A-2-3 Record of Water Level in Borehole during Drilling

RECORD OF WATER LEVEL IN BOREHOLE DURING DRILLNG

(DIAGRAM)

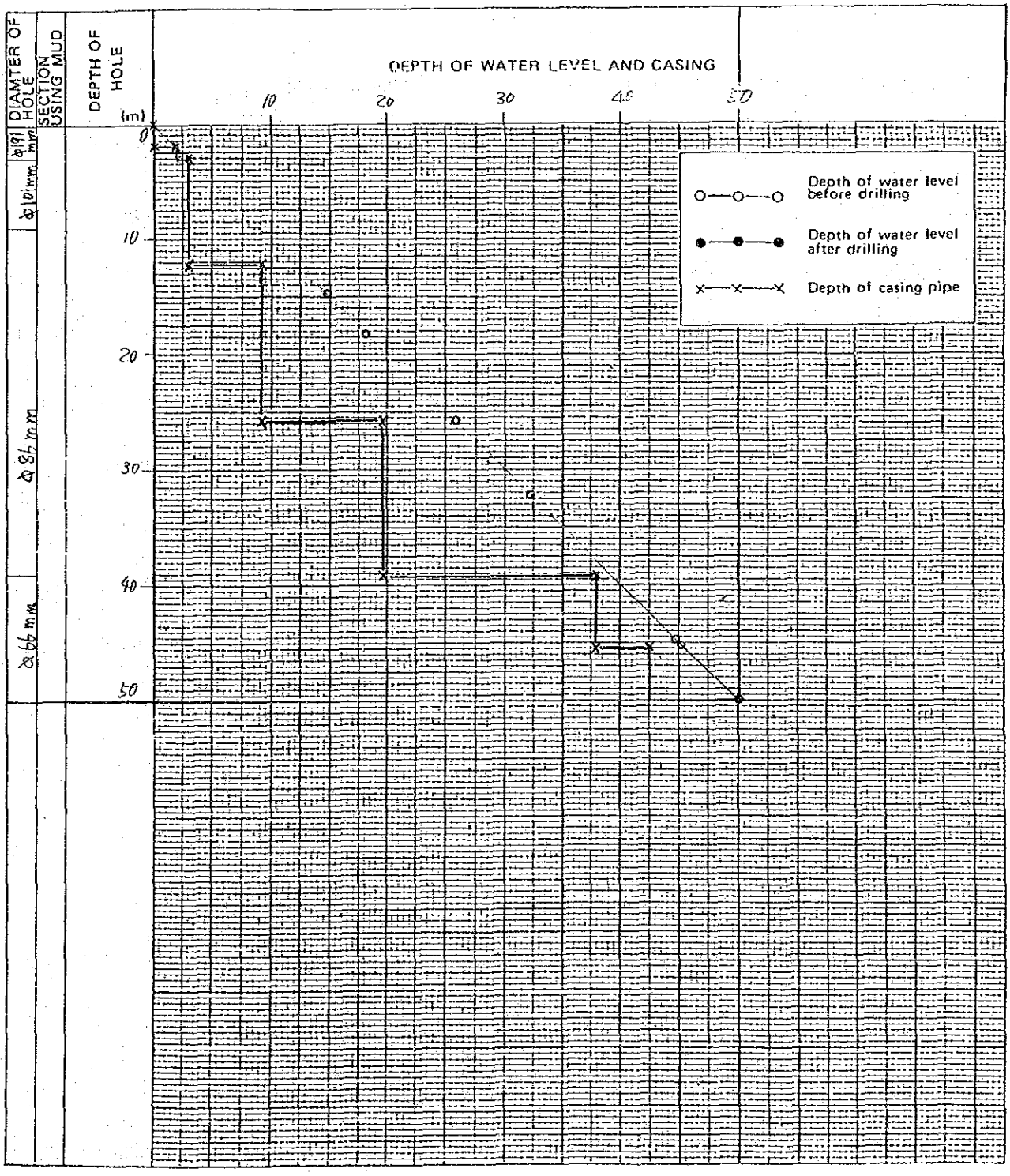
Kihansi PROJECT HOLE No. K j- (SHEET OF)

LOCATION Upper dam site DEPTH OF HOLE 50 m COMMENCED 8.8.'89

ELEVATION 1373.61 DIAMETER OF HOLE φ191 ~ φ66 mm COMPLETED 10.10.'89

COORDINATE

ANGLE FROM HORIZONTAL 90° MEASURED BY



RECORD OF WATER LEVEL IN BOREHOLE DURING DRILLNG

(DIAGRAM)

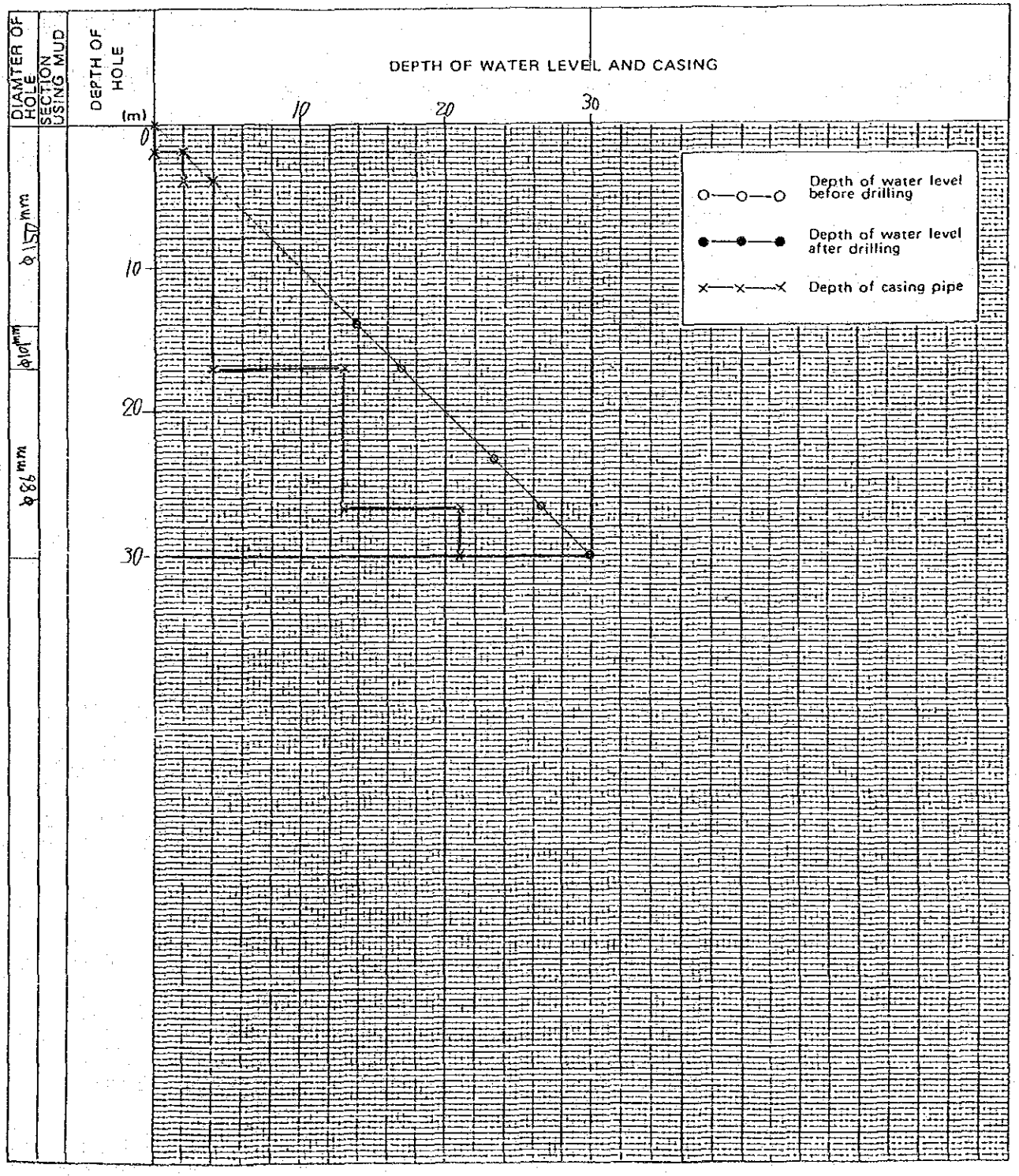
Kihansi PROJECT HOLE No. KU-2 (SHEET OF)

LOCATION Upper dam site DEPTH OF HOLE 30 m COMMENCED 3.9.87

ELEVATION 1356.66 DIAMETER OF HOLE φ150~86 mm COMPLETED 10.9.87

COORDINATE

ANGLE FROM HORIZONTAL 90° MEASURED BY



RECORD OF WATER LEVEL IN BOREHOLE DURING DRILLNG

(DIAGRAM)

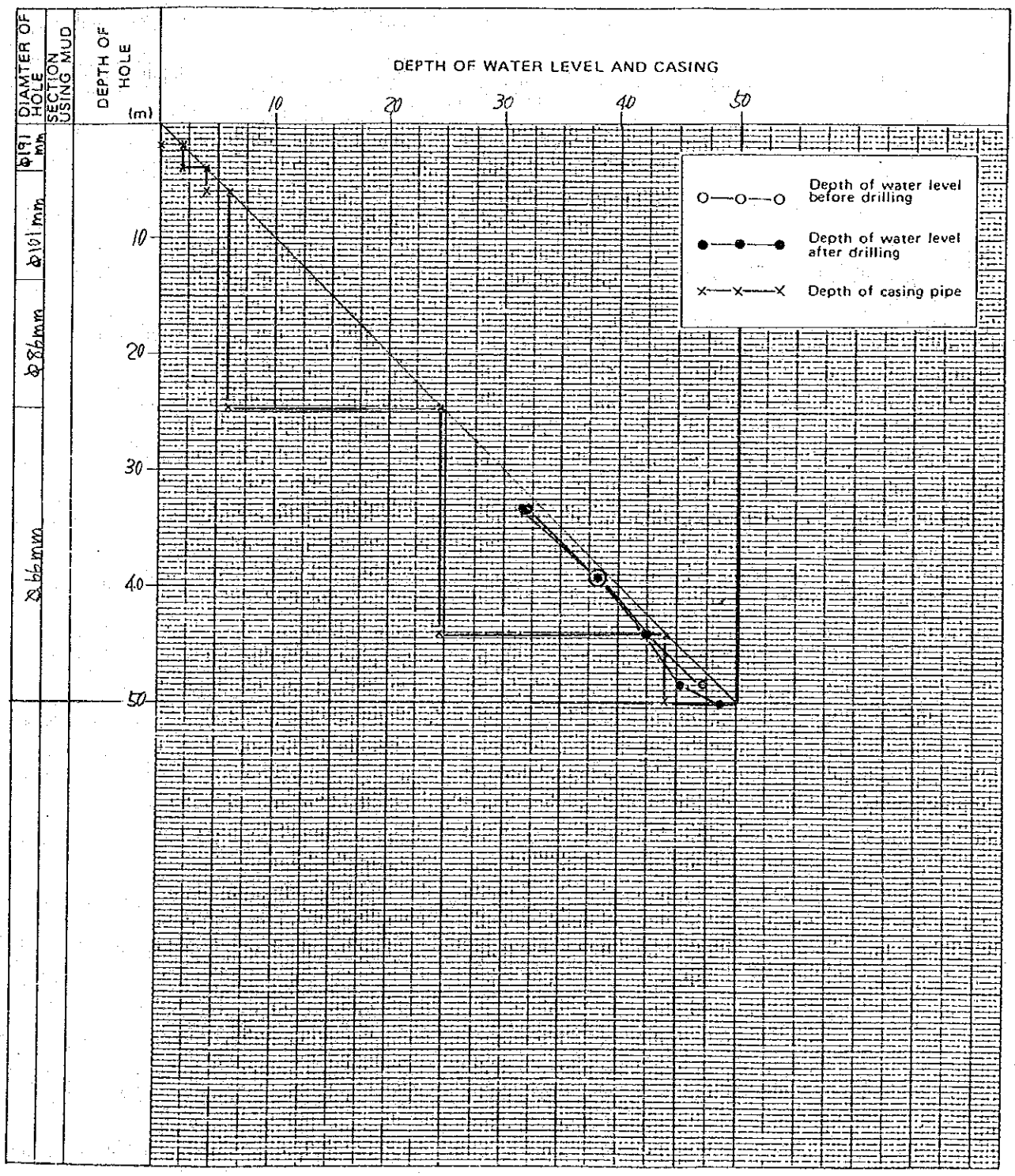
Kihansi PROJECT HOLE No. [illegible] (SHEET OF)

LOCATION Upper dam site DEPTH OF HOLE 50 m COMMENCED [illegible]

ELEVATION 1361.23 DIAMETER OF HOLE φ191 ~ φ66 mm COMPLETED [illegible]

COORDINATE

ANGLE FROM HORIZONTAL 90° MEASURED BY



RECORD OF WATER LEVEL IN BOREHOLE DURING DRILLNG

(DIAGRAM)

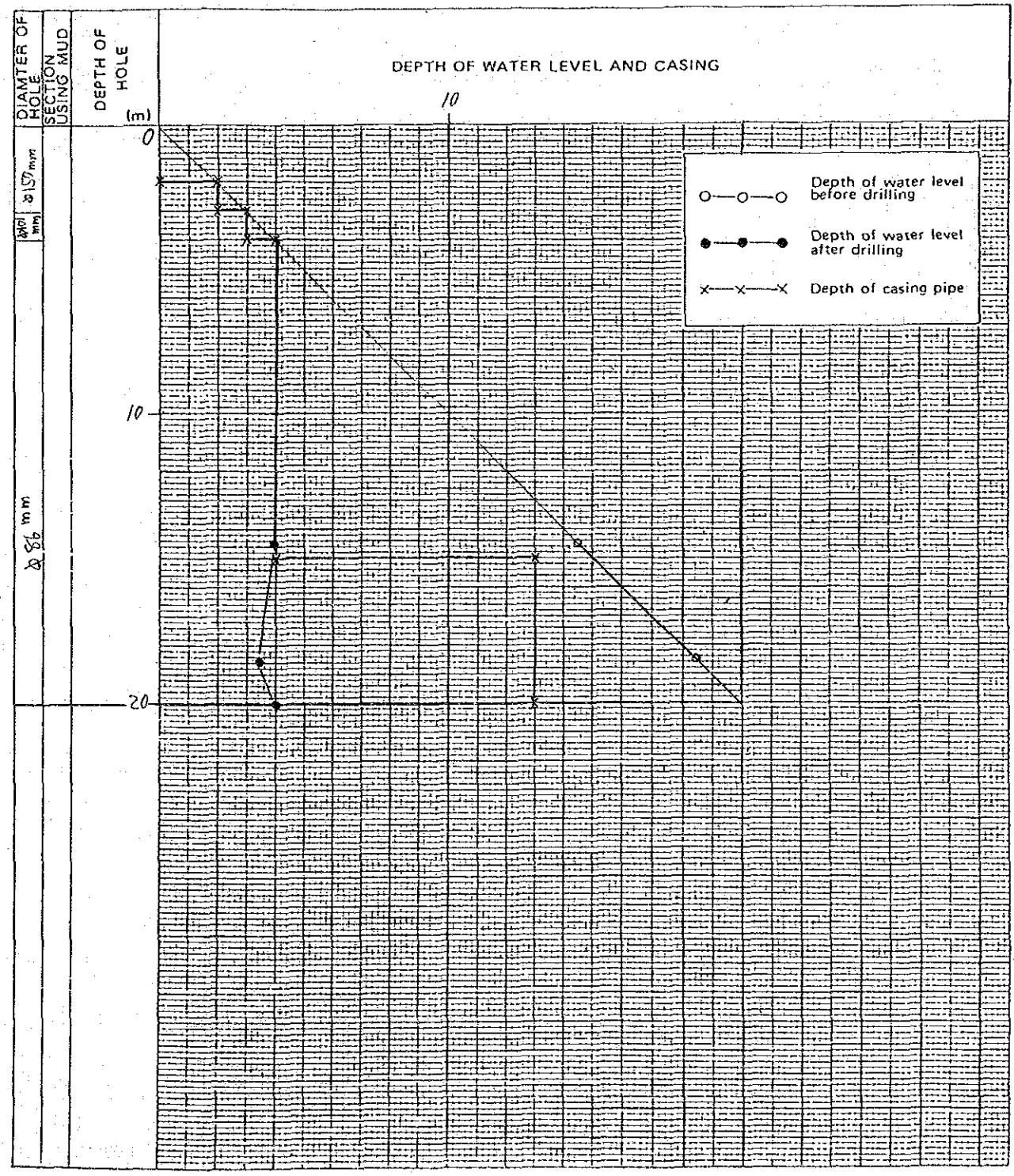
Kihansi PROJECT HOLE No. KL-1 (SHEET OF)

LOCATION Lower dam Site DEPTH OF HOLE 20 m COMMENCED 25.9.79

ELEVATION 1153.30 DIAMETER OF HOLE φ150 ~ 86 mm COMPLETED 2.10.79

COORDINATE

ANGLE FROM HORIZONTAL 90° MEASURED BY



RECORD OF WATER LEVEL IN BOREHOLE DURING DRILLNG

(DIAGRAM)

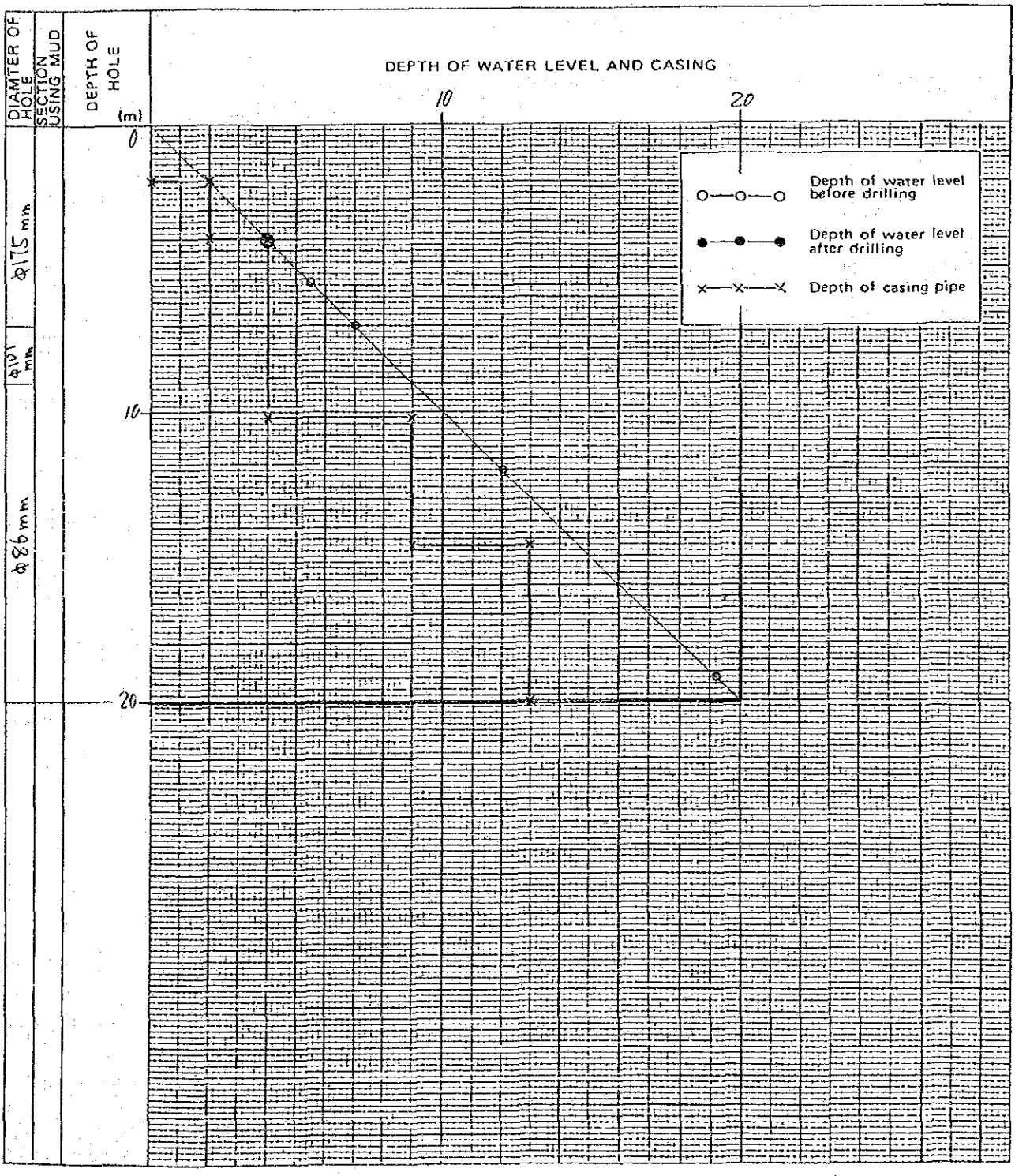
Kiharsi PROJECT HOLE No. [illegible] (SHEET OF)

LOCATION Lower dam site DEPTH OF HOLE 20 m COMMENCED 18.8.'89

ELEVATION 1132.2 DIAMETER OF HOLE φ175~86 mm COMPLETED 21.9.'89

COORDINATE

ANGLE FROM HORIZONTAL 90° MEASURED BY



RECORD OF WATER LEVEL IN BOREHOLE DURING DRILLNG

(DIAGRAM)

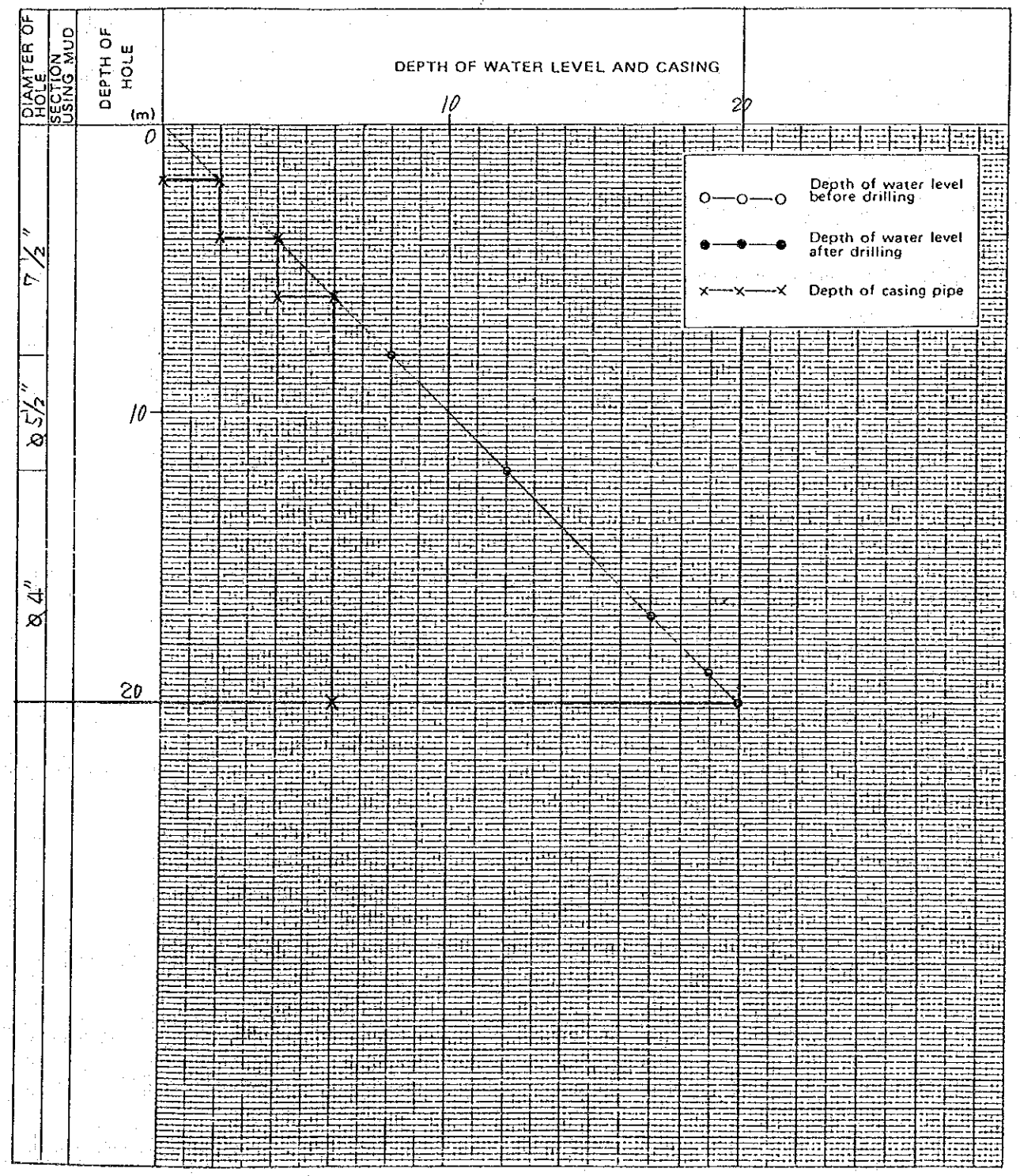
Kihansi PROJECT HOLE No. KI-3 (SHEET OF)

LOCATION Louver headrace tunnel DEPTH OF HOLE 20 m COMMENCED 24.8.'89

ELEVATION _____ DIAMETER OF HOLE φ191~101 mm COMPLETED 30.8.'89

COORDINATE _____

ANGLE FROM HORIZONTAL 90° MEASURED BY _____



RECORD OF WATER LEVEL IN BOREHOLE DURING DRILLNG

(DIAGRAM)

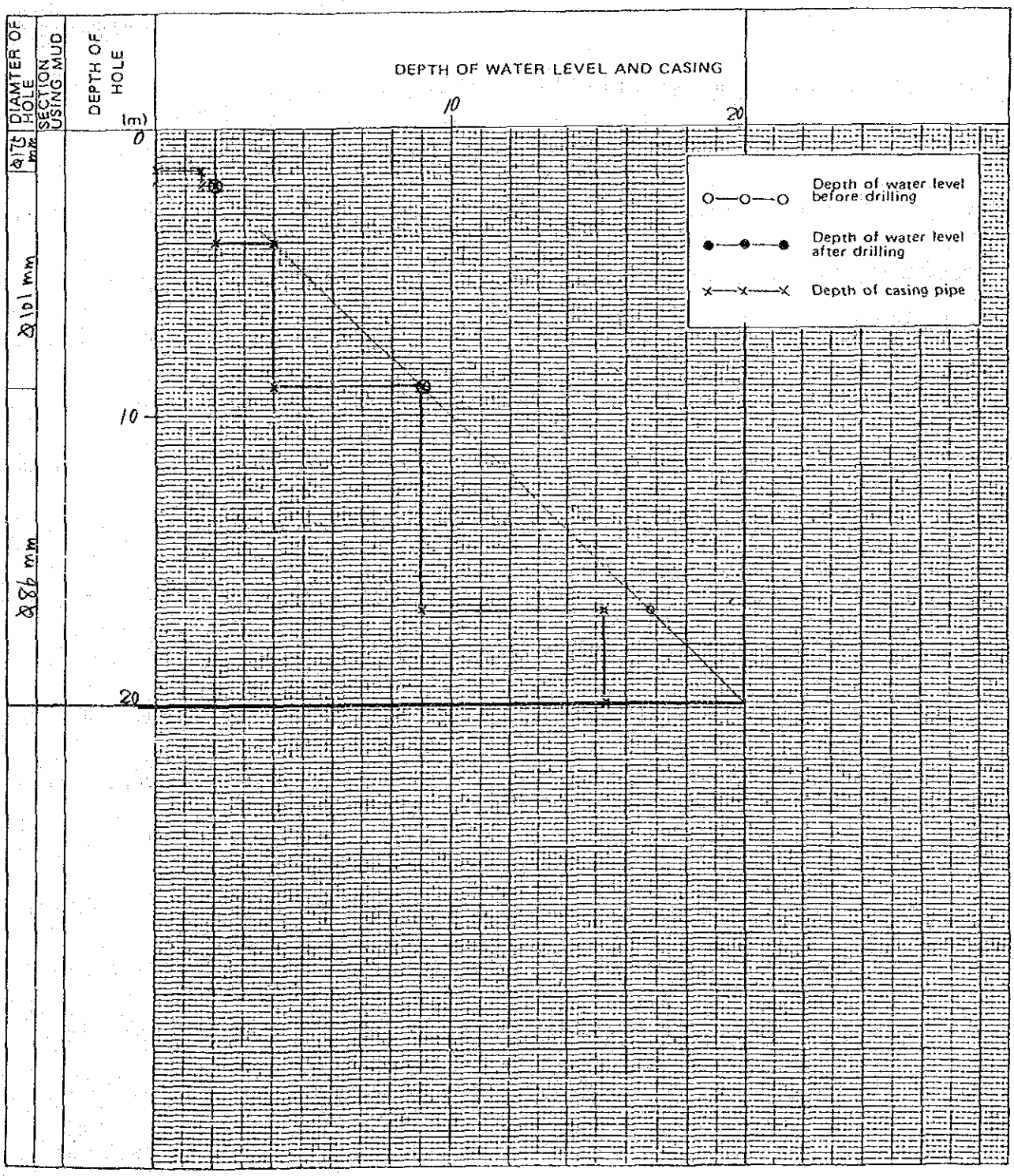
Kihansi PROJECT HOLE No. KL-4 (SHEET OF)

LOCATION Lower P/S DEPTH OF HOLE 20 m COMMENCED 12.7.'89

ELEVATION 325.04 DIAMETER OF HOLE φ175 ~ 86 mm COMPLETED 15.8.'89

COORDINATE

ANGLE FROM HORIZONTAL 90° MEASURED BY



RECORD OF WATER LEVEL IN BOREHOLE DURING DRILLNG

(DIAGRAM)

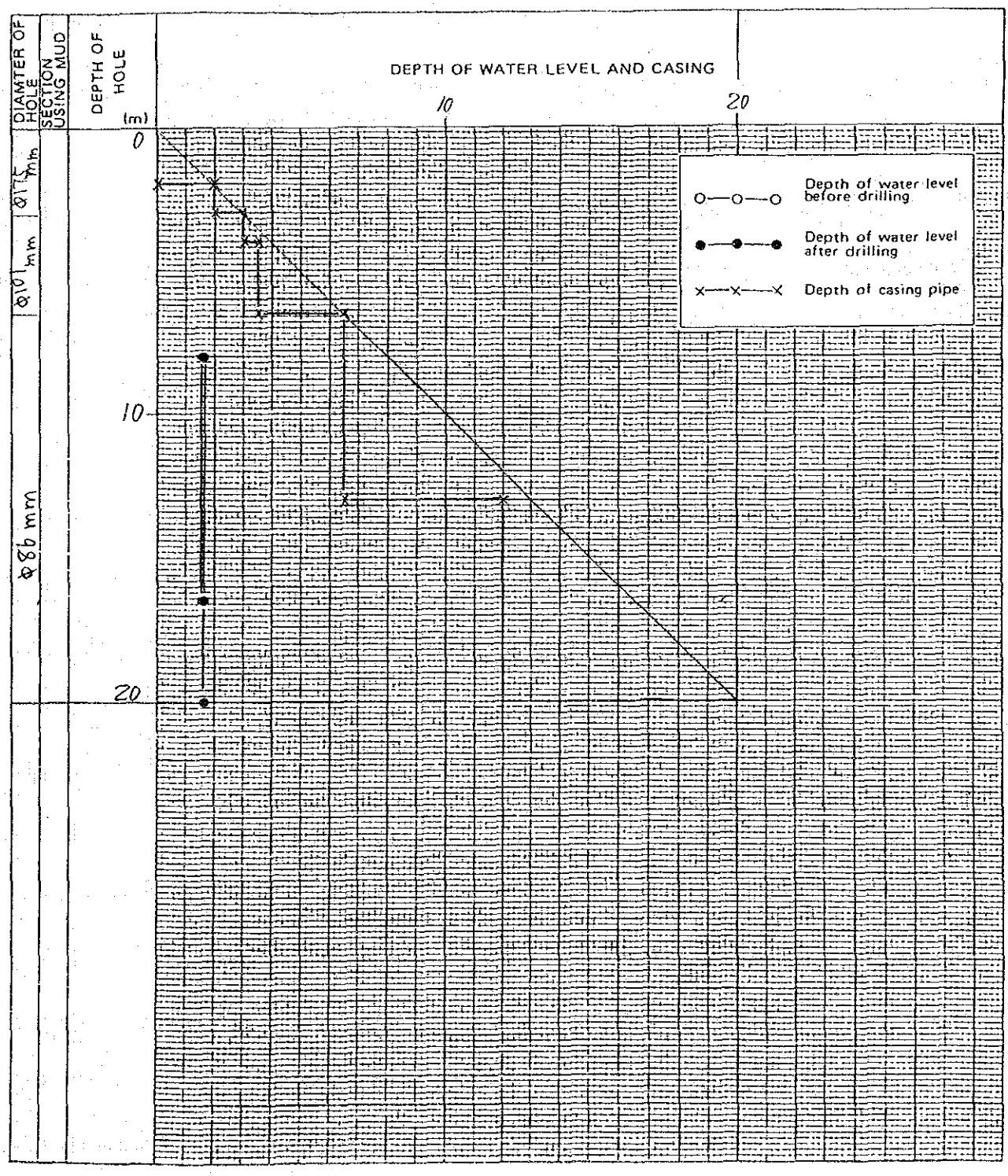
Kihansi PROJECT HOLE No. KL-5 (SHEET OF)

LOCATION Lower P/S DEPTH OF HOLE 20 m COMMENCED 10.7.89

ELEVATION 315.66 DIAMETER OF HOLE φ175~86 mm COMPLETED 12.8.89

COORDINATE

ANGLE FROM HORIZONTAL 90° MEASURED BY



RECORD OF WATER LEVEL IN BOREHOLE DURING DRILLNG

(DIAGRAM)

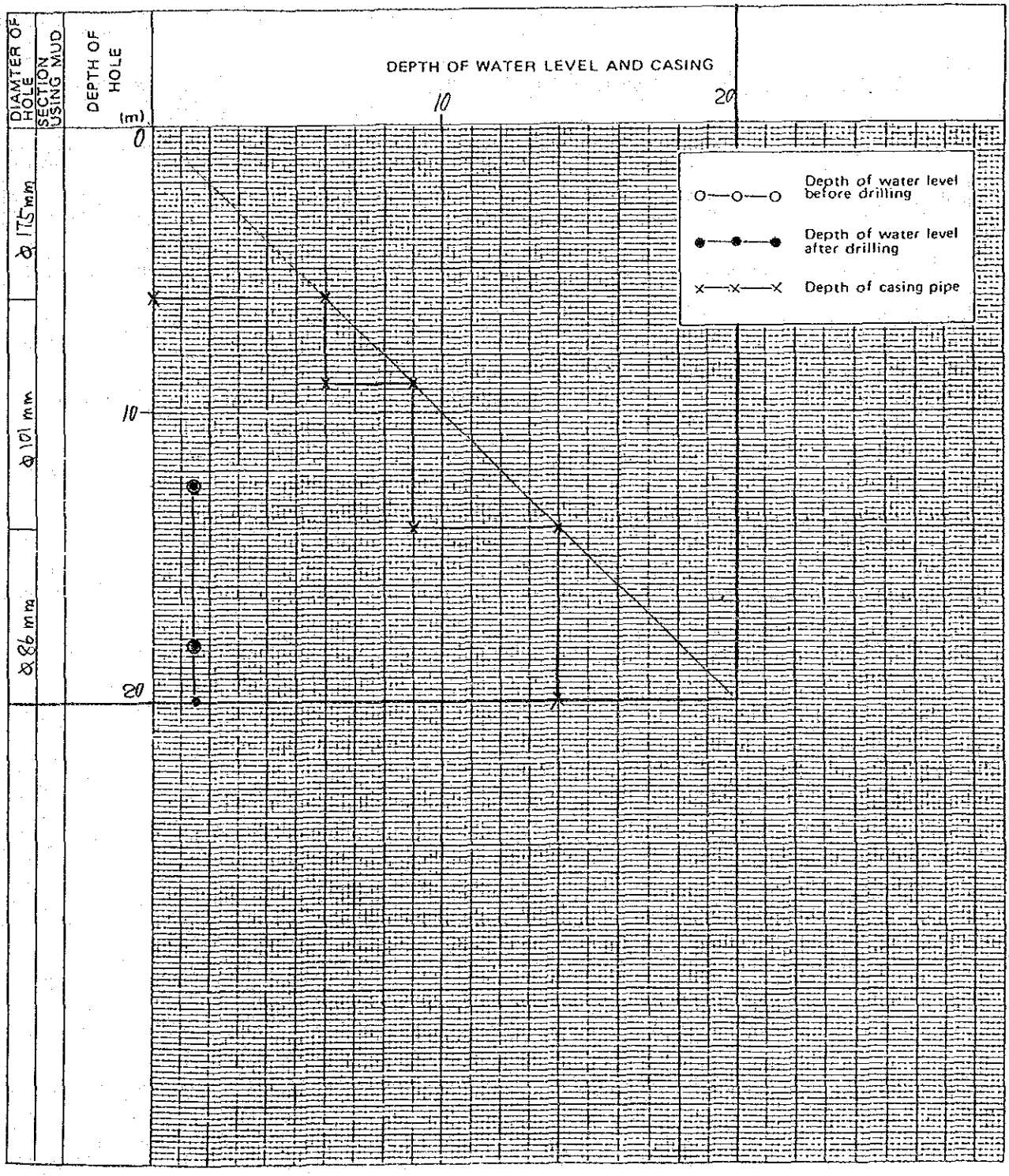
Kihansi PROJECT HOLE No. KM-1 (SHEET OF)

LOCATION Sand quarry / Upper R/S DEPTH OF HOLE 20 m COMMENCED 16. 8. 89

ELEVATION 1353.7 DIAMETER OF HOLE φ175~86 mm COMPLETED 16. 9. 89

COORDINATE

ANGLE FROM HORIZONTAL 90° MEASURED BY



RECORD OF WATER LEVEL IN BOREHOLE DURING DRILLNG

(DIAGRAM)

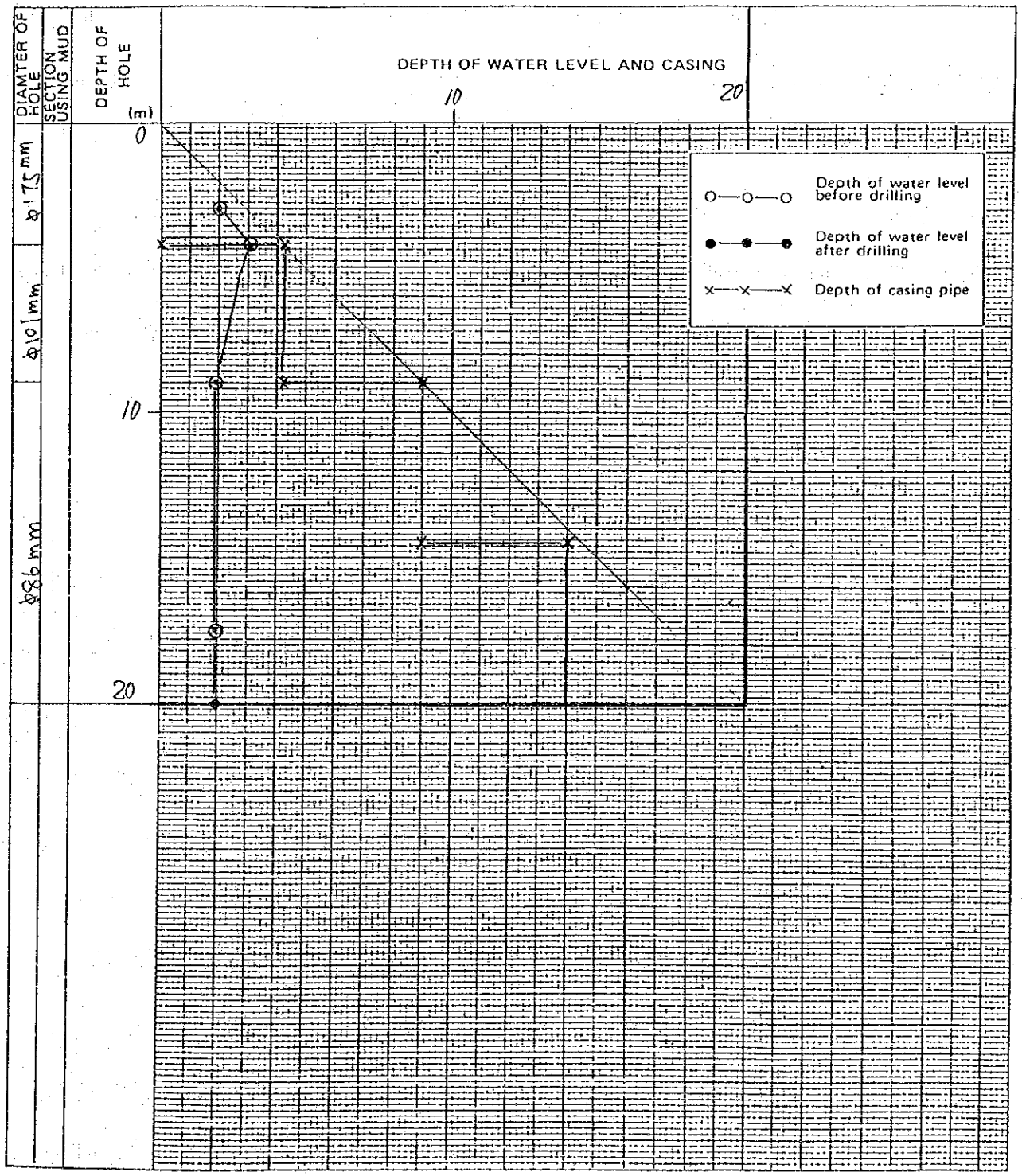
Kihansi PROJECT HOLE No. KH-2 (SHEET OF)

LOCATION Sand quarry DEPTH OF HOLE 20 m COMMENCED 6.9.89

ELEVATION 280.9 DIAMETER OF HOLE φ175~86 mm COMPLETED 9.8.89

COORDINATE

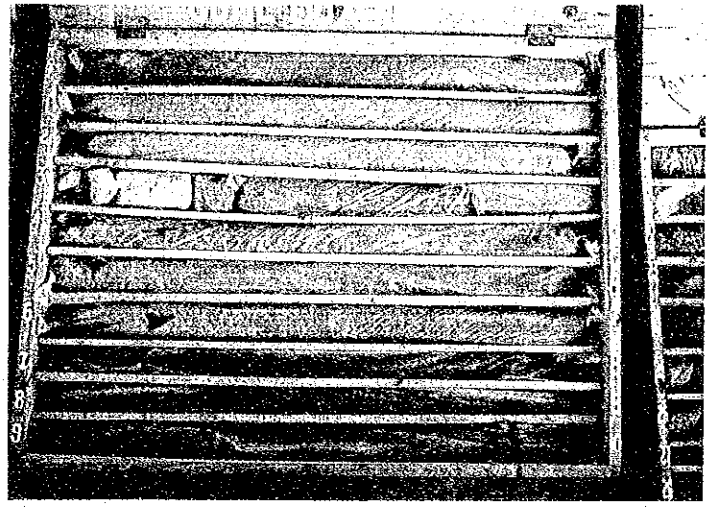
ANGLE FROM HORIZONTAL 90° MEASURED BY



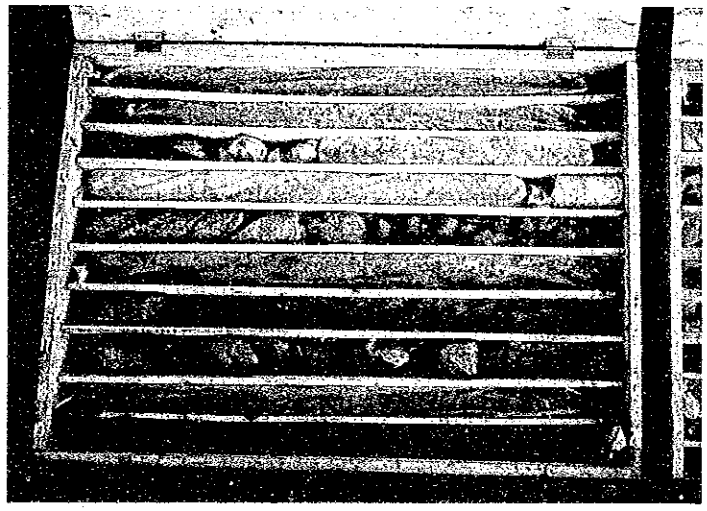
A-2-4 Core Photograph

CORE PHOTOGRAPHS

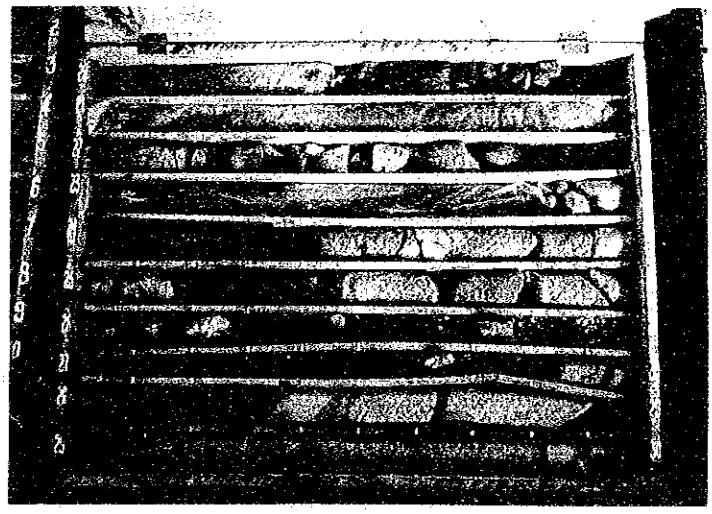
KU-1 Depth 0.0-10.0m



KU-1 Depth 10.0-20.0m

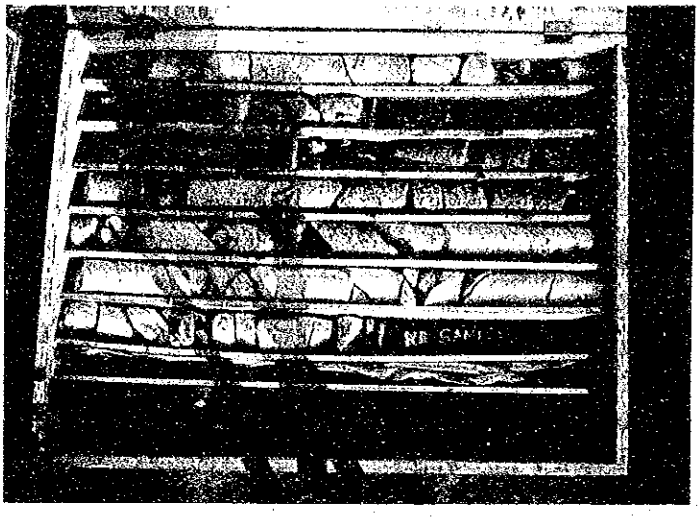


KU-1 Depth 20.0-30.0m

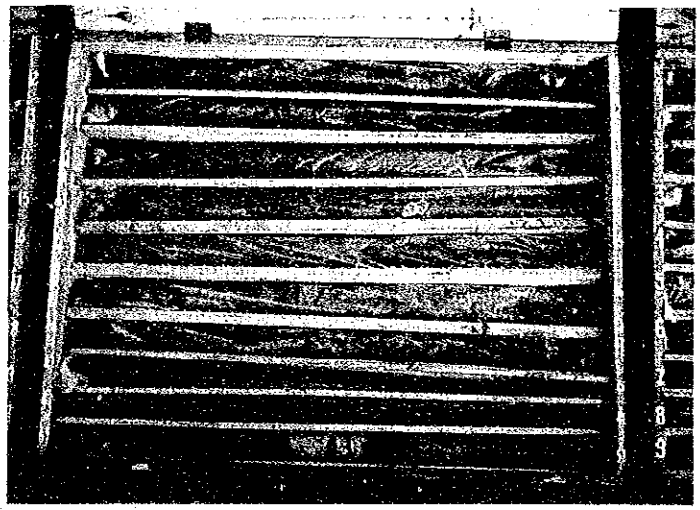


CORE PHOTOGRAPHS

KU-1 Depth 30.0-40.0m

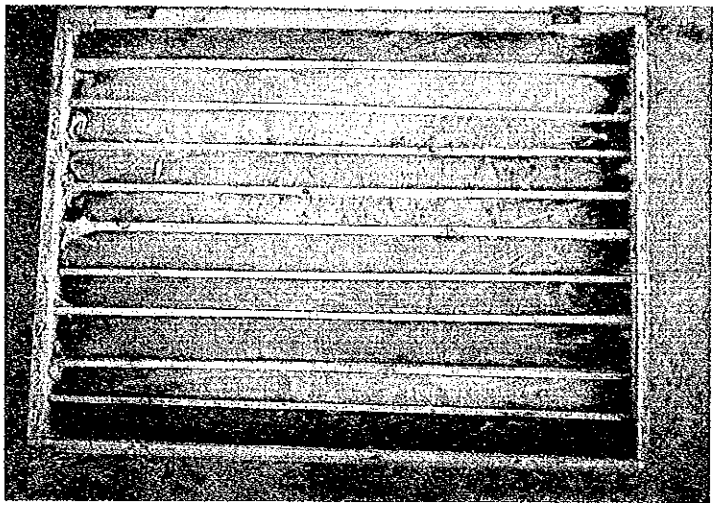


KU-1 Depth 40.0-50.0m

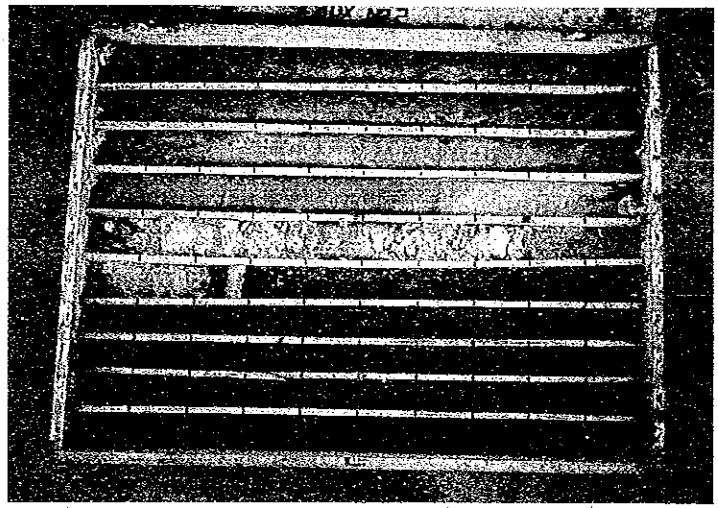


CORE PHOTOGRAPHS

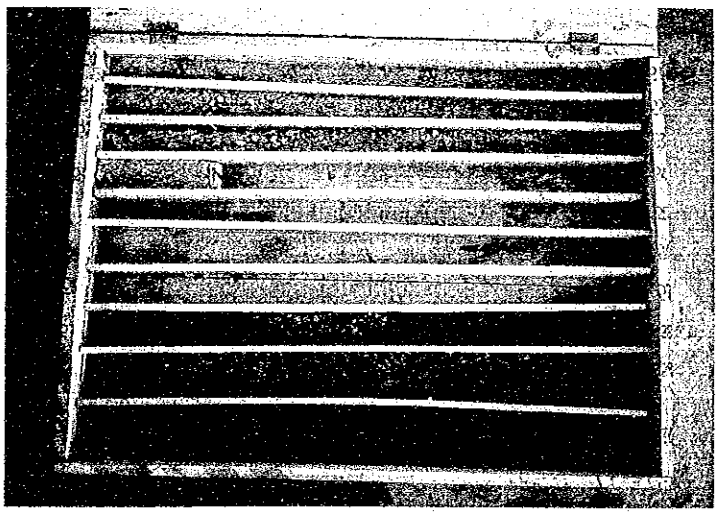
KU-2 Depth 0.0-10.0m



KU-2 Depth 10.0-20.0m

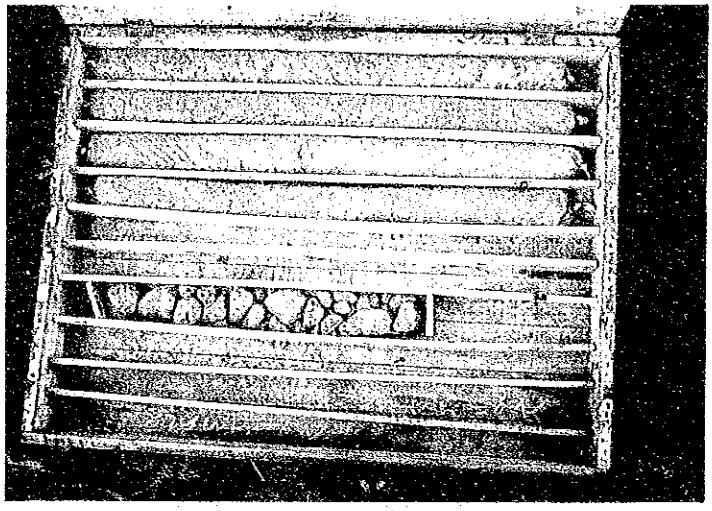


KU-2 Depth 20.0-30.0m

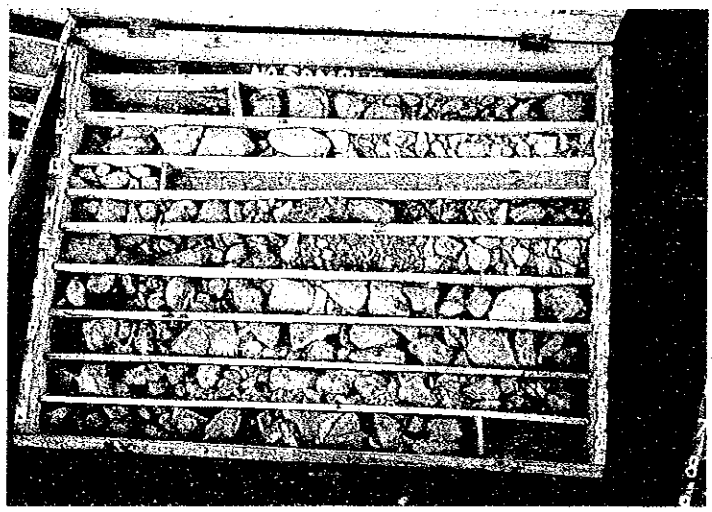


CORE PHOTOGRAPHS

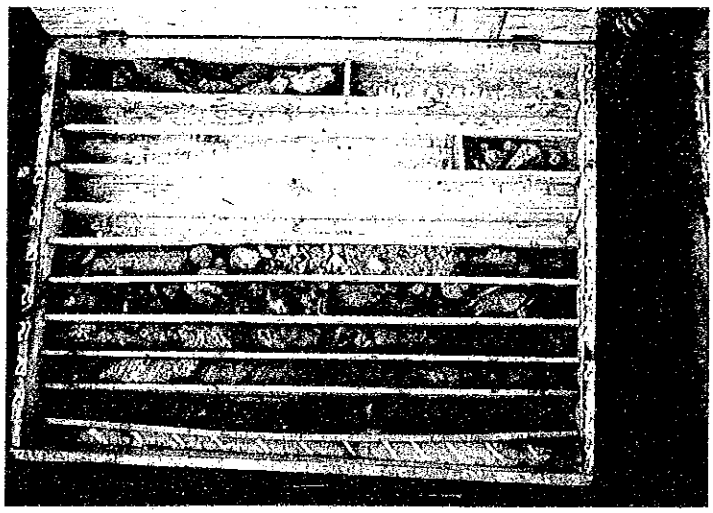
KU-3 Depth 0.0-10.0m



KU-3 Depth 10.0-20.0m



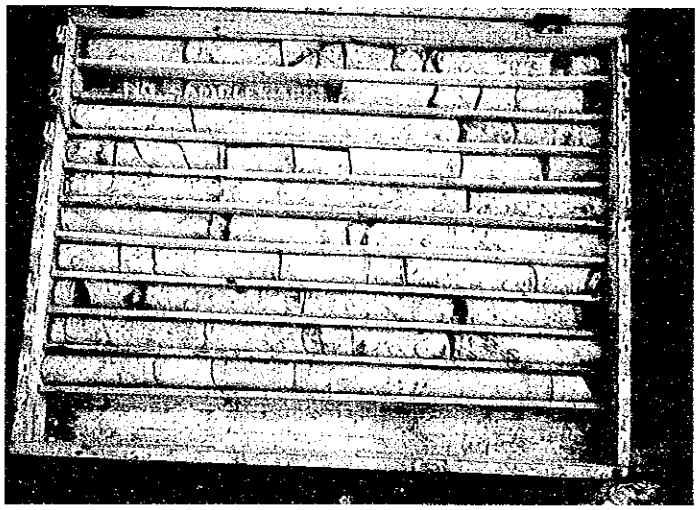
KU-3 Depth 20.0-30.0m



CORE PHOTOGRAPHS

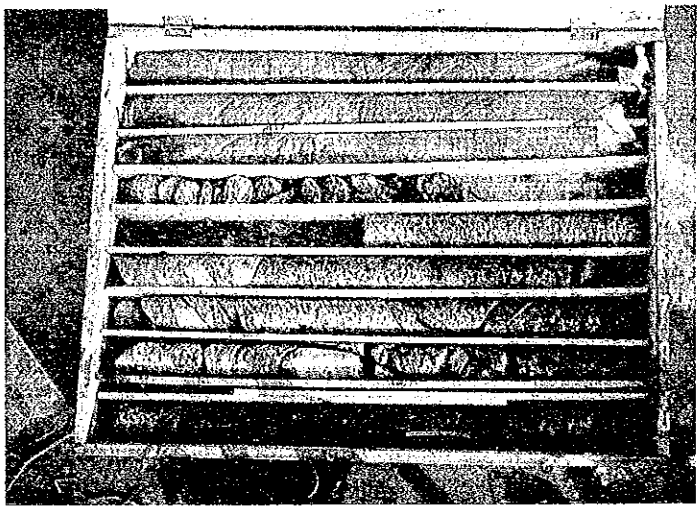
KU-3 Depth 30.0-40.0m

KU-3 Depth 40.0-50.0m

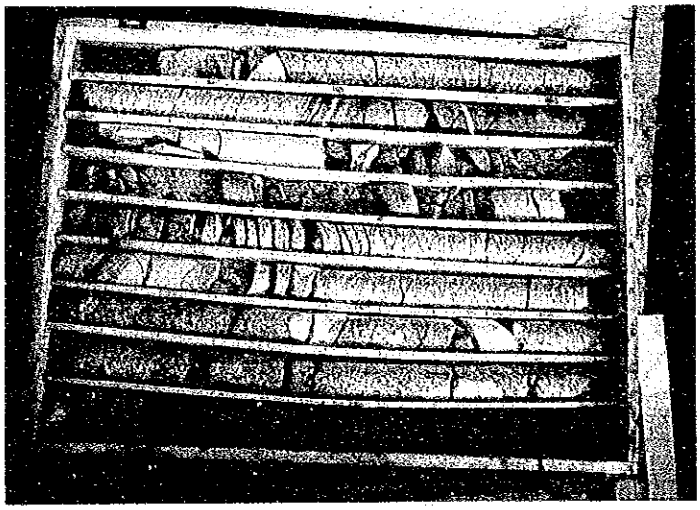


CORE PHOTOGRAPHS

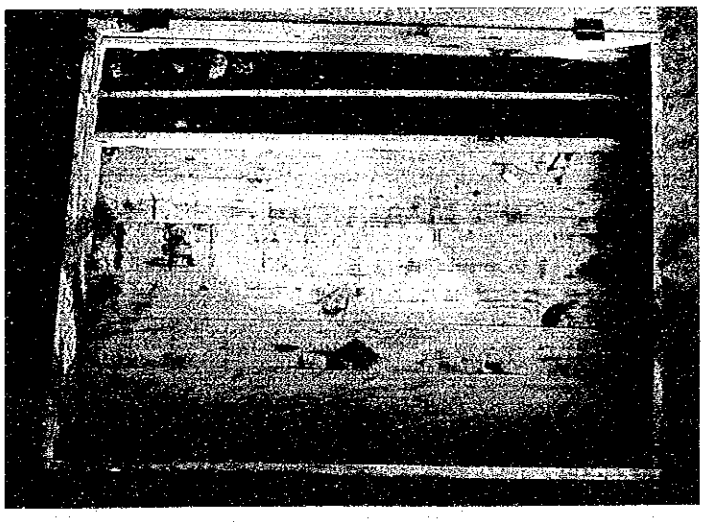
KL-1 Depth 0.0-9.0m



KL-1 Depth 9.0-18.0m

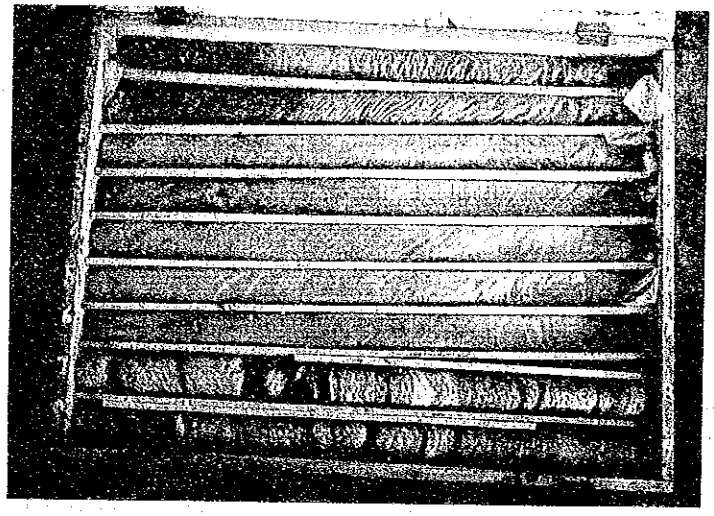


KL-1 Depth 18.0-20.0m

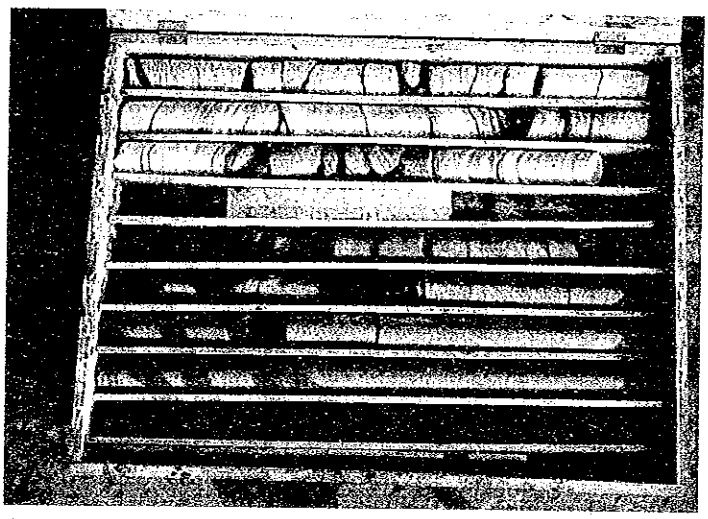


CORE PHOTOGRAPHS

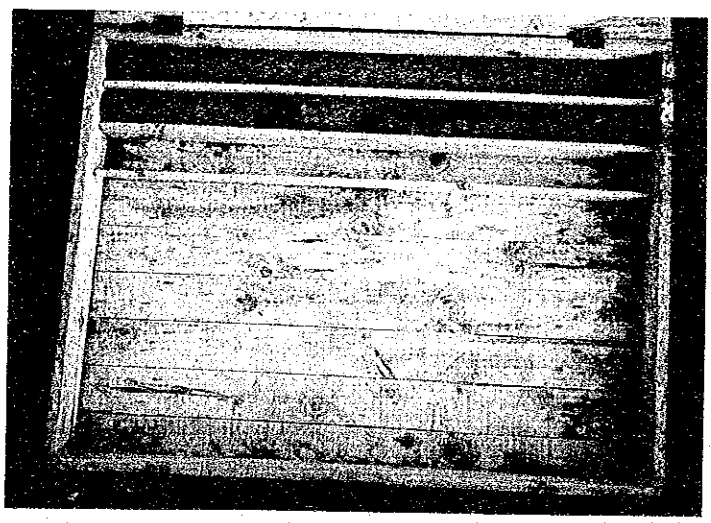
KL-2 Depth 0.0-9.0m



KL-2 Depth 9.0-18.0m

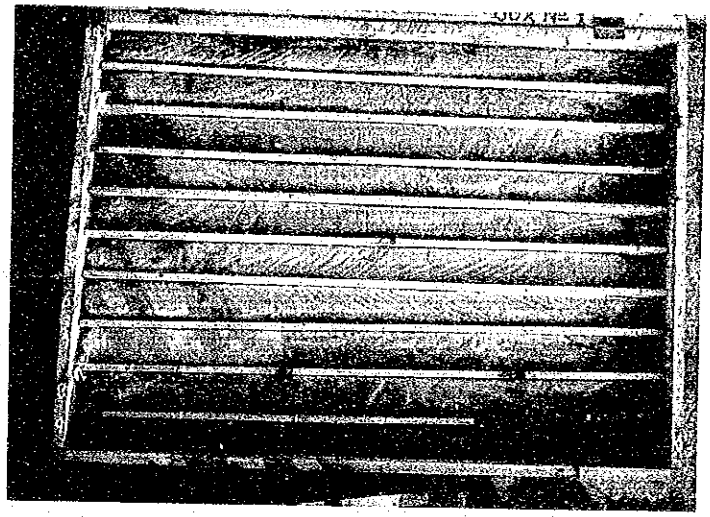


KL-2 Depth 18.0-20.0m

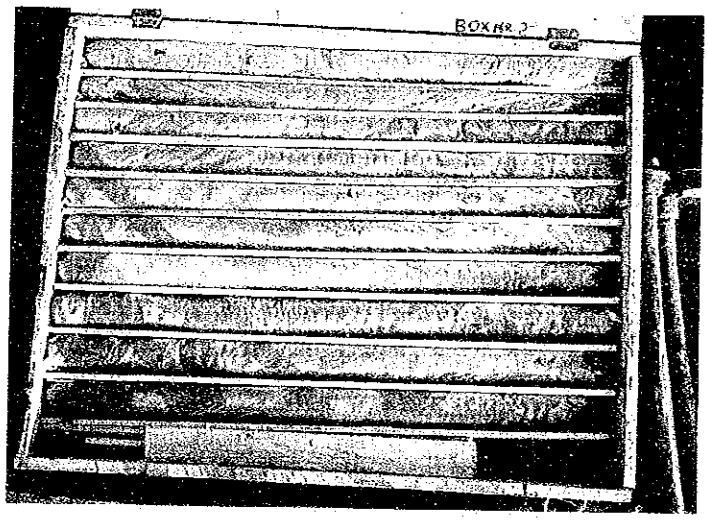


CORE PHOTOGRAPHS

KL-3 Depth 0.0-10.0m

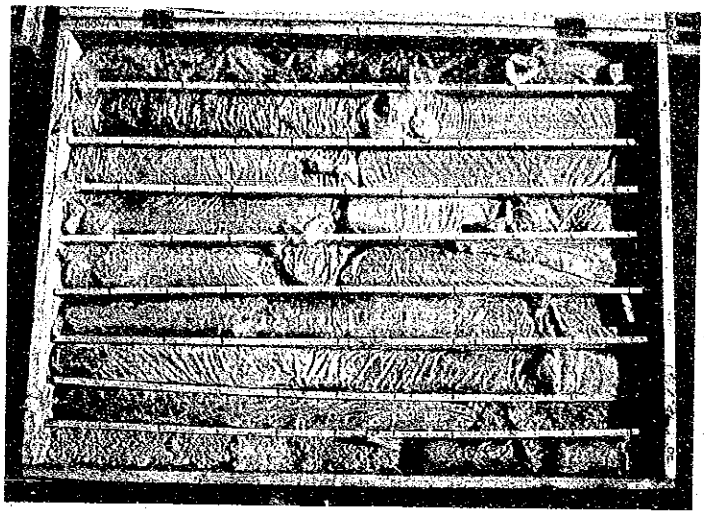


KL-3 Depth 10.0-20.0m

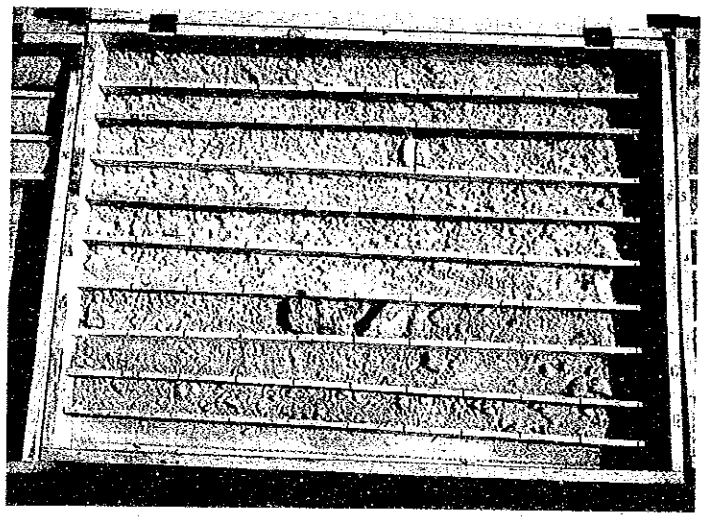


CORE PHOTOGRAPHS

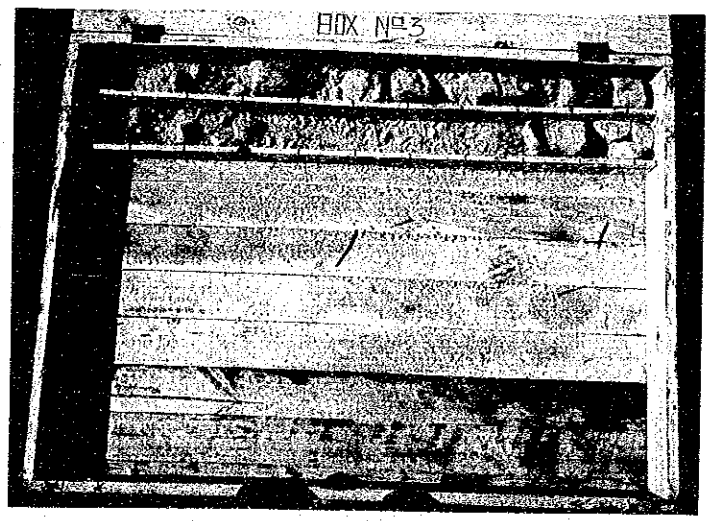
KL-4 Depth 0.0-9.0m



KL-4 Depth 9.0-18.0m

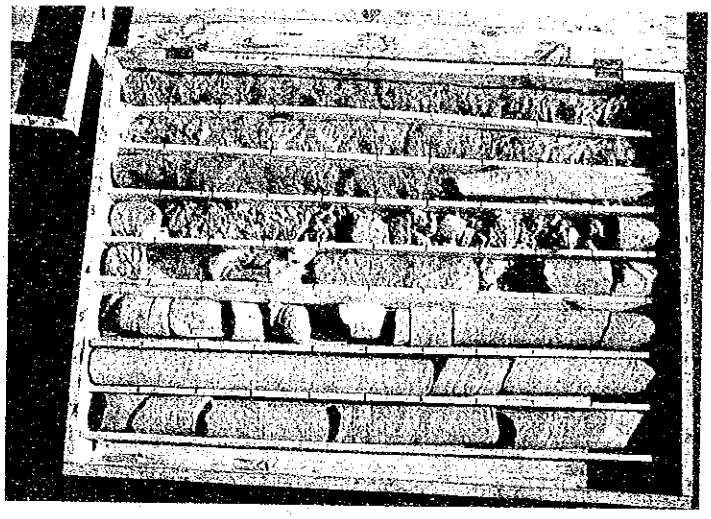


KL-4 Depth 18.0-20.0m

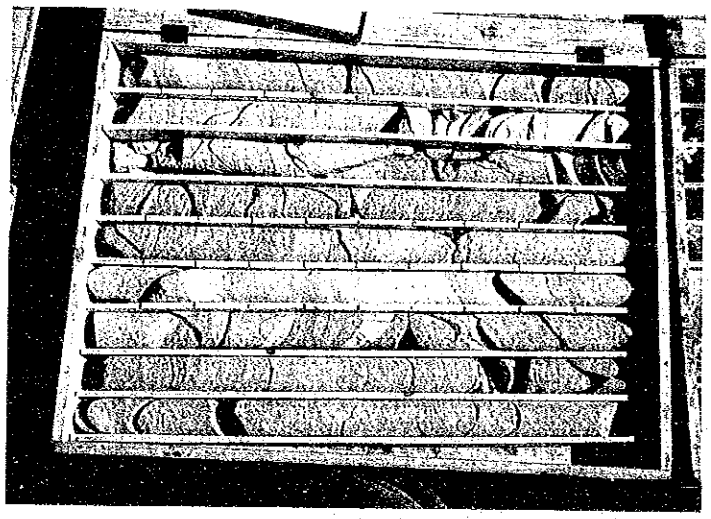


CORE PHOTOGRAPHS

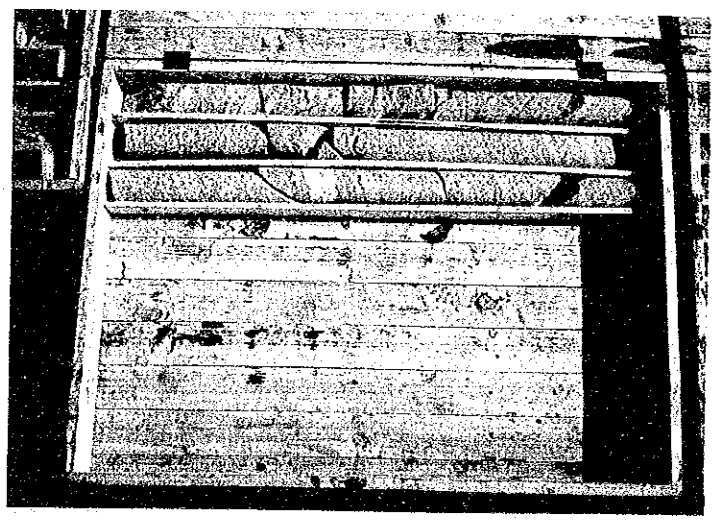
KL-5 Depth 0.0-8.0m



KL-5 Depth 8.0-17.0m

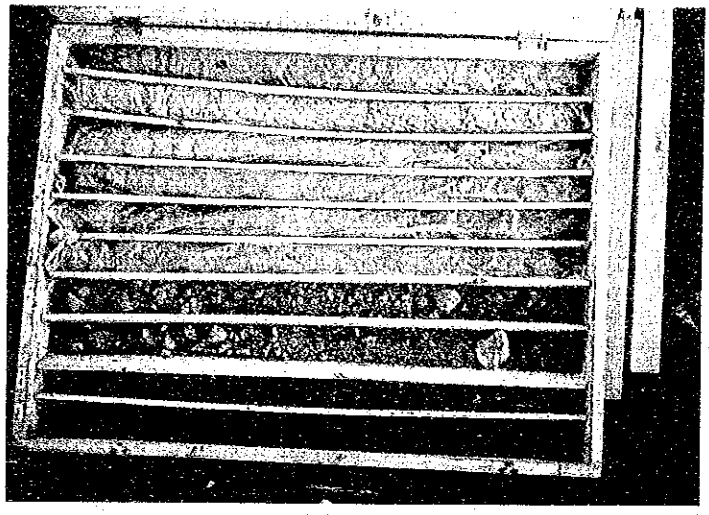


KL-5 Depth 17.0-20.0m



CORE PHOTOGRAPHS

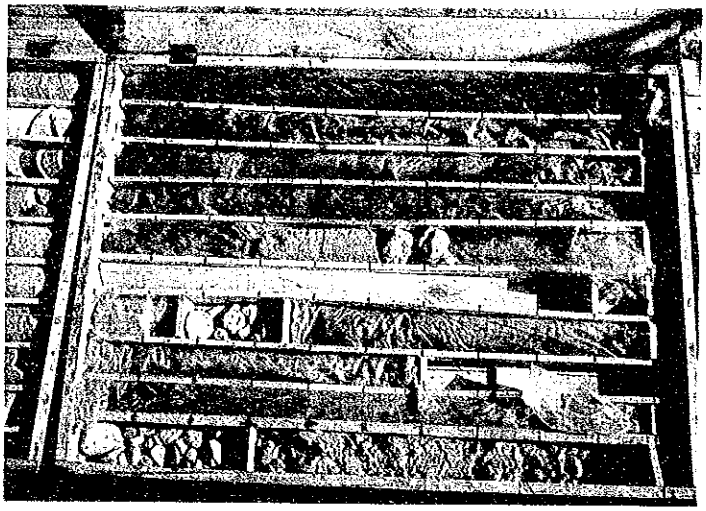
KM-1 Depth 0.0-10.0m



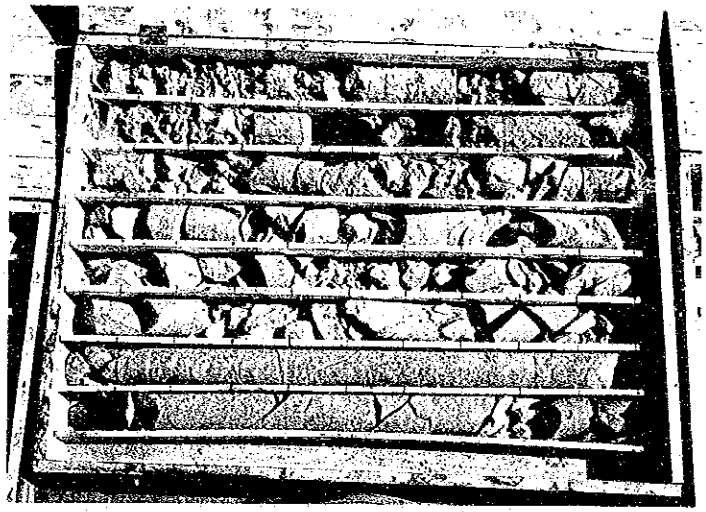
KM-1 Depth 10.0-20.0m

CORE PHOTOGRAPHS

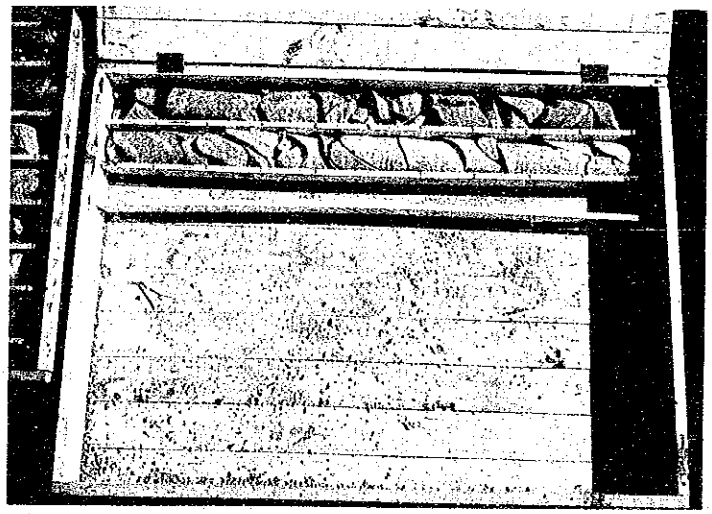
KM-2 Depth 0.0-10.0m



KM-2 Depth 10.0-18.0m



KM-2 Depth 18.0-20.0m



A-2-5 Microscopic Observation

Microscopic Observation

Sheet of

Project; Kihansi Hydroelectric Power Development Project.

Locality; Drillhole KU-1,Depth 34.0m,Upper Damsite.

Sample No.; K - 1 Slice No.; K - 1

Rock name ; Biotite psammitic gneiss

Texture ; Dynamothermal metamorphism. Gneissose fabric - Cataclastic fabric.
Psammitic type,holocrystalline,equi-granular banded structure.
Granoblastic - Lepidoblastic texture and Porphyroblastic texture.

	Name	Characteristcs
Rock forming mineral	Constituents : Granoblastic fraction : - Lepidoblastic fraction : Porphyroblastic portion :	0.1 - 0.8 - 3.0 mm.,in size. consisting of chiefly quartz (elongated) - ortholase - microcline - plagioclase (oligoclase,An₂/₃₀), and retained as the palimpsest the original grain-boundaries of psammitic facies. consisting of chiefly biotite (brown type), associating with epidote - sphene granules. plagioclase with poikiloblastic inclusions.
Description	This rock was determined by the granoblastic - lepidoblastic texture and the psammitic palimpsests.	
Degree of alteration		

Occurence;

Macroscopic observation;
This rock is the coarse grained,leucocratic,crystalline,and gneissic rock.

Microscopic Observation

Sheet of

Project; Kihansi Hydroelectric Power Development Project.

Locality; Drillhole KL-1,Depth 18.4m,Lower Damsite.

Sample No.; K - 2 Slice No.; K - 2

Rock name ; Lamprophyre --- Comptonite ---

Texture ; Hypabyssal rocks,holocrystalline,granophyric structure.
Porphyritic texture.
Bostonitic texture in groundmass.

	Name	Characteristcs
Rock forming mineral	Constituents : Porphyritic phenocrysts : In groundmass, Bostonitic texture	0.3 - 1.5 mm.,insize. Amphibole (Berkevikite,darkish brown,masked, Extinction angle 19°, birefringence 0.013) - olivine pseudomorphes (replaced serpentines) : Plagioclse small laths (albitized) - amphibole (berkevikite) - olivine pseudomorphes (serpentinitized)
Description	This rock was determined by the textures and the constituents,as the lamprophyre - comptonite - .	

Degree of alteration	Serpnentinitisation	products Serpentines
	Biotitisation	products Biotite
	Albitisation	products albite
	Paragenesis of garnets	

Occurence;

Macroscopic observation;

This rock is the fine grained,melanocratic,holocrystalline,and homogeneous rocks.

Microscopic Observation

Sheet of

Project; Kihansi Hydroelectric Power Development Project.

Locality; Drillhole KL-2,Depth 20.0m,Lower Damsite.

Sample No.; K -3 Slice No.; K - 3

Rock name ; Gneissic amphibolite

Texture ; Dynamothermal metamorphism. Gneissose fabric,holocrystalline, equi-granular banded structure.
Granoblastic - Nematoblastic texture,and Porphyroblastic texture.

	Name	Characteristcs
Rock forming mineral	Constituents : Granoblastic texture : Nematoblastic texture : Porphyroblastic texture :	0.1 - 1.0 - 1.5 mm., in size. Quartz - Plagioclase (oligoclase - andesine,An).- Hornblende(green variety,very aboundantly) with a few biotite - garnet - haematite. Hornblende (green type,sieved by poikiloblastic texture).
Description	This rock was determined by the textures and the constituents,as the amphibolite,derived from the basic igneous rocks.	
Degree of alteration		

Occurence;

Macroscopic observation;
This rock is the medium grained,melanocratic,and gneissose banded rocks.

Microscopic Observation

Sheet of

Project; Kihansi Hydroelectric Power Development Project.

Locality; Right bank of Lower Damsite.

Sample No.; K - 4 Slice No.; K - 4

Rock name ; Biotite psammitic gneiss

Texture ; Dynamothermal metamorp..hism. Gneissose fabric - Granulose fabric.
Psammitic type,holocrystalline,equi-granular banded structure.
Granoblastic - lepidoblastic texture.

	Name	Characteristcs
Rock forming mineral	Constituents : Granoblastic -Granulose texture. : Lepidoblastic texture :	0.2 - 2.0 mm., in size. Quartz - plagioclase - microcline (very aboundant) ,associating with the mozaic interlocked sub-equigranular grain -boundaries of psammitic palimpsest. Biotite (brown type) with a few epidote and garnet granules.
Description	This rock was determined by the textures and constituents of psammitic palimpsests,as the biotite psammitic gneiss.	
Degree of alteration		

Occurence;

Macroscopic observation;

This rock is the medium to coarse grained,leucocratic,banded and granulose rocks.

A-2-6 Microscopic Photograph

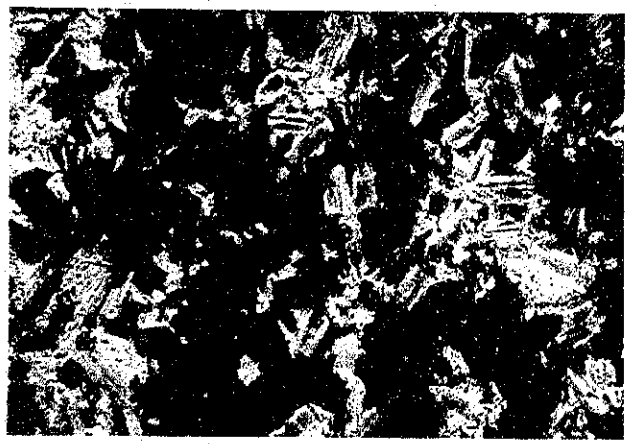
Microscopic Photograph

Sheet 2 of

Project ; _____ Locality ; The KB - 1 boring, 18.4 m.

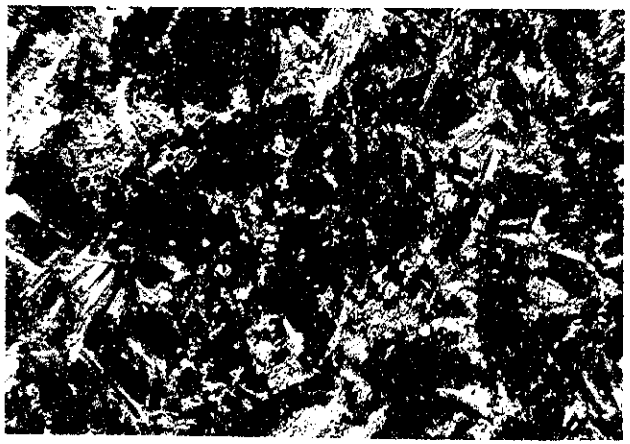
Sample No.; K - 2 Slice No.; K - 2

Rock Name ; Lamprophyre - Comptonite -



Film No. 3

Parallel polars Magn. X 20



Film No. 4

Crossed polars Magn. X 20

0 0.7 mm.

Scale

Microscopic Photograph

Sheet 1 of

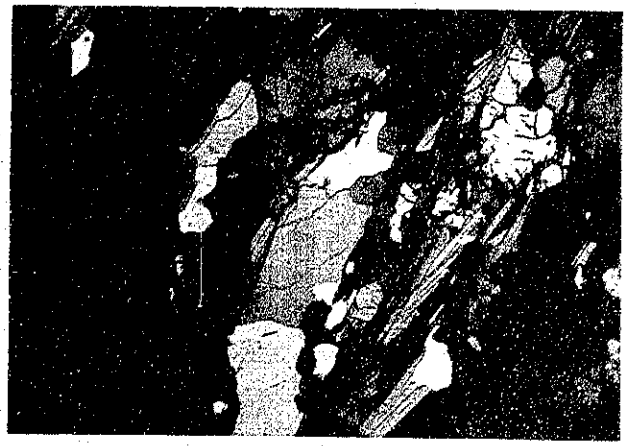
Project ; _____ Locality ; The KU - 1 boring, 34 m.

Sample No.; K - 1 Slice No.; K - 1

Rock Name ; Biotite psammitic gneiss

Film No. 9

Parallel polars Magn. X 40



Film No. 10

Crossed polars Magn. X 40

0 0.35 mm.

Scale

Microscopic Photograph Sheet 4 of

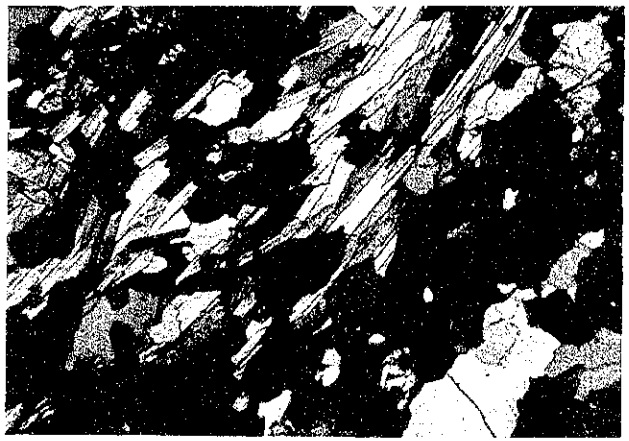
Project ; Locality ; The outcrops of Dam-site.

Sample No.; K - 4 Slice No.; K - 4

Rock Name ; Biotite psammitic gneiss

Film No. 7

Parallel polars Magn. X 20



Film No. 8

Crossed polars Magn. X 20

0 0.7 mm.

Scale

Microscopic Photograph Sheet 3 of

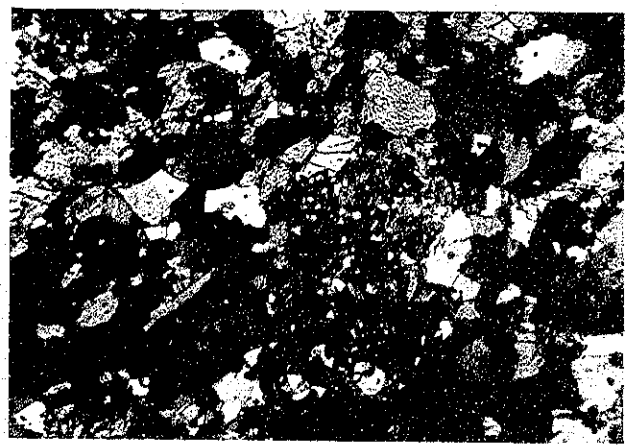
Project ; Locality ; The KL - 2 boring, 20.0 m.

Sample No.; K - 3 Slice No.; K - 3

Rock Name ; Gneissic amphibolite

Film No. 5

Parallel polars Magn. X 20



Film No. 6

Crossed polars Magn. X 20

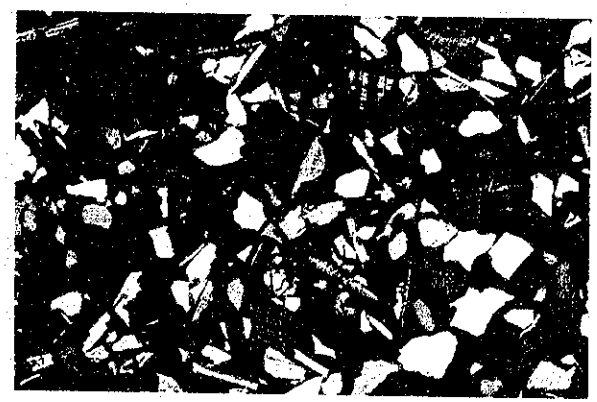
0 0.7 mm.

Scale

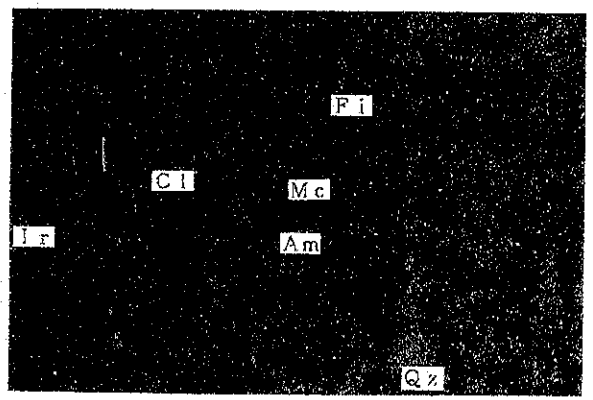
MICROSCOPIC PHOTOGRAPH

Project Name: _____

Sample No. : L-2



0 _____ 1mm CROSS 4×10



0 _____ 1mm OPEN 4×10

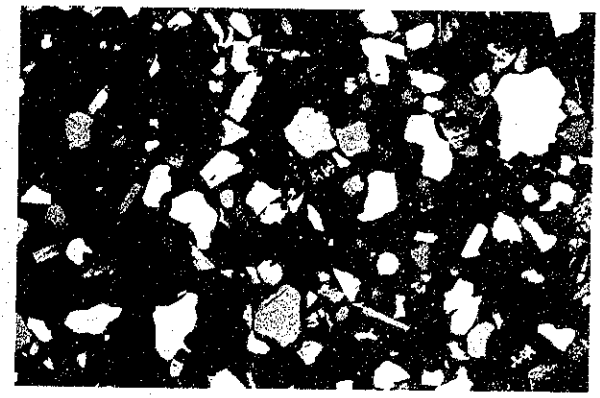
EX.

Qz.: Quartz Am.: Amphibole Cl.: Claymineral
Fl.: Feldspar Mc.: Mica Ir.: Ironmineral
Gn.: Garnet

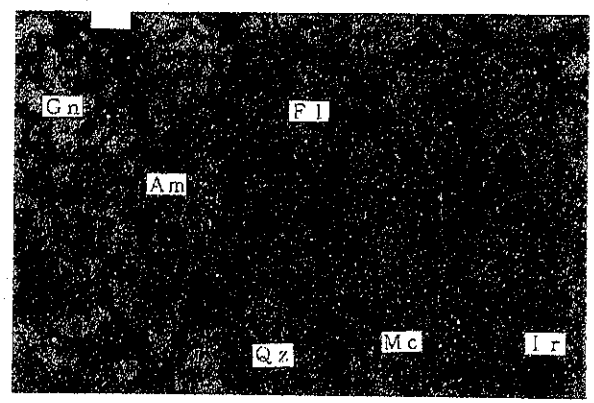
MICROSCOPIC PHOTOGRAPH

Project Name: _____

Sample No. : L-1



0 _____ 1mm CROSS 4×10



0 _____ 1mm OPEN 4×10

EX.

Qz.: Quartz Am.: Amphibole Cl.: Claymineral
Fl.: Feldspar Mc.: Mica Gn.: Garnet
Ir.: Ironmineral

A-2-7 X-ray Analysis Data

SAMPLE NAME:KIHANSHI DATE:89.07.31
TARGET/FILTER(MONOCHRO):Cu
VOLTAGE/CURRENT: 45KV 35mA
SLITS:DS 1 RS .15 SS 1
SCAN SPEED: 5 DEG/MIN.
STEP/SAMPLING: .02 DEG
PRESET TIME: 0 SEC
SMOOTHING: 11
OPERATOR:
COMMENT:

1. 50490	SiO_2	α-Quartz
2.	—	Plagioclase
3.	—	Olthoclase
4.160351	$(Mg,Fe)_6(Si,Al)_4O_{10}(OH)_2$	Chlorite
5. 70032	$KAl_2Si_2O_5(OH)_2$	Muscovite
6. 20045	$K(Fe,Mg)_3AlSi_3O_{10}(OH)_2$	Biotite
7.190629	Fe_3O_4	Magnetite
8.130375	$Al_2Si_2O_5(OH)_4$	Kaolinite
9.130029	$(Fe,Al,Mg)_6(Si,Al)_4O_{10}(OH)_8$	Chamosite
10.240030	$CaCO_3$	Vaterite