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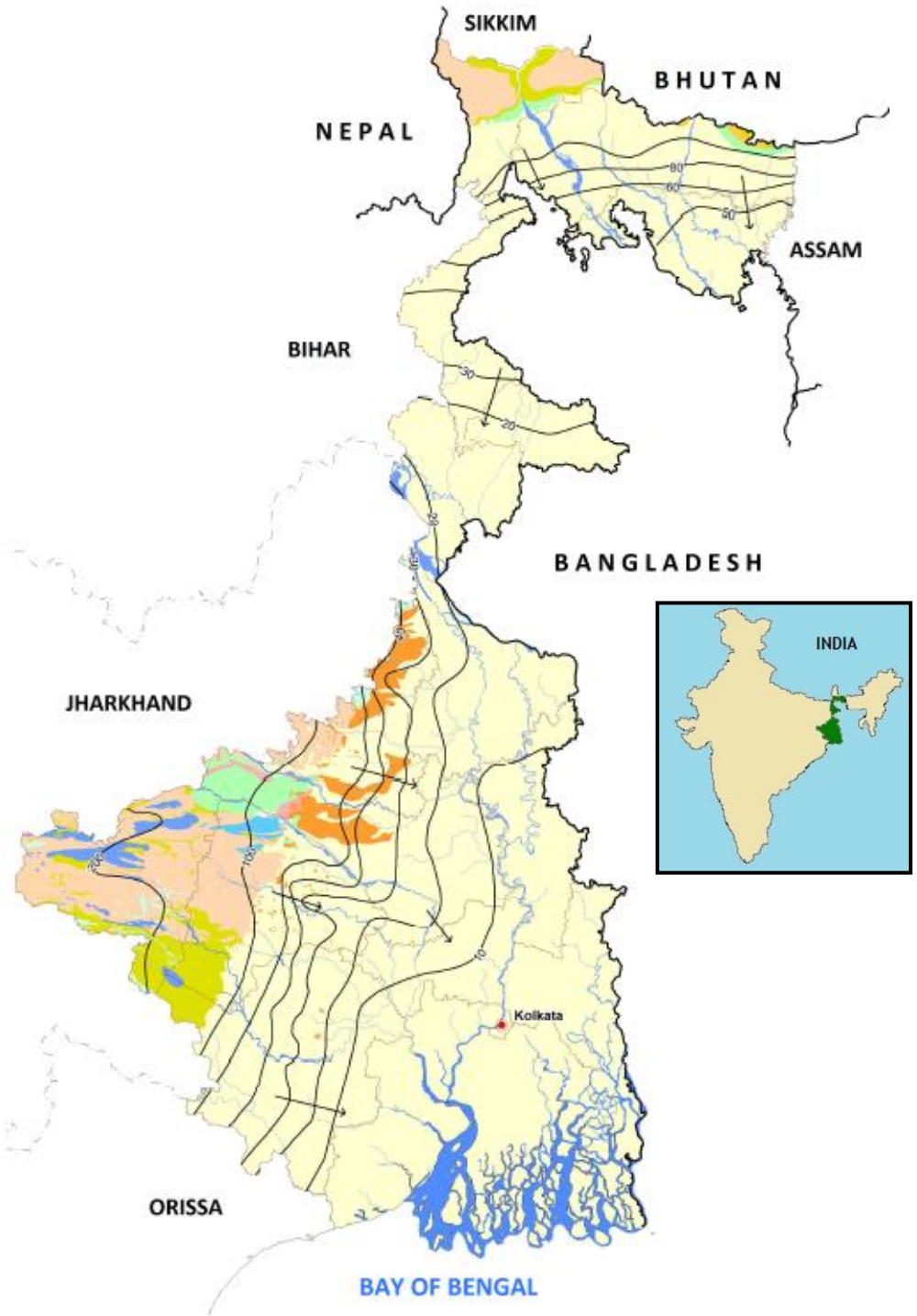
REPORT ON THE DYNAMIC GROUND WATER RESOURCES OF WEST BENGAL as on 31st March, 2022

Central Ground Water Board,
Eastern Region, Kolkata

State Water Investigation Directorate
Government of West Bengal



CGWB, ER, Kolkata
December, 2022

REPORT ON THE DYNAMIC GROUND WATER RESOURCES OF WEST BENGAL as on 31-03-2022

Prepared by

Central Ground Water Board
Eastern Region
Government of India

&

State Water Investigation Directorate
Government of West Bengal

CGWB, Eastern Region, Kolkata
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PREFACE

The state of West Bengal for its major parts is bestowed with potential and prolific aquifer systems, which get adequately recharged annually due to high annual rainfall of the order of >1500mm. Even where aquifer is limited in space and time in the state, dependence on sub-surface water is the essence of life. Ground water therefore has played and will continue to play an important role in the overall development of the state. With the increase in population, and developmental activities especially the summer paddy cultivation, the demand for ground water has increased manifold. The ease, with which ground is extracted even by an individual, has led to its indiscriminate abstraction in unplanned manner, particularly from the near surface aquifer. But like other natural resources utilizable ground water too is not an infinite resource. This calls for an evaluation of the demand, availability and projected demand scenario of ground water in the state.

Unlike other natural resources, ground water is mobile, and the assessment of ground water resource involves computation of many variable parameters which is rather difficult as technology is yet to develop for their direct measurements. Nevertheless estimation of ground water resource, casts a glance over the existing status of ground water development.

This report is an outcome of the joint exercises of the Central Ground Water Board, Eastern Region and the State Water Investigation Directorate, Government of West Bengal along with other state govt. departments in the core working group for estimation of resources. It is an effort to present the findings of assessment of dynamic component of ground water resource available in the unconfined aquifer, adopting methodology of 'Ground Water Estimation Committee 2015. The methodology into account long term ground water level trend of monitoring stations, along with the stage of ground water development for categorization of units. The findings of the assessment reveal that in this State, the Net Ground Water Availability and Gross Draft are 21.41 lakh ham and 10.06 lakh ham respectively. The Stage of development in State is about 47.01%.

The ground water development needs judicious approach and requires to be carried out in a planned and phased manner with close and regular monitoring. Out of 345 assessment units of West Bengal, 60 blocks in 05 district are in the coastal tract area, where fresh groundwater occurs predominantly under confined condition. During 2021-22, Ground Water Resource Assessment for Confined Aquifers of West Bengal is attempted for the first time. Assessment results show presence of 0.25 bcm of Dynamic Confined Ground Water Resources, 10.21 bcm of In-Storage Confined Ground Water Resources and 10.26 bcm of Total Confined Ground Water Resources is present in the area.

The report is a combined and sincere effort of officers of SWID and CGWB. The contributions made by other State Govt. Departments in the working group are thankfully acknowledged. The committed efforts of officers of CGWB under guidance of Dr. Indranil Roy, Sc. 'D' of CGWB, and Smt. Debatri Bagchi, Sr. Geologist of SWID in the form of data collection, their synthesis, interpretation and finally estimation of ground water resource as well as compilation of entire data in tabular form, preparation of various graphics, maps, appendices and the preparation of the text, have resulted in bringing out the present volume.

(Dr. Anadi Gayen)

Regional Director
Central Ground Water Board
Eastern Region, Kolkata

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CHAPTER I

INTRODUCTION

1.1 Background for Re-estimating the Ground Water Resources of the State

Proper planning and management of ground water development in a state in a judicious and socio-economically equitable manner, principally depends on proper quantification of ground water resources and also on assessment of status of ground water development.

Estimation of ground water resources on scientific basis for different States of India was made for the first time following the guidelines prescribed by 'Ground Water Over-exploitation Committee' – 1979, constituted by Agricultural Refinance and Development Corporation (ARDC) headed by the Chairman, CGWB. CGWB and State Ground Water Departments computed the gross water availability by ARDC norms. To make the methodology more realistic, Govt. of India constituted a new committee on ground water estimation (GEC) in 1982 headed by the Chairman, CGWB. The Committee prescribed guidelines for estimation, which was known as GEC 1984 Methodology. CGWB and SWID, Govt. of West Bengal, have adopted this methodology and estimated the ground water resources. The estimation of ground water resource based on GEC 1984 methodology was done for the first time in 1985 for 273 blocks out of 341 blocks of the State. Eight (08) blocks in hilly areas and Sixty (60) blocks in coastal tracts of West Bengal were not considered for ground water estimation. These blocks were excluded as in hilly terrain availability and development of ground water through abstraction structures is negligible (only spring water is in use) and in the coastal areas where the aquifers are under confined condition and hence not suitable for application of the methodology. Later following the modified GEC 1997 Methodology estimation of ground water resource has been carried out in 2004, 2008, 2011 and 2013. Ground water estimation methodology is further modified in 2015 namely, GEC 2015 Methodology. Present ground water resource estimation is carried out for 345 assessment units following the same.

1.2 Constitution of State-level committee for Ground Water Resources Estimation

With a view to re-estimate ground water resource in the State of West Bengal for the assessment year 2022, based on the guidelines provided in the GEC 2015 methodology, a State Level Committee has been constituted by Govt. of West Bengal vide notification 20-WI-13015/1/2022-EIQWRIDD)-Dept. of WRID dated 06.01.2022 (**Annexure-I**)

1.3 Brief Outline of the Proceedings of the Resources Estimation

Dynamic ground water resource (as per GEC'97) has been estimated for the state of West Bengal previously in the year 2004, 2008-09, 2010-11 and 2012-13. As per instruction of CHQ, CGWB referring GOI of Ministry of Jal Shakti, ground water resource estimation (as on 31st March, 2022) (as per GEC'2015) is initiated. The State Level Committee for Ground Water Assessment formed "Groundwater Resource Assessment Cell" and "Working Group" for Dynamic Groundwater Resources Re-Assessment of West Bengal (as on Marth 31st, 2022) vide notification 21-WI-13015/1/2022-EIQWRIDD)-Dept. of WRID dated 06.01.2022 (**Annexure-II**) and assigned the work to CGWB, Eastern Region and SWID, Govt. of WB. The working group finalized the report in consultation of other members of the committee and prepared the report.

After submission of the report to SLGWAC, a meeting of the State Level Committee for Ground Water Assessment is convened by the Member Secretary and Convener (Regional Director, CGWB, ER) on 29/08/2022. The meeting was held under the Chairmanship of Secretary, WRIDD, Govt. of West Bengal. After a detailed discussion among the members the reports on "**Dynamic Ground Water Resources of West Bengal (as on 31st March, 2022)"** have been approved by the Committee. (**Annexure III**).

West Bengal Report as part of national compilation is reviewed and deliberated upon during the meeting of CLEG held on 28.09.2022 and is approved.

CHAPTER II
HYDROGEOLOGICAL CONDITIONS OF THE STATE

The State of West Bengal included between 23˚31′ and 27˚33′15″ N latitude and 85˚45′20″ and 89˚33′ E longitude has a total geographical area of 87,853 sq.km. The Himalayan ranges form the northern boundary of the State while Bay of Bengal forms the southern boundary. The State has common border with Nepal, Bhutan and Sikkim (India) in the north, Assam (India) and Bangladesh in the east, Bihar (India) and Jharkhand (India) in the west and Orissa (India) in the southwest. The State of West Bengal is administered through five divisions namely Presidency, Medinipur, Barddhaman, Malda and Jalpaiguri. The State comprises of 23 districts (as on 2022) with 344 blocks under those five divisions. The State of West Bengal has a total population of 91276115 as per 2011 census report. The population density in the State is 1028 per sq.km.

The State can be broadly divided into four distinct physiographical divisions (i) Himalayan Region comprising districts of Darjeeling, Jalpaiguri and Kochbehar (ii) Eastern fringe of Chotanagpur Plateau comprising districts of Puruliya, western part of Barddhaman, Medinipur, Birbhum and northern and western part of Bankura (iii) Deltaic areas of Sundarbans comprising districts of South 24 Parganas and small part of North 24 Parganas forming deltaic zone, and (iv) Flat land areas.

In general, West Bengal is a flat plain crisscrossed with rivers except the Himalayan foot hills in the north and Chotanagpur plateau in the south-west. The State is principally drained by the southern flowing Ganga River and its numerous distributaries. The Ganga River system encompasses the catchment areas of the Mahananda, Jalangi, Bhaira etc., in the eastern part and the Mayurakshi, Ajoy, Damodar, Dwarakeswar and Kasai in the western part. The Teesta, Torsa and Jaldhaka streams of the Brahmaputra River system originate in the Himalayas and drain the northern part of the State. Besides these there is a small independent river basin, the Subarnarekha basin covering south western part of the State in Medinipur district.

2.1 Description of rock types:

The state of West Bengal is covered by diverse rock types ranging from the Archaean metamorphics to the Quaternary unconsolidated sediments. Approximately 2/3rd area of the State

is covered by alluvial and deltaic deposits of Sub – Recent to Recent time and the remaining parts are under a wide variety of hard rocks. The geological set up of West Bengal according to the above-mentioned physiographic units as mentioned by Geological Survey of India is as follows.

Table 2.1 Generalized Stratigraphic Succession of the rock units of the Extra-Peninsular Region of West Bengal

	Present day flood plain deposit	Sand, silt and clay
	Baikunthapur / Shaugoan Formation Chalsa Formation, Matiali Formation	Boulders, gravels, pebbles,
Quaternary	Thaljhora Formation, Samsing Formation	Sands and silts.
----------	---------- Unconformity----------	----------
Tertiary	Siwalik Group	Siltstone, coarse – grained sandstone (salt and pepper sandstone) and conglomerate with interbands of shale and impure calcareous horizons at the basal part.
----------	----------Main Boundary Thrust----------	----------
Permo –Carboniferous And Younger Rocks.	Gondwana Supergroup: Damuda Group / Talchir Group	Feldspathic and micaceous quartzite, sandstone, Carbonaceous slates with thin seams of crushed coal. Basal pebble and boulder bed.
----------	----------Tectonic Contact----------	----------
	Buxa Formation (Mid to Up. Riphean)	Predominantly dolostone, cherts and variegated slates.
	----------Contact Controversial	----------
Daling Group	Reyang Formation	Ortho-and proto quartzite variegated slates and phyllites.
PROTEROZOIC	Gorubathan Formation	Green slate, phyllite, phyllonite, cherty chlorite quartzite, green tuffaceous wacke with basic metavolcanics.
Darjeeling Gneiss	Lingtse Gneiss	Sheared streaky, porphyritic biotite gneiss. Golden, silvery mica schist, garnet, starlets, kyanite and sillimanite bearing schists and gneisses, migmatitic gneiss.
----------	----------Central Crystalline Thrust-------	----------
	Chungthang Formation	Calc – gneiss, calc – granite, augen gneiss, marble, sillimanite gneiss, graphite schist; etc.
OLDER PROTEROZOIC	Kanchenjungha Gneiss	Banded gneiss, augen gneiss, streaky gneiss, migmatites etc. with profuse intrusions of granite, aplite and pegmatite.
	Base not seen	

Source: GSI, Miscellaneous Publication No. 30, 1999.

Table 2.2 Generalised Stratigraphic Succession of Peninsular West Bengal

CENOZOIC	Quaternary	Holocene - Pleistocene	Debagram Formation and Bengal Alluvium	Recent to sub recent soil / alluvium / sandy clay / loose sand / kankar / caliche / lateritic sediment with calcretes
			Unconformity	
		Miocene – Pliocene (?)	Memari Formation and Pandua Formation (undifferentiated)	Fossiliferous shale, mudstone / calc. mud / impure limestone often pyritiferous, fine to coarse sandstone with floral remains
	Tertiary		Unconformity	
		Middle Palaeocene to Middle-Lower Eocene	Jalangi Formation	Ferruginous sandstone clay / thin pebble bed / impure limestone / sandstone / grey clay / carbonaceous clay with rich floral assemblage and erect plant roots
			Unconformity	
MESOZOIC	GONDWANA SUPERGROUP	Upper Jurassic to Lower Cretaceous	Durgapur Formation	Hard, compact, thinly laminated quartzite gritty towards base, carbonaceous shale, brown and greenish brown sandstone with streaks of carbonaceous material, carbonaceous shale
			Unconformity	
		Jurassic to Cretaceous	Rajmahal Formation	Basic traps with inter trappeans
		Triassic to Jurassic	Dubrajpur Formation Supra Panchet Formation	
		Triassic	Unconformity (local) Panchet Formation	
			Unconformity (?)	
U. PALAEOZOIC			Raniganj Formation	Grey sandstone and carbonaceous shale with thick coal seams
		Permian	Barren Measure Formation	Dark grey shale, nodule of iron ores
			Barakar Formation Karharbari Formation Talchir Formation	Shale and sandstone with coal seams
			Unconformity	
PRE-CAMBRIAN		Middle Proterozoic	Manbhum granite Satellite granite plutons (Chhendapathar etc.) Kuilapal granite gneiss	(Porphyritic at places)
		Lower Proterozoic	Dalma volcanics Singhbhum Group	(Mafics and ultramafics) High grade mica schist, phyllites, quartzites, ultramafics, and felsic rocks, tuffs, cherts, and calc. silicates
		Archaean to Lower Proterozoic	Chhotanagpur Gneissic Complex (i) Composite gneiss (ii) Quartz-biotite gneiss Unclassified Metamorphics/ Anorthosites (Bankura, Purulia) Paraschist, marble/ calc. granulites/ quartzites, amphibolites/ pyroxene granulite/ hornblende schist/ gneiss	

2.2 Hydrometeorology:

The general climate of the state, except the Himalayan zone, is tropical. The tropic of cancer passes across the middle of the districts of Nadia and Barddhaman and the northern part of the districts of Bankura and Purulia. For meteorological purposes, IMD has divided the state into two sub-divisions, namely:

(a) Gangetic West Bengal consisting of the districts: (1) Purba Bardhaman (2) Bankura (3) Birbhum (4) East Medinipur (5) Hooghly (6) Howrah (7) Kolkata (8) Murshidabad (9) Nadia (10) North 24 Parganas (11) Purulia (12) South 24 Parganas (13) West Medinipur (14) Paschim Bardhaman and (15) Jhargram.

(b) Sub-Himalayan West Bengal consisting of the districts: (1) Cooch Behar (2) Darjeeling (3) Jalpaiguri (4) Malda (5) North Dinajpur (6) South Dinajpur (7) Alipurduar and (8) Kalimpong.

The total annual rainfall in the plains of the state increases from 142 cm over the southern parts to 371 cm over the northern parts while it decreases to 116 cm over the northwestern parts of Gangetic West Bengal. The foothills of Himalayas receive maximum amount of annual rainfall varying from 205 cm to 450 cm. The southwest monsoon is the principal rainy season when the plains of the state receive almost 74% to 83% of annual rainfall amount whereas the hills of West Bengal receive 73% to 87%. Rainfall in the winter season (December to February) is about 3% of the annual total in Gangetic West Bengal and 1% of the annual total in the plains of the northern parts whereas it is varying from 1% to 5% in the hills of West Bengal. In the hot weather season (March to May), rainfall is about 11% of the annual total in Gangetic West Bengal and 14% in northern parts (plains) respectively and is varying from 10% to 18% in the hills of West Bengal.

Evaporation is lower in the state of West Bengal and the annual value is around 150 cm. Evaporation is lowest (< 2mm to 8mm/day) during January & maximum during May (when it ranges from >4 mm to 20 mm/day). However due to non-availability of detailed field values, evapo-transpiration factor is not considered for present resource estimation work.

2.3 Ground Water Condition

The State of West Bengal has been divided into two broad hydrogeological units—hard consolidated to semi-consolidated formation and alluvial (unconsolidated) formation. Alluvial formation occupies about two-third of the State area while the remaining one-third is occupied by hard-consolidated formation (Archaean crystalline & Gondwana Sedimentaries)

***Hard Consolidated & Semi-consolidated Formation*:** Archaean crystallines rocks, Gondwana Sedimentaries and Rajmahal trap rocks mainly comprise hilly tract of Darjeeling and Jalpaiguri districts falling, in the Extra-Peninsular region, in the northern part of the State and in Purulia and western part of Barddhaman, Bankura, Birbhum and northen part of West Medinipur districts in western and south-western Peninsular region of the State. Groundwater occurs under unconfined condition in the top most weathered residuum of the consolidated to semi-consolidated rocks, the thickness of the weathered mantle, in general, varies from less than 1 m to 5 m in extra-peninsular region and from 5 to 15 m in peninsular region and is being developed through big dia dug/open wells. Groundwater also occurs in the deeper part below the weathered mantle in the zone of secondary porosity. Bored wells, tapping the secondary porosities within the depth of 100 m bgl have yielded 5 to 30 m^3/hr. The heterogeneity of fractures has limited the scope of large-scale development of groundwater in this part of the state. Water supply in the hilly tract is, in general, done through spring water. Harnessing of these springs has been suggested to be done in a planned manner to avoid water crisis during peak summer months.

***Unconsolidated Formation*:** Thick pile of unconsolidated sediments, laid down by the Ganga-Brahmaputra river system, the thickness of which increases from marginal platform area in the west towards the east and southeast These unconsolidated sediments are found to be made up of succession of clay, silt, sand and gravel of Quaternary age overlying Mio-Pliocene sediments. The Quaternary sediments are made up of Recent and Older alluvium. Occurrence and movement of ground water in this hydrogeological unit is controlled by the primary porosities of the sediments.

- Older Alluvium occurs with/ without Laterite cappings in Bhabar zone (in parts of Darjeeling & Jalpaiguri districts), as Barind tract (in parts of Malda & Dakshin Dinajpur districts) and in the western parts of the State, fringing the eastern border of the Chottanagpur Plateau. Groundwater in the Older Alluvium occurs under unconfined

condition in the near surface aquifer and under semi-confined to confined condition below a blanket of 15 to 20 m thick discontinuous clay bed in the depth span of 50 to 150 m in most of the places with moderate yield prospects of 50-120 m^3/hr. The water level is moderately deep (5 to 20 m bgl) with high seasonal fluctuation. In poorly sorted deposits in Bhabar zone, groundwater occurs under unconfined conditions with water level is as deep as 20 to 30 m and is characterized by high seasonal fluctuation to the tune of 10-12 m. Yields of tube wells tapping this aquifer vary in general from 20 to 80 m^3/hr with a maximum drawdown of 20 m.

- Recent Alluvium overlies the Older Alluvium with thickness increasing towards east and south east. Groundwater in these sediments occurs under unconfined condition in the near surface aquifer and under semi confined to confined condition in the deeper aquifers. In major parts in the area, fairly thick and regionally extensive both unconfined and confined aquifer systems are present. These are the areas of prolific ground water resources having large yield prospects above 150-200 m^3/hr. The depth to water table in the area varies from less than 2 m to10 m bgl in pre monsoon period and from less than 1m to 5 m bgl in post monsoon period with seasonal fluctuation varying from 1 to more than 4 m and the flow of groundwater is towards east and southeast with gradient varying from 1 m/km in the upland area to 4 m/km in the flat area near coast.

***Coastal Confined Area*:**

The 20-30 km wide coastal zone, covering an area of 13,083 sq.km. covering 59 blocks in four districts (Purba Medinipur district-16 blocks, North 24 Parganas district- 5 blocks, South 24 Parganas district-29 blocks and Haora district-9 blocks) lies in the active delta of the Ganga-Brahmaputra River system. A group of fresh water aquifers occur within the depth span of 120-300 mbgl, sandwiched between saline aquifers. The area is underlain by a 20-30 m thick blanket of surface clay below which brackish water aquifers occur within a depth of 120 m bgl in the western part of Hugli river and 150-160 m bgl in the eastern part of Hugli river. A 15-20 m thick impervious clay layer separates the brackish water aquifers from the underlying fresh water aquifers. These fresh water aquifers extend down to a depth of 300 –600 mbgl being more towards Sagar islands. These fresh water aquifers are again underlain by a group of brackish aquifers separated by a thick blanket of impervious clay layer. Groundwater occurs under confined condition and the piezometric head quite deep in Haldia Industrial area and Kolkata

Municipal Corporation area due to heavy withdrawal of groundwater. The flow of groundwater is towards Bay of Bengal with hydraulic gradient varying from 1- 0.3 m/km. Yields of tube wells tapping these fresh water aquifers varies from 100-150 m^3/hr with a maximum draw down of 17m. Near surface unconfined aquifers are also present in some pockets over the top brackish/saline aquifers in Haora, Kolkata and North & South 24 Parganas districts.

Table 2.4 Rationalized Irrigation Unit Draft

Sl.	District	DW	STW	MDTW	DTW
1	Alipurduar	1.3	3.0	4.5	10
2	Bankura	0.8	3.0	4.5	15
3	Birbhum (Alluvial)	1.2	3.5	4.5	21
	Birbhum (Hardrock)	0.8	2.5	4.5	18
4	Kochbehar	1.3	2.6	4.5	10
5	Dakshin Dinajpur	1.3	3.0	4.5	20
6	Darjeeling	1.3	2.6	4.5	10
7	Hooghly	0.8	3.5	5.0	20
8	Howrah	0.8	3.5	6.0	20
9	Jalpaiguri	1.3	2.6	4.5	10
10	Jhargram	0.8	3.5	4.5	16
11	Malda (Bamongola)	0.8	1.3	4.5	18
	Malda (Rest of the Blocks)	1.3	3.0	4.5	20
12	Murshidabad (Older Alluvium)	0.8	2.6	6.0	18
	Murshidabad (Younger Alluvium)	1.2	2.6	8.0	21
13	Nadia	1.2	2.0	4.0	21
14	North 24 Parganas	1.2	3.0	5.0	21
15	Paschim Bardhaman	0.8	2.5	4.5	18
16	Paschim Medinipur	0.8	3.5	4.5	16
17	Purba Barddhaman (Older Alluvium)	0.8	3.0	5.0	20
	Purba Barddhaman (Younger Alluvium)	1.2	3.0	5.0	21
18	Purba Medinipur	0.8	3.0	5.0	16
19	Purulia	0.5	2.0	4.5	12
20	Uttar Dinajpur	1.3	1.5	4.5	20

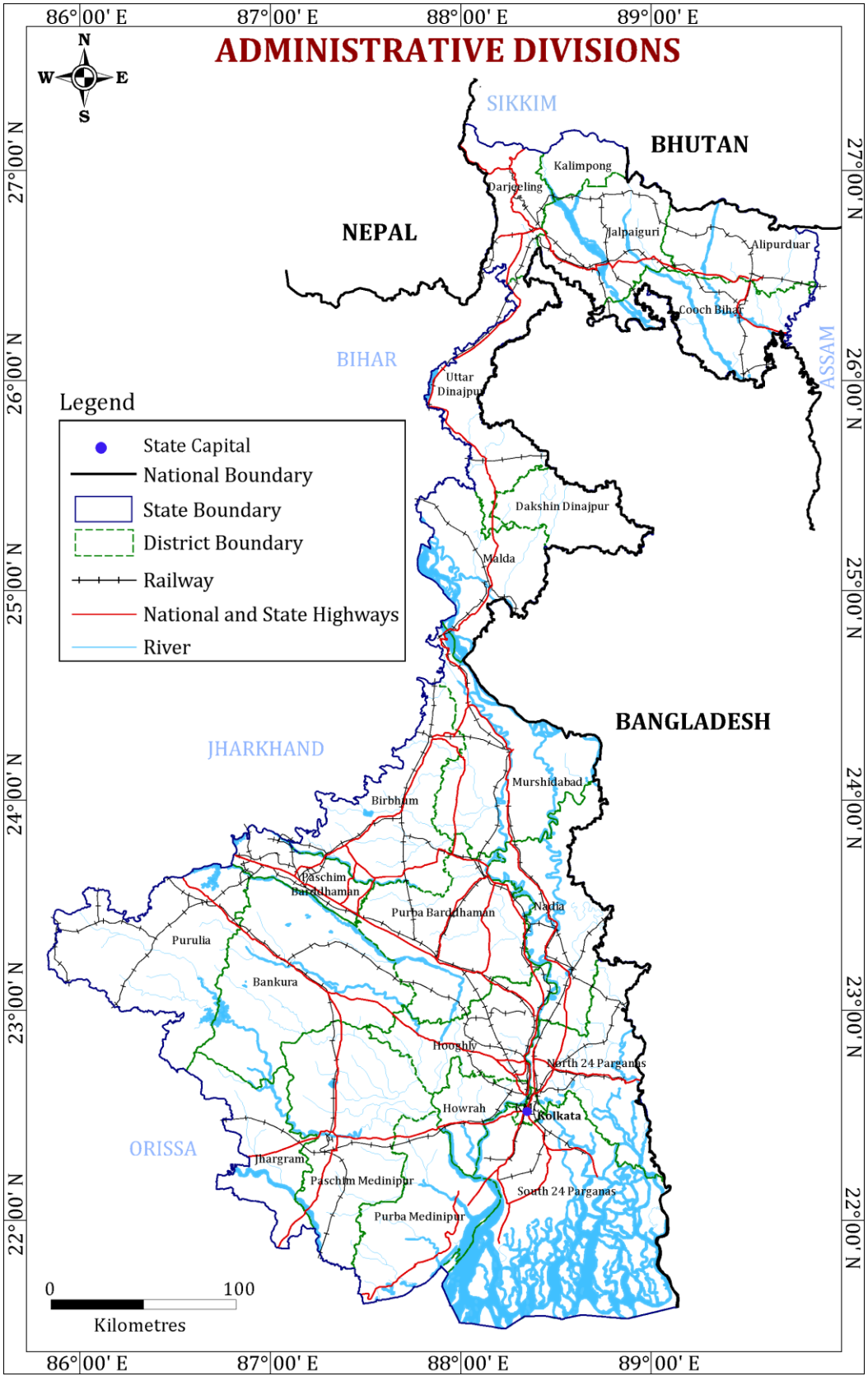
2.4 Ground Water quality:

The chemical quality of groundwater is dependent on the source of water and on the course over which it flows. Ground water quality throughout the State is found to be slightly alkaline. The quality of ground water in northern part of the state is much fresh with low mineral contents having electrical conductance varied from 50 to 1100 µS/cm at 25^0C. Except in few cases, the quality of ground water in the south and western part of the state is potable. The coastal belt of Medinipur, South 24 Parganas, Hugli and Howrah districts, lying in the active delta of the Ganga, ground water in upper aquifer (within depth of 160m bgl) is brackish with high chloride and high TDS.

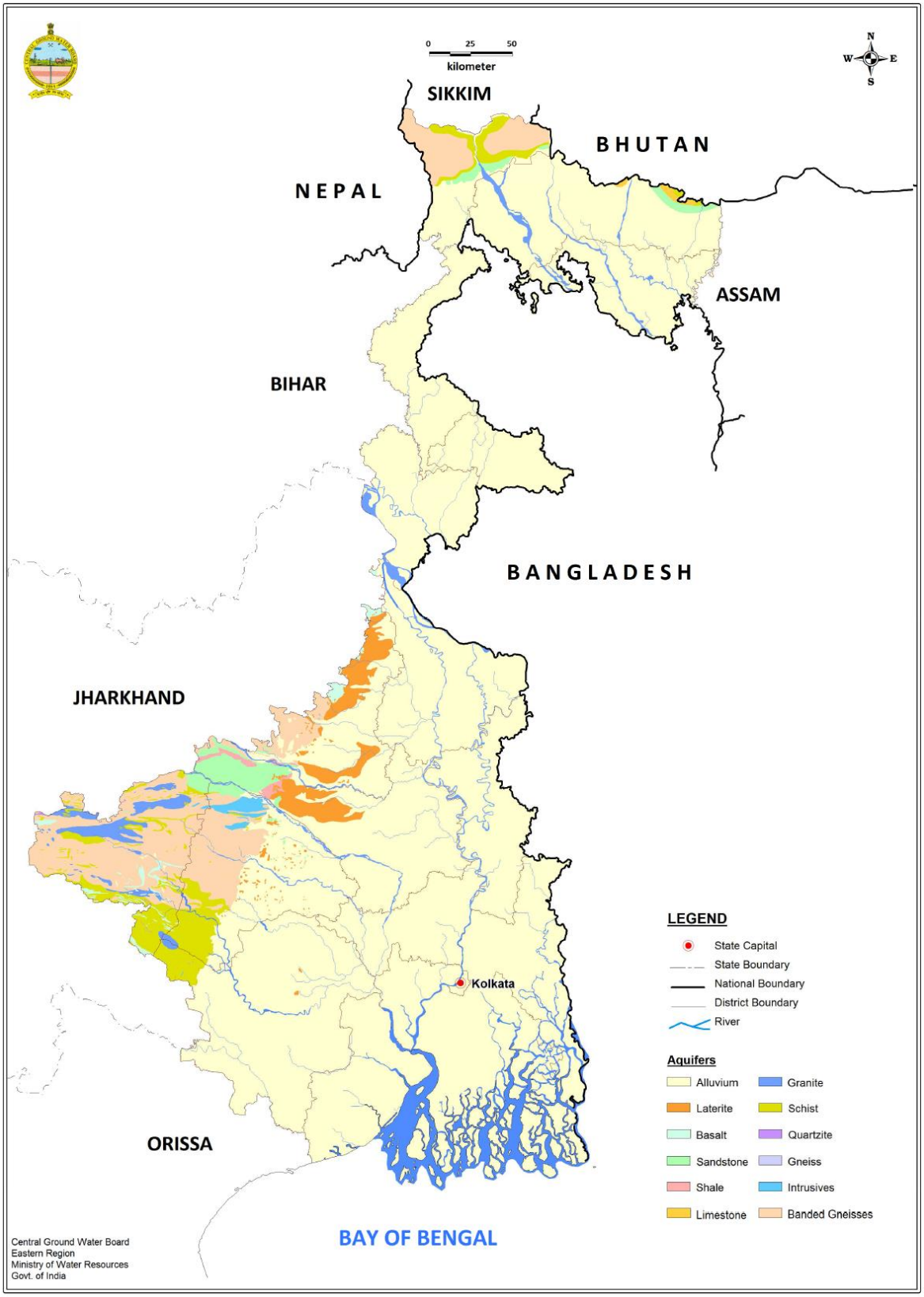
Occurrence of arsenic, as a pollutant in groundwater, has been found sporadically within a linear tract extending NNW-SSE from Kaliachak block of Malda district along the eastern part of Bhagirathi River in Murshidabad, Nadia, North 24 Parganas & South 24 Parganas districts and in western part of Bhagirathi River in parts of Purba Barddhaman, Hugli, Howrah districts covering seventy-nine administrative blocks. The concentration of arsenic above permissible limit has been found sporadically in the aquifers in the depth span of 20 to 100 m bgl.

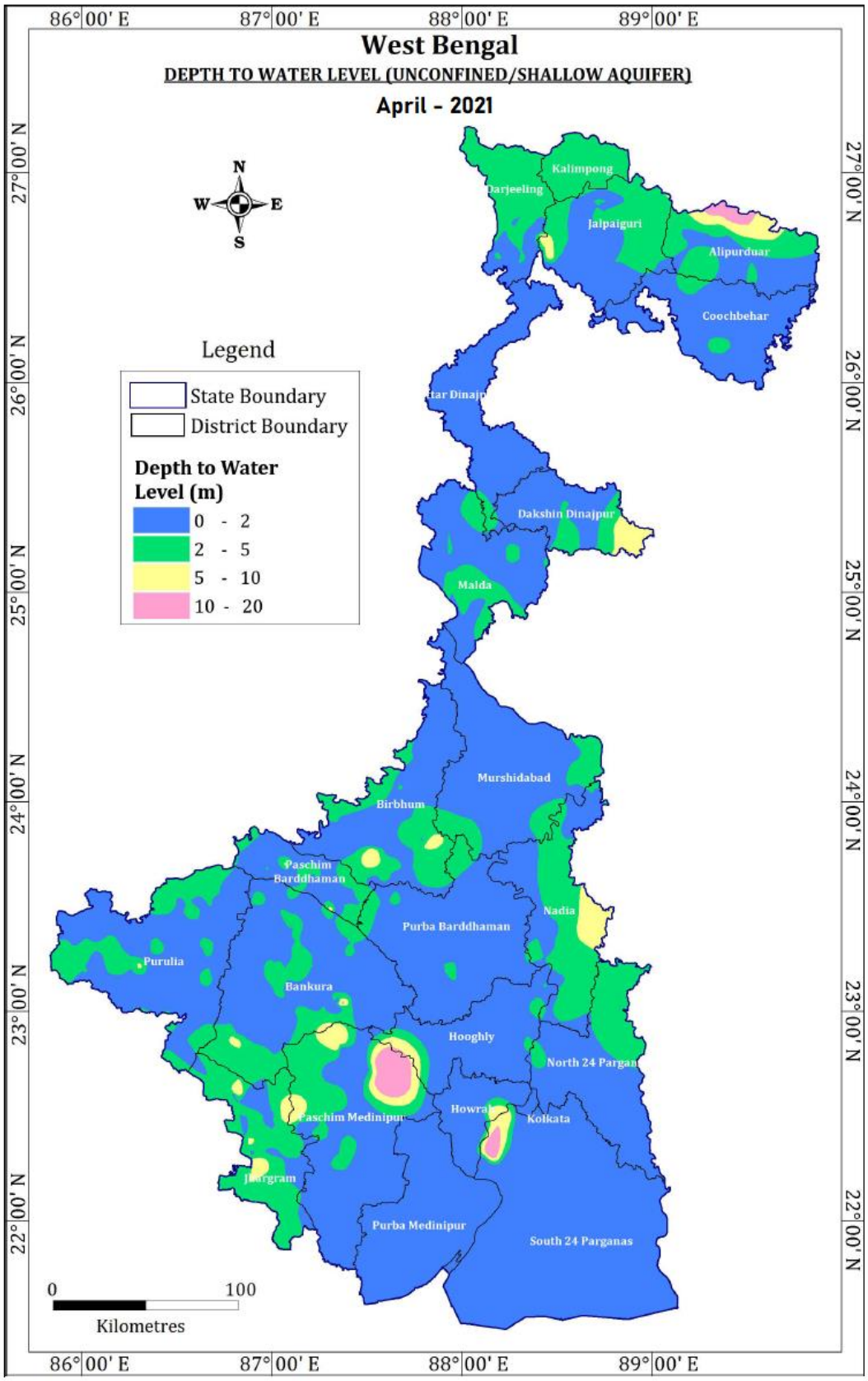
Fluoride concentration more than 1.5 mg/l, maximum permissible limit (as per BIS), has been found in few places of seven districts in Birbhum, Purulia, Murshidabad, Malda, Dakshin & Uttar Dinajpur districts.

Administrative Divisions of West Bengal



Principal aquifer Systems of West Bengal




West Bengal
DEPTH TO WATER LEVEL (UNCONFINED/SHALLOW AQUIFER)
April - 2021
86° 00' E
87° 00' E
88° 00' E
89° 00' E
27° 00' N
26° 00' N
25° 00' N
24° 00' N
23° 00' N
22° 00' N
N
W
E
S
Legend
State Boundary
District Boundary
Depth to Water Level (m)
0 - 2
2 - 5
5 - 10
10 - 20
Kalimpong
Darjeeling
Jalpaiguri
Alipurduar
Coochbehar
Dakshin Dinajpur
Malda
Murshidabad
Birbhum
Paschim Barddhaman
Purba Barddhaman
Nadia
Purulia
Bankura
Hooghly
North 24 Pargan
Howrah
Kolkata
Paschim Medinipur
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Purba Medinipur
South 24 Parganas
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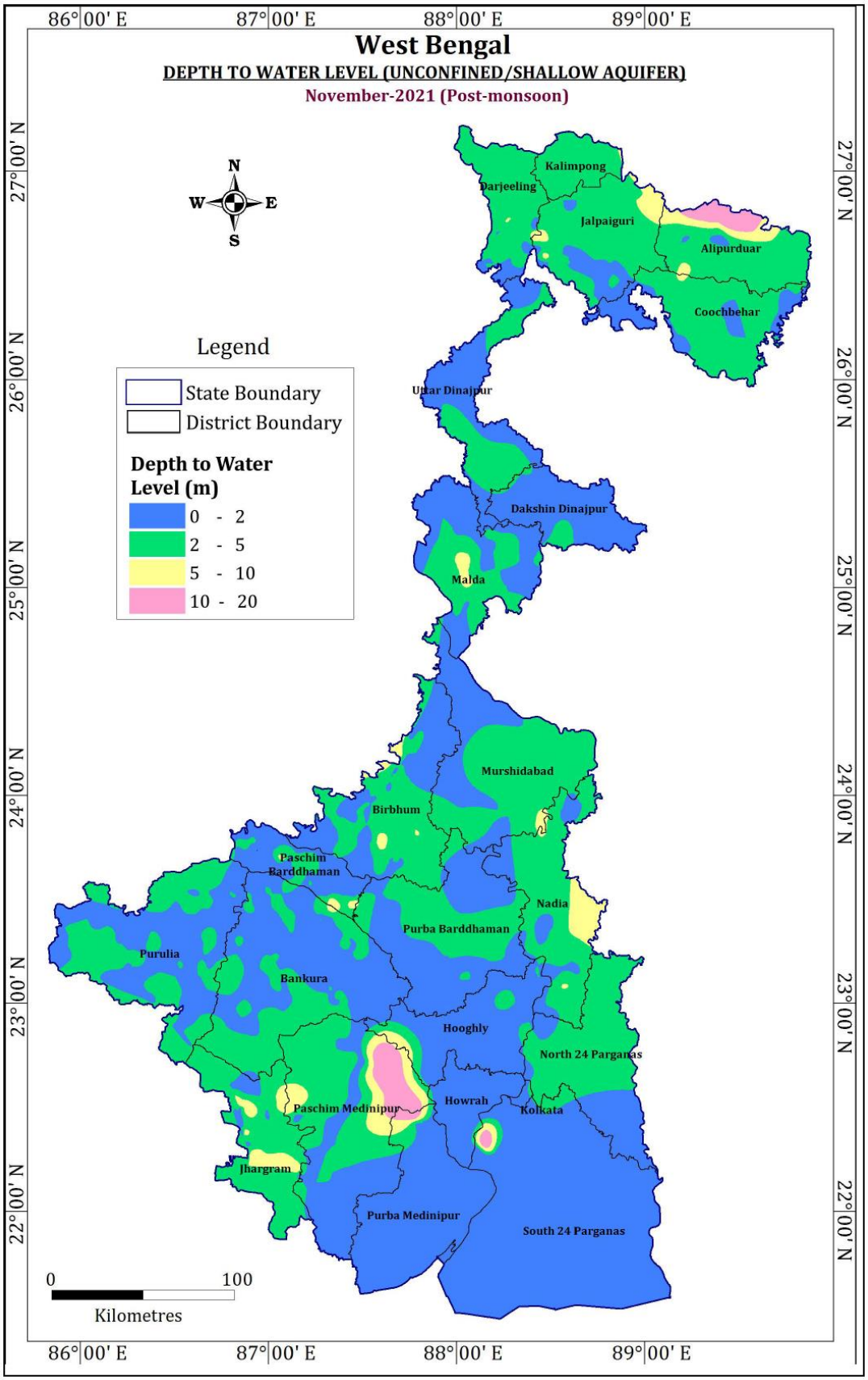
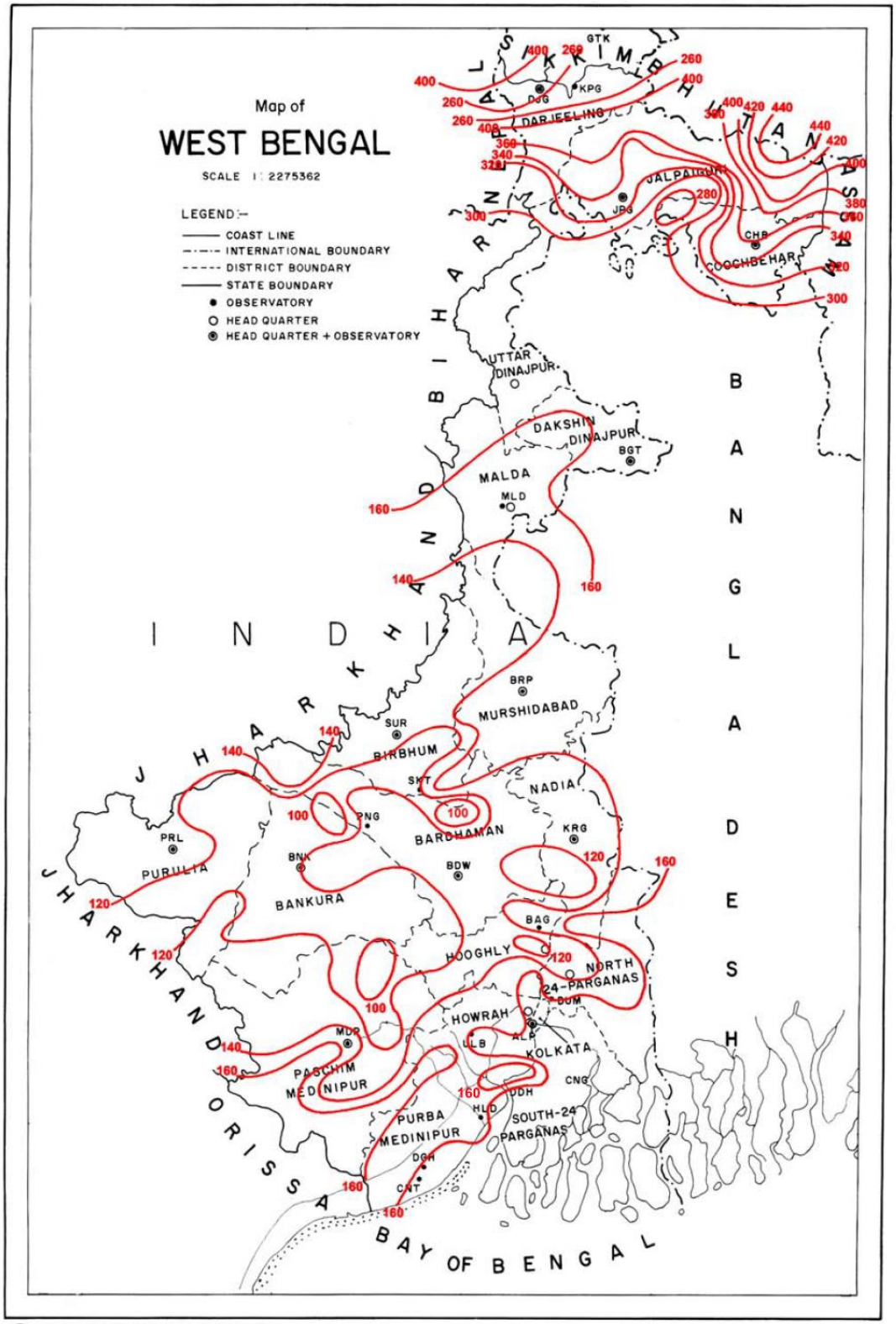
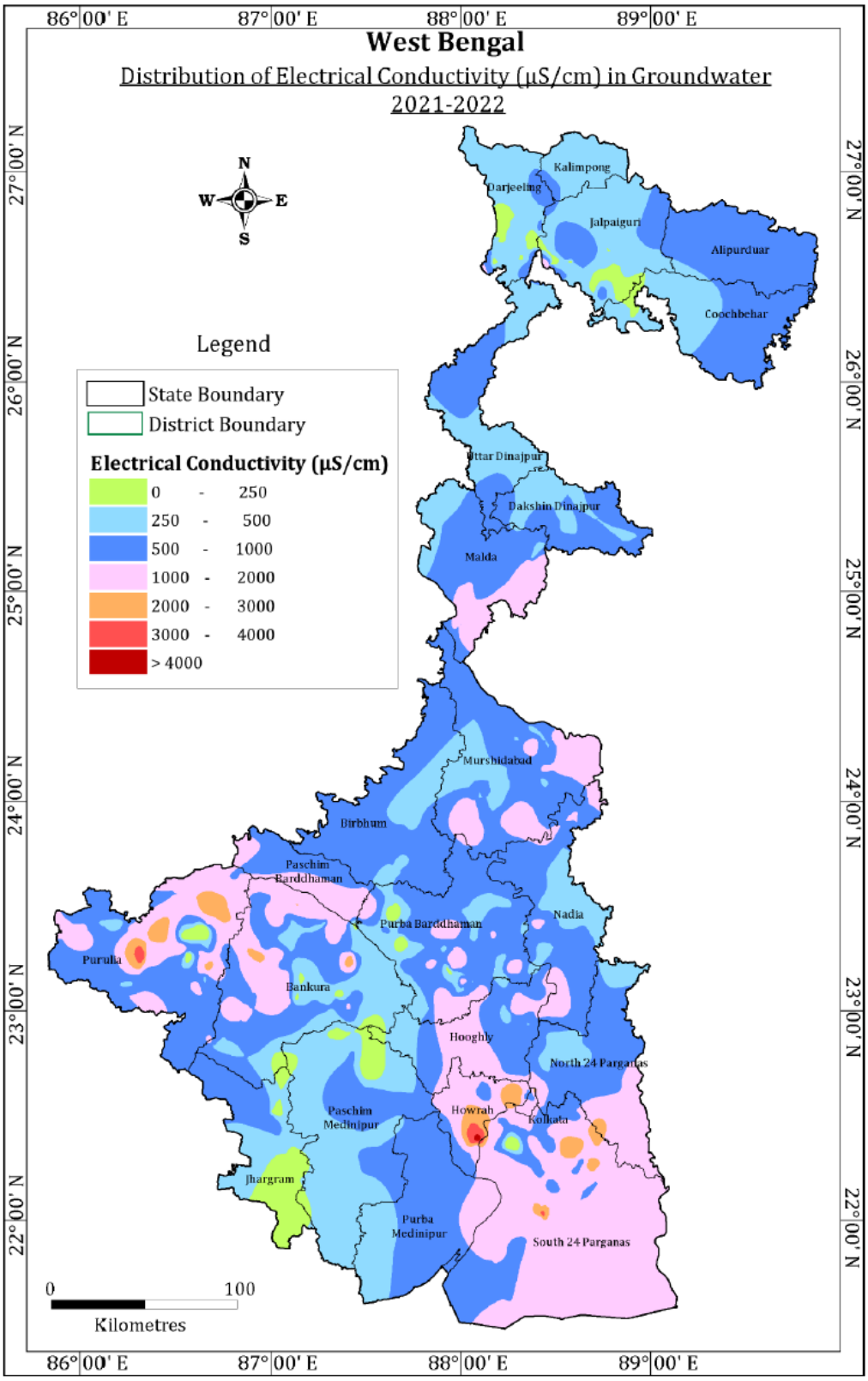

West Bengal
DEPTH TO WATER LEVEL (UNCONFINED/SHALLOW AQUIFER)
November-2021 (Post-monsoon)
86° 00' E
87° 00' E
88° 00' E
89° 00' E
27° 00' N
26° 00' N
25° 00' N
24° 00' N
23° 00' N
22° 00' N
N
W
E
S
Legend
State Boundary
District Boundary
Depth to Water Level (m)
0 - 2
2 - 5
5 - 10
10 - 20
Kalimpong
Darjeeling
Jalpaiguri
Alipurduar
Coochbehar
Uttar Dinajpur
Dakshin Dinajpur
Malda
Murshidabad
Birbhum
Paschim Barddhaman
Purba Barddhaman
Nadia
Purulia
Bankura
Hooghly
North 24 Parganas
Howrah
Kolkata
Paschim Medinipur
Jhargram
Purba Medinipur
South 24 Parganas
0
100
Kilometres

ANNUAL NORMAL RAINFALL (CM)



Source: IMD (2008)


West Bengal
Distribution of Electrical Conductivity (µS/cm) in Groundwater
2021-2022
86° 00' E
87° 00' E
88° 00' E
89° 00' E
27° 00' N
26° 00' N
25° 00' N
24° 00' N
23° 00' N
22° 00' N
N
W
E
S
Legend
State Boundary
District Boundary
Electrical Conductivity (µS/cm)
0 - 250
250 - 500
500 - 1000
1000 - 2000
2000 - 3000
3000 - 4000
> 4000
Kalimpong
Darjeeling
Jalpaiguri
Alipurduar
Coochbehar
Uttar Dinajpur
Dakshin Dinajpur
Malda
Murshidabad
Birbhum
Paschim Barddhaman
Purba Barddhaman
Nadia
Purulia
Bankura
Hooghly
North 24 Parganas
Howrah
Kolkata
Paschim Medinipur
Jhargram
Purba Medinipur
South 24 Parganas
0
100
Kilometres

CHAPTER III

GROUND WATER RESOURCES ESTIMATION METHODOLOGY- GEC' 15

3.1 Ground Water Resource Estimation Methodology – GEC'15 - Brief Description

Increasing thrust on ground water and changed scenario of data accusation led Government of India to form another Ground Water Estimation committee in 1995 to review the existing methodology of Ground water Resources (GEC '84) and suggest revisions, if necessary. The Committee proposed a revised and elaborate methodology for resource estimation popularly known as GEC '97 methodology. Further, in 2015 Ground Water Estimation committee has modified existing methodology and brought out few changes which currently at vogue and is known as GEC '15 methodology.

Principal attributes of GEC 2015 methodology:

The methodology recommends aquifer wise ground water resource assessment of both the Groundwater resources components, i.e., Replenishable ground water resources or Dynamic Ground Water Resources and In-storage Resources or Static Resources. Wherever the aquifer geometry has not been firmly established for the unconfined aquifer, the in-storage ground water resources have to be assessed in the alluvial areas down to the depth of bed rock or 300 m, whichever is less. In case of hard rock aquifers, the depth of assessment would be limited to 100 m. In case of confined aquifers, if it is known that groundwater extraction is being done from this aquifer, the dynamic as well as in-storage resources are to be estimated. If it is firmly established that there is no ground water extraction from this confined aquifer, then only in-storage resources of that aquifer have to be estimated. Until aquifer geometry is established on appropriate scale, the existing practice of using watershed in hard rock areas and blocks/ mandals/ firkas in soft rock areas may be continued.

CHAPTER IV

GROUND WATER RESOURCES SCENARIO IN WEST BENGAL

The ground water resource assessment (in 2022) for the State of West Bengal has been carried out as per GEC 2015 guidelines through 'IN-GRES', with blocks as primary assessment units. IN-GRES is a software/web-based application developed by Central Ground Water Board (CGWB) in collaboration with Indian Institute of Technology-Hyderabad for assessment of ground water resources.

Objectives of INGRESS Tool

- To provide common and standardized platform for Ground Water Resource Assessment for the entire country based on Ground Water Resource Estimation Committee-2015 (GEC-2015) methodology.
- Pan-India operationalization for Joint assessment by CGWB and State Ground Water Departments.
- Visibility dashboards allowing user to view the data/map and download reports.
- Provide GIS based Thematic map of assessment units.

Summary of Assessment Units

a)	Assessment Unit	Individual Block and Urban Areas
b)	Assessment Sub Unit	Command, Non-Command and Poor-quality area in Block
c)	Total number of Assessment Units in West Bengal	345 units covering 344 administrative Blocks and 01 Urban Unit. Urban Unit is represented by Kolkata district.

d)	Total Number of sub- units	373 sub units of which 93 command & 220 non commands
e)	Base Year of Collection of Data	2021-2022
f)	Year of Projection of data	2022

All 344 blocks of the State of West Bengal and one (01) urban area as Kolkata Municipal Corporation is assessed. Total Annual Ground Water Recharge has been estimated at 23.61 bcm and Annual Extractable Ground Water Resource has been estimated at 21.42 bcm. Current Annual Ground Water Extraction for all uses has been estimated at 10.07 bcm, which translates into a Stage of Ground Water Extraction at 47.01 %. As per present assessment categorization scheme, out of 345 assessed units, 232 AUs are Safe, 31 AUs are Semi-Critical, 22 AUs are Critical and 60 AUs are of poor groundwater quality. There is no Over-Exploited Blocks in the State.

Estimation for confined aquifer covered areas, hilly areas and poor groundwater quality areas are taken up for the first time during the present exercise. Earlier estimation was carried out for 268 assessment units where as in present estimation is carried out for 345 assessment units. However, as a whole for the State compared to earlier assessment, Stage of Ground Water Extraction is increased from 44.60 % to 47.01%. This is mostly due to growth of domestic draft.

Table 4.1 State Summary Dynamic Groundwater Resource Assessment (As on 31st march, 2022)

Components	Dynamic GW Resource	
	(BCM)	(ham)
Total Ground Water Recharge	23.60	2360611.66
Provision for Natural Ground Water Discharge	2.18	218854.82
Net Ground Water Availability	21.41	2141756.84
Gross Ground Water Draft for All Uses	10.06	1006766.44
Current Annual GW Draft for Irrigation	8.38	838302.34
Current Annual GW Draft for Domestic	1.54	154474.25
Current Annual GW Draft for Industrial uses	0.139	13989.69
Stage of G.W. Development (%)	*47.01 %*	
Annual Allocation of GW for Domestic & Industrial Water Supply for 2035	1.76	176310.86
Net GW Availability for 'Future Use'	11.28	1128676.9

Contribution of various Recharge Components

Recharge Components	Recharge (%)
Recharge from Rainfall	78.36 %
Recharge From Canal	0.13 %
Recharge From Surface Water Irrigation Return flow	2.46 %
Recharge From Ground Water Irrigation Return flow	12.52 %
Recharge From Tank and Ponds	6.53 %

4.1 Spatial variation of the Ground water recharge and development scenario in West Bengal

Following observations are made from the district-wise detailed ground water assessment of the State

i) It is observed that stages of ground water development even within broadly similar hydrogeological set up are highly irregular. The average stage of ground water development of the State is 47.01%.

ii) Spatial distribution of groundwater recharge and extraction is given in figure 4.1 and 4.2.

iii) Maximum ground water development in the State is observed in the central alluvial districts of Nadia (89.2%), North 24 Parganas (65.69%), Dakshin Dinajpur (60.29%) and Murshidabad (59.56%) districts.

iv) The stage of development varies widely within a district and it may be due to the local hydrogeological conditions, aquifer disposition, available cultivable land, soil type, irrigation practices, cropping pattern etc. It is observed that Paddy, specially summer paddy (Boro) cultivation is more in Nadia, Murshidabad, North 24 Parganas and Barddhaman districts which require huge water for cultivation. Therefore, ground water withdrawal is more and Stage of Development is high in these districts.

v) In northern districts of Darjeeling, Kalimpong, Jalpaiguri, Alipurduar and Kochbehar, ground water development is quite low. On the other hand, due to heavy annual rainfall of more than 3000 mm the recharge is more. Thus, reflecting lower value of stage of ground water development and all the blocks of these districts have been categorized as ‘Safe’.

vi) The hard rock terrain lying in the western part of the State comprising Purulia, western parts of Bankura, Paschim Barddhaman, Birbhum, Jhargram & Paschim Medinipur districts, possess about low ground water resources with an average stage of development of about 35% with a range of 14.98% and 56.58%.

vii) It is observed that all the blocks are categorized as 'Safe' as ground water development is limited, due to unfavorable hydrogeological situation, low development prospects and limited or no *boro* cultivation practice in these areas.

viii) In Southern Bengal, some of the assessed blocks show very low SOD. This is due to limited and patchy distribution of unconfined aquifer in those areas. This situation led towards development of confined aquifer system in the area and kept the top-unconfined layer mostly untouched.

ix) In the rest of the State, ground water development is more or less around the State average of 47.01% and ranges between 40% & 50%.

x) Based on available population figures (2011 Census), total requirement of water for domestic and industrial uses for the State forms 16.68% of the net ground water availability.

xi) Present exercise resulted into changes in block-wise categorization reflecting temporal variation in ground water recharge/discharge/draft pattern.

xii) Based on stage of ground water development and long term pre- and post- monsoon water level trend, the status of categorization in the State is given in **Table 4.2**.

xiii) Therefore, a total number of 345 administrative units are assessed. These 345 administrative blocks/ units of assessment are further subdivided into 373 sub units of command (93), non-command area (220) and poor-quality area (60). Out of 345 administrative units (344 Blocks and 01 Urban unit), 31 blocks are categorized as 'Semi-critical', 22 block categorized as 'Critical', 60 block categorized as 'Poor-quality' and rest 232 as 'Safe'. Assessment unit -wise list of 'Safe', 'Semi-critical' and 'Critical' blocks is given in **Annexure V**.

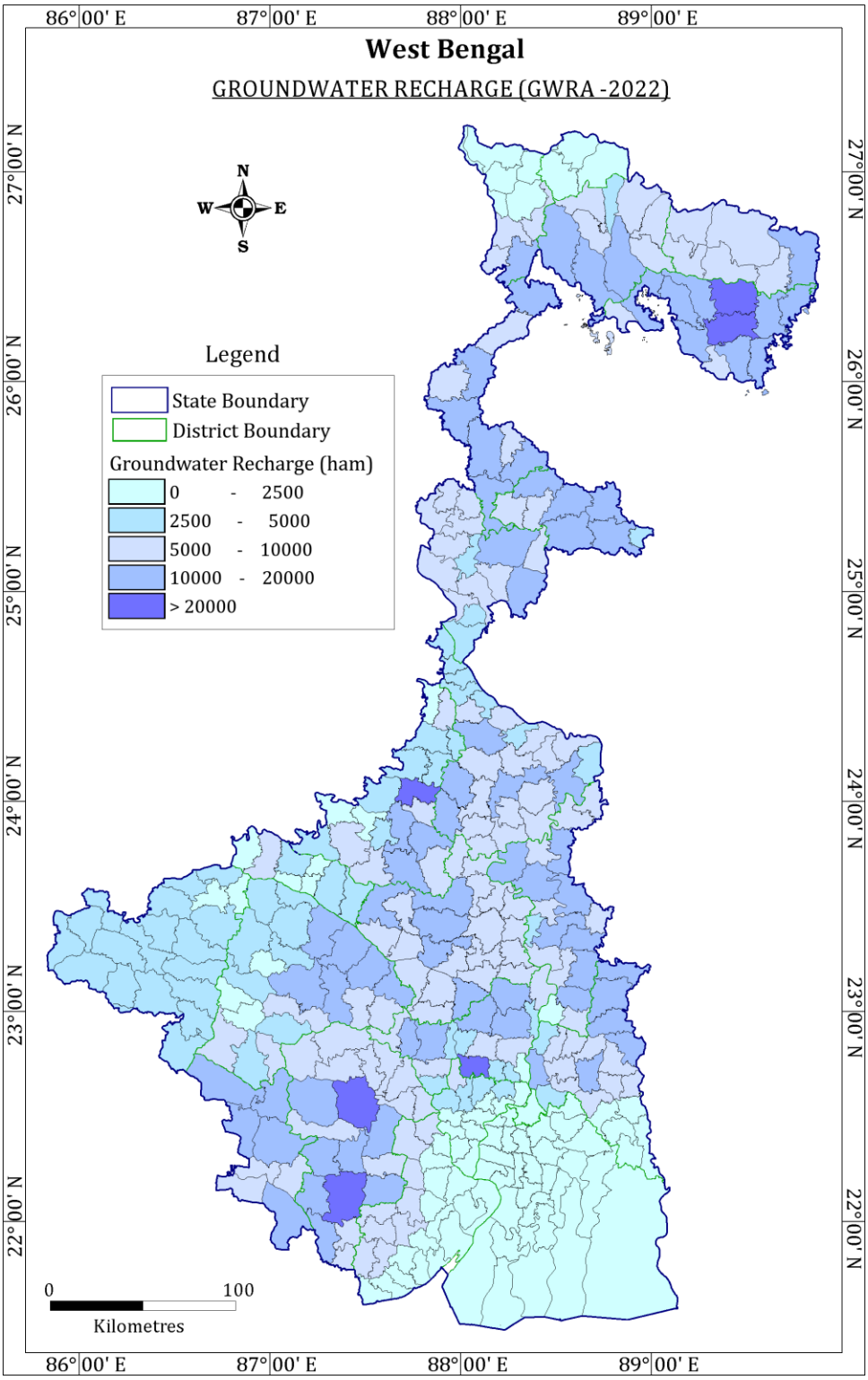


Fig. 4.1. Map showing Spatial Variation in GW Recharge

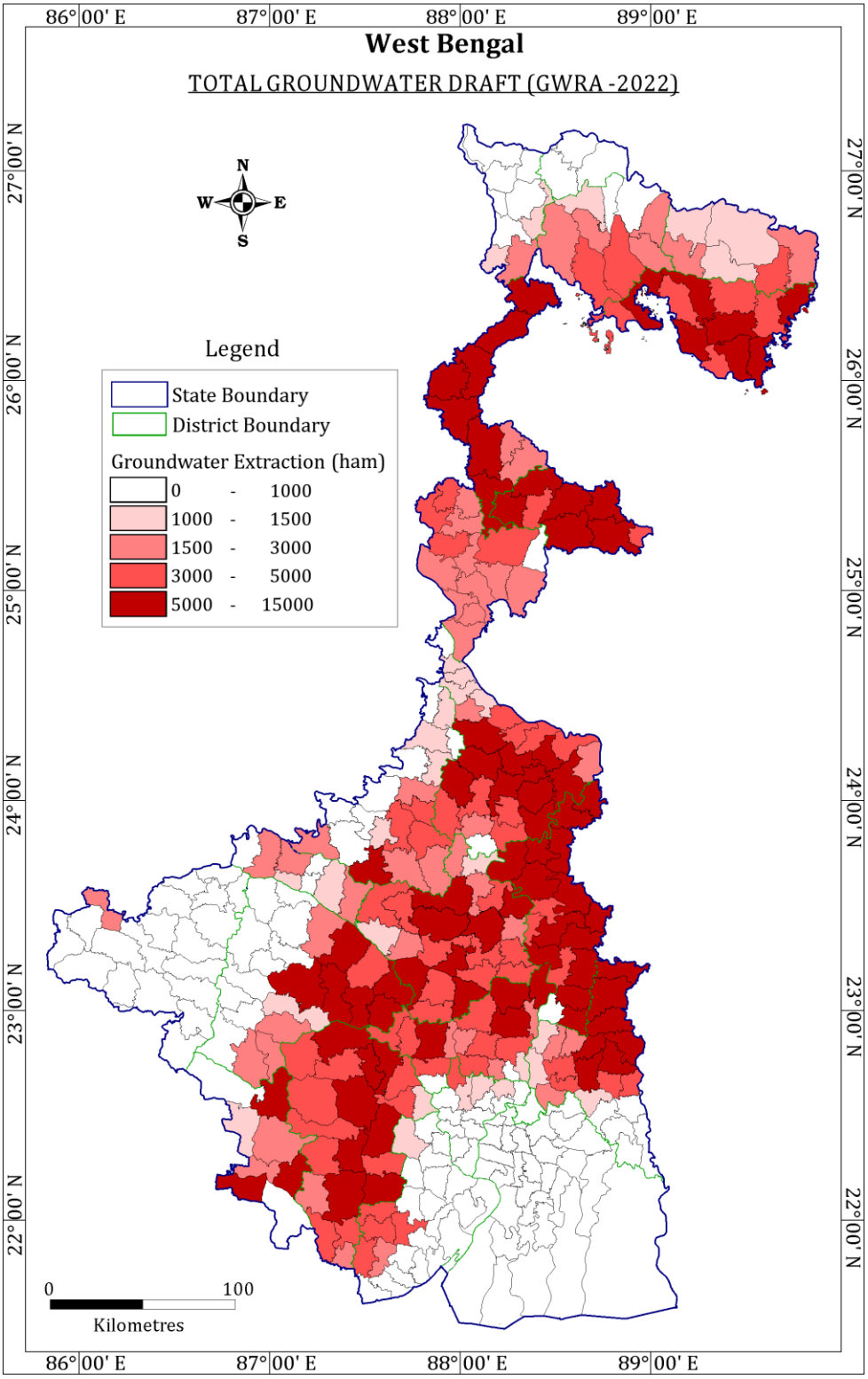


Fig. 4.2. Map showing Spatial Variation in GW Extraction

Table 5.2 List of Categorized Blocks
(As on 31st march, 2022)

Sl.	Name of District	Semi-Critical	Critical
1	Birbhum	Mayureswar-II	-
2	Dakshin Dinajpur	Kushmundi, Balurghat	Hilli
3	Haora	Udaynarayanpur	-
4	Hugli	Serampur Uttarpara, Balagarh, Goghat-II	-
5	Malda	Ratua-II, Kaliachak-I	-
6	Murshidabad	Hariharpara, Murshidabad Jiaganj, Bhagawangola-I, Berhampore, Beldanga-I, Nawda	Raninagar- I
7	Nadia	Kaliganj, Hanskhali, Haringhata, Krishnanagar-II, Krishnanagar-I, Kalyani	Ranaghat-II, Nakashipara, Karimpur-I, Santipur, Krishnaganj, Tehatta-I, Nabadwip, Karimpur-II, Chapra, Tehatta-II
8	North 24 Parganas	Barasat-i, Baduria, Swarupnagar	Basirhat-I, Bongaon, Habra-I, Gaighata, Deganga, Bagda
9	Paschim Barddhaman	-	Raniganj
10	Paschim Medinipur	Kharagpur-II, Keshpur	Chandrakona-II, Garbeta-I
11	Purba Barddhaman	Kalna-II, Burdwan-II, Mangolkote, Memari-I, Purbasthali-II	Manteswar

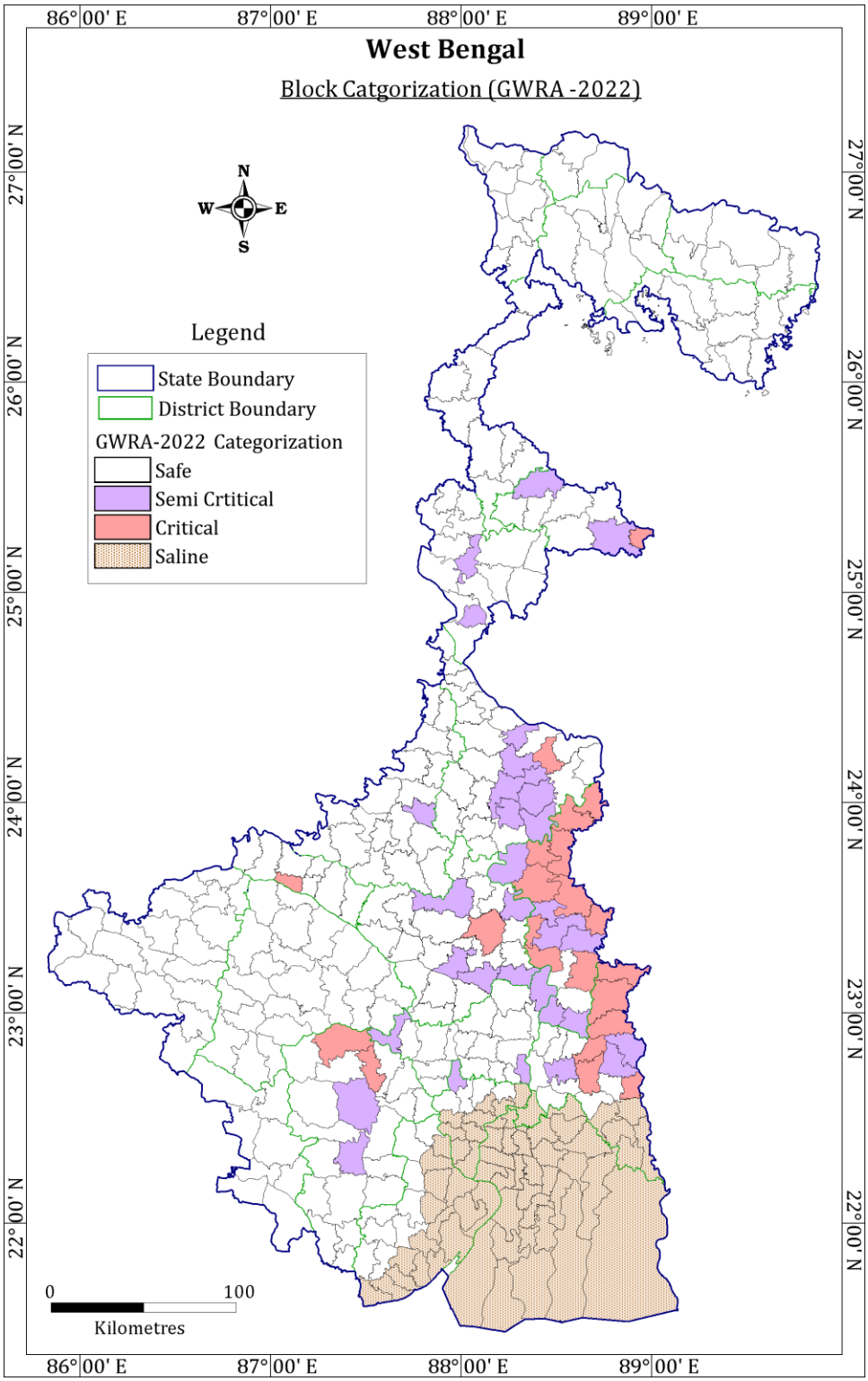


Fig. 4.3. Map showing Categorization of Assessment Units

4.2 Comparison with earlier ground water resources estimates and reasons for significant departure from earlier estimates

During 2020, Ground Water Resource Assessment for West Bengal could not be completed as State Level Committee has not approved the assessment results. Hence, Central Level Expert Group recommended that the results of previous assessment (*i.e.*, 2013) in respect of West Bengal may be used in place of GWRA-2020 for national compilation on Dynamic Ground Water Resources of India, 2020. Also due to redistribution and reorganization of blocks, present estimation is not directly comparable with earlier estimate.

1. Declining pattern in rain fall is another major contributor. The majority of semi-critical blocks show a major decline in post-monsoon water level. This falling trend is mainly contributed to their categorization.

2. In present estimation, 6th Minor Irrigation Census data is used for number of groundwater abstraction structures. New Tube-wells constructed during this period is also accounted for using Tube-well Registration data with SWID.

3. In earlier estimation, only Structure data of MI Census has been used. However, in present estimation, Minor Irrigation Potential Created data of 6th MI Census is also utilized.

4. In this exercise projected population from population figures from Census 2011 have been used. Categorization of few blocks as semi-critical in N 24 Parganas district is mainly due to high population.

5. During this exercise, it is observed that blocks are showing higher domestic draft in urban areas confirming ever persistent urbanization trend. With this situation norm for urban water consumption may be reviewed in future;

6. In present exercise Industrial draft has been estimated using industries registered with SWID. Additionally, coal mining industry has been identified as a major groundwater dewatering source through their activity.

7. Change in administrative setup in terms of increase in number of blocks is also responsible for change in number of blocks categorized as other than 'Safe'.

Table 4.3. Comparison of Dynamic GW Resource Estimate

Comparative Criteria	Resource Assessment 2004 (BCM)	Resource Assessment 2008-09 (BCM)	Resource Assessment 2010-11 (BCM)	Resource Assessment 2012-13 (BCM)	Resource Assessment 2021-22 (BCM)
Total annual ground water recharge	30.36	30.50	29.25	29.51	23.60
Natural discharge during non-monsoon	2.90	2.92	2.67	2.82	2.18
Net annual ground water availability	27.46	27.58	26.58	26.69	21.41
Gross ground Water draft for irrigation	10.84	10.11	9.72	10.84	8.38
Gross ground water draft for domestic and industrial uses	0.81	0.79	0.97	1.01	1.68
Gross draft for all uses	11.65	10.91	10.69	11.88	10.06
Stage of GW Extraction	42.42 %	39.54 %	40.22 %	44.38 %	*47.01 %*

4.3 Computation of Ground water resources of Confined Aquifer in West Bengal

During 2021-22, Ground Water Resource Assessment for Confined Aquifers of West Bengal is attempted for the first time. The 60 coastal blocks in 05 district of confined aquifer system were not assessed earlier for their groundwater resource are due to scarcity of aquifer parameters and saline nature of top part. Following GEC-2015 methodology, Ground Water Resource Assessment for deeper freshwater part of confined aquifers is carried out for those blocks. The assessment shows that 0.25 bcm of Dynamic Confined Ground Water Resources, 10.21

bcm of In-Storage Confined Ground Water Resources and 10.26 bcm of Total Confined Ground Water Resources is present in the area. District-wise status of Confined Ground Water Resources in the State is given in **Table 4.4**.

Table 4.4. Groundwater Resource Estimate of Confined Aquifer

Sl.	District	Dynamic Confined Ground Water Resources (ham)		In-Storage Confined Ground Water Resources (ham)		Total Confined Ground Water Resources (ham)	
		Fresh	Saline	Fresh	Saline	Fresh	Saline
1	Haora	1277.68	0	105842	0	107119.7	0
2	Kolkata	270.4	0	12576.5	0	12846.9	0
3	North 24 Parganas	1892.42	0	180305.57	0	182197.99	0
4	Purba Medinipur	5632.8	0	284887.33	0	290520.13	0
5	South 24 Parganas	16415.93	0	417417.65	0	433833.59	0
	Total	**25489.2**	**0**	**1001029.1**	**0**	**1026518.3**	**0**
	Total (bcm)	**0.25**	**0**	**10.21**	**0**	**10.26**	**0**

Government of West Bengal
Water Resources Investigation & Development Department
Block-A, 5th Floor, Khadya Bhawan,
11A, Mirza Ghalib Street
Kolkata-700 087

No. 20-WI-13015/1/2022-EIC(WRIDD)-Dept. of WRID **Dated Kolkata, the 06/01//2022**

NOTIFICATION

Subject: Ground Water Resources Assessment for the State of West Bengal – constitution of State Level Committee for re-assessment of ground water resources as on 31st March -2022.

The last assessment of state-wise annual ground water recharge for the entire country was carried out for the water year 2019-20 based on the methodology adopted by the Ground Water Resources Estimation Committee - 2015. Since then changes in ground water scenario in many parts of the county has been observed. The National Water Policy, 2012 has also recommended that the ground water resources of the country should be re-assessed periodically. With a view to ***Re-Assessed Ground Water Resources for The Water Year 2021-2022,*** the State Level Committee is hereby constituted with the following composition: -

1. Composition:

i)	Principal Secretary	WRI&D Department	Chairman
ii)	Engineer-in-Chief & EO Secretary	WRI&D Department	Member
iii)	Engineer-in-Chief & EO Secretary	PHE Department	Member
iv)	Director	State Water Investigation Directorate	Member
v)	Director & EO Secretary	Department of Agriculture	Member
vi)	Representative not below the rank of Joint Secretary	Department of Micro, Small and Medium Enterprises and Textiles	Member
vii)	Representative not below the rank of Joint Secretary	Irrigation & Water Ways Department	Member
viii)	Representative not below the rank of Joint Secretary	Department of Industries & Commerce	Member
ix)	Representative not below the rank of Joint Secretary	P & RD Department	Member
x)	Joint Secretary (MI)	WRIDD	Member
xi)	General Manager	NABARD	Member
xii)	Regional Director,	CGWB (ER)	Member Secretary

The committee may co-opt any other Member(s) / special invitee(s), if necessary.

2.Terms of Reference: The broad terms of reference of the Committee would be as follows :–

(i) To re-assess annual ground water recharge of the state in accordance with the Ground Water Resources Estimation Methodology-2015.
(ii) To estimate the status of utilization of the annual extractable ground water resource.
(iii) To take up 10% field level validations of the villages in the assessment unit. The sample villages may be may be selected based on prevailing hydrological conditions and should be representative of assessment unit.
(iv) "Ground Water Assessment Cell" will be formed comprising officers from State/Nodal Department and officers from Regional Offices of CGWB.
(v) The committee may constitute a Working/Executive Group to ensure speedy assessment of groundwater resources, field validation and strengthening of database.

3. Time frame: The Committee will submit its report within the stipulated time frame.

By Order of the Governor

Sd/-
[Prabhat Kumar Mishra, IAS]
Principal Secretary to the Government of West Bengal

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No. 20/1 (13)-WI-13015/1/2022-EIC(WRIDD)-Dept. of WRID **Dated Kolkata, the 06/01/2022**

Copy forwarded for kind information and necessary action –

1) The Addl. Chief Secretary / Principal Secretary/ Secretary, Department of Commerce and Industries, GoWB, 4, Camac Street, Kolkata –700 016.
2) The Addl. Chief Secretary / Principal Secretary/ Secretary, P&RD Department, GoWB, Joint Administrative Building, Plot No.7, Floors) Block: HC, 6th to 10th, FD Block, Sector III, Bidhannagar, Kolkata, West Bengal 700106.
3) The Addl. Chief Secretary / Principal Secretary/ Secretary, Public Health & Engineering Department, GoWB, New Secretariat Building, 1, K.S. Road, Kolkata-700001.
4) The Addl. Chief Secretary, Principal Secretary/ Secretary, Irrigation and Waterways Department, GoWB, Jalsampad Bhavan, Bidhan Nagar, Kolkata-700091.
5) The Addl. Chief Secretary, Principal Secretary/ Secretary, Department of Agriculture, GoWB. Nabanna', 3rd Floor, 325, Sarat Chatterjee Road, Howrah- 711102.
6) The Addl. Chief Secretary, Principal Secretary/ Secretary, Department of Micro, Small and Medium Enterprises and Textiles, 4, Camac Street, Kolkata –700 016.
7) The Principal Secretary, WRI&D Department, GoWB, Khadya Bhavan, 5th Floor, Block-A, 11A, Mirza Ghalib Street, Kolkata- 700087.
8) The Engineer-in-Chief & EO Secretary, WRI&D Department, Khadya Bhavan, 5th Floor, Block-A, 11A, Mirza Ghalib Street, Kolkata- 700087.
9) The Director, State Water Investigation Directorate. Nirman Bhavan, 3rd Floor, Salt Lake, Kolkata-700091.
10) The Director of Agriculture & EO Secretary
11) The General Manager, NABARD, 2nd Floor, 1 Abhilasha, 6, Royd St, Near Bata More, Taltala, Kolkata, West Bengal 700016.
12) The Joint Secretary (MI), WRI&D Deptt. Khadya Bhavan , 5th Floor, Block-A, 11A, Mirza Ghalib Street, Kolkata- 700087.
13) The Regional Director, Central Ground Water Board (Eastern Region), "Bhujalika", CP-6, Sector-V, Salt Lake, Kolkata- 700091.

6/1/2022

Engineer-in Chief & *ex-officio* Secretary

No. 20/2 (4)-WI-13015/1/2022-EIC(WRIDD)-Dept. of WRID **Dated Kolkata, the 06/01/2022**

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2. The Sr. P.S. to Principal Secretary, WRI&D Department.
3. The Sr. P.S. to Engineer-in-Chief & EO Secretary, WRI&D Department.
4. The Sr. P.S. to Joint Secretary (MI), WRI&D Department.

6/1/2022

Engineer-in Chief & *ex-officio* Secretary

Government of West Bengal
Water Resources Investigation & Development Department
Block-A, 5th Floor, Khadya Bhawan,
11A, Mirza Ghalib Street
Kolkata-700 087

No. 21-WI-13015/1/2022-EIC(WRIDD)-Dept. of WRID **Dated Kolkata, the 06/01//2022**

NOTIFICATION

Subject: Formation of "Groundwater Resource Assessment Cell" and "Working Group" for Dynamic Groundwater Resources Re-Assessment of West Bengal (as on March 31st, 2022)

In order to conduct dynamic ground water resources estimation (as on 31st March-2022) "**Groundwater Resource Assessment Cell**" is hereby formed as mentioned below:

1. Shri. Subrata Halder, Executive Engineer (AI), Data Processing Cell, SWID, Kolkata,
2. Shri Shantanu Das, Executive Engineer (AI), DPSR Wing, IPD Circle, SWID,
3. Smt. Moumita Patra, Executive Engineer (AI) & TA to SE(AI), IPD Circle, SWID,
4. Smt. Debatri Bagchi Roy, Senior Geologist Data Processing Cell, SWID HQ, Kolkata,
5. Smt. Anindita Lahiri, Geologist Data Processing Cell, SWID HQ, Kolkata,
6. Mrs. Rose Anita Kujur, Scientist 'D', CGWB,
7. Shri. S. M. Hossain, Scientist 'D', CGWB,
8. Mr. Anirvan Chowdhury, Scientist 'B', CGWB.

In addition, **Working Group for** Dynamic Groundwater Resources Assessment of West Bengal (as on March 31st, 2022) is also formed as mentioned below:

1. Smt. Moumita Sarkar, Assistant Engineer (AI), DPSR DPSR Wing, IPD Circle, SWID
2. Shri. Subhasish Basak, AE (AI), Design Division, SWID
3. Smt. Aparajita Banerjee, Geological Assistant, Geological Sub Div.IID, Howrah.
4. Shri. Debapriya Purkait, Geological Assistant, Geological Sub Div.IIC, Hooghly.
5. Smt. Naseema Jamal, Scientist 'B', CGWB
6. Ms. Zumchillo T Ezung, Scientist 'B', CGWB
7. Dr. Nilamoni Barman, Scientist 'B', CGWB
8. Shri Sandip Bhowal, AHG, CGWB

By Order of the Governor

Sd/-
[Prabhat Kumar Mishra, IAS]
Principal Secretary to the Government of West Bengal

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No. 21/1(3)-WI-13015/1/2022-EIC(WRIDD)-Dept. of WRID Dated Kolkata, the 06/01//2022

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1) The Director, State Water Investigation Directorate. Nirman Bhavan, 3rd Floor, Salt Lake, Kolkata- 700091.
2) The Chief Engineer-I/II, Water Resources Development Directorate
3) The Regional Director, Central Ground Water Board (Eastern Region), "Bhujalika", CP-6, Sector-V, Salt Lake, Kolkata- 700091.

6/1/2022

Engineer-in Chief & *ex-officio* Secretary

No. 21/ 2(4)-WI-13015/1/2022-EIC(WRIDD)-Dept. of WRID Dated Kolkata, the 06/01//2022

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2. The Sr. P.S. to Principal Secretary, WRI&D Department.
3. The Sr. P.S. to Engineer-in-Chief & EO Secretary, WRI&D Department.
4. The Sr. P.S. to Joint Secretary (MI), WRI&D Department.

6/1/2022

Engineer-in Chief & *ex-officio* Secretary

Minutes of the Meeting of
the State Level Ground Water Resource Estimation Committee

Date: 29th August, 2022
Time: 3: 00 P.M. to 4:15 P.M.
Venue: Conference Room, Jalsampad Bhavan, Salt Lake, Kolkata- 700091.
Mode of Meeting: Combination of both Online and Physical mode.

1. The meeting is chaired by Shri Prabhat Kumar Mishra, IAS, Principal Secretary, WRIDD, Govt. of West Bengal and Chairman SLGWREC and is attended by 19 members/ officers, list of which is given as Annexure–I.

2. At the very outset, the Chairman welcomed all the members and apprised the house regarding the agenda of today's meeting.

3. Report of the committee, constituted vide Govt. of West Bengal Notification No. 20-WI-13015/1/2022-EIC (WRIDD)-Dept. Of WRID –Dt. 06.01.2022, on Dynamic Ground Water Resources of West Bengal, for the Assessment year 2021-22 using Ground Water Estimation Methodology- 2015 (GEC-2015) is taken up for discussion.

4. As desired by the Chairman of SLGWREC, report and findings are presented before the committee by Dr. Indranil Roy, Scientist D, Central Ground Water Board, Eastern Region, Kolkata. Discussions held about the methodology adopted for the exercise and computational procedures undertaken for arriving at the final estimates of Ground Water Resources of West Bengal (both Dynamic and Static) and the concomitant categorization of the assessment units. The following are the summary of presentation and subsequent discussions:

    a. All 344 blocks of the State of West Bengal and one (01) urban area as Kolkata Municipal Corporation is assessed in terms of GEC-2015 guidelines. For the first time, assessment of all the 59 coastal blocks and Kolkata Municipal Corporation is done as per the guideline prescribed in GEC 2015 for the confined aquifer as these blocks are having Salinity affect in the shallow aquifer and the fresh aquifers are confined in nature.

    b. Groundwater assessment of total 345 assessment units is carried out for both Dynamic and Static part of the unconfined & confined aquifer.

    c. The major findings of the assessment were as follows:

        i. For Dynamic Groundwater Resources:

1. Annual Replenishable Ground Water Resources is computed to be at 23.60 BCM.
2. The Natural Discharge is pegged at 2.18 BCM.
3. The Net Annual Ground Water Availability stands at 21.41 BCM.

ii. The Annual Gross Ground Water Draft for all uses is computed at 10.06 BCM

iii. The average Stage of Ground Water Extraction (Development) for the entire state is 47.01 %

iv. Out of above mentioned 345 assessed units– 232 are categorized as Safe, 31 as Semi-Critical,22 as Critical and 60 as of poor groundwater quality. There is no Over-Exploited Blocks in the State. List of the Semi-Critical and Critical Blocks are given below.

5. After detailed discussions and deliberations among the members, the Estimate of Dynamic Ground Water Resources of West Bengal as on 31.03.2022, and the concomitant categorization, is unanimously accepted and approved by the State Level Ground Water Resources Estimation Committee (SLGWREC). The RD, CGWB and the Director, SWID were asked to take suitable necessary action accordingly.

6. The meeting ended with thanks from and to the chair.

Summary of Estimation of Dynamic Ground Water Resources of the State of West Bengal as per assessment for the year 2021-2022

Components	Dynamic GW Resource	
	(BCM)	(ham)
Total Ground Water Recharge	**23.60**	**2360611.66**
Provision for Natural Ground Water Discharge	**2.18**	**218854.82**
Net Ground Water Availability	**21.41**	**2141756.84**
Gross Ground Water Draft for All Uses	**10.06**	**1006766.44**
Current Annual GW Draft for Irrigation	8.38	838302.34
Current Annual GW Draft for Domestic	1.54	154474.25
Current Annual GW Draft for Industrial uses	0.14	13989.69
Stage of G.W. Development (%)	***47.01***	
Annual Allocation of GW for Domestic & Industrial Water Supply for 2035	1.76	176310.86
Net GW Availability for 'Future Use'	11.28	1128676.9

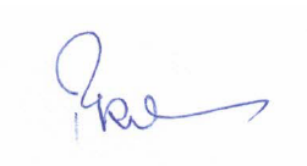
LIST OF BLOCKS CATEGORIZED AS "CRITICAL" AS PER GWRE OF WEST BENGAL, 2021-22

Sl. No.	District	No. of Blocks	Blocks	Category
1	Murshidabad	**1**	RANINAGAR-I	Critical
2	Nadia	**10**	CHAPRA	Critical
3	Nadia		KARIMPUR-I	Critical
4	Nadia		KARIMPUR-II	Critical
5	Nadia		KRISHNAGANJ	Critical
6	Nadia		NABADWIP	Critical
7	Nadia		NAKASHIPARA	Critical
8	Nadia		RANAGHAT-II	Critical
9	Nadia		SANTIPUR	Critical
10	Nadia		TEHATTA-I	Critical
11	Nadia		TEHATTA-II	Critical
12	North 24 Parganas	**6**	BAGDA	Critical
13	North 24 Parganas		BASIRHAT-I	Critical
14	North 24 Parganas		BONGAON	Critical
15	North 24 Parganas		DEGANGA	Critical
16	North 24 Parganas		GAIGHATA	Critical
17	North 24 Parganas		HABRA-I	Critical
18	Purbo Bardhaman	**1**	MANTESWAR	Critical
19	Paschim Bardhaman	**1**	RANIGANJ	Critical
20	Paschim Medinipore	**2**	CHANDRAKONA-II	Critical
21	Paschim Medinipore		GARBETA-I	Critical
22	Dakshin Dinajpur	**1**	HILLI	Critical
	Total	**22**		

LIST OF BLOCKS CATEGORIZED AS "SEMI-CRITICAL"

AS PER GWRE OF WEST BENGAL, 2021-22

Sl. No.	District	No. of Blocks	Blocks	Category
1	Murshidabad	6	BELDANGA-I	Semi-critical
2	Murshidabad		BERHAMPORE	Semi-critical
3	Murshidabad		BHAGAWANGOLA-I	Semi-critical
4	Murshidabad		HARIHARPARA	Semi-critical
5	Murshidabad		MURSHIDABAD JIAGANJ	Semi-critical
6	Murshidabad		NAWDA	Semi-critical
7	Nadia	6	HANSKHALI	Semi-critical
8	Nadia		HARINGHATA	Semi-critical
9	Nadia		KALIGANJ	Semi-critical
10	Nadia		KALYANI	Semi-critical
11	Nadia		KRISHNANAGAR-I	Semi-critical
12	Nadia		KRISHNANAGAR-II	Semi-critical
13	North 24 Parganas	3	BADURIA	Semi-critical
14	North 24 Parganas		BARASAT-I	Semi-critical
15	North 24 Parganas		SWARUPNAGAR	Semi-critical
16	Howrah	1	UDAYNARAYANPUR	Semi-critical
17	Hooghly	3	BALAGARH	Semi-critical
18	Hooghly		GOGHAT-II	Semi-critical
19	Hooghly		SERAMPUR UTTARPARA	Semi-critical
20	Purbo Bardhaman	5	BURDWAN-II	Semi-critical
21	Purbo Bardhaman		KALNA-II	Semi-critical
22	Purbo Bardhaman		MANGOLKOTE	Semi-critical
23	Purbo Bardhaman		MEMARI-I	Semi-critical
24	Purbo Bardhaman		PURBASTHALI-II	Semi-critical
25	Birbhum	1	MAYURESWAR-II	Semi-critical
26	Paschim Medinipore	2	KESHPUR	Semi-critical
27	Paschim Medinipore		KHARAGPUR-II	Semi-critical
28	Dakshin Dinajpur	2	BALURGHAT	Semi-critical
29	Dakshin Dinajpur		KUSHMUNDI	Semi-critical
30	Malda	2	RATUA-II	Semi-critical
31	Malda		KALIACHAK-I	Semi-critical
	Total	31		



Principal Secretary, WRIDD
Govt. of West Bengal &
Chairman, SLGWREC

Annexure – 1

The meeting is held in hybrid mode with 19 participants. Of them 10 people joined in Online mode and 09 people joined physically.

List of participants joined in physical mode

1.	Prabhat Kumar Mishra, Principal Secretary, WRIDD & Chairman, SLC.
2.	Debasish Roy, OSD & Ex-Officio Secretay, WRIDD
3.	Arindam Ghosh, Director, SWID, WRIDD
4.	Dr. Anadi Gayen, Regional Director, CGWB (ER) & Member Secretary, SLC.
5.	Sandhya Yadav, Sc.-E, CGWB (ER)
6.	Dr. Indranil Roy, Sc.-D, CGWB (ER)
7.	Anirvan Chowdhury, Sc.-B, CGWB (ER)
8.	Debatri Bagchi Roy, Senior Geologist, SWID, WRIDD
9.	Anindita Lahiri, Geologist, SWID, WRIDD

List of participants joined Online

1	Representative from Department of MSME and Textile, GoWB
2.	Representative from NABARD, Kolkata
3.	Representative from UD & MA Department, GoWB
4.	S. Halder, EE (AI), WRDD
5.	S. Das, EE (AI), SWID
6.	Moumita Patra, EE (AI), SWID
7.	Moumita Roy Sarkar, AE (AI), SWID
8.	Moumita Patra, EE (AI), SWID
9.	Aparajita Banerjee, GA , SWID
10.	Prasanth Yentapalli, ACH, CGWB, ER

Second Meeting of the

State Level Committee for Re-assessment of Ground Water Resources(As on 31.03.2022) Chaired by Principal Secretary, WRI & DD & I & WD, Govt. of West Bengal, in the Conference Hall of I & WD, on 29.08.2022 at 1500 Hrs

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Members Present

Sl No	Name & Designation	Organization	Mobile No	Email	Signature
1	PRABHAT KUMAR MISHRA Principal Secretary	WRI & DD & I & WD, Govt. of WB			
2	DEBASISH ROY OSD & ex-officio Secretary	WRI & DD Govt. of West Bengal	+68686826	osdsecywrida@gmail.com	
3	Arindam Ghosh. Director, SWID.	WRIDD.	8584807777	directorswid@gmail.com	
4	Sc. Amrita Gayen Regional Director(I/C), CGWB	CGWB	9433588814	amritagayen1968@gmail.com	
5	Sandhya Yadav. Sc-E CGWB, ER, Kolkata	CGWB	9449631287	sandhyanath2018@gmail.com	29/8/22
6	ANIRVAN CHOUDHURY Scientist-'B'(HG) CGWB,	CGWB, ER	9861150546	geoanirvan@yahoo.com	29.8.22
7	Dr. Indranil Roy Sc. D CGWB	CGWB, ER	9433059281	indranil_r@yahoo.com	29/8/22
8	DEBATRI BAGCHI ROY Senior Geologist. SWID(HQ)	SWID	9830700453	geolswiddpc@gmail.com	29/8/22

Second Meeting of the

State Level Committee for Re-assessment of Ground Water Resources(As on 31.03.2022) Chaired by Principal Secretary, WRI & DD & I & WD, Govt. of West Bengal, in the Conference Hall of I & WD, on 29.08.2022 at 1500 Hrs

==========

Members Present

Sl No	Name & Designation	Organization	Mobile No	Email	Signature
9	ANINDITA LAHIRI GEOLOGIST	DP Cell, SWID HQ, Kolkata.	6289001297	geolswiddpcl@gmail.com	
10					
11					
12					
13					
14					
15					

Annexure IV

DYNAMIC GROUND WATER RESOURCES OF INDIA, 2022															
WEST BENGAL															
S.NO	State/Union Territories	Ground Water Recharge					Total Natural Discharges	Annual Extractable Ground Water Resource	Current Annual Ground Water Extraction				Annual GW Allocation for Domestic use as on 2025	Net Ground Water Availability for future use	Stage of Ground Water Extraction (%)
		Monsoon Season		Non-Monsoon Season		Total Annual Ground Water Recharge			Irrigation	Industrial	Domestic	Total			
		Recharge from rainfall	Recharge from other Sources	Recharge from Rainfall	Recharge from other Sources										
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	ALIPURDUAR	39176.38	675.98	8101.02	1907.21	49860.59	4986.05	44874.54	7791.10	163.25	3353.74	11308.09	3688.97	33231.22	25.20
2	BANKURA	105843.00	14120.29	17741.41	21130.80	158835.50	13074.97	145760.53	48584.50	238.01	8546.17	57368.72	8999.24	91450.93	39.36
3	BIRBHUM	78984.21	7807.33	14659.50	79430.82	180881.86	15857.62	165024.24	23619.50	1217.18	8342.68	33179.37	8967.97	131219.58	20.11
4	DAKSHIN DINAJPUR	65491.50	6641.06	13206.67	15885.35	101224.58	10122.46	91102.12	50867.80	168.13	3887.66	54923.58	4075.12	35991.08	60.29
5	DARJILING	34592.39	595.82	6834.32	950.80	42973.33	4297.34	38675.99	2132.70	371.85	3335.13	5839.72	3746.83	32424.57	15.10
6	HAORA	17102.59	993.64	3589.81	1681.48	23367.52	1945.84	21421.68	4536.00	387.50	2627.92	7551.42	3101.44	13548.25	35.25
7	HUGLI	80580.07	35790.08	16644.65	19490.23	152505.03	15151.62	137353.41	47638.60	2067.41	10298.35	60004.35	11034.87	77395.45	43.69
8	JALPAIGURI	58708.42	1208.46	10709.27	2872.78	73498.93	7349.90	66149.03	9650.50	794.42	6112.41	16557.33	8777.43	46926.67	25.03
9	JHARGRAM	70843.49	3456.44	15977.14	6797.39	97074.46	9707.46	87367.01	20429.60	241.52	2760.99	23432.11	2909.92	64992.00	26.82
10	KALIMPONG	3207.91	189.21	515.35	163.95	4076.42	407.64	3668.78	0.00	2.45	62.24	64.68	62.82	3603.52	1.76
11	KOCH BIHAR	145710.25	5899.12	30343.86	18817.39	200770.62	20077.06	180693.56	78238.80	90.28	6803.36	85132.41	7285.72	95078.78	47.11
12	KOLKATTA	-	-	-	-	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	MALDA	78721.96	5954.21	11447.82	12486.80	108610.79	9447.37	99163.42	26905.50	38.41	9989.09	36933.02	11251.12	60968.37	37.24
14	MURSHIDABAD	121846.03	13494.58	27520.69	22521.09	185382.39	14898.91	170483.48	83787.60	123.51	17628.82	101539.92	25470.77	66200.29	59.56
15	NADIA	99124.52	11939.68	22470.15	26189.24	159723.59	15704.69	144018.90	116768.00	452.87	11249.59	128470.48	12202.95	14664.65	89.20
16	NORTH 24 PARGANAS	78984.12	16800.34	19096.05	38767.30	153647.81	13429.73	140218.08	78903.20	837.97	12365.21	92106.38	13828.69	46698.19	65.69
17	PASCHIM BARDDHAMAN	18258.86	1528.06	3681.30	2384.53	25852.75	2585.29	23267.46	852.84	4321.86	4737.50	9912.18	5184.87	13088.74	42.60
18	PASCHIM MEDINIPUR	160309.67	9804.94	28382.86	22747.63	221245.10	20540.63	200704.47	100936.40	1041.88	11570.64	113548.97	12307.79	88367.71	56.58
19	PURBA BARDDHAMAN	123334.55	10961.51	25331.09	20456.46	180083.61	15982.16	164101.45	78180.20	630.02	11150.94	89961.16	11788.78	76024.52	54.82
20	PURBA MEDINIPUR	49237.70	4064.81	9789.26	7998.63	71090.40	7109.06	63981.33	17103.20	7.40	4751.40	21862.03	5247.87	41622.83	34.17
21	PURULIYA	41466.10	8707.62	6429.08	11181.52	67784.32	6778.45	61005.87	2001.20	85.44	7053.92	9140.60	7635.53	51283.63	14.98
22	SOUTH 24 PARGANAS	-	-	-	-	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23	UTTAR DINAJPUR	74423.03	4583.94	11262.64	11852.45	102122.06	9400.57	92721.49	39375.10	708.33	7846.50	47929.92	8742.16	43895.92	51.69
	Total(Ham)	**1545946.75**	**165217.12**	**303733.94**	**345713.85**	**2360611.66**	**218854.82**	**2141756.84**	**838302.34**	**13989.69**	**154474.25**	**1006766.44**	**176310.86**	**1128676.90**	**47.01**
	Total(Bcm)	**15.46**	**1.65**	**3.04**	**3.46**	**23.61**	**2.19**	**21.42**	**8.38**	**0.14**	**1.54**	**10.07**	**1.76**	**11.29**	**47.01**

Annexure-5

CATEGORIZATION OF ASSESSMENT UNITS (2022)				
WEST BENGAL				
S.No	**Name of District**	**Name of Assessment Unit**	**Stage of Ground Water Extraction (%) 2022**	**Categorization**
1	ALIPURDUAR	ALIPURDUAR-I	20.08	Safe
2	ALIPURDUAR	ALIPURDUAR-II	59.05	Safe
3	ALIPURDUAR	FALAKATA	31.75	Safe
4	ALIPURDUAR	KALCHINI	12.46	Safe
5	ALIPURDUAR	KUMARGRAM	19.44	Safe
6	ALIPURDUAR	MADARIHAT	15.34	Safe
7	BANKURA	BANKURA-I	20.53	Safe
8	BANKURA	BANKURA-II	25.27	Safe
9	BANKURA	BARJORA	16.70	Safe
10	BANKURA	CHHATNA	14.54	Safe
11	BANKURA	GANGAJALGHATI	12.46	Safe
12	BANKURA	HIRBANDH	10.62	Safe
13	BANKURA	INDPUR	12.77	Safe
14	BANKURA	INDUS	59.69	Safe
15	BANKURA	JAYPUR	57.61	Safe
16	BANKURA	KHATRA	11.94	Safe
17	BANKURA	KOTULPUR	65.00	Safe
18	BANKURA	MEJHIA	6.51	Safe
19	BANKURA	ONDA	54.53	Safe
20	BANKURA	PATRASAYER	44.84	Safe
21	BANKURA	RAIPUR	51.28	Safe
22	BANKURA	RANIBUNDH	6.57	Safe
23	BANKURA	SALTORA	12.14	Safe
24	BANKURA	SARENGA	43.18	Safe
25	BANKURA	SIMLAPAL	53.01	Safe
26	BANKURA	SONAMUKHI	45.52	Safe
27	BANKURA	TALDANGRA	15.65	Safe
28	BANKURA	VISHNUPUR	60.57	Safe
29	BIRBHUM	BOLPUR SRINIKETAN	18.88	Safe
30	BIRBHUM	DUBRAJPUR	11.55	Safe
31	BIRBHUM	ILLAMBAZAR	57.84	Safe
32	BIRBHUM	KHOYRASOL	55.17	Safe
33	BIRBHUM	LABPUR	33.55	Safe
34	BIRBHUM	MAYURESWAR-I	3.67	Safe
35	BIRBHUM	MAYURESWAR-II	70.82	Semi-Critical
36	BIRBHUM	MOHAMMAD BAZAR	18.51	Safe
37	BIRBHUM	MURARAI-I	37.64	Safe
38	BIRBHUM	MURARAI-II	27.04	Safe
39	BIRBHUM	NALHATI-I	41.26	Safe
40	BIRBHUM	NALHATI-II	13.52	Safe
41	BIRBHUM	NANOOR	22.36	Safe
42	BIRBHUM	RAJNAGAR	12.27	Safe
43	BIRBHUM	RAMPURHAT-I	21.87	Safe
44	BIRBHUM	RAMPURHAT-II	22.94	Safe
45	BIRBHUM	SAINTHIA	34.20	Safe
46	BIRBHUM	SURI-I	30.44	Safe
47	BIRBHUM	SURI-II	23.26	Safe
48	DAKSHIN DINAJPUR	BALURGHAT	72.32	Semi-Critical
49	DAKSHIN DINAJPUR	BANSIHARI	61.04	Safe
50	DAKSHIN DINAJPUR	GANGARAMPUR	54.60	Safe
51	DAKSHIN DINAJPUR	HARIRAMPUR	60.44	Safe
52	DAKSHIN DINAJPUR	HILLI	96.58	Critical

Annexure-5

53	DAKSHIN DINAJPUR	KUMARGANJ	65.83	Safe
54	DAKSHIN DINAJPUR	KUSHMUNDI	72.71	Semi-Critical
55	DAKSHIN DINAJPUR	TAPAN	31.84	Safe
56	DARJILING	DARJEELING PULBAZAR	31.97	Safe
57	DARJILING	JOREBUNGLOW SUKIAR	28.35	Safe
58	DARJILING	KHARIBARI	18.68	Safe
59	DARJILING	KURSEONG	24.02	Safe
60	DARJILING	MATIGARA	18.46	Safe
61	DARJILING	MIRIK	40.25	Safe
62	DARJILING	NAXALBARI	7.81	Safe
63	DARJILING	PHANSIDEWA	11.76	Safe
64	DARJILING	RANGLI RANGLIOT	18.89	Safe
65	HAORA	AMTA-I	24.96	Safe
66	HAORA	AMTA-II	12.86	Safe
67	HAORA	BAGNAN-I	0.00	Saline
68	HAORA	BAGNAN-II	0.00	Saline
69	HAORA	BALLY JAGACHHA	0.00	Saline
70	HAORA	DOMJUR	30.51	Safe
71	HAORA	JAGATBALLAVPUR	26.34	Safe
72	HAORA	PANCHLA	0.00	Saline
73	HAORA	SANKRAIL	0.00	Saline
74	HAORA	SHYAMPUR-I	0.00	Saline
75	HAORA	SHYAMPUR-II	0.00	Saline
76	HAORA	UDAYNARAYANPUR	74.44	Semi-Critical
77	HAORA	ULUBERIA-I	0.00	Saline
78	HAORA	ULUBERIA-II	0.00	Saline
79	HUGLI	ARAMBAG	55.50	Safe
80	HUGLI	BALAGARH	86.68	Semi-Critical
81	HUGLI	CHANDITALA-I	46.48	Safe
82	HUGLI	CHANDITALA-II	32.73	Safe
83	HUGLI	CHINSURAH-MAGRA	61.59	Safe
84	HUGLI	DHANIAKHALI	30.32	Safe
85	HUGLI	GOGHAT-I	31.36	Safe
86	HUGLI	GOGHAT-II	74.96	Semi-Critical
87	HUGLI	HARIPAL	54.74	Safe
88	HUGLI	JANGIPARA	19.36	Safe
89	HUGLI	KHANAKUL-I	57.20	Safe
90	HUGLI	KHANAKUL-II	14.51	Safe
91	HUGLI	PANDUA	51.90	Safe
92	HUGLI	POLBA-DADPUR	34.01	Safe
93	HUGLI	PURSURA	57.75	Safe
94	HUGLI	SERAMPUR UTTARPARA	70.60	Semi-Critical
95	HUGLI	SINGUR	64.62	Safe
96	HUGLI	TARAKESWAR	42.04	Safe
97	JALPAIGURI	BANARHAT	25.21	Safe
98	JALPAIGURI	DHUPGURI	41.91	Safe
99	JALPAIGURI	JALPAIGURI SADAR	40.63	Safe
100	JALPAIGURI	KRANTI	25.70	Safe
101	JALPAIGURI	MAL	22.83	Safe
102	JALPAIGURI	MAYNAGURI	33.45	Safe
103	JALPAIGURI	METIALI	12.70	Safe
104	JALPAIGURI	NAGRAKATA	5.24	Safe
105	JALPAIGURI	RAJGANJ	16.90	Safe
106	JHARGRAM	BINPUR-I	52.18	Safe
107	JHARGRAM	BINPUR-II	5.33	Safe
108	JHARGRAM	GOPIBALLAVPUR-I	61.56	Safe

Annexure-5

109	JHARGRAM	GOPIBALLAVPUR-II	36.91	Safe
110	JHARGRAM	JAMBONI	14.72	Safe
111	JHARGRAM	JHARGRAM	15.81	Safe
112	JHARGRAM	NAYAGRAM	4.25	Safe
113	JHARGRAM	SAKRAIL	61.42	Safe
114	KALIMPONG	GORUBATHAN	1.06	Safe
115	KALIMPONG	KALIMPONG-I	2.66	Safe
116	KALIMPONG	KALIMPONG-II	1.66	Safe
117	KOCH BIHAR	COOCHBEHAR-I	66.36	Safe
118	KOCH BIHAR	COOCHBEHAR-II	25.17	Safe
119	KOCH BIHAR	DINHATA-I	68.86	Safe
120	KOCH BIHAR	DINHATA-II	45.32	Safe
121	KOCH BIHAR	HALDIBARI	42.50	Safe
122	KOCH BIHAR	MATHABHANGA-I	26.86	Safe
123	KOCH BIHAR	MATHABHANGA-II	65.08	Safe
124	KOCH BIHAR	MEKLIGANJ	42.43	Safe
125	KOCH BIHAR	SITAI	54.57	Safe
126	KOCH BIHAR	SITALKUCHI	62.73	Safe
127	KOCH BIHAR	TUFANGANJ-I	25.98	Safe
128	KOCH BIHAR	TUFANGANJ-II	38.80	Safe
129	KOLKATTA	KMC	0.00	Saline
130	MALDA	BAMANGOLA	16.30	Safe
131	MALDA	CHANCHAL-I	46.88	Safe
132	MALDA	CHANCHAL-II	39.54	Safe
133	MALDA	ENGLISH BAZAR	21.84	Safe
134	MALDA	GAZOLE	33.25	Safe
135	MALDA	HABIBPUR	18.05	Safe
136	MALDA	HARISCHANDRAPUR-I	57.46	Safe
137	MALDA	HARISCHANDRAPUR-II	60.67	Safe
138	MALDA	KALIACHAK-I	75.90	Semi-Critical
139	MALDA	KALIACHAK-II	37.01	Safe
140	MALDA	KALIACHAK-III	63.69	Safe
141	MALDA	MANIKCHAK	18.44	Safe
142	MALDA	OLD MALDA	23.09	Safe
143	MALDA	RATUA-I	46.91	Safe
144	MALDA	RATUA-II	72.31	Semi-Critical
145	MURSHIDABAD	BELDANGA-I	73.95	Semi-Critical
146	MURSHIDABAD	BELDANGA-II	55.71	Safe
147	MURSHIDABAD	BERHAMPORE	73.68	Semi-Critical
148	MURSHIDABAD	BHAGAWANGOLA-I	81.89	Semi-Critical
149	MURSHIDABAD	BHAGAWANGOLA-II	69.11	Safe
150	MURSHIDABAD	BHARATPUR-I	49.08	Safe
151	MURSHIDABAD	BHARATPUR-II	17.88	Safe
152	MURSHIDABAD	BURWAN	45.06	Safe
153	MURSHIDABAD	DOMKAL	54.04	Safe
154	MURSHIDABAD	FARAKKA	22.70	Safe
155	MURSHIDABAD	HARIHARPARA	71.64	Semi-Critical
156	MURSHIDABAD	JALANGI	58.34	Safe
157	MURSHIDABAD	KANDI	59.65	Safe
158	MURSHIDABAD	KHARGRAM	55.32	Safe
159	MURSHIDABAD	LALGOLA	61.47	Safe
160	MURSHIDABAD	MURSHIDABAD JIAGANJ	81.61	Semi-Critical
161	MURSHIDABAD	NABAGRAM	66.23	Safe
162	MURSHIDABAD	NAWDA	77.31	Semi-Critical
163	MURSHIDABAD	RAGUNATHGANJ-I	37.77	Safe
164	MURSHIDABAD	RAGUNATHGANJ-II	30.56	Safe

Annexure-5

165	MURSHIDABAD	RANINAGAR-I	95.90	Critical
166	MURSHIDABAD	RANINAGAR-II	57.59	Safe
167	MURSHIDABAD	SAGARDIGHI	65.15	Safe
168	MURSHIDABAD	SAMSERGANJ	38.33	Safe
169	MURSHIDABAD	SUTI-I	33.99	Safe
170	MURSHIDABAD	SUTI-II	55.46	Safe
171	NADIA	CHAKDAH	68.23	Safe
172	NADIA	CHAPRA	97.41	Critical
173	NADIA	HANSKHALI	83.37	Semi-Critical
174	NADIA	HARINGHATA	85.97	Semi-Critical
175	NADIA	KALIGANJ	83.61	Semi-Critical
176	NADIA	KALYANI	70.87	Semi-Critical
177	NADIA	KARIMPUR-I	95.47	Critical
178	NADIA	KARIMPUR-II	91.03	Critical
179	NADIA	KRISHNAGANJ	97.35	Critical
180	NADIA	KRISHNANAGAR-I	86.33	Semi-Critical
181	NADIA	KRISHNANAGAR-II	79.63	Semi-Critical
182	NADIA	NABADWIP	98.70	Critical
183	NADIA	NAKASHIPARA	97.57	Critical
184	NADIA	RANAGHAT-I	62.11	Safe
185	NADIA	RANAGHAT-II	92.83	Critical
186	NADIA	SANTIPUR	97.80	Critical
187	NADIA	TEHATTA-I	96.52	Critical
188	NADIA	TEHATTA-II	96.64	Critical
189	NORTH 24 PARGANAS	AMDANGA	44.14	Safe
190	NORTH 24 PARGANAS	BADURIA	85.30	Semi-Critical
191	NORTH 24 PARGANAS	BAGDA	98.31	Critical
192	NORTH 24 PARGANAS	BARASAT-I	74.80	Semi-Critical
193	NORTH 24 PARGANAS	BARASAT-II	54.91	Safe
194	NORTH 24 PARGANAS	BARRACKPUR-I	31.22	Safe
195	NORTH 24 PARGANAS	BARRACKPUR-II	13.49	Safe
196	NORTH 24 PARGANAS	BASIRHAT-I	93.70	Critical
197	NORTH 24 PARGANAS	BASIRHAT-II	47.03	Safe
198	NORTH 24 PARGANAS	BONGAON	90.09	Critical
199	NORTH 24 PARGANAS	DEGANGA	98.46	Critical
200	NORTH 24 PARGANAS	GAIGHATA	93.91	Critical
201	NORTH 24 PARGANAS	HABRA-I	99.56	Critical
202	NORTH 24 PARGANAS	HABRA-II	54.84	Safe
203	NORTH 24 PARGANAS	HAROA	17.53	Safe
204	NORTH 24 PARGANAS	HASNABAD	0.00	Saline
205	NORTH 24 PARGANAS	HINGALGANJ	0.00	Saline
206	NORTH 24 PARGANAS	MINAKHAN	0.00	Saline
207	NORTH 24 PARGANAS	RAJARHAT	60.36	Safe
208	NORTH 24 PARGANAS	SANDESHKHALI-I	0.00	Saline
209	NORTH 24 PARGANAS	SANDESHKHALI-II	0.00	Saline
210	NORTH 24 PARGANAS	SWARUPNAGAR	78.30	Semi-Critical
211	PASCHIM BARDDHAMAN	ANDAL	19.67	Safe
212	PASCHIM BARDDHAMAN	BARABANI	29.07	Safe
213	PASCHIM BARDDHAMAN	DURGAPUR-FARIDPUR	37.39	Safe
214	PASCHIM BARDDHAMAN	JAMURIA	62.61	Safe
215	PASCHIM BARDDHAMAN	KANKSA	48.90	Safe
216	PASCHIM BARDDHAMAN	PANDABESWAR	15.29	Safe
217	PASCHIM BARDDHAMAN	RANIGANJ	95.16	Critical
218	PASCHIM BARDDHAMAN	SALANPUR	38.69	Safe
219	PASCHIM MEDINIPUR	CHANDRAKONA-I	60.19	Safe
220	PASCHIM MEDINIPUR	CHANDRAKONA-II	92.33	Critical

Annexure-5

221	PASCHIM MEDINIPUR	DANTAN-I	48.00	Safe
222	PASCHIM MEDINIPUR	DANTAN-II	54.50	Safe
223	PASCHIM MEDINIPUR	DASPUR-I	50.21	Safe
224	PASCHIM MEDINIPUR	DASPUR-II	20.05	Safe
225	PASCHIM MEDINIPUR	DEBRA	69.06	Safe
226	PASCHIM MEDINIPUR	GARBETA-I	95.63	Critical
227	PASCHIM MEDINIPUR	GARBETA-II	55.17	Safe
228	PASCHIM MEDINIPUR	GARBETA-III	66.24	Safe
229	PASCHIM MEDINIPUR	GHATAL	49.69	Safe
230	PASCHIM MEDINIPUR	KESHIARY	27.70	Safe
231	PASCHIM MEDINIPUR	KESHPUR	73.09	Semi-Critical
232	PASCHIM MEDINIPUR	KHARAGPUR-I	31.20	Safe
233	PASCHIM MEDINIPUR	KHARAGPUR-II	84.08	Semi-Critical
234	PASCHIM MEDINIPUR	MIDNAPORE	47.68	Safe
235	PASCHIM MEDINIPUR	MOHANPUR	56.72	Safe
236	PASCHIM MEDINIPUR	NARAYANGARH	63.71	Safe
237	PASCHIM MEDINIPUR	PINGLA	53.04	Safe
238	PASCHIM MEDINIPUR	SABANG	60.19	Safe
239	PASCHIM MEDINIPUR	SALBANI	33.59	Safe
240	PURBA BARDDHAMAN	AUSGRAM-I	39.57	Safe
241	PURBA BARDDHAMAN	AUSGRAM-II	33.97	Safe
242	PURBA BARDDHAMAN	BHATAR	53.63	Safe
243	PURBA BARDDHAMAN	BURDWAN-I	39.41	Safe
244	PURBA BARDDHAMAN	BURDWAN-II	84.25	Semi-Critical
245	PURBA BARDDHAMAN	GALSI-I	21.14	Safe
246	PURBA BARDDHAMAN	GALSI-II	27.72	Safe
247	PURBA BARDDHAMAN	JAMALPUR	65.04	Safe
248	PURBA BARDDHAMAN	KALNA-I	52.43	Safe
249	PURBA BARDDHAMAN	KALNA-II	70.64	Semi-Critical
250	PURBA BARDDHAMAN	KATWA-I	48.17	Safe
251	PURBA BARDDHAMAN	KATWA-II	56.25	Safe
252	PURBA BARDDHAMAN	KETUGRAM-I	40.04	Safe
253	PURBA BARDDHAMAN	KETUGRAM-II	22.41	Safe
254	PURBA BARDDHAMAN	KHANDAGHOSH	59.70	Safe
255	PURBA BARDDHAMAN	MANGOLKOTE	70.69	Semi-Critical
256	PURBA BARDDHAMAN	MANTESWAR	91.37	Critical
257	PURBA BARDDHAMAN	MEMARI-I	80.56	Semi-Critical
258	PURBA BARDDHAMAN	MEMARI-II	56.35	Safe
259	PURBA BARDDHAMAN	PURBASTHALI-I	41.83	Safe
260	PURBA BARDDHAMAN	PURBASTHALI-II	87.23	Semi-Critical
261	PURBA BARDDHAMAN	RAINA-I	54.23	Safe
262	PURBA BARDDHAMAN	RAINA-II	63.24	Safe
263	PURBA MEDINIPUR	BHAGAWANPUR-I	9.98	Safe
264	PURBA MEDINIPUR	BHAGAWANPUR-II	50.10	Safe
265	PURBA MEDINIPUR	CONTAI-I	0.00	Saline
266	PURBA MEDINIPUR	CONTAI-II	0.00	Saline
267	PURBA MEDINIPUR	CONTAI-III	0.00	Saline
268	PURBA MEDINIPUR	EGRA-I	54.16	Safe
269	PURBA MEDINIPUR	EGRA-II	33.19	Safe
270	PURBA MEDINIPUR	HALDIA	0.00	Saline
271	PURBA MEDINIPUR	KHEJURI-I	0.00	Saline
272	PURBA MEDINIPUR	KHEJURI-II	0.00	Saline
273	PURBA MEDINIPUR	MAHISADAL	0.00	Saline
274	PURBA MEDINIPUR	MOYNA	13.41	Safe
275	PURBA MEDINIPUR	NANDA KUMAR	0.00	Saline
276	PURBA MEDINIPUR	NANDIGRAM-I	0.00	Saline

Annexure-5

277	PURBA MEDINIPUR	NANDIGRAM-II	0.00	Saline
278	PURBA MEDINIPUR	NANDIGRAM-III	0.00	Saline
279	PURBA MEDINIPUR	PANSKURA-I	16.19	Safe
280	PURBA MEDINIPUR	PANSKURA-II	17.90	Safe
281	PURBA MEDINIPUR	POTASHPUR-I	58.61	Safe
282	PURBA MEDINIPUR	POTASHPUR-II	46.09	Safe
283	PURBA MEDINIPUR	RAMNAGAR-I	0.00	Saline
284	PURBA MEDINIPUR	RAMNAGAR-II	0.00	Saline
285	PURBA MEDINIPUR	SAHID MATANGINI	0.00	Saline
286	PURBA MEDINIPUR	SUTAHATA	0.00	Saline
287	PURBA MEDINIPUR	TAMLUK	0.00	Saline
288	PURULIYA	ARSHA	12.25	Safe
289	PURULIYA	BAGMUNDI	10.61	Safe
290	PURULIYA	BALARAMPUR	11.93	Safe
291	PURULIYA	BARABAZAR	12.03	Safe
292	PURULIYA	BUNDWAN	7.78	Safe
293	PURULIYA	HURA	10.09	Safe
294	PURULIYA	JAIPUR	58.47	Safe
295	PURULIYA	JHALDA-I	20.52	Safe
296	PURULIYA	JHALDA-II	21.21	Safe
297	PURULIYA	KASHIPUR	10.18	Safe
298	PURULIYA	MANBAZAR-I	10.78	Safe
299	PURULIYA	MANBAZAR-II	10.36	Safe
300	PURULIYA	NETURIA	7.58	Safe
301	PURULIYA	PARA	14.25	Safe
302	PURULIYA	PUNCHA	9.85	Safe
303	PURULIYA	PURULIA-I	21.89	Safe
304	PURULIYA	PURULIA-II	14.79	Safe
305	PURULIYA	RAGHUNATHPUR-I	17.55	Safe
306	PURULIYA	RAGHUNATHPUR-II	12.85	Safe
307	PURULIYA	SANTURI	12.18	Safe
308	SOUTH 24 PARGANAS	BARUIPUR	0.00	Saline
309	SOUTH 24 PARGANAS	BASANTI	0.00	Saline
310	SOUTH 24 PARGANAS	BHANGAR-I	0.00	Saline
311	SOUTH 24 PARGANAS	BHANGAR-II	0.00	Saline
312	SOUTH 24 PARGANAS	BISHNUPUR-I	0.00	Saline
313	SOUTH 24 PARGANAS	BISHNUPUR-II	0.00	Saline
314	SOUTH 24 PARGANAS	BUDGE BUDGE-I	0.00	Saline
315	SOUTH 24 PARGANAS	BUDGE BUDGE-II	0.00	Saline
316	SOUTH 24 PARGANAS	CANNING-I	0.00	Saline
317	SOUTH 24 PARGANAS	CANNING-II	0.00	Saline
318	SOUTH 24 PARGANAS	DIAMOND HARBOUR-I	0.00	Saline
319	SOUTH 24 PARGANAS	DIAMOND HARBOUR-II	0.00	Saline
320	SOUTH 24 PARGANAS	FALTA	0.00	Saline
321	SOUTH 24 PARGANAS	GOSABA	0.00	Saline
322	SOUTH 24 PARGANAS	JAYNAGAR-I	0.00	Saline
323	SOUTH 24 PARGANAS	JAYNAGAR-II	0.00	Saline
324	SOUTH 24 PARGANAS	KAKDWIP	0.00	Saline
325	SOUTH 24 PARGANAS	KULPI	0.00	Saline
326	SOUTH 24 PARGANAS	KULTALI	0.00	Saline
327	SOUTH 24 PARGANAS	MAGRAHAT-I	0.00	Saline
328	SOUTH 24 PARGANAS	MAGRAHAT-II	0.00	Saline
329	SOUTH 24 PARGANAS	MANDIRBAZAR	0.00	Saline
330	SOUTH 24 PARGANAS	MATHURAPUR-I	0.00	Saline
331	SOUTH 24 PARGANAS	MATHURAPUR-II	0.00	Saline
332	SOUTH 24 PARGANAS	NAMKHANA	0.00	Saline

Annexure-5

333	SOUTH 24 PARGANAS	PATHARPRATIMA	0.00	Saline
334	SOUTH 24 PARGANAS	SAGAR	0.00	Saline
335	SOUTH 24 PARGANAS	SONARPUR	0.00	Saline
336	SOUTH 24 PARGANAS	THAKURPUKUR MAHES	0.00	Saline
337	UTTAR DINAJPUR	CHOPRA	48.04	Safe
338	UTTAR DINAJPUR	GOALPOKHAR-I	64.42	Safe
339	UTTAR DINAJPUR	GOALPOKHAR-II	65.24	Safe
340	UTTAR DINAJPUR	HEMTABAD	32.35	Safe
341	UTTAR DINAJPUR	ISLAMPUR	69.93	Safe
342	UTTAR DINAJPUR	ITAHAR	39.88	Safe
343	UTTAR DINAJPUR	KALIAGANJ	23.67	Safe
344	UTTAR DINAJPUR	KARANDIGHI	64.17	Safe
345	UTTAR DINAJPUR	RAIGANJ	55.94	Safe

QUALITY PROBLEMS IN ASSESSMENT UNITS, 2022
WEST BENGAL

S.NO	Name of District	S.NO	Name of Assessment Units affected by Fluoride	S.NO	Name of Assessment Units affected by Arsenic	S.NO	Name of Assessment Units affected by Salinity
1	**BANKURA**	1	BANKURA-II				
		2	BARJORA				
		3	CHHATNA				
		4	GANGAJALGHATI				
		5	HIRBANDH				
		6	INDPUR				
		7	RAIPUR				
		8	SALTORA				
		9	SIMLAPAL				
		10	TALDANGRA				
2	**BIRBHUM**	1	DUBRAJPUR				
		2	KHOYRASOL				
		3	MAYURESWAR-I				
		4	NALHATI-I				
		5	RAJNAGAR				
		6	RAMPURHAT-I				
		7	SURI-II				
3	**DAKSHIN DINAJPUR**	1	BANSIHARI	1	BALURGHAT		
		2	GANGARAMPUR				
		3	KUMARGANJ				
		4	KUSHMUNDI				
		5	TAPAN				
4	**HAORA**			1	AMTA-I	1	BAGNAN-I
				2	AMTA-II	2	BAGNAN-II
				3	BALLY JAGACHHA	3	BALLY JAGACHHA
				4	SANKRAIL	4	PANCHLA
				5	ULUBERIA-II	5	SANKRAIL
						6	SHYAMPUR-I
						7	SHYAMPUR-II
						8	ULUBERIA-I
						9	ULUBERIA-II
5	**HUGLI**			1	BALAGARH		
				2	CHANDITALA-II		
				3	DHANIAKHALI		
				4	GOGHAT-I		
				5	HARIPAL		
				6	KHANAKUL-I		
				7	KHANAKUL-II		
				8	PANDUA		
				9	POLBA-DADPUR		
				10	SERAMPUR UTTARPARA		
				11	SINGUR		
6	**KOCH BIHAR**			1	COOCHBEHAR-I		
7	**KOLKATA**					1	KMC
8	**MALDA**	1	BAMANGOLA	1	CHANCHAL-II		
		2	RATUA-II	2	ENGLISH BAZAR		
				3	KALIACHAK-I		
				4	KALIACHAK-II		
				5	KALIACHAK-III		
				6	MANIKCHAK		
				7	RATUA-I		
				8	RATUA-II		
9	**MURSHIDABAD**			1	BELDANGA-I		
				2	BELDANGA-II		
				3	BERHAMPORE		
				4	BHAGAWANGOLA-I		
				5	BHAGAWANGOLA-II		
				6	BHARATPUR-I		
				7	DOMKAL		
				8	FARAKKA		
				9	HARIHARPARA		
				10	JALANGI		
				11	KANDI		
				12	LALGOLA		
				13	MURSHIDABAD JIAGANJ		
				14	NABAGRAM		
				15	NAWDA		
				16	RAGUNATHGANJ-I		

				17	RAGUNATHGANJ-II		
				18	RANINAGAR-I		
				19	RANINAGAR-II		
				20	SAGARDIGHI		
				21	SAMSERGANJ		
				22	SUTI-I		
				23	SUTI-II		
10	**NADIA**			1	CHAKDAH		
				2	CHAPRA		
				3	HANSKHALI		
				4	HARINGHATA		
				5	KALIGANJ		
				6	KARIMPUR-I		
				7	KARIMPUR-II		
				8	KRISHNAGANJ		
				9	KRISHNANAGAR-I		
				10	KRISHNANAGAR-II		
				11	NABADWIP		
				12	NAKASHIPARA		
				13	RANAGHAT-I		
				14	RANAGHAT-II		
				15	SANTIPUR		
				16	TEHATTA-I		
				17	TEHATTA-II		
11	**NORTH 24 PARAGANAS**			1	AMDANGA	1	HASNABAD
				2	BADURIA	2	HINGALGANJ
				3	BAGDA	3	MINAKHAN
				4	BARASAT-I	4	SANDESHKHALI-I
				5	BARASAT-II	5	SANDESHKHALI-II
				6	BARRACKPUR-I		
				7	BARRACKPUR-II		
				8	BASIRHAT-I		
				9	BASIRHAT-II		
				10	BONGAON		
				11	DEGANGA		
				12	GAIGHATA		
				13	HABRA-I		
				14	HABRA-II		
				15	HAROA		
				16	HASNABAD		
				17	HINGALGANJ		
				18	MINAKHAN		
				19	RAJARHAT		
				20	SANDESHKHALI-I		
				21	SANDESHKHALI-II		
				22	SWARUPNAGAR		
12	**PURBA BARDDHAMAN**			1	KALNA-I		
				2	KALNA-II		
				3	KATWA-I		
				4	KATWA-II		
				5	PURBASTHALI-I		
				6	PURBASTHALI-II		
13	**PURBA MEDINIPUR**					1	CONTAI-I
						2	CONTAI-II
						3	CONTAI-III
						4	HALDIA
						5	KHEJURI-I
						6	KHEJURI-II
						7	MAHISADAL
						8	NANDA KUMAR
						9	NANDIGRAM-I
						10	NANDIGRAM-II
						11	NANDIGRAM-III
						12	RAMNAGAR-I
						13	RAMNAGAR-II
						14	SAHID MATANGINI
						15	SUTAHATA
						16	TAMLUK
14	**PURULIYA**	1	ARSHA				
		2	BAGMUNDI				
		3	BALARAMPUR				
		4	BARABAZAR				
		5	HURA				
		6	JAIPUR				

		7	JHALDA-I				
		8	KASHIPUR				
		9	MANBAZAR-I				
		10	NETURIA				
		11	PARA				
		12	PUNCHA				
		13	PURULIA-I				
		14	PURULIA-II				
		15	RAGHUNATHPUR-I				
		16	RAGHUNATHPUR-II				
		17	SANTURI				
15	**SOUTH 24 PARAGANAS**	1	BARUIPUR	1	BARUIPUR	1	BARUIPUR
				2	BHANGAR-I	2	BASANTI
				3	BHANGAR-II	3	BHANGAR-I
				4	BISHNUPUR-I	4	BHANGAR-II
				5	BISHNUPUR-II	5	BISHNUPUR-I
				6	BUDGE BUDGE-II	6	BISHNUPUR-II
				7	JAYNAGAR-I	7	BUDGE BUDGE-I
				8	MAGRAHAT-II	8	BUDGE BUDGE-II
				9	SONARPUR	9	CANNING-I
						10	CANNING-II
						11	DIAMOND HARBOUR-I
						12	DIAMOND HARBOUR-II
						13	FALTA
						14	GOSABA
						15	JAYNAGAR-I
						16	JAYNAGAR-II
						17	KAKDWIP
						18	KULPI
						19	KULTALI
						20	MAGRAHAT-I
						21	MAGRAHAT-II
						22	MANDIRBAZAR
						23	MATHURAPUR-I
						24	MATHURAPUR-II
						25	NAMKHANA
						26	PATHARPRATIMA
						27	SAGAR
						28	SONARPUR
						29	THAKURPUKUR MAHESTALA
16	**UTTAR DINAJPUR**	1	ITAHAR	1	GOALPOKHAR-II		

ASSESSMENT UNIT WISE RESOURCE POSITION

Sl. No	District	Assessment Unit Name	Total Area of Assessment Unit (Ha)	Recharge Worthy Area(Ha)	Recharge from Rainfall-Monsoon Season	Recharge from Other Sources-Monsoon Season	Recharge from Rainfall-Non Monsoon Season	Recharge from Other Sources- Non Monsoon Season	Total Annual Ground Water (Ham) Recharge	Total Natural Discharges (Ham)	Annual Extractable Ground Water Resource (Ham)	Ground Water Extraction for Irrigation Use (Ham)	Ground Water Extraction for Industrial Use (Ham)	Ground Water Extraction for Domestic Use (Ham)	Total Extraction (Ham)	Annual GW Allocation for for Domestic Use as on 2025 (Ham)	Net Ground Water Availability for future use (Ham)
1	ALIPURDUAR	ALIPURDUAR-I	37859	37859	5978.08	101.13	1290.83	256.56	7626.60	762.66	6863.94	868.80	41.40	468.32	1378.52	486.91	5466.83
2	ALIPURDUAR	ALIPURDUAR-II	32872	32872	5190.61	263.30	1120.79	795.43	7370.13	737.01	6633.12	3310.60	20.88	585.44	3916.92	599.15	2702.49
3	ALIPURDUAR	FALAKATA	35398	35398	5589.47	119.92	1206.92	350.27	7266.58	726.66	6539.92	1373.00	17.10	686.40	2076.50	800.99	4348.83
4	ALIPURDUAR	KALCHINI	42024	42024	8294.68	49.93	1432.83	86.08	9863.52	986.35	8877.17	391.50	26.20	688.36	1106.06	777.39	7682.08
5	ALIPURDUAR	KUMARGRAM	51768	51768	8174.36	95.69	1765.06	307.55	10342.66	1034.26	9308.40	1321.90	19.72	468.11	1809.73	532.54	7434.24
6	ALIPURDUAR	MADARIHAT	37676	37676	5949.18	46.01	1284.59	111.32	7391.10	739.11	6651.99	525.30	37.95	457.11	1020.36	491.99	5596.75
7	BANKURA	BANKURA-I	19015	19015	1075.77	674.44	230.62	438.43	2419.26	241.93	2177.33	5.60	8.96	432.35	446.91	449.67	1713.10
8	BANKURA	BANKURA-II	22084	22084	1249.39	800.11	267.84	449.25	2766.59	276.66	2489.93	261.90	11.04	356.34	629.28	377.01	1839.98
9	BANKURA	BARJORA	39323	39323	10454.35	788.06	1498.88	1053.06	13794.35	689.72	13104.63	1648.00	63.90	476.40	2188.29	506.56	10886.18
10	BANKURA	CHHATNA	44747	44747	2531.54	551.23	542.70	578.07	4203.54	420.36	3783.18	20.40	44.16	485.47	550.03	520.60	3198.02
11	BANKURA	GANGAJALGHATI	36647	36647	2073.29	1311.18	444.46	931.27	4760.20	476.02	4284.18	67.60	18.90	447.34	533.84	468.56	3729.12
12	BANKURA	HIRBANDH	19097	19097	1080.40	502.65	231.61	494.87	2309.53	230.96	2078.57	5.60	0.00	215.10	220.70	229.07	1843.90
13	BANKURA	INDPUR	30260	30260	1711.95	707.05	367.00	665.97	3451.97	345.20	3106.77	0.80	1.80	394.06	396.67	416.04	2688.12
14	BANKURA	INDUS	25499	25499	7419.06	833.06	1060.31	1947.34	11259.77	1125.98	10133.79	5625.00	6.72	417.23	6048.95	435.95	4066.12
15	BANKURA	JAYPUR	26382	26382	7465.46	419.83	1066.94	1013.43	9965.66	996.56	8969.10	4778.40	3.85	384.86	5167.11	401.81	5582.02
16	BANKURA	KHATRA	23182	23182	1311.51	377.02	281.16	382.96	2352.65	235.26	2117.39	18.20	0.48	234.10	252.77	236.63	1862.09
17	BANKURA	KOTULPUR	25038	25038	6606.30	426.18	995.96	828.97	8857.41	693.97	8163.44	4871.30	6.93	427.85	5306.08	440.99	3643.64
18	BANKURA	MEJHIA	16287	16287	3159.19	160.42	451.50	215.51	3986.62	398.66	3587.96	0.00	17.40	216.16	233.56	227.83	3342.73
19	BANKURA	ONDA	50246	50246	11045.75	1065.29	1915.24	2189.42	16215.70	810.78	15404.92	7744.90	11.34	643.62	8399.86	682.72	6965.96
20	BANKURA	PATRASAYER	32262	32262	8604.56	329.42	1229.74	995.49	11159.21	1115.92	10043.29	4033.50	12.32	457.21	4503.03	479.88	5517.59
21	BANKURA	RAIPUR	36992	36992	2092.81	781.75	448.65	691.23	4014.44	401.44	3613.00	1437.40	0.09	415.08	1852.58	443.81	1731.69
22	BANKURA	RANIBUNDH	42851	42851	2424.28	1198.59	519.71	1819.53	5962.11	596.21	5365.90	50.00	0.96	301.54	352.51	319.17	4995.76
23	BANKURA	SALTORA	31262	31262	1768.63	701.42	379.15	433.63	3282.83	328.29	2954.54	18.40	3.43	336.78	358.61	353.04	2579.67
24	BANKURA	SARENGA	22378	22378	4177.36	218.30	895.53	516.62	5807.81	580.79	5227.02	1991.60	0.00	265.56	2257.16	278.84	2956.58
25	BANKURA	SIMLAPAL	31015	31015	1978.49	431.27	424.14	550.32	3384.22	299.25	3084.97	1296.00	0.26	338.95	1635.22	363.78	2340.70
26	BANKURA	SONAMUKHI	39685	39685	8949.61	376.95	1512.68	1075.16	11914.40	595.72	11318.68	4710.80	8.91	432.38	5152.09	451.67	6147.30
27	BANKURA	TALDANGRA	34974	34974	7381.52	382.25	1365.23	499.82	9628.82	481.45	9147.37	1051.60	2.88	376.97	1431.46	400.22	7692.66
28	BANKURA	VISHNUPUR	38775	38775	11281.78	1083.82	1612.36	3360.45	17338.41	1733.84	15604.57	8947.50	13.68	490.83	9452.01	515.39	6128.00
29	BIRBHUM	BOLPUR SRINIKETAN	34772	34772	7796.06	575.75	1459.17	1014.89	10845.87	542.29	10303.58	1317.30	4.10	624.19	1945.59	674.05	8308.13
30	BIRBHUM	DUBRAJPUR	36095	36095	6719.21	489.87	1514.69	864.50	9588.27	958.83	8629.44	476.00	2.52	517.81	996.33	548.40	7602.52
31	BIRBHUM	ILLAMBAZAR	26155	26155	5723.79	722.54	1097.57	1932.22	9476.12	473.81	9002.31	4783.70	5.85	417.52	5207.07	451.76	3761.00
32	BIRBHUM	KHOYRASOL	27219	27219	1900.09	473.83	428.33	491.22	3293.47	329.34	2964.13	126.80	1123.50	385.08	1635.38	406.21	1307.62
33	BIRBHUM	LABPUR	26800	26800	7483.37	567.83	1124.64	1250.47	10426.31	1042.63	9383.68	2658.00	0.00	490.17	3148.17	511.93	6213.75
34	BIRBHUM	MAYURESWAR-I	22484	22484	6278.22	567.11	943.52	65833.14	73621.99	7362.20	66259.79	2044.50	3.84	381.31	2429.64	414.41	63797.05
35	BIRBHUM	MAYURESWAR-II	15659	15659	3601.18	525.77	657.11	1271.66	6055.72	302.79	5752.93	3754.50	0.58	319.25	4074.33	336.06	1661.79
36	BIRBHUM	MOHAMMAD BAZAR	31564	31564	2203.41	576.35	496.71	796.06	4072.53	407.26	3665.27	240.70	6.00	431.77	678.47	464.77	2953.80
37	BIRBHUM	MURARAI-I	17130	17130	1195.80	209.09	269.57	353.00	2027.46	202.75	1824.71	249.30	0.13	437.40	686.83	453.35	1121.93
38	BIRBHUM	MURARAI-II	18534	18534	4312.71	251.44	777.77	592.25	5934.17	593.41	5340.76	866.50	0.00	577.48	1443.98	624.79	3849.47
39	BIRBHUM	NALHATI-I	24898	24898	1738.07	291.41	391.81	544.56	2965.85	296.59	2669.26	547.10	0.00	554.28	1101.38	647.57	1474.59
40	BIRBHUM	NALHATI-II	10916	10916	2032.05	116.46	458.08	166.18	2772.77	277.28	2495.49	0.00	0.00	337.41	337.41	364.38	2131.11
41	BIRBHUM	NANOOR	31194	31194	7243.82	389.69	1309.03	818.83	9761.37	488.07	9273.30	1547.30	0.00	526.34	2073.64	547.56	7178.44
42	BIRBHUM	RAJNAGAR	22148	22148	1546.10	260.01	348.53	284.49	2439.13	243.91	2195.22	103.20	0.18	166.08	269.46	195.50	1896.34

Annexure-7

Sl. No	District	Assessment Unit Name	Total Area of Assessment Unit (Ha)	Recharge Worthy Area(Ha)	Recharge from Rainfall-Monsoon Season	Recharge from Other Sources-Monsoon Season	Recharge from Rainfall-Non Monsoon Season	Recharge from Other Sources- Non Monsoon Season	Total Annual Ground Water (Ham) Recharge	Total Natural Discharges (Ham)	Annual Extractable Ground Water Resource (Ham)	Ground Water Extraction for Irrigation Use (Ham)	Ground Water Extraction for Industrial Use (Ham)	Ground Water Extraction for Domestic Use (Ham)	Total Extraction (Ham)	Annual GW Allocation for for Domestic Use as on 2025 (Ham)	Net Ground Water Availability for future use (Ham)
43	BIRBHUM	RAMPURHAT-I	29388	29388	2235.47	330.72	462.46	499.73	3528.38	176.42	3351.96	149.00	0.00	584.14	733.15	628.24	2574.71
44	BIRBHUM	RAMPURHAT-II	18419	18419	3428.76	239.78	772.93	418.18	4859.65	485.96	4373.69	495.00	35.20	473.10	1003.30	515.72	3327.77
45	BIRBHUM	SAINTHIA	31440	31440	8779.00	714.79	1319.35	1422.04	12235.18	1223.52	11011.66	3226.50	0.00	539.26	3765.76	564.58	7220.58
46	BIRBHUM	SURI-I	16412	16412	1145.68	269.91	258.27	359.66	2033.52	203.35	1830.17	161.60	35.28	360.25	557.13	386.69	1246.60
47	BIRBHUM	SURI-II	13582	13582	3621.42	234.98	569.96	517.74	4944.10	247.21	4696.89	872.50	0.00	219.84	1092.35	232.00	3592.38
48	DAKSHIN DINAJPUR	BALURGHAT	37950	37950	11093.76	1154.72	2237.11	2905.90	17391.49	1739.15	15652.34	10455.50	55.60	808.45	11319.55	840.72	4300.52
49	DAKSHIN DINAJPUR	BANSIHARI	19652	19652	5744.79	606.00	1158.46	1440.26	8949.51	894.95	8054.56	4549.40	4.48	362.92	4916.80	386.69	3113.99
50	DAKSHIN DINAJPUR	GANGARAMPUR	32581	32581	9524.27	1039.76	1920.61	2336.24	14820.88	1482.09	13338.79	6523.50	90.44	669.02	7282.96	703.40	6021.45
51	DAKSHIN DINAJPUR	HARIRAMPUR	20484	20484	5988.00	833.92	1207.51	1744.47	9773.90	977.39	8796.51	4996.30	0.00	320.13	5316.43	338.48	3461.73
52	DAKSHIN DINAJPUR	HILLI	9079	9079	2654.03	262.32	535.20	848.06	4299.61	429.96	3869.65	3535.40	1.53	200.41	3737.34	207.21	125.51
53	DAKSHIN DINAJPUR	KUMARGANJ	28663	28663	8378.93	810.88	1689.65	2166.50	13045.96	1304.60	11741.36	7306.40	9.84	413.07	7729.30	430.55	3994.58
54	DAKSHIN DINAJPUR	KUSHMUNDI	31064	31064	9080.81	855.46	1831.19	2316.25	14083.71	1408.37	12675.34	8716.10	0.64	500.00	9216.74	527.70	3430.90
55	DAKSHIN DINAJPUR	TAPAN	44563	44563	13026.91	1078.00	2626.94	2127.67	18859.52	1885.95	16973.57	4785.20	5.60	613.66	5404.46	640.37	11542.40
56	DARJILING	DARJEELING PULBAZAR	42343	8469	1289.35	28.43	207.13	54.03	1578.94	157.90	1421.04	0.00	0.00	454.23	454.24	484.54	936.49
57	DARJILING	JOREBUNGLOW SUKIAPOKHRI	22183	4437	675.50	73.62	108.52	62.33	919.97	92.00	827.97	0.00	0.00	234.71	234.72	291.23	536.73
58	DARJILING	KHARIBARI	14488	14488	5545.75	69.49	1113.66	212.54	6941.44	694.14	6247.30	874.90	21.60	270.39	1166.90	307.06	5043.73
59	DARJILING	KURSEONG	39036	7807	950.85	83.72	190.94	49.28	1274.79	127.48	1147.31	0.00	0.43	275.18	275.61	285.55	861.33
60	DARJILING	MATIGARA	15271	15271	5845.47	110.72	1173.85	175.16	7305.20	730.52	6574.68	111.00	189.15	913.36	1213.51	985.16	5289.37
61	DARJILING	MIRIK	12589	2518	306.68	16.36	61.59	22.06	406.69	40.67	366.02	9.70	5.67	131.95	147.32	138.69	211.96
62	DARJILING	NAXALBARI	18812	18812	7200.90	106.97	1446.04	98.75	8852.66	885.27	7967.39	186.70	92.00	343.83	622.53	492.16	7196.53
63	DARJILING	PHANSIDEWA	31210	31210	11946.64	93.69	2399.05	261.78	14701.16	1470.11	13231.05	950.40	63.00	542.74	1556.15	587.61	11630.03
64	DARJILING	RANGLI RANGLIOT	27299	5460	831.25	12.82	133.54	14.87	992.48	99.25	893.23	0.00	0.00	168.74	168.74	174.83	718.40
65	HAORA	AMTA-I	12365	12365	3690.74	128.22	732.40	238.87	4790.23	479.03	4311.20	604.00	23.40	448.56	1075.96	580.20	3103.60
66	HAORA	AMTA-II	13542	13542	3132.05	251.91	802.12	252.51	4438.59	221.93	4216.66	70.00	0.00	472.28	542.28	512.06	3634.60
67	HAORA	BAGNAN-I	8633	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
68	HAORA	BAGNAN-II	7752	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
69	HAORA	BALLY JAGACHHA	7205	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
70	HAORA	DOMJUR	9730	9730	2904.24	112.96	576.33	188.00	3781.53	378.15	3403.38	0.00	334.00	704.46	1038.46	835.24	2234.14
71	HAORA	JAGATBALLAVPUR	12489	12489	3650.49	151.91	739.74	283.03	4825.17	313.53	4511.64	622.00	28.82	537.72	1188.55	689.24	3323.09
72	HAORA	PANCHLA	5342	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
73	HAORA	SANKRAIL	3664	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
74	HAORA	SHYAMPUR-I	11392	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
75	HAORA	SHYAMPUR-II	10025	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
76	HAORA	UDAYNARAYANPUR	12480	12480	3725.07	348.64	739.22	719.07	5532.00	553.20	4978.80	3240.00	1.28	464.89	3706.17	484.70	1252.82
77	HAORA	ULUBERIA-I	11438	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
78	HAORA	ULUBERIA-II	6298	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
79	HUGLI	ARAMBAG	26932	26932	7368.52	477.65	1492.40	1009.56	10348.13	1034.81	9313.32	4344.00	10.43	814.56	5168.99	858.62	4100.27
80	HUGLI	BALAGARH	20215	20215	5530.77	796.16	1120.19	1882.85	9329.97	932.99	8396.98	6779.90	2.22	496.27	7278.39	556.63	1058.23
81	HUGLI	CHANDITALA-I	9345	9345	2556.77	196.32	517.84	335.62	3606.55	360.66	3245.89	1156.30	8.70	343.56	1508.56	512.74	1568.15
82	HUGLI	CHANDITALA-II	7034	7034	1924.48	111.94	389.78	214.95	2641.15	264.11	2377.04	331.50	111.44	335.12	778.06	356.52	1577.58
83	HUGLI	CHINSURAH-MAGRA	8186	8186	2239.67	153.94	453.61	218.06	3065.28	306.52	2758.76	209.50	650.88	838.79	1699.18	888.54	1009.83
84	HUGLI	DHANIAKHALI	27568	27568	7542.53	792.49	1527.64	1133.35	10996.01	1099.60	9896.41	2157.30	69.60	773.78	3000.68	802.75	6866.76
85	HUGLI	GOGHAT-I	18632	18632	5097.66	547.13	1032.47	6289.38	12966.64	1296.67	11669.97	3312.00	0.88	346.47	3659.35	363.05	7994.04
86	HUGLI	GOGHAT-II	19003	19003	4551.73	312.28	1053.03	826.93	6743.97	575.48	6168.49	4224.00	1.74	398.10	4623.84	417.50	1879.41

Annexure-7

Sl. No	District	Assessment Unit Name	Total Area of Assessment Unit (Ha)	Recharge Worthy Area(Ha)	Recharge from Rainfall-Monsoon Season	Recharge from Other Sources-Monsoon Season	Recharge from Rainfall-Non Monsoon Season	Recharge from Other Sources- Non Monsoon Season	Total Annual Ground Water (Ham) Recharge	Total Natural Discharges (Ham)	Annual Extractable Ground Water Resource (Ham)	Ground Water Extraction for Irrigation Use (Ham)	Ground Water Extraction for Industrial Use (Ham)	Ground Water Extraction for Domestic Use (Ham)	Total Extraction (Ham)	Annual GW Allocation for for Domestic Use as on 2025 (Ham)	Net Ground Water Availability for future use (Ham)
87	HUGLI	HARIPAL	18442	18442	5045.68	485.93	1021.94	837.99	7391.54	739.16	6652.38	2783.50	228.57	629.35	3641.42	661.73	2978.58
88	HUGLI	JANGIPARA	16423	16423	3744.40	20626.08	910.06	873.82	26154.36	2615.44	23538.92	4048.80	4.92	504.52	4558.24	546.62	18938.58
89	HUGLI	KHANAKUL-I	17193	17193	4703.96	455.90	952.73	740.28	6852.87	685.29	6167.58	2880.50	0.00	647.31	3527.81	686.63	2600.45
90	HUGLI	KHANAKUL-II	12184	12184	3333.51	212.80	675.16	324.09	4545.56	454.56	4091.00	123.00	0.00	470.43	593.43	499.22	3468.78
91	HUGLI	PANDUA	27644	27644	7563.32	683.73	1531.85	1313.49	11092.39	1109.25	9983.14	4438.20	11.07	732.21	5181.48	822.36	4711.51
92	HUGLI	POLBA-DADPUR	28569	28569	7816.40	8825.82	1583.11	1596.22	19821.55	1982.16	17839.39	5257.30	168.50	641.31	6067.11	667.41	11746.18
93	HUGLI	PURSURA	10043	10043	2747.74	373.05	556.52	546.55	4223.86	422.39	3801.47	1767.50	2.20	425.79	2195.48	444.71	1587.07
94	HUGLI	SERAMPUR UTTARPARA	4480	4480	1021.43	166.72	248.25	292.40	1728.80	172.88	1555.92	143.30	621.12	334.04	1098.46	342.68	448.82
95	HUGLI	SINGUR	16485	16485	4510.25	262.04	913.49	529.79	6215.57	621.56	5594.01	2359.50	170.52	1084.90	3614.92	1105.41	2387.34
96	HUGLI	TARAKESWAR	11993	11993	3281.25	310.10	664.58	524.90	4780.83	478.09	4302.74	1322.50	4.62	481.83	1808.95	501.75	2473.87
97	JALPAIGURI	BANARHAT	28766	28766	5515.18	67.37	905.48	251.13	6739.16	673.91	6065.25	1224.60	0.00	304.58	1529.19	304.58	4536.06
98	JALPAIGURI	DHUPGURI	27788	27788	4262.14	139.81	874.70	376.05	5652.70	565.27	5087.43	1259.30	20.70	852.22	2132.22	1099.95	2707.48
99	JALPAIGURI	JALPAIGURI SADAR	51362	51362	7877.93	206.16	1616.75	626.66	10327.50	1032.75	9294.75	2493.40	286.67	996.68	3776.75	1370.51	5144.17
100	JALPAIGURI	KRANTI	29509	29509	5657.63	98.53	928.87	250.87	6935.90	693.59	6242.31	941.20	0.00	662.99	1604.19	1522.11	3779.00
101	JALPAIGURI	MAL	25831	25831	5942.96	119.46	813.10	274.89	7150.41	715.04	6435.37	823.40	80.22	565.27	1468.89	777.10	4754.65
102	JALPAIGURI	MAYNAGURI	53060	53060	8138.37	260.20	1670.20	654.73	10723.50	1072.35	9651.15	2382.50	35.91	809.76	3228.17	868.30	6364.44
103	JALPAIGURI	METIALI	20491	20491	3928.65	32.73	645.01	82.56	4688.95	468.90	4220.05	287.00	13.04	236.04	536.08	236.04	3683.97
104	JALPAIGURI	NAGRAKATA	39749	39749	7620.90	123.48	1251.20	102.50	9098.08	909.81	8188.27	110.70	9.04	309.42	429.16	321.78	7746.75
105	JALPAIGURI	RAJGANJ	63663	63663	9764.66	160.72	2003.96	253.39	12182.73	1218.28	10964.45	128.40	348.84	1375.44	1852.68	2277.06	8210.15
106	JHARGRAM	BINPUR-I	35762	35762	8548.00	565.51	1927.81	1281.87	12323.19	1232.33	11090.87	5397.70	1.73	387.87	5787.30	407.10	6490.37
107	JHARGRAM	BINPUR-II	58350	58350	13593.14	149.53	3065.62	258.34	17066.63	1706.67	15359.96	420.80	0.00	397.23	818.03	423.64	14515.52
108	JHARGRAM	GOPIBALLAVPUR-I	27583	27583	6233.01	394.70	1405.71	1181.75	9215.17	921.51	8293.66	4839.70	0.00	265.86	5105.56	281.40	3172.56
109	JHARGRAM	GOPIBALLAVPUR-II	19217	19217	4342.52	412.08	979.36	750.27	6484.23	648.43	5835.80	1884.10	0.00	269.67	2153.77	283.40	3668.30
110	JHARGRAM	JAMBONI	31813	31813	7842.41	586.07	1768.68	772.02	10969.18	1096.92	9872.26	1173.80	0.51	278.44	1452.75	291.06	8406.89
111	JHARGRAM	JHARGRAM	51511	51511	12698.29	485.37	2863.81	852.33	16899.80	1689.98	15209.82	1662.20	229.68	512.63	2404.51	537.42	12780.52
112	JHARGRAM	NAYAGRAM	50144	50144	11331.19	422.43	2555.49	504.07	14813.18	1481.31	13331.87	205.50	0.00	361.77	567.27	383.75	12742.62
113	JHARGRAM	SAKRAIL	27680	27680	6254.93	440.75	1410.66	1196.74	9303.08	930.31	8372.77	4845.80	9.60	287.52	5142.92	302.15	3215.22
114	KALIMPONG	GORUBATHAN	44272	8854	1347.96	64.17	216.55	36.45	1665.13	166.51	1498.62	0.00	2.45	13.46	15.90	13.57	1482.61
115	KALIMPONG	KALIMPONG-I	36962	7392	1125.38	55.77	180.79	58.55	1420.49	142.05	1278.44	0.00	0.00	33.97	33.97	34.32	1244.12
116	KALIMPONG	KALIMPONG-II	24126	4825	734.57	69.27	118.01	68.95	990.80	99.08	891.72	0.00	0.00	14.81	14.81	14.93	876.79
117	KOCH BIHAR	COOCHBEHAR-I	36936	36936	15846.19	877.29	3299.94	2951.41	22974.83	2297.49	20677.34	12817.00	7.80	896.20	13721.00	941.91	6910.63
118	KOCH BIHAR	COOCHBEHAR-II	38538	38538	16533.48	371.13	3443.06	1084.48	21432.15	2143.21	19288.94	3995.90	45.00	813.28	4854.18	947.06	14300.98
119	KOCH BIHAR	DINHATA-I	28422	28422	12193.54	742.09	2539.28	2415.10	17890.01	1789.00	16101.01	10318.90	10.10	758.66	11087.66	795.69	4976.32
120	KOCH BIHAR	DINHATA-II	24698	24698	10595.88	580.10	2206.57	1572.55	14955.10	1495.51	13459.59	5444.00	10.74	644.69	6099.43	696.33	7308.52
121	KOCH BIHAR	HALDIBARI	16288	16288	6987.84	200.07	1455.20	719.58	9362.69	936.27	8426.42	3305.40	0.00	275.50	3580.89	287.33	4833.70
122	KOCH BIHAR	MATHABHANGA-I	32310	32310	13861.56	315.94	2886.64	947.04	18011.18	1801.12	16210.06	3749.40	1.60	602.56	4353.56	644.75	11814.31
123	KOCH BIHAR	MATHABHANGA-II	30999	30999	13299.12	713.79	2769.51	2410.84	19193.26	1919.33	17273.93	10651.20	6.55	584.61	11242.36	623.13	5993.05
124	KOCH BIHAR	MEKLIGANJ	30595	30595	13125.79	400.22	2733.42	1402.39	17661.82	1766.18	15895.64	6337.60	5.52	400.75	6743.87	423.68	9128.84
125	KOCH BIHAR	SITAI	16082	16082	6899.46	345.85	1436.80	1088.54	9770.65	977.06	8793.59	4518.20	0.00	280.22	4798.42	297.01	3978.38
126	KOCH BIHAR	SITALKUCHI	26251	26251	11262.14	531.08	2345.32	1870.57	16009.11	1600.91	14408.20	8573.00	0.00	464.86	9037.86	489.95	5345.25
127	KOCH BIHAR	TUFANGANJ-I	31949	31949	13706.68	419.45	2854.39	1116.42	18096.94	1809.69	16287.25	3593.70	2.94	634.17	4230.80	664.37	12026.25
128	KOCH BIHAR	TUFANGANJ-II	26569	26569	11398.57	402.11	2373.73	1238.47	15412.88	1541.29	13871.59	4934.50	0.03	447.85	5382.38	474.51	8462.55
129	KOLKATTA	KMC	18700	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
130	MALDA	BAMANGOLA	20620	20620	5285.05	250.53	728.82	456.67	6721.07	672.11	6048.96	622.70	2.52	360.57	985.79	379.87	5043.87

Annexure-7

Sl. No	District	Assessment Unit Name	Total Area of Assessment Unit (Ha)	Recharge Worthy Area(Ha)	Recharge from Rainfall-Monsoon Season	Recharge from Other Sources-Monsoon Season	Recharge from Rainfall-Non Monsoon Season	Recharge from Other Sources- Non Monsoon Season	Total Annual Ground Water (Ham) Recharge	Total Natural Discharges (Ham)	Annual Extractable Ground Water Resource (Ham)	Ground Water Extraction for Irrigation Use (Ham)	Ground Water Extraction for Industrial Use (Ham)	Ground Water Extraction for Domestic Use (Ham)	Total Extraction (Ham)	Annual GW Allocation for for Domestic Use as on 2025 (Ham)	Net Ground Water Availability for future use (Ham)
131	MALDA	CHANCHAL-I	16215	16215	4156.02	265.56	573.12	653.17	5647.87	564.79	5083.08	1862.80	0.00	520.16	2382.96	562.46	2657.82
132	MALDA	CHANCHAL-II	20522	20522	4056.12	301.77	725.35	685.07	5768.31	288.41	5479.90	1596.10	0.51	569.88	2166.49	632.21	3251.08
133	MALDA	ENGLISH BAZAR	25185	25185	6455.09	385.55	890.17	710.38	8441.19	844.12	7597.07	602.60	8.70	1047.54	1658.85	1187.37	5798.39
134	MALDA	GAZOLE	31373	31373	8041.12	757.80	1108.88	1575.93	11483.73	1148.37	10335.36	2574.30	1.02	861.25	3436.57	930.39	6829.65
135	MALDA	HABIBPUR	39710	39710	8481.63	1191.90	1403.56	1910.75	12987.84	1298.78	11689.06	1603.80	10.75	495.89	2110.44	527.21	9547.30
136	MALDA	HARISCHANDRAPUR-I	17142	17142	4393.62	210.83	605.89	639.92	5850.26	585.02	5265.24	2478.70	0.00	546.46	3025.16	601.75	2184.79
137	MALDA	HARISCHANDRAPUR-II	21720	21720	5566.99	495.21	767.70	1182.67	8012.57	801.26	7211.31	3658.50	3.24	713.32	4375.07	801.84	2747.72
138	MALDA	KALIACHAK-I	10660	10660	2612.47	305.09	376.78	664.10	3958.44	197.92	3760.52	2010.70	1.28	842.41	2854.39	1108.22	640.32
139	MALDA	KALIACHAK-II	20917	20917	4840.45	302.34	739.32	687.23	6569.34	328.47	6240.87	1859.60	0.00	450.39	2309.99	458.02	3923.25
140	MALDA	KALIACHAK-III	12737	12737	3142.01	249.89	450.19	611.74	4453.83	222.70	4231.13	1766.90	0.00	927.89	2694.79	1050.59	1413.64
141	MALDA	MANIKCHAK	31639	31639	8109.30	234.36	1118.29	429.83	9891.78	989.18	8902.60	881.40	0.00	759.89	1641.29	850.25	7170.95
142	MALDA	OLD MALDA	22800	22800	5214.69	515.92	805.87	987.77	7524.25	376.21	7148.04	1096.30	8.08	546.03	1650.41	651.45	5392.21
143	MALDA	RATUA-I	22517	22517	5771.27	250.85	795.87	676.10	7494.09	749.41	6744.68	2383.50	0.00	780.23	3163.73	876.15	3485.03
144	MALDA	RATUA-II	10129	10129	2596.13	236.61	358.01	615.47	3806.22	380.62	3425.60	1907.60	2.31	567.18	2477.09	633.34	882.35
145	MURSHIDABAD	BELDANGA-I	16875	16875	4486.65	320.11	904.69	724.74	6436.19	643.62	5792.57	3431.00	0.00	852.44	4283.45	943.15	1418.41
146	MURSHIDABAD	BELDANGA-II	20793	20793	4899.69	328.10	1114.74	822.71	7165.24	358.26	6806.98	3125.60	1.92	664.35	3791.87	719.10	2960.36
147	MURSHIDABAD	BERHAMPORE	31419	31419	8353.55	770.96	1684.41	1789.44	12598.36	1259.83	11338.53	6935.20	30.43	1388.99	8354.61	1677.80	2695.11
148	MURSHIDABAD	BHAGAWANGOLA-I	13640	13640	3409.72	167.51	731.26	492.91	4801.40	240.07	4561.33	3176.00	1.92	557.42	3735.34	616.24	767.17
149	MURSHIDABAD	BHAGAWANGOLA-II	14959	14959	3977.24	152.87	801.97	594.19	5526.27	552.63	4973.64	3002.20	6.54	428.68	3437.42	469.54	1495.36
150	MURSHIDABAD	BHARATPUR-I	18372	18372	3256.45	316.29	984.94	730.86	5288.54	528.85	4759.69	1897.40	0.00	438.54	2335.94	464.78	2397.51
151	MURSHIDABAD	BHARATPUR-II	15850	15850	4214.13	294.50	849.74	454.07	5812.44	581.24	5231.20	556.80	0.00	378.63	935.43	384.40	4290.00
152	MURSHIDABAD	BURWAN	27094	27094	7203.64	521.11	1452.54	1192.41	10369.70	1036.98	9332.72	3550.20	0.00	655.02	4205.22	694.82	5087.70
153	MURSHIDABAD	DOMKAL	30519	30519	8114.26	303.17	1636.16	859.32	10912.91	1091.29	9821.62	4361.20	1.92	944.41	5307.53	1011.10	4447.40
154	MURSHIDABAD	FARAKKA	13274	13274	2875.73	130.82	711.64	232.63	3950.82	197.54	3753.28	239.80	12.88	599.37	852.05	830.73	2669.87
155	MURSHIDABAD	HARIHARPARA	25314	25314	6273.43	438.15	1357.11	1243.44	9312.13	465.61	8846.52	5673.00	0.00	664.60	6337.60	709.62	2463.90
156	MURSHIDABAD	JALANGI	12200	12200	3200.89	223.43	654.06	556.45	4634.83	231.75	4403.08	1911.80	0.00	656.93	2568.73	704.26	1787.02
157	MURSHIDABAD	KANDI	22748	22748	4032.10	490.68	1219.55	1063.06	6805.39	680.54	6124.85	3014.80	0.78	637.91	3653.48	673.39	2435.89
158	MURSHIDABAD	KHARGRAM	31845	31845	8466.82	922.92	1707.25	2150.24	13247.23	1324.72	11922.51	5888.80	0.00	706.58	6595.38	755.12	5278.59
159	MURSHIDABAD	LALGOLA	18437	18437	4901.95	211.94	988.43	573.30	6675.62	667.56	6008.06	2750.80	0.39	941.77	3692.96	1051.10	2205.77
160	MURSHIDABAD	MURSHIDABAD JIAGANJ	20862	20862	4551.93	413.10	1118.44	1092.25	7175.72	358.78	6816.94	4773.60	34.08	755.33	5563.01	807.52	1201.74
161	MURSHIDABAD	NABAGRAM	30663	30663	5435.03	543.63	1643.88	1408.07	9030.61	903.06	8127.55	4793.20	4.96	585.04	5383.20	623.57	2705.82
162	MURSHIDABAD	NAWDA	23139	23139	6152.10	360.08	1240.51	1174.51	8927.20	892.72	8034.48	5627.20	1.92	582.08	6211.20	619.86	1785.50
163	MURSHIDABAD	RAGUNATHGANJ-I	9465	9465	1988.04	4660.74	507.43	811.37	7967.58	796.75	7170.83	2090.40	3.84	613.83	2708.08	722.95	4353.63
164	MURSHIDABAD	RAGUNATHGANJ-II	14091	14091	3356.60	105.25	755.44	227.22	4444.51	222.22	4222.29	692.60	5.76	592.00	1290.36	887.63	2636.30
165	MURSHIDABAD	RANINAGAR-I	17107	17107	4543.63	312.14	917.13	859.06	6631.96	331.60	6300.36	5561.40	1.92	478.43	6041.75	554.76	182.28
166	MURSHIDABAD	RANINAGAR-II	17513	17513	4612.39	188.33	938.89	524.80	6264.41	313.22	5951.19	2905.20	1.92	520.12	3427.24	571.08	2472.99
167	MURSHIDABAD	SAGARDIGHI	34520	34520	6616.88	723.15	1850.66	1841.12	11031.81	551.59	10480.22	5971.40	4.17	852.67	6828.24	940.34	3564.31
168	MURSHIDABAD	SAMSERGANJ	9269	9269	2216.51	90.17	496.92	164.41	2968.01	148.40	2819.61	203.60	4.32	872.94	1080.85	1304.81	1306.89
169	MURSHIDABAD	SUTI-I	13884	13884	2604.92	380.90	744.34	675.27	4405.43	220.27	4185.16	830.60	0.00	592.04	1422.64	5690.72	2762.52
170	MURSHIDABAD	SUTI-II	9486	9486	2101.75	124.53	508.56	263.24	2998.08	299.81	2698.27	823.80	3.84	668.70	1496.34	1042.38	828.25
171	NADIA	CHAKDAH	25959	25959	6792.27	791.68	1535.86	1653.04	10772.85	1077.28	9695.57	5836.00	87.10	692.04	6615.14	737.24	3035.23
172	NADIA	CHAPRA	30598	30598	8006.08	973.87	1810.32	2171.45	12961.72	1296.18	11665.54	10602.00	9.56	751.94	11363.50	809.32	244.66
173	NADIA	HANSKHALI	24628	24628	6444.01	791.66	1457.11	1645.17	10337.95	1033.80	9304.15	7121.20	1.66	634.42	7757.28	735.18	1446.11
174	NADIA	HARINGHATA	17033	17033	4456.75	564.36	1007.75	1201.19	7230.05	723.00	6507.05	4930.00	145.98	518.23	5594.21	573.16	857.91

Annexure-7

Sl. No	District	Assessment Unit Name	Total Area of Assessment Unit (Ha)	Recharge Worthy Area(Ha)	Recharge from Rainfall-Monsoon Season	Recharge from Other Sources-Monsoon Season	Recharge from Rainfall-Non Monsoon Season	Recharge from Other Sources- Non Monsoon Season	Total Annual Ground Water (Ham) Recharge	Total Natural Discharges (Ham)	Annual Extractable Ground Water Resource (Ham)	Ground Water Extraction for Irrigation Use (Ham)	Ground Water Extraction for Industrial Use (Ham)	Ground Water Extraction for Domestic Use (Ham)	Total Extraction (Ham)	Annual GW Allocation for for Domestic Use as on 2025 (Ham)	Net Ground Water Availability for future use (Ham)
175	NADIA	KALIGANJ	32091	32091	8396.73	882.26	1898.66	1958.13	13135.78	1313.58	11822.20	9082.80	13.95	788.37	9885.12	868.55	1856.90
176	NADIA	KALYANI	2921	2921	764.29	41.09	172.82	68.44	1046.64	104.67	941.97	0.00	73.20	594.38	667.58	675.90	192.87
177	NADIA	KARIMPUR-I	21578	21578	5645.96	620.30	1276.66	1387.53	8930.45	893.05	8037.40	7250.00	0.64	422.88	7673.52	477.91	308.85
178	NADIA	KARIMPUR-II	22439	22439	5871.25	665.92	1327.60	1477.24	9342.01	934.20	8407.81	7104.80	4.80	544.16	7653.76	573.33	724.88
179	NADIA	KRISHNAGANJ	15159	15159	3966.41	490.45	896.88	1073.30	6427.04	642.71	5784.33	5267.20	7.35	356.66	5631.21	371.05	138.73
180	NADIA	KRISHNANAGAR-I	27319	27319	7148.12	997.37	1616.32	2256.77	12018.58	1201.86	10816.72	8356.00	19.20	962.59	9337.79	1007.49	1434.03
181	NADIA	KRISHNANAGAR-II	12436	12436	3253.93	403.92	735.77	888.10	5281.72	528.18	4753.54	3448.80	2.16	334.21	3785.17	356.71	945.87
182	NADIA	NABADWIP	9739	9739	2548.25	374.78	576.21	798.43	4297.67	429.76	3867.91	3331.20	20.35	465.99	3817.54	535.59	50.37
183	NADIA	NAKASHIPARA	36091	36091	9443.35	1098.34	2135.32	2461.96	15138.97	1513.90	13625.07	12327.20	11.90	954.46	13293.57	1015.38	270.58
184	NADIA	RANAGHAT-I	14553	14553	3559.14	290.50	861.03	643.39	5354.06	267.70	5086.36	2591.60	16.64	550.65	3158.90	646.52	1831.59
185	NADIA	RANAGHAT-II	27903	27903	7300.92	882.74	1650.88	1918.24	11752.78	1175.28	10577.50	8833.60	7.21	978.72	9819.53	1024.71	711.98
186	NADIA	SANTIPUR	17140	17140	4484.75	663.76	1014.08	1424.22	7586.81	758.68	6828.13	5946.00	17.60	714.54	6678.15	759.43	105.09
187	NADIA	TEHATTA-I	24955	24955	6529.57	789.47	1476.46	1757.89	10553.39	1055.34	9498.05	8556.40	3.58	607.69	9167.67	638.20	299.87
188	NADIA	TEHATTA-II	17247	17247	4512.74	617.21	1020.42	1404.75	7555.12	755.52	6799.60	6183.20	9.99	377.65	6570.84	397.28	209.13
189	NORTH 24 PARGANAS	AMDANGA	13928	13928	4125.34	287.00	904.01	729.07	6045.42	604.54	5440.88	1935.00	0.90	465.97	2401.87	487.59	3017.39
190	NORTH 24 PARGANAS	BADURIA	17972	17972	5323.14	653.26	1166.48	1982.45	9125.33	912.53	8212.80	6213.40	0.13	792.30	7005.83	838.89	1160.38
191	NORTH 24 PARGANAS	BAGDA	23347	23347	6915.16	850.96	1515.35	2824.25	12105.72	1210.57	10895.15	10295.40	0.00	415.50	10710.90	433.10	166.65
192	NORTH 24 PARGANAS	BARASAT-I	11404	11404	3377.76	322.53	740.18	790.95	5231.42	523.14	4708.28	1794.00	251.74	1475.97	3521.71	1763.33	899.21
193	NORTH 24 PARGANAS	BARASAT-II	10497	10497	2713.86	826.43	681.31	1721.53	5943.13	297.15	5645.98	2572.40	43.94	483.79	3100.14	506.36	2523.27
194	NORTH 24 PARGANAS	BARRACKPUR-I	9544	9544	1958.74	305.03	619.46	508.39	3391.62	169.58	3222.04	0.00	90.52	915.53	1006.06	916.30	2215.21
195	NORTH 24 PARGANAS	BARRACKPUR-II	38305	38305	7563.72	205.83	2486.21	340.64	10596.40	1059.65	9536.75	9.00	379.61	897.44	1286.05	923.01	8225.13
196	NORTH 24 PARGANAS	BASIRHAT-I	11184	11184	2268.99	553.52	725.90	1477.22	5025.63	251.29	4774.34	4072.40	4.80	396.36	4473.56	416.77	280.37
197	NORTH 24 PARGANAS	BASIRHAT-II	12744	12744	3228.05	880.93	827.16	1799.36	6735.50	336.78	6398.72	2453.20	0.48	555.38	3009.06	614.79	3330.25
198	NORTH 24 PARGANAS	BONGAON	33670	33670	9957.06	1339.37	2185.37	4123.97	17605.77	880.29	16725.48	14336.40	2.64	729.37	15068.41	759.62	1626.82
199	NORTH 24 PARGANAS	DEGANGA	20209	20209	5985.72	895.80	1311.68	2755.10	10948.30	1094.83	9853.47	9079.00	0.00	622.86	9701.87	654.05	120.41
200	NORTH 24 PARGANAS	GAIGHATA	24330	24330	7206.32	1060.86	1579.15	3208.51	13054.84	1305.49	11749.35	10335.60	4.48	693.70	11033.77	768.87	640.41
201	NORTH 24 PARGANAS	HABRA-I	11736	11736	3476.09	461.97	761.73	1443.22	6143.01	614.31	5528.70	4891.00	10.50	602.62	5504.12	652.61	24.58
202	NORTH 24 PARGANAS	HABRA-II	11267	11267	3337.18	264.93	731.29	685.26	5018.66	501.87	4516.79	2054.00	0.09	422.83	2476.92	510.01	1952.69
203	NORTH 24 PARGANAS	HAROA	15273	15273	3015.81	1440.69	991.30	2496.79	7944.59	794.46	7150.13	684.00	9.27	559.92	1253.19	601.35	5855.51
204	NORTH 24 PARGANAS	HASNABAD	15307	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
205	NORTH 24 PARGANAS	HINGALGANJ	23880	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
206	NORTH 24 PARGANAS	MINAKHAN	15882	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
207	NORTH 24 PARGANAS	RAJARHAT	7290	7290	2159.23	504.12	473.16	902.35	4038.86	403.88	3634.98	444.00	38.78	1711.25	2194.03	2329.82	822.38
208	NORTH 24 PARGANAS	SANDESHKHALI-I	18230	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
209	NORTH 24 PARGANAS	SANDESHKHALI-II	19721	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
210	NORTH 24 PARGANAS	SWARUPNAGAR	21513	21513	6371.95	1135.22	1396.31	2958.51	11861.99	1186.20	10675.79	7734.40	0.09	624.40	8358.89	652.22	2289.08
211	PASCHIM BARDDHAMAN	ANDAL	8487	8487	1440.94	81.88	263.82	136.47	1923.11	192.31	1730.80	0.00	34.76	305.69	340.45	323.18	1372.86
212	PASCHIM BARDDHAMAN	BARABANI	27895	27895	4736.06	114.63	867.11	191.04	5908.84	590.89	5317.95	0.00	395.92	1149.95	1545.86	1249.34	3672.70
213	PASCHIM BARDDHAMAN	DURGAPUR-FARIDPUR	31017	31017	1919.94	531.44	421.82	783.33	3656.53	365.66	3290.87	0.00	120.15	1110.20	1230.35	1175.73	1994.99
214	PASCHIM BARDDHAMAN	JAMURIA	24027	24027	3399.46	147.12	746.87	245.19	4538.64	453.87	4084.77	0.00	2082.90	474.63	2557.52	508.40	1493.48
215	PASCHIM BARDDHAMAN	KANKSA	27844	27844	2487.25	287.24	546.46	420.11	3741.06	374.11	3366.95	852.84	396.06	397.54	1646.44	560.63	1738.25
216	PASCHIM BARDDHAMAN	PANDABESWAR	8411	8411	1428.03	87.89	261.45	145.29	1922.66	192.26	1730.40	0.00	0.00	264.62	264.62	288.19	1442.21
217	PASCHIM BARDDHAMAN	RANIGANJ	8327	8327	1413.77	20.39	258.84	33.99	1726.99	172.70	1554.29	0.00	1210.88	268.19	1479.07	280.63	62.78
218	PASCHIM BARDDHAMAN	SALANPUR	23157	23157	1433.41	257.47	314.93	429.11	2434.92	243.49	2191.43	0.00	81.19	766.68	847.87	798.77	1311.47

Annexure-7

Sl. No	District	Assessment Unit Name	Total Area of Assessment Unit (Ha)	Recharge Worthy Area(Ha)	Recharge from Rainfall-Monsoon Season	Recharge from Other Sources-Monsoon Season	Recharge from Rainfall-Non Monsoon Season	Recharge from Other Sources- Non Monsoon Season	Total Annual Ground Water (Ham) Recharge	Total Natural Discharges (Ham)	Annual Extractable Ground Water Resource (Ham)	Ground Water Extraction for Irrigation Use (Ham)	Ground Water Extraction for Industrial Use (Ham)	Ground Water Extraction for Domestic Use (Ham)	Total Extraction (Ham)	Annual GW Allocation for for Domestic Use as on 2025 (Ham)	Net Ground Water Availability for future use (Ham)
219	PASCHIM MEDINIPUR	CHANDRAKONA-I	23760	23760	7022.10	437.44	1178.63	1113.15	9751.32	975.13	8776.19	4880.50	0.00	401.61	5282.11	426.35	3469.34
220	PASCHIM MEDINIPUR	CHANDRAKONA-II	15044	15044	4446.14	381.86	746.27	811.70	6385.97	638.60	5747.37	4953.50	1.02	352.14	5306.66	374.73	418.12
221	PASCHIM MEDINIPUR	DANTAN-I	25707	25707	7597.52	354.30	1275.21	789.89	10016.92	1001.69	9015.23	3907.80	0.57	418.81	4327.18	448.28	4658.58
222	PASCHIM MEDINIPUR	DANTAN-II	18556	18556	5484.09	305.81	920.48	710.08	7420.46	742.05	6678.41	3243.00	0.00	397.00	3640.00	422.40	3013.01
223	PASCHIM MEDINIPUR	DASPUR-I	16829	16829	4973.69	389.28	834.81	671.48	6869.26	686.93	6182.33	2573.30	5.00	525.85	3104.15	561.22	3042.81
224	PASCHIM MEDINIPUR	DASPUR-II	16546	16546	4890.05	424.57	820.77	335.92	6471.31	647.13	5824.18	553.00	2.04	612.59	1167.63	652.65	4616.49
225	PASCHIM MEDINIPUR	DEBRA	34241	34241	10119.68	760.37	1698.55	1730.44	14309.04	1430.90	12878.14	8174.40	10.17	709.30	8893.88	747.25	3946.31
226	PASCHIM MEDINIPUR	GARBETA-I	36187	36187	5347.40	463.35	897.54	1443.87	8152.16	815.22	7336.94	6461.20	1.73	553.08	7016.02	595.04	278.96
227	PASCHIM MEDINIPUR	GARBETA-II	39255	39255	5189.67	430.21	973.63	1046.42	7639.93	381.99	7257.94	3630.40	1.28	372.21	4003.89	392.30	3233.96
228	PASCHIM MEDINIPUR	GARBETA-III	31212	31212	4612.24	295.09	774.15	799.09	6480.57	648.05	5832.52	3456.60	0.30	406.37	3863.27	462.32	2044.04
229	PASCHIM MEDINIPUR	GHATAL	23671	23671	6995.79	636.19	1174.21	936.37	9742.56	974.26	8768.30	3703.50	0.00	653.75	4357.25	691.00	4373.80
230	PASCHIM MEDINIPUR	KESHIARY	29209	29209	8632.51	340.65	1448.93	763.46	11185.55	1118.56	10066.99	2315.80	0.00	473.09	2788.89	498.20	7252.99
231	PASCHIM MEDINIPUR	KESHPUR	48316	48316	14279.44	935.34	2396.74	2773.09	20384.61	2038.46	18346.15	12520.50	1.28	886.79	13408.57	952.84	4871.53
232	PASCHIM MEDINIPUR	KHARAGPUR-I	40396	40396	10669.54	296.98	2003.87	690.11	13660.50	683.03	12977.47	2496.30	719.36	833.27	4048.93	863.93	8897.88
233	PASCHIM MEDINIPUR	KHARAGPUR-II	26563	26563	7448.02	395.51	1250.12	1210.47	10304.12	1030.42	9273.70	7144.90	140.25	512.20	7797.36	540.30	3266.87
234	PASCHIM MEDINIPUR	MIDNAPORE	34200	34200	6343.57	269.27	1597.11	741.57	8951.52	895.15	8056.37	3057.60	11.07	772.88	3841.55	834.99	4152.71
235	PASCHIM MEDINIPUR	MOHANPUR	13749	13749	4063.42	274.61	682.03	537.52	5557.58	555.75	5001.83	2548.30	0.00	288.73	2837.04	308.29	2145.23
236	PASCHIM MEDINIPUR	NARAYANGARH	49949	49949	14762.06	952.60	2477.75	2560.40	20752.81	2075.28	18677.53	11119.50	26.65	752.38	11898.53	794.15	6737.23
237	PASCHIM MEDINIPUR	PINGLA	22448	22448	6634.34	393.59	1113.55	745.01	8886.49	888.65	7997.84	3750.30	0.26	491.86	4242.42	519.95	3727.33
238	PASCHIM MEDINIPUR	SABANG	30500	30500	9014.05	675.31	1512.97	1272.49	12474.82	1247.49	11227.33	6079.00	0.00	679.04	6758.05	715.99	4432.33
239	PASCHIM MEDINIPUR	SALBANI	55339	55339	11784.35	392.61	2605.54	1065.10	15847.60	1065.89	14781.71	4367.00	120.90	477.68	4965.59	505.61	9788.19
240	PURBA BARDDHAMAN	AUSGRAM-I	22234	22234	5636.68	573.67	1036.70	1172.87	8419.92	641.96	7777.96	2721.00	9.65	347.23	3077.88	363.56	4683.75
241	PURBA BARDDHAMAN	AUSGRAM-II	36045	36045	9179.68	666.54	1680.68	1309.25	12836.15	1283.62	11552.53	3447.60	107.80	369.36	3924.75	385.31	7611.83
242	PURBA BARDDHAMAN	BHATAR	41501	41501	7046.11	552.18	1935.08	997.43	10530.80	1053.08	9477.72	4394.00	41.40	647.09	5082.49	676.40	4365.92
243	PURBA BARDDHAMAN	BURDWAN-I	29460	29460	7502.66	399.62	1373.64	751.65	10027.57	1002.76	9024.81	2395.20	196.47	964.85	3556.52	1027.96	5405.18
244	PURBA BARDDHAMAN	BURDWAN-II	18957	18957	4403.44	458.77	883.91	1255.15	7001.27	350.06	6651.21	5242.20	3.35	357.97	5603.52	380.06	1025.60
245	PURBA BARDDHAMAN	GALSI-I	25737	25737	5143.00	543.26	1200.04	526.63	7412.93	370.64	7042.29	1019.00	41.58	427.83	1488.41	478.75	5502.96
246	PURBA BARDDHAMAN	GALSI-II	21909	21909	5579.62	368.79	1021.56	549.33	7519.30	751.93	6767.37	1515.00	3.35	357.42	1875.77	371.67	4877.35
247	PURBA BARDDHAMAN	JAMALPUR	26302	26302	6698.40	854.71	1226.39	1946.17	10725.67	1072.56	9653.11	5557.20	77.50	643.59	6278.29	667.95	5872.51
248	PURBA BARDDHAMAN	KALNA-I	17548	17548	4469.00	589.85	818.21	691.14	6568.20	656.83	5911.37	2541.60	3.00	554.69	3099.28	573.00	2793.78
249	PURBA BARDDHAMAN	KALNA-II	17217	17217	4384.70	432.10	802.78	900.29	6519.87	651.99	5867.88	3761.40	2.67	380.93	4145.00	407.85	1695.96
250	PURBA BARDDHAMAN	KATWA-I	17747	17747	3595.47	264.78	827.49	486.24	5173.98	258.70	4915.28	1778.80	0.00	588.73	2367.52	621.26	2515.23
251	PURBA BARDDHAMAN	KATWA-II	17356	17356	3928.10	285.49	809.26	595.58	5618.43	280.92	5337.51	2658.00	0.00	344.18	3002.19	363.37	2316.13
252	PURBA BARDDHAMAN	KETUGRAM-I	19398	19398	3293.42	375.89	904.47	658.37	5232.15	523.22	4708.93	1470.00	0.00	415.64	1885.64	438.44	2800.49
253	PURBA BARDDHAMAN	KETUGRAM-II	16003	16003	3841.70	374.85	746.18	576.40	5539.13	276.96	5262.17	889.00	0.00	290.51	1179.51	303.18	4069.99
254	PURBA BARDDHAMAN	KHANDAGHOSH	26523	26523	6754.68	507.68	1236.69	1160.77	9659.82	965.99	8693.83	4667.80	57.12	465.73	5190.65	486.83	3482.08
255	PURBA BARDDHAMAN	MANGOLKOTE	36544	36544	7755.63	645.77	1703.94	948.05	11053.39	1105.34	9948.05	6377.00	0.00	655.76	7032.76	689.14	2881.91
256	PURBA BARDDHAMAN	MANTESWAR	30519	30519	5181.57	424.39	1423.02	645.18	7674.16	767.42	6906.74	5727.00	0.00	583.95	6310.95	610.41	569.33
257	PURBA BARDDHAMAN	MEMARI-I	18684	18684	3965.25	525.51	871.18	1073.81	6435.75	643.58	5792.17	4075.00	3.78	587.38	4666.16	613.21	1100.18
258	PURBA BARDDHAMAN	MEMARI-II	20159	20159	3729.13	395.47	939.96	714.03	5778.59	288.93	5489.66	2678.00	47.34	368.14	3093.48	384.20	2380.12
259	PURBA BARDDHAMAN	PURBASTHALI-I	14844	14844	3780.36	395.20	692.13	580.54	5448.23	544.83	4903.40	1580.40	0.00	470.57	2050.97	555.66	2767.34
260	PURBA BARDDHAMAN	PURBASTHALI-II	19247	19247	4901.68	504.47	897.43	1241.72	7545.30	754.54	6790.76	5378.00	0.00	545.37	5923.37	581.03	831.73
261	PURBA BARDDHAMAN	RAINA-I	26607	26607	6776.07	424.48	1240.61	892.62	9333.78	933.38	8400.40	4137.00	3.57	415.27	4555.84	425.61	3834.22
262	PURBA BARDDHAMAN	RAINA-II	22728	22728	5788.20	398.04	1059.74	783.24	8029.22	802.92	7226.30	4170.00	31.44	368.77	4570.21	383.93	2640.93

Annexure-7

Sl. No	District	Assessment Unit Name	Total Area of Assessment Unit (Ha)	Recharge Worthy Area(Ha)	Recharge from Rainfall-Monsoon Season	Recharge from Other Sources-Monsoon Season	Recharge from Rainfall-Non Monsoon Season	Recharge from Other Sources- Non Monsoon Season	Total Annual Ground Water (Ham) Recharge	Total Natural Discharges (Ham)	Annual Extractable Ground Water Resource (Ham)	Ground Water Extraction for Irrigation Use (Ham)	Ground Water Extraction for Industrial Use (Ham)	Ground Water Extraction for Domestic Use (Ham)	Total Extraction (Ham)	Annual GW Allocation for for Domestic Use as on 2025 (Ham)	Net Ground Water Availability for future use (Ham)
263	PURBA MEDINIPUR	BHAGAWANPUR-I	17424	17424	5200.92	274.64	1034.03	456.61	6966.20	696.62	6269.58	0.00	0.39	625.24	625.63	701.78	5567.41
264	PURBA MEDINIPUR	BHAGAWANPUR-II	18020	18020	5378.82	537.40	1069.40	1178.63	8164.25	816.42	7347.83	3192.00	0.39	488.88	3681.28	518.58	3636.85
265	PURBA MEDINIPUR	CONTAI-I	15527	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
266	PURBA MEDINIPUR	CONTAI-II	17030	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
267	PURBA MEDINIPUR	CONTAI-III	16052	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
268	PURBA MEDINIPUR	EGRA-I	19710	19710	5883.27	631.69	1169.69	1530.87	9215.52	921.56	8293.96	4065.00	0.00	427.30	4492.30	454.24	3774.72
269	PURBA MEDINIPUR	EGRA-II	18471	18471	5513.44	314.26	1096.16	713.95	7637.81	763.78	6874.03	1828.00	0.24	453.07	2281.32	479.77	4566.01
270	PURBA MEDINIPUR	HALDIA	6544	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
271	PURBA MEDINIPUR	KHEJURI-I	13051	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
272	PURBA MEDINIPUR	KHEJURI-II	13746	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
273	PURBA MEDINIPUR	MAHISADAL	14648	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
274	PURBA MEDINIPUR	MOYNA	15450	15450	4611.70	582.44	916.88	1038.23	7149.25	714.92	6434.32	287.00	1.08	574.50	862.58	611.35	5534.89
275	PURBA MEDINIPUR	NANDA KUMAR	16570	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
276	PURBA MEDINIPUR	NANDIGRAM-I	18184	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
277	PURBA MEDINIPUR	NANDIGRAM-II	10574	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
278	PURBA MEDINIPUR	NANDIGRAM-III	13758	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
279	PURBA MEDINIPUR	PANSKURA-I	24690	24690.00	7369.76	229.72	1465.23	465.39	9530.10	953.01	8577.09	761.00	1.28	626.05	1388.34	742.97	7071.83
280	PURBA MEDINIPUR	PANSKURA-II	14790	14790.00	4414.69	233.30	877.71	247.13	5772.83	577.28	5195.55	249.80	0.00	680.28	930.08	801.30	4144.45
281	PURBA MEDINIPUR	POTASHPUR-I	17226	17226.00	5141.82	605.29	1022.28	1344.47	8113.86	811.39	7302.47	3856.00	0.00	423.97	4279.97	454.93	2991.54
282	PURBA MEDINIPUR	POTASHPUR-II	19174	19174.00	5723.28	308.47	1137.88	834.53	8004.16	800.42	7203.74	2864.40	4.02	452.11	3320.53	482.95	3852.37
283	PURBA MEDINIPUR	RAMNAGAR-I	13943	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
284	PURBA MEDINIPUR	RAMNAGAR-II	16327	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
285	PURBA MEDINIPUR	SAHID MATANGINI	9782	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
286	PURBA MEDINIPUR	SUTAHATA	7954	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
287	PURBA MEDINIPUR	TAMLUK	12350	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
288	PURULIYA	ARSHA	37504	37504.00	2511.08	326.84	389.33	524.58	3751.83	375.18	3376.65	0.80	0.00	412.68	413.48	447.94	2927.91
289	PURULIYA	BAGMUNDI	42795	42795.00	2865.34	221.68	444.25	350.43	3881.70	388.17	3493.53	6.40	0.00	364.20	370.60	396.82	3090.31
290	PURULIYA	BALARAMPUR	30088	30088.00	2014.54	345.26	312.34	473.38	3145.52	314.55	2830.97	4.00	0.00	333.86	337.86	358.22	2468.75
291	PURULIYA	BARABAZAR	41806	41806.00	2799.12	384.41	433.99	569.07	4186.59	418.66	3767.93	21.20	0.00	432.22	453.42	461.84	3284.89
292	PURULIYA	BUNDWAN	35125	35125.00	2351.79	277.19	364.63	326.84	3320.45	332.05	2988.40	7.60	0.00	224.80	232.41	243.68	2737.11
293	PURULIYA	HURA	38221	38221.00	2559.09	521.36	396.77	608.73	4085.95	408.60	3677.35	12.80	0.00	358.35	371.16	376.91	3287.63
294	PURULIYA	JAIPUR	23047	23047.00	1543.11	654.34	239.25	973.91	3410.61	341.07	3069.54	1466.80	0.00	327.82	1794.63	363.13	1239.60
295	PURULIYA	JHALDA-I	31509	31509.00	2109.69	373.84	327.09	478.39	3289.01	328.90	2960.11	231.60	0.00	375.69	607.30	413.40	2315.10
296	PURULIYA	JHALDA-II	25661	25661.00	1718.13	394.92	266.39	522.81	2902.25	290.23	2612.02	190.50	0.00	363.55	554.05	404.37	2017.15
297	PURULIYA	KASHIPUR	45131	45131.00	3021.75	681.37	468.50	721.42	4893.04	489.30	4403.74	1.50	1.04	445.85	448.39	458.27	3942.93
298	PURULIYA	MANBAZAR-I	38132	38132.00	2553.13	479.41	395.85	597.53	4025.92	402.59	3623.33	1.50	0.00	389.15	390.65	430.35	3191.48
299	PURULIYA	MANBAZAR-II	28581	28581.00	1913.64	240.55	296.70	296.27	2747.16	274.72	2472.44	10.50	0.00	245.56	256.06	259.69	2202.25
300	PURULIYA	NETURIA	20365	20365.00	1363.54	1057.35	211.41	1573.44	4205.74	420.58	3785.16	19.00	36.96	230.97	286.94	244.22	3484.97
301	PURULIYA	PARA	31259	31259.00	2092.95	682.11	324.50	596.40	3695.96	369.60	3326.36	1.00	1.76	471.29	474.05	550.57	2773.03
302	PURULIYA	PUNCHA	33011	33011.00	2210.25	471.63	342.69	533.13	3557.70	355.77	3201.93	1.00	0.00	314.51	315.51	333.32	2867.61
303	PURULIYA	PURULIA-I	28150	28150.00	1884.78	278.91	292.23	429.89	2885.81	288.58	2597.23	3.50	2.40	562.51	568.42	596.39	1994.93
304	PURULIYA	PURULIA-II	31010	31010.00	2076.27	377.02	321.91	522.91	3298.11	329.81	2968.30	6.50	14.40	418.11	439.01	460.82	2486.58
305	PURULIYA	RAGHUNATHPUR-I	20182	20182.00	1351.29	199.42	209.51	272.92	2033.14	203.31	1829.83	2.00	3.08	316.00	321.08	334.79	1489.96
306	PURULIYA	RAGHUNATHPUR-II	19767	19767.00	1323.50	525.43	205.20	555.69	2609.82	260.98	2348.84	12.00	6.00	283.93	301.94	301.50	2029.33

Annexure-7

Sl. No	District	Assessment Unit Name	Total Area of Assessment Unit (Ha)	Recharge Worthy Area(Ha)	Recharge from Rainfall-Monsoon Season	Recharge from Other Sources-Monsoon Season	Recharge from Rainfall-Non Monsoon Season	Recharge from Other Sources- Non Monsoon Season	Total Annual Ground Water (Ham) Recharge	Total Natural Discharges (Ham)	Annual Extractable Ground Water Resource (Ham)	Ground Water Extraction for Irrigation Use (Ham)	Ground Water Extraction for Industrial Use (Ham)	Ground Water Extraction for Domestic Use (Ham)	Total Extraction (Ham)	Annual GW Allocation for for Domestic Use as on 2025 (Ham)	Net Ground Water Availability for future use (Ham)
307	PURULIYA	SANTURI	17969	17969.00	1203.11	214.58	186.54	253.78	1858.01	185.80	1672.21	1.00	19.80	182.84	203.64	199.30	1452.11
308	SOUTH 24 PARGANAS	BARUIPUR	23566	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
309	SOUTH 24 PARGANAS	BASANTI	40421	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
310	SOUTH 24 PARGANAS	BHANGAR-I	15362	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
311	SOUTH 24 PARGANAS	BHANGAR-II	16204	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
312	SOUTH 24 PARGANAS	BISHNUPUR-I	11636	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
313	SOUTH 24 PARGANAS	BISHNUPUR-II	8171	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
314	SOUTH 24 PARGANAS	BUDGE BUDGE-I	4394	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
315	SOUTH 24 PARGANAS	BUDGE BUDGE-II	7801	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
316	SOUTH 24 PARGANAS	CANNING-I	18787	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
317	SOUTH 24 PARGANAS	CANNING-II	21493	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
318	SOUTH 24 PARGANAS	DIAMOND HARBOUR-I	8061	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
319	SOUTH 24 PARGANAS	DIAMOND HARBOUR-II	9447	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
320	SOUTH 24 PARGANAS	FALTA	13068	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
321	SOUTH 24 PARGANAS	GOSABA	29673	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
322	SOUTH 24 PARGANAS	JAYNAGAR-I	13686	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
323	SOUTH 24 PARGANAS	JAYNAGAR-II	18625	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
324	SOUTH 24 PARGANAS	KAKDWIP	25274	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
325	SOUTH 24 PARGANAS	KULPI	21085	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
326	SOUTH 24 PARGANAS	KULTALI	30618	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
327	SOUTH 24 PARGANAS	MAGRAHAT-I	11904	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
328	SOUTH 24 PARGANAS	MAGRAHAT-II	13693	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
329	SOUTH 24 PARGANAS	MANDIRBAZAR	11235	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
330	SOUTH 24 PARGANAS	MATHURAPUR-I	14730	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
331	SOUTH 24 PARGANAS	MATHURAPUR-II	22745	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
332	SOUTH 24 PARGANAS	NAMKHANA	37062	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
333	SOUTH 24 PARGANAS	PATHARPRATIMA	48448	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
334	SOUTH 24 PARGANAS	SAGAR	28211	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
335	SOUTH 24 PARGANAS	SONARPUR	15175	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
336	SOUTH 24 PARGANAS	THAKURPUKUR MAHESTALA	10726	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
337	UTTAR DINAJPUR	CHOPRA	48082	48082	10338.89	314.58	1696.08	1015.87	13365.42	1336.54	12028.88	4536.74	448.14	793.47	5778.35	894.25	6149.75
338	UTTAR DINAJPUR	GOALPOKHAR-I	36511	36511	7850.82	547.73	1287.92	1506.88	11193.35	1119.34	10074.01	5487.06	49.96	952.53	6489.55	1101.92	3435.07
339	UTTAR DINAJPUR	GOALPOKHAR-II	29869	29869	6422.62	385.38	1053.62	1151.80	9013.42	901.34	8112.08	4454.22	0.00	838.51	5292.72	950.92	2706.95
340	UTTAR DINAJPUR	HEMTABAD	19182	19182	4344.93	235.39	676.64	545.11	5802.07	290.11	5511.96	1389.00	15.96	378.00	1782.97	409.83	3697.16
341	UTTAR DINAJPUR	ISLAMPUR	32944	32944	7083.82	338.76	1162.09	1137.78	9722.45	972.25	8750.20	5069.06	96.04	953.87	6118.97	1067.25	2517.85
342	UTTAR DINAJPUR	ITAHAR	36240	36240	11688.83	800.20	1278.36	1802.66	15570.05	1557.00	14013.05	4731.00	50.76	806.73	5588.49	885.74	8345.55
343	UTTAR DINAJPUR	KALIAGANJ	30190	30190	8143.89	391.63	1064.95	830.33	10430.80	521.54	9909.26	1702.50	5.76	637.36	2345.62	669.33	7531.67
344	UTTAR DINAJPUR	KARANDIGHI	39052	39052	8397.20	785.87	1377.55	1959.54	12520.16	1252.02	11268.14	6116.28	21.91	1092.85	7231.03	1265.69	3864.27
345	UTTAR DINAJPUR	RAIGANJ	47213	47213	10152.03	784.40	1665.43	1902.48	14504.34	1450.43	13053.91	5889.24	19.80	1393.19	7302.22	1497.23	5647.65
Total (Ham)			**8175625**	**7976577**	**1545946.75**	**165217.12**	**303733.94**	**345713.85**	**2360611.66**	**218854.82**	**2141756.84**	**838302.34**	**13989.69**	**154474.25**	**1006766.44**	**176310.86**	**1128676.9**
Total (Bcm)					**15.46**	**1.65**	**3.04**	**3.46**	**23.61**	**2.19**	**21.42**	**8.38**	**0.14**	**1.54**	**10.07**	**1.76**	**11.29**