

ORIGINAL COPY

GOVERNMENT OF INDIA
CENTRAL GROUND WATER BOARD
MINISTRY OF WATER RESOURCES

BASIC DATA REPORT OF THE EXPLORATORY BOREHOLE
DRILLED AT CENTRAL BAZAR, DIPHU SUBDIVISION,
KARBI ANGLONG DISTRICT, ASSAM

Central Ground Water Board	
L. S. Fieldabad.	
Acc. No.	7
D. No.	18-3-88

NORTH EASTERN REGION
GUWAHATI, ASSAM
FEBRUARY : 1988

The contents of this report are not
to be published or reproduced
without the permission of the
Central Ground Water Board
Governing Body

(1)

CENTRAL GROUND WATER BOARD
BASIC DATA REPORT OF THE EXPLORATORY BOREHOLE (ABANDONED)
AT CENTRAL BAZAR, DISHU SUB DIVISION

GEOLOGY AND HYDROGEOLOGY : Dr. S.S. Garhia
Assistant Hydrogeologist.
DRILLING UNIT : DTH/SCD-72/46.
DRILLING CREW : Shri O.S. Rao,
D.I.C. and party.
SITE PLAN AND R.L. DATA : Shri A. K. Das,
Junior Surveyor.
SITE LOCATION : CENTRAL BAZAR,
26°08'51" N ; 93°08'02" E
DISTRICT AND STATE : KarbiAnglong, Assam.

I N T R O D U C T I O N

As a part of programme of Ground Water Exploration and First Approximate Resource Evaluation studies in the hard rock terrain of KarbiAnglong district, Assam, Central Ground Water Board drilled an exploratory bore hole during the field season programme 1986-87 at Central Bazar. The formations encountered were weathered granitic material underlain by granite gneisses and granites.

LOCATION : The site is located at about 200m from Central Bazar towards Bakulia on the eastern side of NH-36.

The site plan has been shown as plate-I. The reduced level of ground surface near the site is 103.730m above mean sea level.

(2)

HISTORY OF DRILLING OPERATIONS

The drilling history is given below in chronological order from the completion of the rig to the present. The rig was erected on 10-9-86 and drilling began on 13-9-86. The rig was erected on 10-9-86 and drilling began on 13-9-86. The rig was erected on 10-9-86 and drilling began on 13-9-86.

DATE	DESCRIPTION
10-9-86	Rig arrived at the site.
11-9-86	Rig erection, mud pit digging etc.
12-9-86	

Drilling of pilot hole with 5 1/8" (142.88mm) dia. drag bit from 0.00 to 6.00m depth.

13-9-86	Drilled down to 16.20m depth. The bore hole was reamed down to 12.45m with 7 1/2" (200.03mm) dia. R.R. bit.
---------	---

The borehole was again reamed from the ground level down to 10.00m depth with 10" (10") bit, and 8" casing pipe was lowered down to 10.00m bgl depth.

16-9-86	Further reaming of the bore hole by 7 1/2" (190.50mm) dia button bit was done from 10.00m to 16.20m bgl and drilling by the same bit continued down to 22.00 m depth.
---------	---

Drilling continued from 22.00m to 31.75m bgl and casing pipe lowered from ground level down to 14.61m bgl.

01-10-86	Drilling from 31.75m bgl to 39.60m with 190.50mm button bit.
----------	--

02-10-86	Drilling from 39.60m to 43.75m bgl with the same bit.
----------	---

03-10-86	Drilling with the same bit continued from 43.95m to 62.25m bgl.
----------	---

(3)

<u>DATE</u>	<u>DESCRIPTION</u>
05-10-86	Drilled from 62.25m to 72.10m depth.
10-10-86	Drilling continued from 72.10m to 80.50m bgl.
11-10-86	Drilling with 190.50mm button bit from 80.50m to 88.40m bgl.
14-10-86	Drilled bore hole with 190.50mm bit from 88.40m to 99.90m bgl.

GEOLOGICAL DATA

The formation samples coming out of bore hole were collected at every one meter or whenever there was a change in lithology. The samples collected were washed, dried and packed in polythene bags with proper labelling. After study of sample and drill time log, litholog of the bore hole was prepared and is given below :

<u>LITHOLOGY</u>	<u>DEPTH RANGE</u>	<u>THICKNESS</u>
1	(m) 2	(m) 3
Clay, yellowish black, sticky	0.00-2.00	2.00
Clay, earthy yellowish, sticky with few grains of quartz and feldspar.	2.00-4.00	2.00
Clay, earthy yellowish with of quartz and feldspar grains, ranging in size from very fine to coarse, feldspar is white in colour.	4.00-6.10	2.10
Weathered granitic rock, comprising of coarse to fine grains of quartz and feldspar, pink.	6.10-11.10	5.00

LITHOLOGY	DEPTH RANGE (m)	THICKNESS (m)
1	2	3
Weathered granitic material mixed with clay (50%).	11.10-12.20	1.10
Quartz, dirty yellowish, fine to coarse in size with 20% clay content.	12.20-14.20	2.00
Clay, brownish black with quartz grains. The main constituent of clay is mica flakes.	14.20-15.20	1.00
Fine grains of quartz with mica flakes and feldspar, pink and white.	15.20-16.20	1.00
Granite, moderately compact, comprising of quartz, feldspar and mica.	16.20-17.20	1.00
Hard, compact, medium to fine grained pink granite with mica, mainly biotite. Feldspar is potash- feldspar.	17.20-21.30	4.10
Fractured granite, micaceous matter is the main constituent, (micaceous band within the granitic rock).	21.30-22.00	0.70
Hard, compact, medium to fine grained pink granite chips, with micaceous content, potassium, feldspar is the main constituent.	22.00-29.40	7.40
Fine grained pink granitic chips free from mica.	29.40-32.50	3.10
Medium to fine grained granitic chips with dominant amount of basic rock chips (Fine grained, dark greenish to black in colour).	32.50-39.60	7.10

(5)

LITHOLOGY	DEPTH RANGE (m)	THICKNESS (m)
1	2	3
Hard, compact, fine to medium grained chips of granite with micaceous matter mainly biotite.	39.60-54.80	15.20
Fractured granite ^{with} fine to medium grained quartz and pink and white feldspars.	54.80-55.80	1.00
Compact granite chips with basic rock chips.	55.80-64.00	8.20
Fractured granitic matter composed of quartz, feldspar and micas.	64.00-68.35	4.35
Compact granitic chips with basic rock chips.	68.35-73.10	4.75
Fractured granite, fine to medium grained angular quartz, pink feldspar, micas etc.	73.10-79.20	6.10
Chips of pink coloured granites comprising of quartz, potassium feldspars and micas.	79.20-82.30	3.10
Chips of pinkish granite with basic rock chips and micas.	82.30-90.90	8.60

DRILL TIME LOG : The drilling time and drilling action for for every meter of penetration of formation was observed. The drilling action was made out to demarcate the fractured zones.

CASING PIPE : The drilling was started from the ground level and after penetrating the weathered zone, the hard and compact granitic rock was encountered at a depth of 16.20m bgl. A Casing pipe of 8" dia. was lowered down to 14.61mbgl to prevent caving of the loose weathered material.

The drilling down to 90.90m depth was carried out with a smaller bit.

As the discharge was very low during the development of bore hole, hence a final yield test with the air compressor was conducted for half an hour and at the same time water samples were taken for chemical analysis.

The discharge measured with the help of V-notch was approximately $1.93\text{m}^3/\text{hr}$ for a drawdown of 40m. The details of data is as follows :

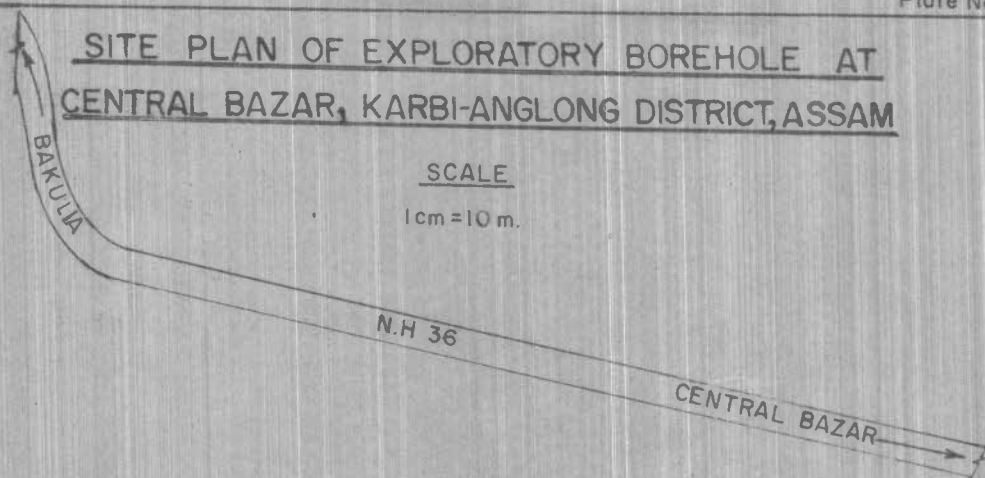
Total depth drilled	= 90.90m bgl
Casing pipe (m)	= 14.61m bgl.
M.P. (agl)	= 0.26m
Static water level	= 0.98m bgl

The drill time log, litholog and casing diagram are drawn in plate- II. Due to a very low discharge ($1.93\text{m}^3/\text{hr}$) with very high drawdown, it is recommended that it may be utilized for drinking water supply purpose by the fitting mark-II type of hand pump. The well provide safe and pollution free water.

SITE PLAN OF EXPLORATORY BOREHOLE AT CENTRAL BAZAR, KARBI-ANGLONG DISTRICT, ASSAM

SCALE

1cm = 10 m.



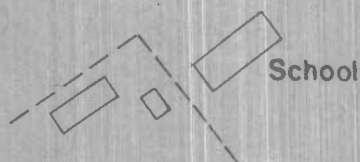
Exploratory Well

REFERENCE

R.L Of MP Of Exploratory Well = 104'080 Mtrs.

R.L Of G.L Of Exploratory Well = 103'730 Mtrs.

CULTIVATED LAND



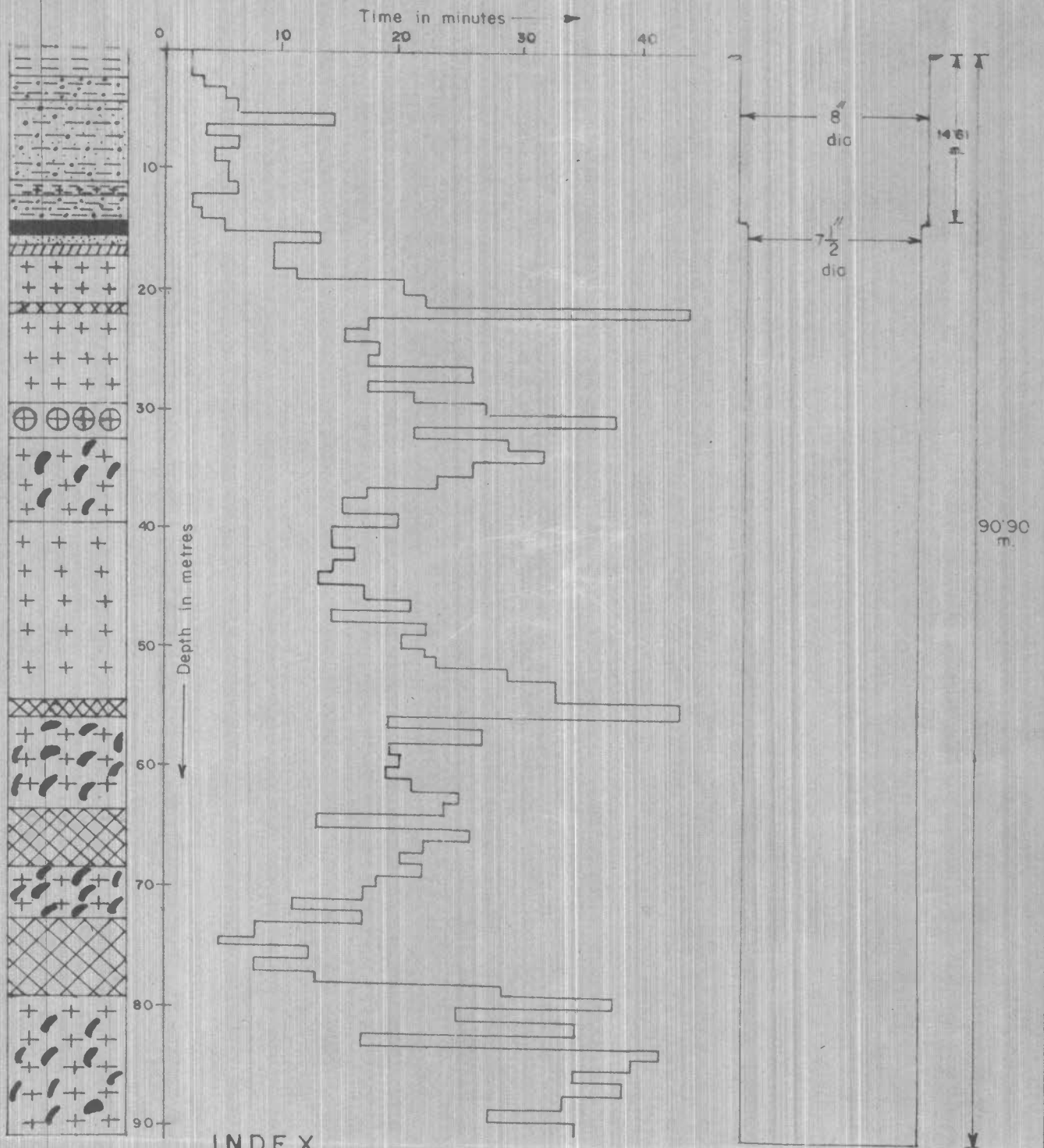
School

DRILLING & LITHOLOGY DATA OF EXPLORATORY BORE-HOLE AT CENTRAL BAZAR DIPHU SUB-DIVISION, KARBI-ANG-LONG DISTRICT, ASSAM.

LITHOLOG

DRILL-TIME LOG

BORE HOLE DIAGRAM



INDEX

	Clay, Yellowish		Granite, fractured
	Sand, Coarse, grained		Granite, hard and Compact
	Sand, fine.		Granite, pink
	Clay, Sticky, Brownish black		Granite with basic enclaves
	Granite, moderately Compact		

Total depth drilled = 90.90m. bgl.
Casing pipe length = 14.61m. bgl.
Diameter of naked bore hole = 7 1/2"
Static Water Level = 0.98m. bgl.
M.P (agl) = 0.26m.
Discharge by V-notch = 1.93m³/day

DISTRIBUTION LIST
FOR
BASIC DATA REPORT

<u>Sl. No.</u>	<u>No. of copies</u>
1. Director(Hqrs), Central Ground Water Board, NH-IV, Faridabad- 121001 (Haryana)	4
2. Index Guard File(HGW), Central Ground Water Board, NH-IV, Faridabad -121001 (Haryana)	1
3. Officer-Incharge, State Unit Office, Central Ground Water Board, Keating Road, Shillong-1 (Meghalaya)	1
4. Officer-Incharge, State Unit Office, Central Ground Water Board, Ashram Chowmohani Dhaleswar Road, Agartala- 799 007 (Tripura)	1
5. Executive Engineer, Div-VII, Central Ground Water Board, R.G.B. Road, Guwahati- 781024 (Assam)	1
6. Guard File, Technical Section, Central Ground Water Board, R.G.B. Road, Guwahati-781024 (Assam)	1
7. Library, North Eastern Region, Central Ground Water Board, Gopinath nagar, Kalapahar, Guwahati 781016 (Assam)	4
8. Author's copy (Concerned Officer(S))	1
9. Organisation for which the investigation was undertaken.	5
10. Superintending/Executive Engineer, PHE, <i>Diphu</i> <i>Revised Aug 1971 BSA - Assam</i>	1