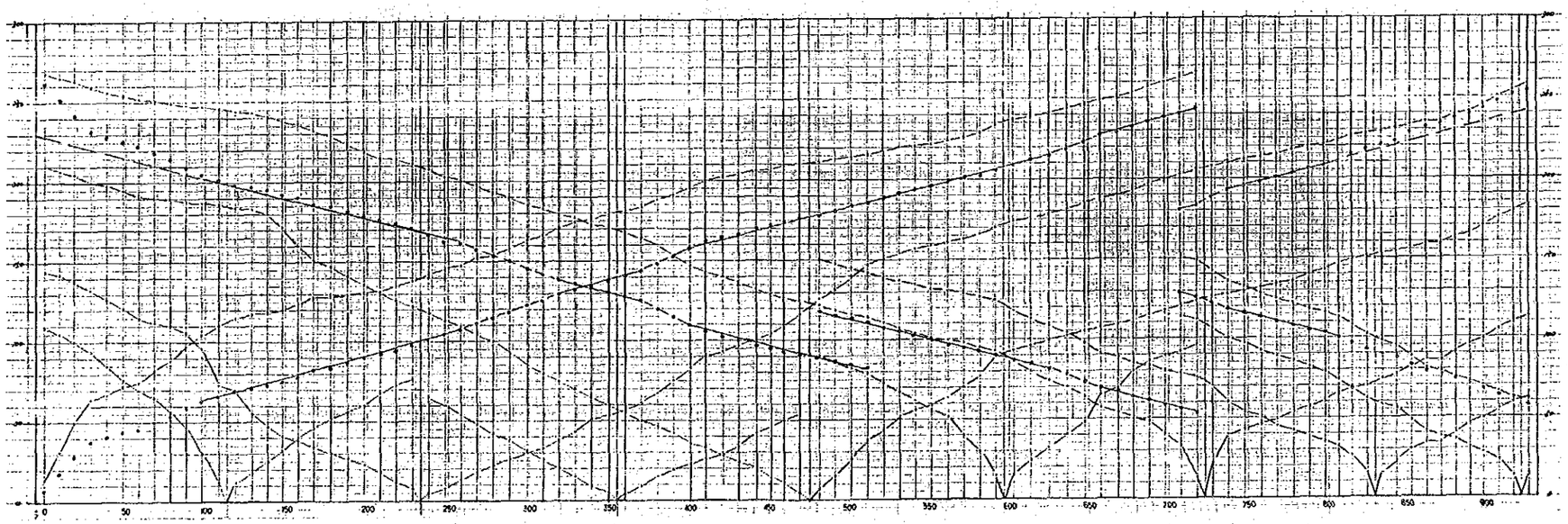


	THE REPUBLIC OF TURKEY ELEKTRİK İŞLERİ ETÜD İDARESİ GENEL MÜDÜRLÜGÜ	ERMENEK HYDROELECTRIC POWER DEVELOPMENT PROJECT JAPAN INTERNATIONAL COOPERATION AGENCY	TITLE Line LA (2/2)

PLATE NO.

LB LINE

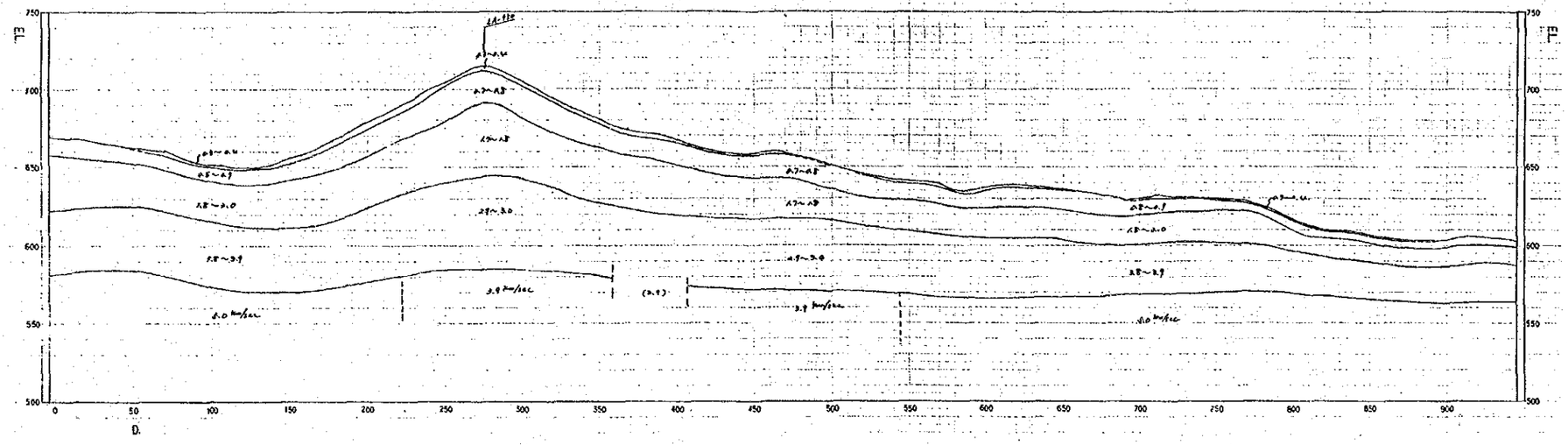


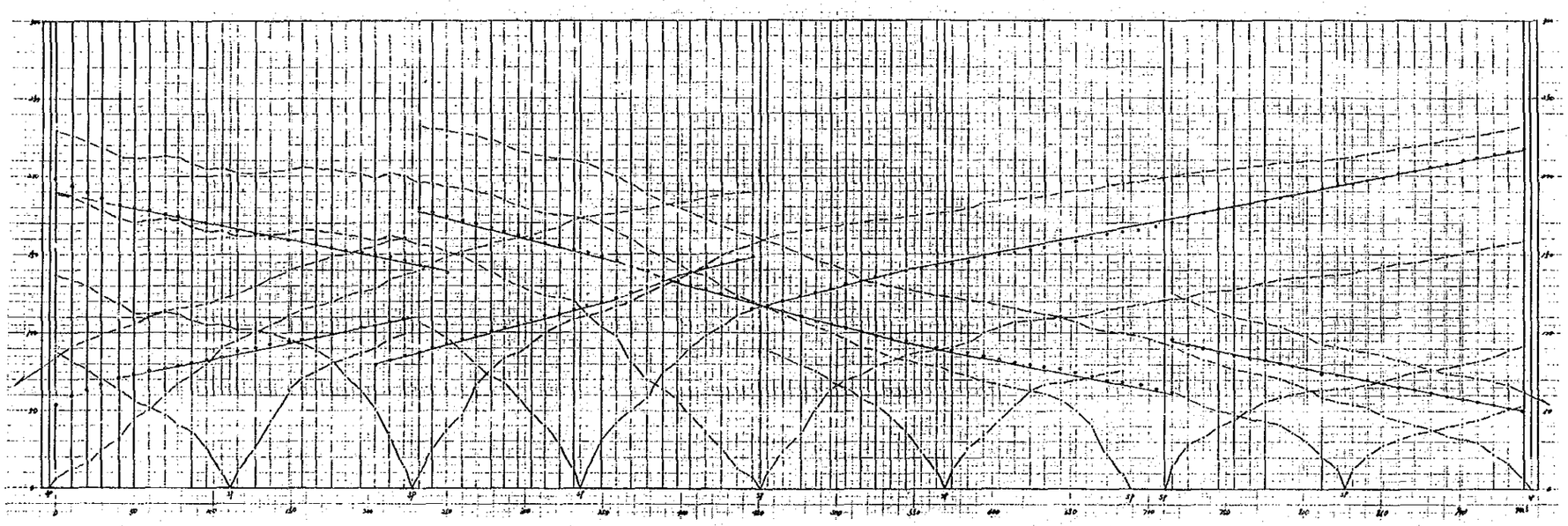


	THE REPUBLIC OF TURKEY ELEKTRİK İŞLERİ ETÜD İDARESİ GENEL MÜDÜRLÜĞÜ	ERMENEK HYDROELECTRIC POWER DEVELOPMENT PROJECT JAPAN INTERNATIONAL COOPERATION AGENCY	TITLE Line LB

PLATE NO.

LC LINE

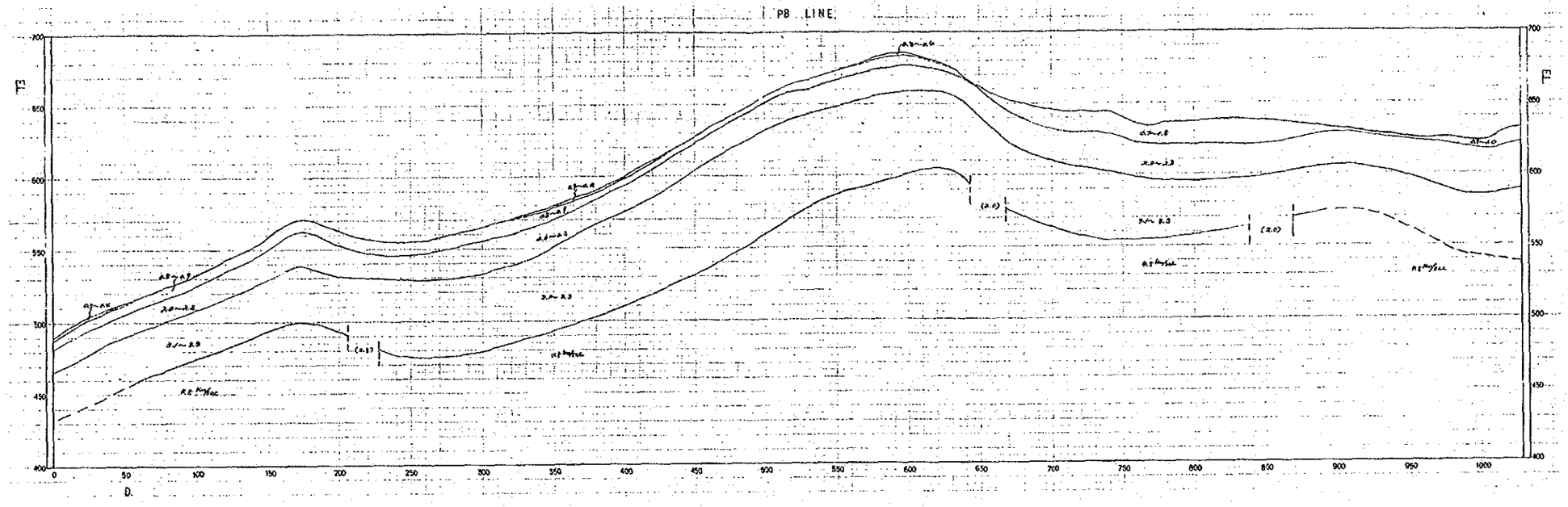


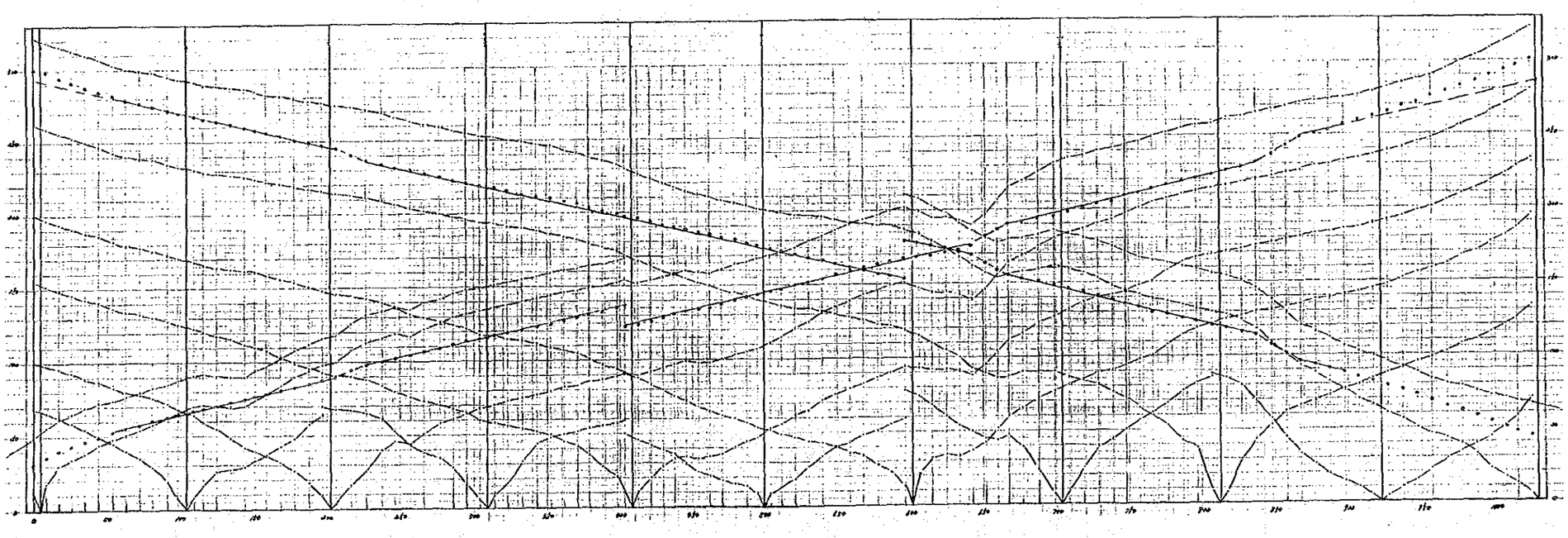


	THE REPUBLIC OF TURKEY ELEKTRİK İŞLERİ ETÜD İDARESİ GENEL MÜDÜRLÜGÜ	ERMENEK HYDROELECTRIC POWER DEVELOPMENT PROJECT JAPAN INTERNATIONAL COOPERATION AGENCY	TITLE Line LC

PLATE NO.

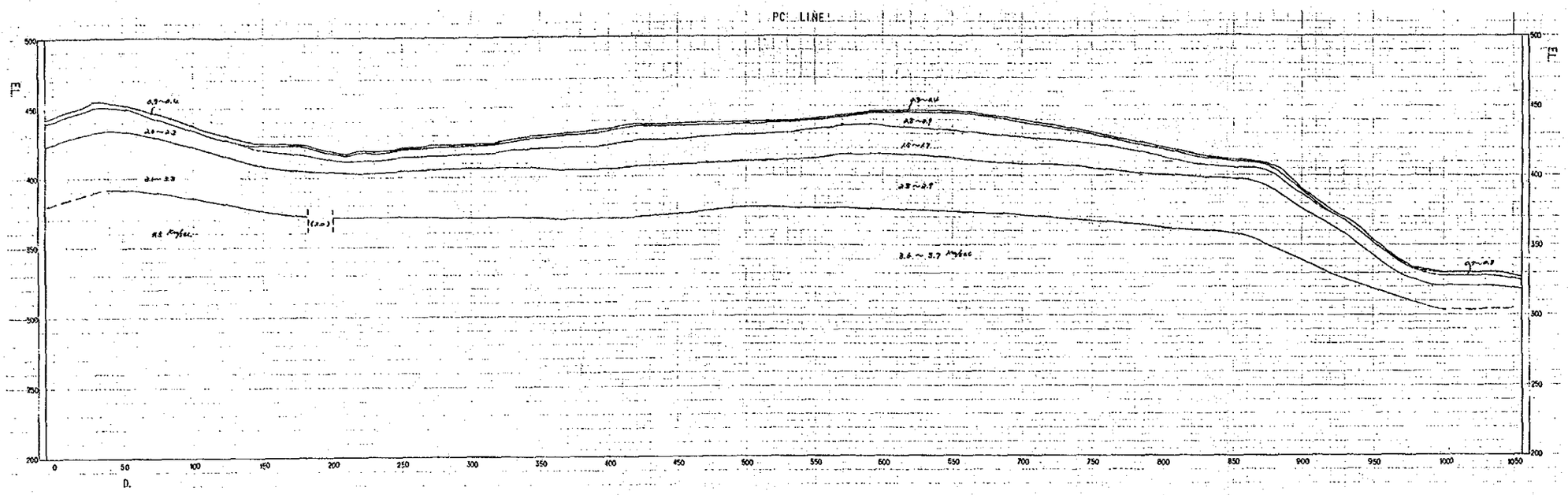
PB LINE

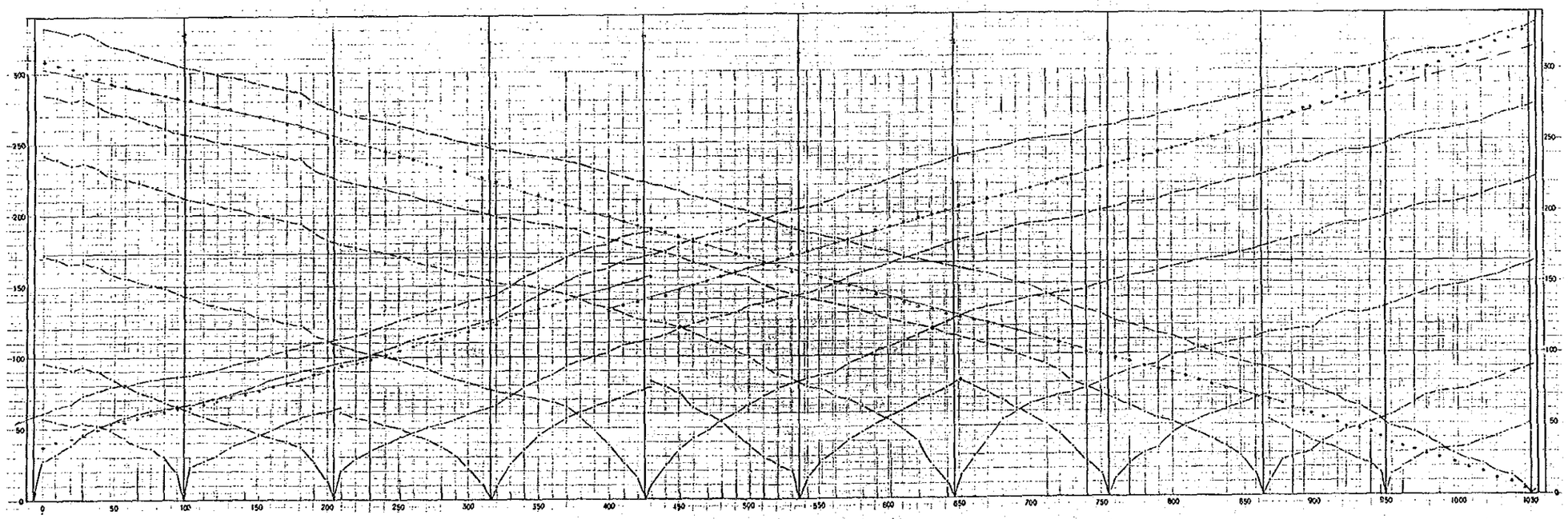




	THE REPUBLIC OF TURKEY ELEKTRİK İŞLERİ ETÜD İDARESİ GENEL MÜDÜRLÜĞÜ	ERMENEK HYDROELECTRIC POWER DEVELOPMENT PROJECT JAPAN INTERNATIONAL COOPERATION AGENCY	TITLE Line PB

PLATE NO.





	THE REPUBLIC OF TURKEY ELEKTRİK İŞLERİ ETÜD İDARESİ GENEL MÜDÜRLÜĞÜ	ERMENEK HYDROELECTRIC POWER DEVELOPMENT PROJECT JAPAN INTERNATIONAL COOPERATION AGENCY	TITLE Line PC

Attachment A4

Report on Micropaleontological and Mineralogical Study

REPORT ON MICROPALEONTOROGICAL AND MINERALOGICAL STUDY

1 STUDY BEFORE F/S STAGE

The micropaleontorogical and mineralogical examinations have been made in MADEN TETKIK VE ARAMA (MTA) by means of microscorpe. The sampling has been made by EIE Geologist. The sampling location is shown in Plate 14. The reports are as follows:
(MTA : General Directorate of Mineral Research and Exploration, Ankara.)

Micropaleontorogical Study Report

Report No.791	: Apr.20, 1987
Report No.980	: Oct.13, 1988
Report No.1067	: Jan.16, 1989
Report No.1120	: Jul. 5, 1989

Mineralogical Study Report

Report No.178	: Mar.21, 1985
Report No.14471	: Oct.21, 1988
Report No.-	: Mar.21, 1989
Report No.922	: Jul. 5, 1989

1.1 MICROPALEONTOROGICAL STUDY REPORT

(1) REPORT NO.791. APR.20, 1987

SAMPLE : Er-22
Microfauna : Cyclogyra mahajeri BRONIMANN, ZANINETTI et BOZORGNIA and Gastropoda.
Age : Lower Triassic (Scythian).

SAMPLE : Er-23
Microfauna : Endothyra sp., Globivalvulina sp. and Tuberritina sp.
Age : Permian.

SAMPLE : Er-25
Microfauna : Globivalvulina sp., Tetrataxis sp., Dinbarula sp., Lasiodiscus sp., Nodosaria sp. and Paleofusulina sp.
Age : Upper Permian.

SAMPLE : Er-26
Microfauna : Turritellella cf.mesotriasica KOEHN-ZANINETTI, Glomospira sp., Ammodiscus sp., Ammobaculites sp., Ophthalmidium sp., Lituolidae and Lageniidae.
Age : Triassic, probably Ladinian (Middle Triassic).

SAMPLE : Er-28
Microfauna : Ophthalmidium sp., Galeanella ? sp., Ammobaculites sp., Duostomina sp., Lageniidae and Miliolipоridae.
Age : Upper Triassic.

SAMPLE : Er-29
Microfauna : Prekurnubia sp., Nautiloculina sp., Siphovalvulina sp., Valvulinidae, Lituolidae and Kurnubininae.
Age : Upper Dogger - Lower Malm (Middle - Upper Jurassic).

SAMPLE : Er-30
Microfauna : Orbitoides medius(d'Archiàc), Lepidorbitoides sp., Rotaliidae, Globotruncana sp., Globigeriniidae, Miliolidae, Anomalinidae, Hippurites, Coral and fragments of macrofossils.
Age : Maastrichtian (Upper Cretaceous).

SAMPLE : Er-31
Microfauna : Lasiodiscus sp., Pseudoendothyra sp. and Climacammina sp.
Age : Carboniferous.

SAMPLE : Er-32
Microfauna : Pseudopfenderina sp., Textularia sp., Pfenderininae, Algal, Valvulinidae and fragments of macrofossils.
Age : Upper Dogger - Lower Malm (Middle - Upper Jurassic).

SAMPLE : Er-33
Microfauna : Pfenderina sp. and Kilianina sp.
Age : Dogger - Lower Malm (Middle - Upper Jurassic).

SAMPLE : Er-34
Microfauna : Valvulina sp., Siphovalvulina sp. and Textularia sp.
Age : Lower - Middle Jurassic.

SAMPLE : Er-37
Microfauna : Endothyra sp., Endothyranella sp., Ophthalmidium sp., Glomospira sp. and Lageniidae.
Age : Middle - Lower Triassic.

SAMPLE : Er-52, Er-24, Er-27, Er-35 and Er-36
Microfauna : Any characteristic microfaunas could not be found.
Age : Could not be identified.

(2) REPORT NO.980. OCT.13, 1988

SAMPLE : Er-2 and Er-5
Microfauna : Pseudocyclammina sp., Cuneolina sp., Valvulina sp., Miliolidae and Ophthalmididae.
Age : Cretaceous (Albian - Santonian), probably Upper Cretaceous, Senonian.

SAMPLE : Er-3 and Er-8
Microfauna : Orbitoides sp., Anomalinidae and many fragments of Rudistes.
Age : Upper Cretaceous (Middle-Upper Maastrichtian).

SAMPLE : Er-1, Er-4 and Er-9
Microfauna : Any characteristic foraminifers could not be found.
Age : Could not be identified.

(3) REPORT NO.1067. JAN.16, 1989

SAMPLE : Er-14
Microfauna : Orbitoides sp., Rotaliidae, Miliolidae and fragments of crusts of Rudis.
Age : Upper Cretaceous or younger than Upper Cretaceous.

SAMPLE : Er-21
Microfauna : Cuneolina sp. and other fragments of fossils.
Age : Lower Cretaceous.

SAMPLE : Er-15
Microfauna : Protopeneroplis sp., Sifovalvulina, Ophtalmidium and Campelliella sp.
Age : Upper Jurassic (Malm).

SAMPLE : Er-16, Er-17, Er-19 and Er-20
Microfauna : Any characteristic microfaunas could not be seen.
Age : Could not be identified.

(4) REPORT NO.1120. JUL.5, 1989

SAMPLE : Er-38
Microfauna : Globotruncaniidae, Stomiosphera sp., Ostracoda and fragments of Macrofossils.
Age : Upper Cretaceous.

SAMPLE : Er-39
Microfauna : Stomiospheara sp., Bol Ostracoda'li and fragments of Macrofossils.
Age : Cretaceous.

SAMPLE : Er-42
Microfauna : Globigeriniidae, Miliolidae, Ophthalmidiidae and Ostracoda.
Age : Cretaceous.

SAMPLE : Er-43
Microfauna : Orbitoides sp., Planorbulina sp., Rotaliidae, Anomalinidae, Milioliidae, Ophthalmidiidae and fragments of Macrofossils.
Age : Upper Cretaceous (Maastrichtian).

SAMPLE : Er-53, Er-41 and Er-44
Microfauna : Any characteristic faunas could not be found.
Age : Could not be dientified.

1.2 MINERALOGICAL STUDY REPORT

(1) REPORT NO.178. MAR.21, 1985

SAMPLE : Er-45

Crypto and microcrystalline limestone.
This is formed by crypto and microcrystalline calcites, with many traces of microfossils. Secondary calcite vains are seen.

SAMPLE : Er-46

Crypto and microcrystalline limestone.
This is formed by compeletely fossiliferous micrite (fossils altered into cryptocrystalline calcite). Grains are ellipsoidal and partly spherical, cemented by calcite. Grain size is 0.1-0.6mm.

SAMPLE : Er-47

Cryptocrystalline limestone.
This is formed by cryptocrystalline calcite densely. Ironhydroxide minerals which is reddish brown stained are seen.

SAMPLE : Er-48

Cryptocrystalline limestone.
This is formed by mainly cryptocrystalline calcite, and a little amount of quartz and clay minerals.

SAMPLE : Er-49

Sandstone.
This is formed by mainly fragments (size; 0.03-0.40mm) of crypto and microcrystalline limestone, completely serpentinized peridotite (serpentinite), quartz and calcites. Minor amount of chert is seen. Grains are densely joined each other, partly cemented by cryptocrystalline calcite.

SAMPLE : Er-50

Cryptocrystalline limestone.
This is poorly silty, formed by fragments (size; 0.02-0.1mm) of cryptocrystalline limestone (silty), quartz, minor amount of serpentinite and a little amount of chloritic mafic minerals. Grains are joined densely each other, partly cemented by cryptocrystalline calcite.

SAMPLE : Er-51

Crypto and microcrystalline limestone.
This is formed by crypto and microcrystalline calcites and a little amount of micro quartz. Cavity structures are seen partly.

(2) REPORT NO.14471. OCT.21, 1988

SAMPLE : Er-1
Cryptocrystalline limestone.
Cryptocrystalline calcite and crusts of microfossils are seen, which are cut by microcrystalline calcite veins.

SAMPLE : Er-2
Cryptocrystalline limestone.
This is formed by cryptocrystalline calcite, which are cut by micro and mesocristalline calcite veins.

SAMPLE : Er-3
Microcrystalline limestone.
This is formed by microcrystalline calcite. Crusts of microfossils are seen partly.

SAMPLE : Er-4
Micro and cryptocrystalline limestone.
This is formed by micro and cryptocrystalline calcites, which are partly cut by mesocrystalline calcite veins. Ironhydroxide infiltration is observed in irregular cracks.

SAMPLE : Er-5
Cryptocrystalline limestone.
This is formed of cryptocrystalline calcite, which is cut by microcrystalline calcite veins.

SAMPLE : Er-6
Completely and partly serpentinized ultrabasic rock.
This is formed by mainly serpentine minerals which are in mesh structure, with minor amount of olivine and pyloxene (orthorhombic), and trace of chromite.

SAMPLE : Er-7 (SK-305; 120.35-132.00m)
Brecciated radiolarite.
This is formed by quartz, chalcedony and radiolaria, which are stained by calcite and partly ironhydroxide.

SAMPLE : Er-8
Micro and mesocrystalline limestone.
This is formed by micro and mesocrystalline calcites (recrystallized calcites), which shows banded structure.

SAMPLE : Er-9
Microcrystalline limestone.
This is formed by microcrystalline calcite(grain size: 0.05-0.5mm), Each grain is crushed and irregular cracks are seen in it.

SAMPLE : Er-10

Serpentinized ultrabasic rock.
This sample is completely serpentinized, with mesh structure. Minor amount of bastite pseudomorph and trace of opacite are seen.

SAMPLE : Er-11

Conglomeratic limestone.
This is formed by gravels of limestone which are recrystallized limestone, sparitic limestone and micritic limestone, with some microfossils. Ironhydroxide infiltration is seen in irregular cracks.

SAMPLE : Er-12 (SK-219; 74.50-76.65m)

Sandy limestone.
This is formed mainly fragments of chert, limestone, quartz and minor amount of feldspar. Some microfossils are seen in limestone. Grain size is 0.12-1.2mm. Each fragment is cemented by microcrystalline calcite.

SAMPLE : Er-13 (SK-219; 63.00-72.00m)

Silty limestone.
This is formed by fragments of quartz, chert and limestone. Fragments are cemented by cryptocrystalline calcite, stained by ironhydroxide.

(3) REPORT NO.- . OCT.21, 1988

SAMPLE : Er-14

Micritic and sparitic limestone.

This is formed by micritic and sparitic calcites, partly contains recrystallized fossil crusts, remnants of microfossils and a little amount of quartz. Quartz and microcrystallized calcite are seen in openings and irregular cracks.

SAMPLE : Er-15

Micritic limestone.

This is formed by micritic calcite. There are many microfossils and fossil crust traces. Calcite is seen in irregular cracks.

SAMPLE : Er-16

Micritic and sparitic limestone.

This is formed by recrystallized micritic and sparitic calcites. A little amount of microfossil is seen.

SAMPLE : Er-17

Biosparitic limestone.

Intraclasts are seen. This is formed by subrounded and recrystallized micritic calcite. Some intraclasts contain microfossils. Intraclasts are cemented by sparitic calcite.

SAMPLE : Er-18

Sandstone.

This is formed by mainly quartz, minor amount of chert and feldspar, and trace of mica and chlorite, which are cemented by crypto and microcrystalline calcites. Each grain is subrounded, and its size is 0.14-0.68mm.

SAMPLE : Er-19

Sparitic limestone.

Intraclasts are seen. This is formed by sparitic calcite, and partly intraclast which consists of micritic calcite. A little amount of microfossil trace is seen.

SAMPLE : Er-20

Micritic limestone.

This is formed by micritic calcite, minor amount of dolomite and microfossil crust, and trace of clay minerals.

SAMPLE : Er-21

Micrite (Micritic limestone).

This is formed by micritic calcite, minor amount of recrystallized limestone(intraclast), a little amount of microfossil trace. Meso and microcrystalline calcite veins are seen.

(4) REPORT NO.922. JUL.21, 1988

SAMPLE : Er-53

Microcrystalline limestone.
This is formed by primary crystalline calcite. Grain size is 0.12- 0.28mm.

SAMPLE : Er-38

Biomicritic sparite.
This is formed by mainly micritic calcite and minor amount of intraclast, which is cemented by sparitic calcite. Some fragments of microfossils are seen partly.

SAMPLE : Er-39

Biomicrite (Biomicritic limestone).
This is formed by mainly micritic calcite. Microfossils amd some fragments of recrystallized microfossils are seen. Sparitic calsite fills openings.

SAMPLE : Er-40

Silicified and chloritic rock.
This formed by quartz and chlorite in submicroscopic formations. Calcite is seen in irregular cracks.

SAMPLE : Er-41

Micrite (Micritic limestone).
This is formed by micritic calcite. Sparitic calcite is seen in irregular cracks and in other openings.

SAMPLE : Er-42

Biomicrite.
This is formed by micritic calcite. Many traces of microfossils and a little amount of sparitic calcite are seen in irregular cracks and other openings.

SAMPLE : Er-43

Biosparitic micrite.
This is formed by micrite which is partly recrystallized. Microfossil traces are seen.

SAMPLE : Er-44

Mesocrystalline limestone
This is formed by primary calcite. Grain size is 0.24-1.2mm.

2 STUDY IN F/S STAGE

The following samples were taken for the mineralogical study in F/S stage. The samples No.1 and 2 were examined by means of microscope. The samples No.3 and 4 were examined by means of X-ray diffraction method for the purpose to examine swelling tendency of serpentinite and green schist.

Sample No.	Rock and Sampling Location
1	Conglomeratic limestone at depth of 41.00 m in borehole SK-102
2	Sandstone at depth of 302.50 m in borehole SK-102
3	Green schist at depth of 171.00 m in borehole SK-102
4	Serpentinite at outcrop near proposed powerhouse site

2.1 Examination by Microscope

(1) Sample No.1

a. Rock name: Limestone (wackestone)
Calcareous matrix, with many fragments of fossils and some pellets. Authigenic calcites are seen commonly.

b. Components

Foraminifera	: 0.1-0.3mm. Benthoic foraminifera may be dominant.
Calcareous algae	: 1.0mm in general, mostly fragments.
Shell fragments	: Layered fragments, 0.2mm in thickness in general. This is mostly replaced by authigenic calcites.
Water flea	: 0.2mm in general, very small amount.
Pellet	: Less than 0.1mm, circular to ellipsoidal, very small amount.
Authigenic calcites	: These are seen irregular, vein and granular shapes in matrix. Granular shapes may be fossil fragments.

(2) Sample No.2

a. Rock name: Lithic greywacke
Formed by 0.5-1.5mm subrounded rock fragments and granular minerals, less sorting and without lamina.
Alteration is low, however some carbonate minerals are seen in matrix, quartz and feldsper group.

b. Components
Component ratio (%): Granular components : Matrix = 40 : 60

Rock fragments(50) > Quartz(23) > Chlorite(10) > Feldsper group(8) > Opaque minerals(5) > Carbonate minerals(3) > Mica group(1)

Quartz	: 0.1-0.7mm, colorless, rarely with undulatory extinction.
Feldsper group	: 0.1-0.2mm. Mostly plagioclase and rarely K-feldsper, colorless. Albite twin is seen in plagioclase.
Chlorite	: 0.08-0.15mm, pale green colored, with pleochroism weakly.
Mica group	: 0.03-0.08mm. Mostly muscovite and rarely biotite. Muscovite is colorless. Biotite is brown, with pleochroism (dark brown-pale brown) strongly. Chloritization is commonly seen in biotite.
Carbonate minerals	: 0.1-0.3mm, with cleavage strongly.
Opaque minerals	: 0.08-0.3mm, granular shape.
Rock fragments	: 0.5-3.0mm, sandstone, mudstone, shale and chert.
Matrix	: Matrix is mainly formed by clay minerals, less than 0.03mm, such as mica clay minerals (illite, etc.) and chlorites. These clay minerals are partly produced by weathering.

2.2 Examination by X-ray powder diffraction method

Samples No.3 and No.4 are examined. The results are summarized in Table 1, Fig.1 and 2, and as follows.
X-ray diffractometer is XD-610, Shimazu-Seisakusyo.

(1) Sample No.3: Green schist

This sample is gray to black colored argillaceous rock, composed of mainly clay minerals. Mica clay minerals, probably illite, is observed dominantly, and Chlorite, smectite and kaoline also are seen very rarely.

Smectite and chlorite show swelling tendency in general, however these are very rare in this sample.

(2) Sample No.4: Serpentinite

This sample is composed mainly of serpentine. In general, antigorite, chrysotite, lizardite, etc. are so called serpentine. Serpentine in this sample is estimated to have similar crystal structures to that of chrysotite which is raw materials of asbestos.
Other minor minerals are spinel (chromspinel and picotite), chromite, etc., which are commonly seen in serpentinite and ultrabasic rocks.

Minerals having swelling tendency are not seen in this sample.

Table 1 RESULT OF X-RAY DIFFRACTION METHOD

Minerals	S/C	Sme	Chl	M	K	Qz	Serp	Spi	Cm
Sample No.3	x	x	xx	xxx	x	xxxx	n	n	n
Sample No.4	n	n	n	n	n	n	xxxx	x	x

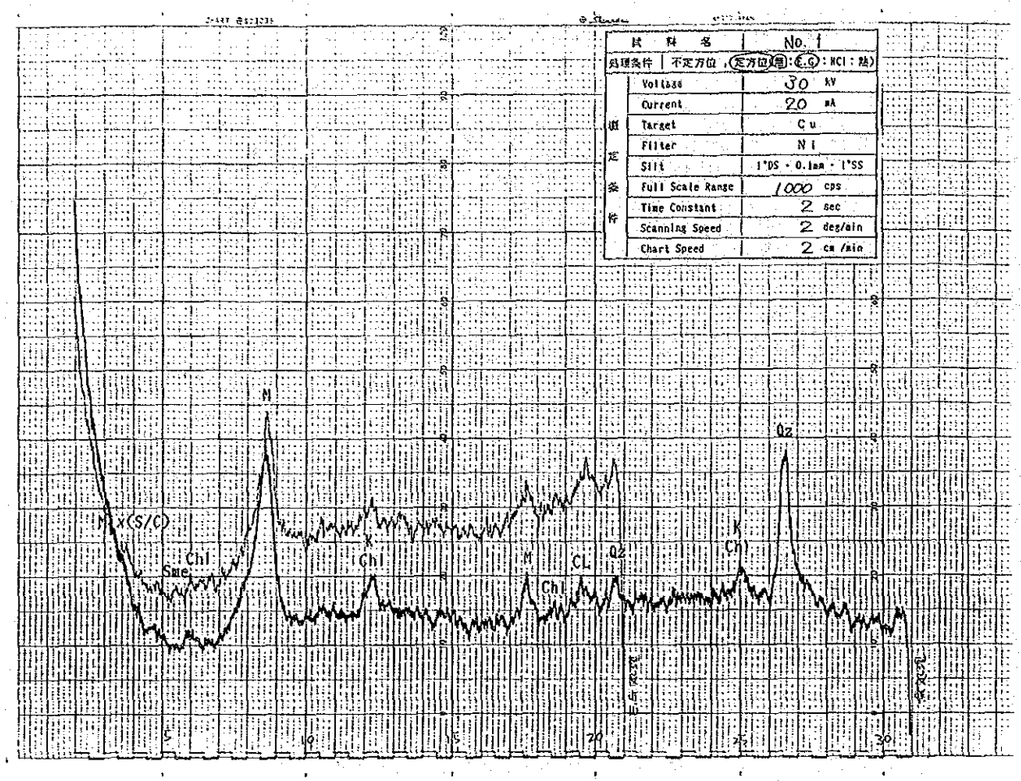
Notes:

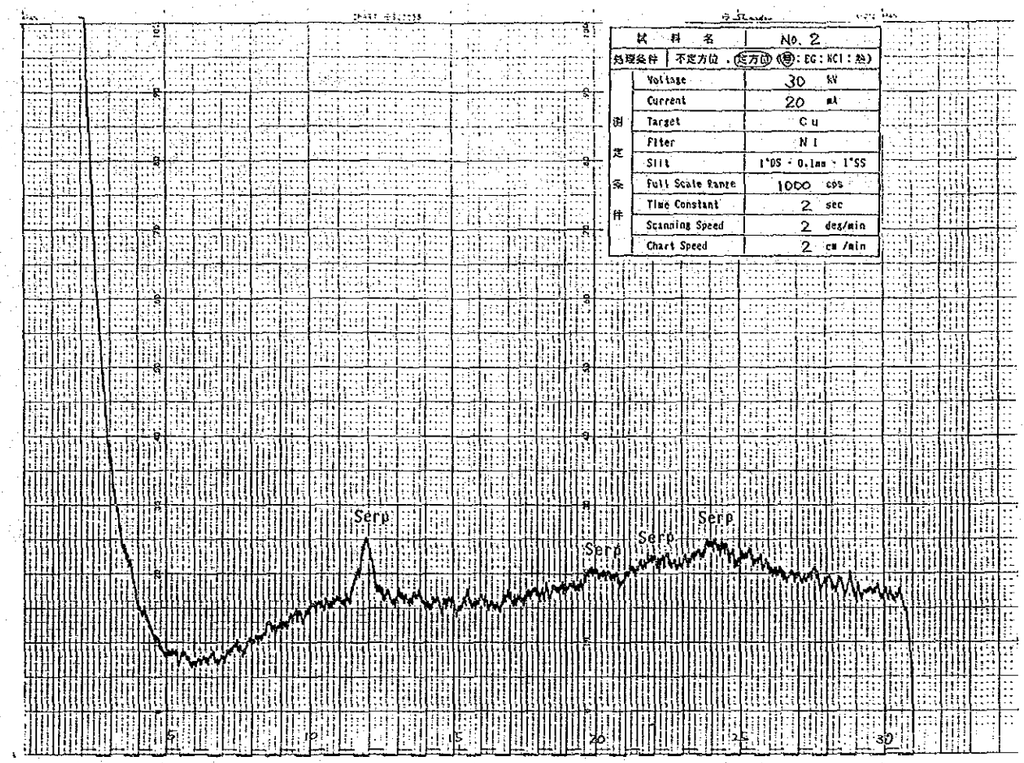
Contents

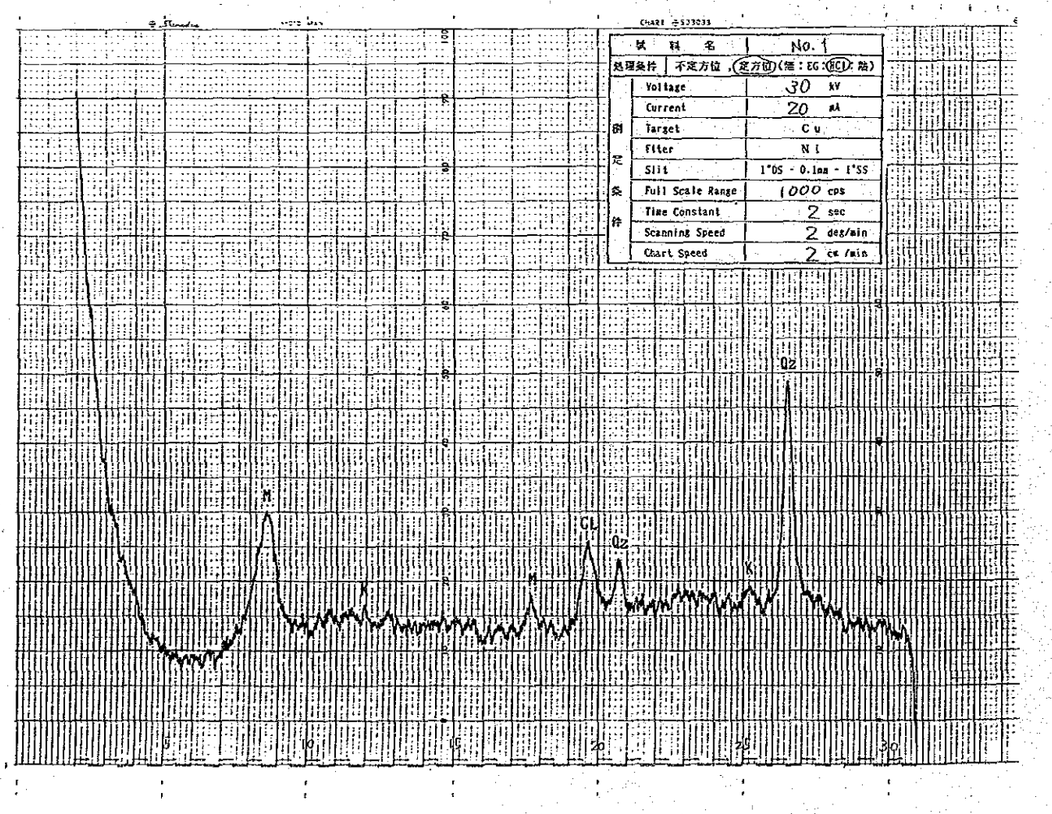
n	Not detected
x	Very small amount
xx	Small amount
xxx	Middle amount
xxxx	Large amount

Minerals

S/C	Smectite/chlorite
Sme	Smectite
Chl	Chlorite
M	Mica clay minerals
K	Kaoline
Qz	Quartz
Serp	Serpentine
Spi	Spinel
Cm	Chromite







LEGEND

Chl	Chlorite
Sme	Smectite
M	Mica clay minerals
K	Kaoline
S/C	Smectite/chlorite
Qz	Quartz
Serp	Serpentine
Spi	Spinel
Cm	Chromite
CL	Illegible due to duplication of some peaks

Fig. 1 **Examination Results of X-Ray Diffraction Method (1/2)**

Fig. 2

Fig. 1 Examination Results of X-Ray Diffraction Method (2/2)