



## केंद्रीय भूमि जल बोर्ड

जल संसाधन, नदी विकास और गंगा संरक्षण

विभाग, जल शक्ति मंत्रालय

भारत सरकार

### **Central Ground Water Board**

Department of Water Resources, River  
Development and Ganga Rejuvenation,  
Ministry of Jal Shakti  
Government of India

## **AQUIFER MAPPING AND MANAGEMENT OF GROUND WATER RESOURCES PAPPIREDDIPATTY FIRKA, DHARMAPURI DISTRICT, TAMIL NADU**

दक्षिण पूर्वी तटीय क्षेत्र, चेन्नई

South Eastern Coastal Region, Chennai

**REPORT ON AQUIFER DISPOSITION & MANAGEMENT PLAN**  
**PAPPIREDDIPATTY FIRKA,**  
**DHARMAPURI DISTRICT, TAMIL NADU STATE**

**SALIENT FEATURES**

1	Name of the Firka/ Area (Sq.Km.) Revenue Division Location	:	PAPPIREDDIPATTY Pappireddipatti	129.04 Sq.km
			Lat :	
			Long :	
2	Number of Revenue Villages	:	25	
3	District	State	: Dharmapuri	TAMIL NADU
4	Population (2011 Census)	:	49381	
5	Normal Rainfall (mm)	:	<b>923.98</b>	
			Monsoon	756.42
			Non-monsoon	167.56
6	Agriculture (2012-13) (Ha)	:	1. Gross Irrigated Area	4634.89
			2. Paddy	1007.95
			3. Sugar cane	1213.02
			4. Banana	83.99
			5. Other Crops	2304.5
			6. Groundwater	4129.5
			7. Surface Water	505.39
7	Existing and future water demands (ham)	:	Domestic & Industrial	130.45 MCM
			Existing	141.16
			Future (year 2025)	160.45
8	Water Level Behaviour (mbgl)	:	Pre-monsoon (m.bgl)	3.5 – 17.89
			Post-monsoon (m.bgl)	2.4 – 16.5

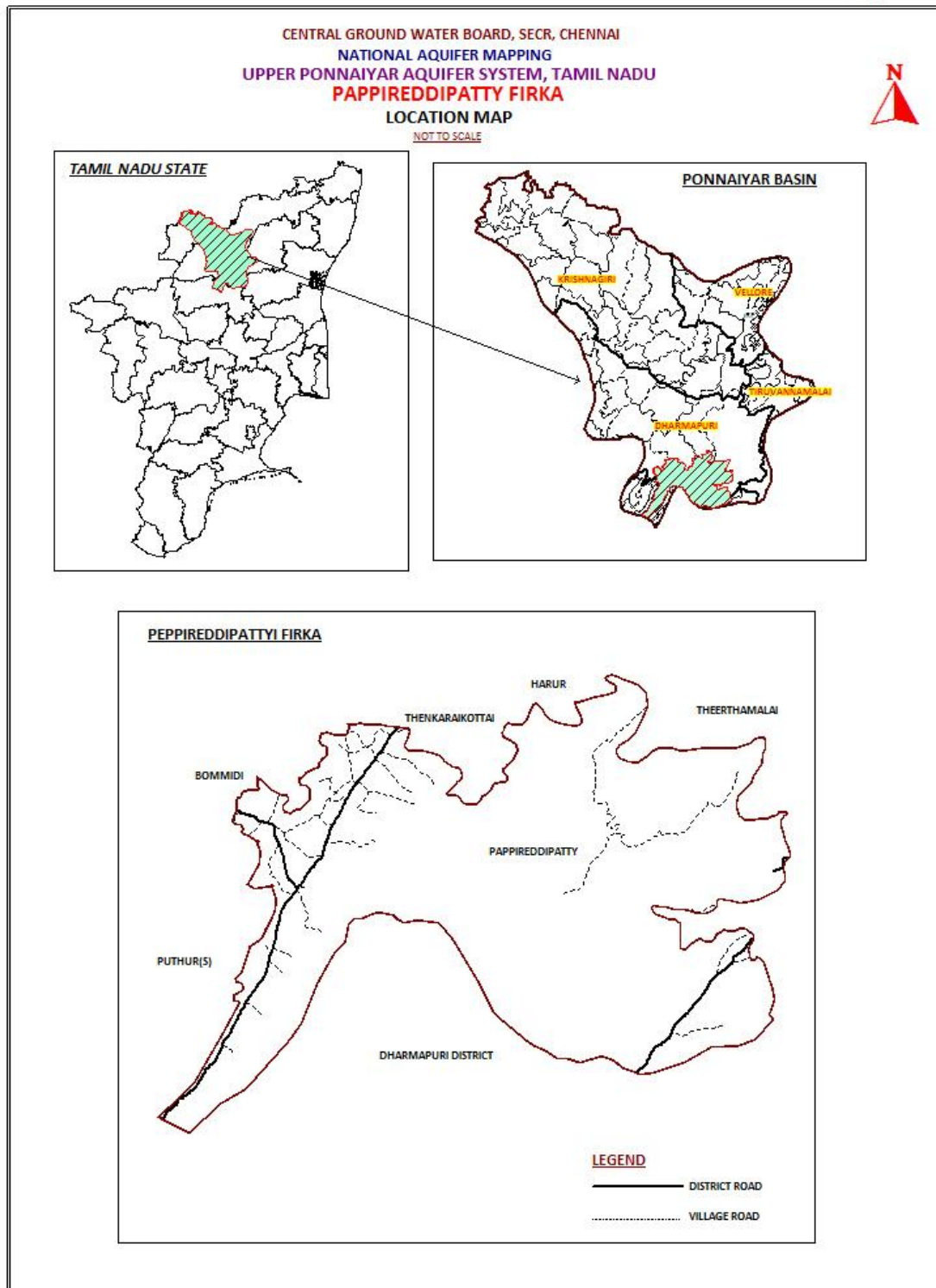
**AQUIFER DISPOSITION**

9	Number of Aqifers	:	2
10	3D Aquifer disposition and basic characteristics of each Aquifer	:	Geology- Charnockite and Hornblende biotite gneiss
			<b>Aquifer I (Weathered Zone)</b>
			Thickness varies from 3.25 – 17.2 m

	Transmissivity (T):	2.3 – 45 m <sup>2</sup> /day													
	Specific Yield (Sy):	0.09 to 12 %													
	<b>Aquifer II (Fractured Zone)</b>														
	Depth of fracturing varies from	17.2 – 244.2 m													
	Transmissivity (T):	12 – 98.7 m <sup>2</sup> /day													
	Specific Storage (S):	0.00001-0.02													
	Cumulative Yield (Aqifer I & II):	0.2 – 1.5 lps													
11	Groundwater Issues	:	<ul style="list-style-type: none"> <li>• Geogenic contamination by Fluoride.</li> <li>• Sustainability of wells (1-2 hrs).</li> </ul>												
12	Groundwater Resource Availability and Extraction (2012-13)	:	<table border="0"> <tbody> <tr> <td>Net Groundwater availability:</td> <td>16.4546 MCM</td> </tr> <tr> <td>Gross Groundwater draft for irrigation:</td> <td>16.3324 MCM</td> </tr> <tr> <td>Gross Groundwater draft for domestic &amp; industrial supply:</td> <td>1.4116 MCM</td> </tr> <tr> <td>Gross Groundwater draft:</td> <td>17.7440 MCM</td> </tr> <tr> <td>Stage of Groundwater development:</td> <td>108 %</td> </tr> <tr> <td>Category:</td> <td>Over Exploited</td> </tr> </tbody> </table>	Net Groundwater availability:	16.4546 MCM	Gross Groundwater draft for irrigation:	16.3324 MCM	Gross Groundwater draft for domestic & industrial supply:	1.4116 MCM	Gross Groundwater draft:	17.7440 MCM	Stage of Groundwater development:	108 %	Category:	Over Exploited
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14	Chemical Quality of Groundwater, Contamination and its suitability	:	<table border="0"> <thead> <tr> <th></th> <th>Min</th> <th>Max</th> </tr> </thead> <tbody> <tr> <td>EC (µS/cm)</td> <td>870</td> <td>1150</td> </tr> <tr> <td>No<sub>3</sub> (mg/l)</td> <td>2</td> <td>51</td> </tr> <tr> <td>F (mg/l)</td> <td>0.7</td> <td>1.61</td> </tr> </tbody> </table>		Min	Max	EC (µS/cm)	870	1150	No <sub>3</sub> (mg/l)	2	51	F (mg/l)	0.7	1.61
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<b>15</b>	<b>Groundwater Recharge Scenario</b>														
15.1	Recharge from Rainfall (Monsoon)		6.1927 MCM												
15.2	Recharge from Other Sources (Monsoon)		8.6089 MCM												

15.3	Recharge from Rainfall (Non-monsoon)	1.7147 MCM
15.4	Recharge from Other Sources (Non-monsoon)	1.7667 MCM
15.5	Total Annual Groundwater Recharge	18.2829 MCM
15.6	Natural Discharge	1.8283 MCM
15.7	Improving Water Efficiency /Saving (Micro irrigation system for 100 ha)	0.7 MCM
15.8	Excepted groundwater recharge	3.994 MCM
15.9	Excepted total groundwater recharge/saving	4.667 MCM
15.10	Expected raise in water level by recharging/saving	1.26 m

Fig -



**Fig-2(a-d): 3 D map and Sections – Pappireddipatti Firka, Dharmapuri District.**

