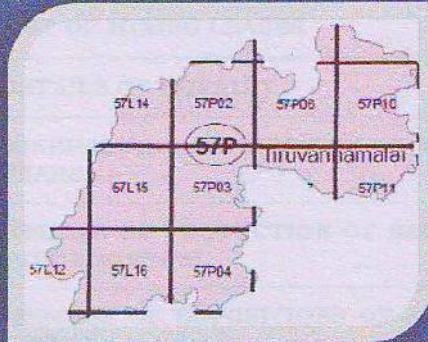
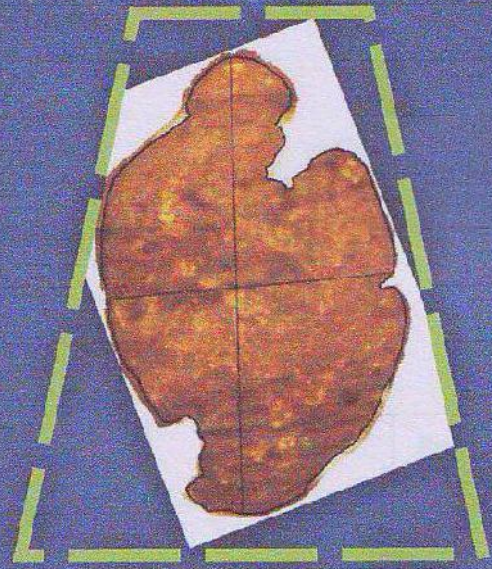
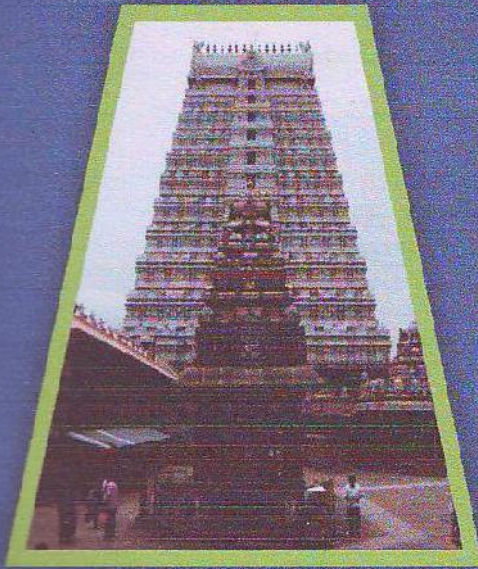


DISTRICT MINERAL SURVEY REPORT TIRUVANNAMALAI DISTRICT




Dinnalvar River




GEOLOGICAL SURVEY OF INDIA
SU: TAMIL NADU & PUDUCHERRY
CHENNAI - 33

MARCH - 2019

GOVERNMENT OF TAMIL NADU
DEPARTMENT OF GEOLOGY &
MINING, TIRUVANNAMALAI


Assistant Director
Dept. of Geology & Mining
Tiruvannamalai District.


COLLECTOR,
Tiruvannamalai District
Tiruvannamalai.

**DISTRICT MINERAL SURVEY REPORT
TIRUVANNAMALAI DISTRICT**

by

**Geological Survey of India
State Unit : Tamil Nadu & Puducherry
Chennai**

in collaboration with

**Government of Tamil Nadu
Department of Geology & Mining
Tiruvannamalai**

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1. INTRODUCTION

Geologically Tiruvannamalai District mainly comprises of rocks of Archaeon age. The type of rocks found in the district are Charnockite, Granitic gneiss, Epidote Hornblende Gneiss, Amphibolite, Pyroxenite, Dunite, Migmatites, Banded Magnetite Quartzite, Shale and Clay. Dolerite dykes (Black Granite) are also noticed cutting across the country rocks.

The need of the minor minerals particularly for infrastructural development of Individuals as well as for the Government is increasing day by day rapidly, accordingly the mining of minor minerals, is also developing vigorously. However, each entity looking for a good environment for their habitat.

To assure the same a committee named **DEIAA** (District Level Environment Impact Assessment Authority) is formed, principally for a safe and careful minor mineral mining without leaving any major impact to the environment. With the objective to generate the “District Survey Report” for Tiruvannamalai District a twenty one days collaborative field work was carried out by Geological Survey of India, State Unit: Tamil Nadu & Puducherry, and Dept. of Geology and Mining, Tiruvannamalai District to locate minor minerals, along with mining activities in the district.

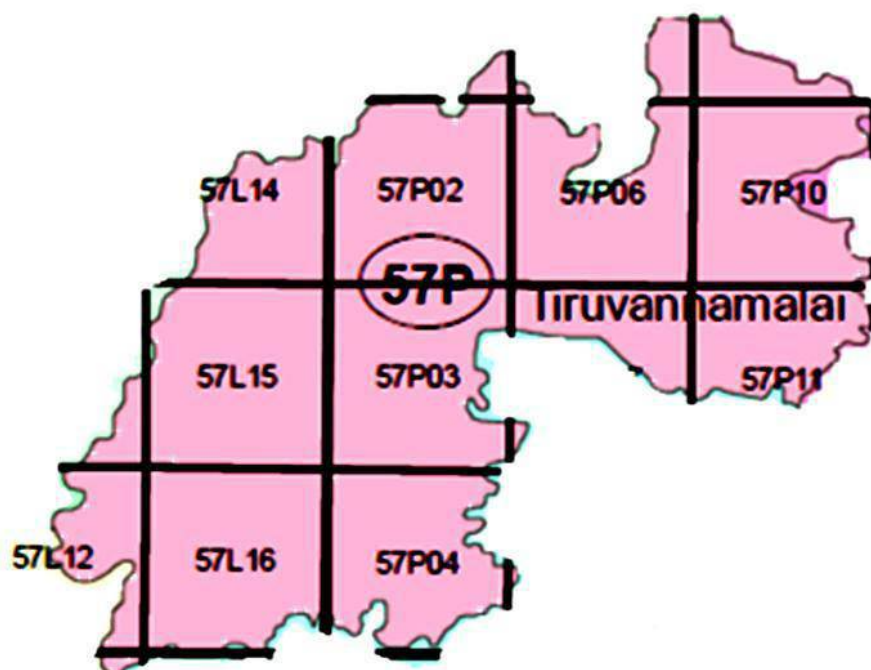


Fig.1.1 Toposheet in Tiruvannamalai District

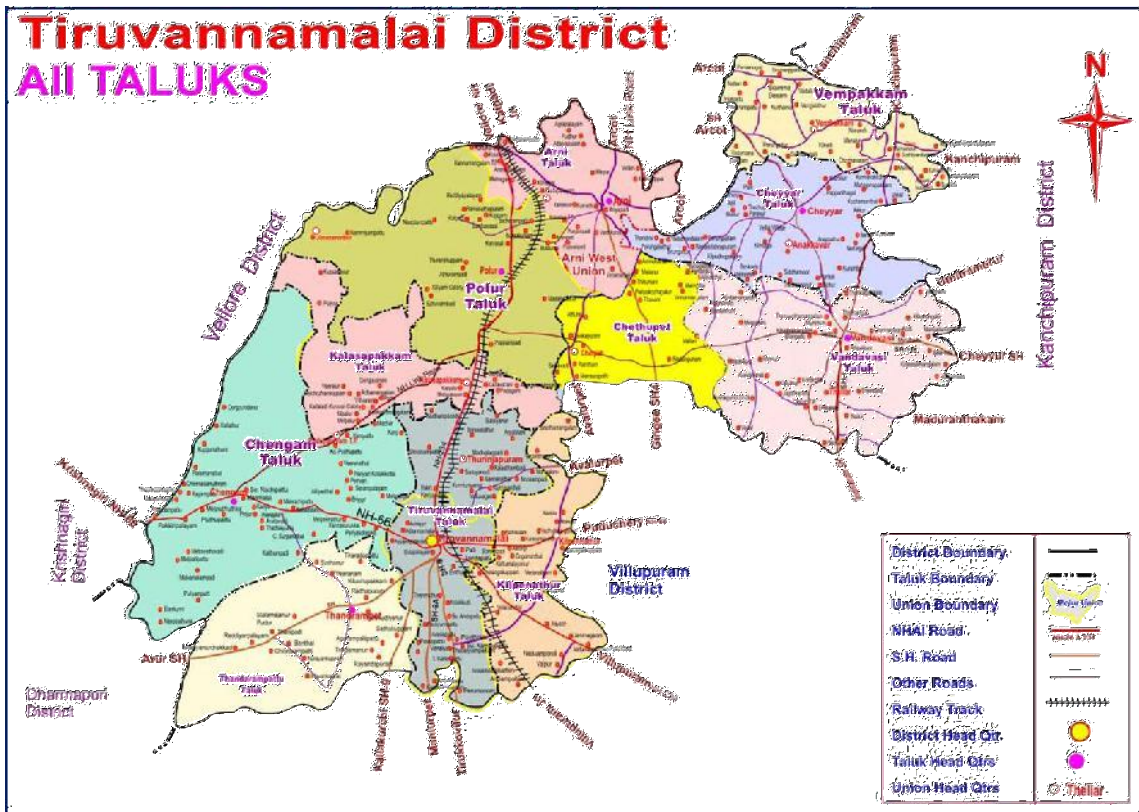


Fig.1.2 Tiruvannamalai District (Taluk wise)

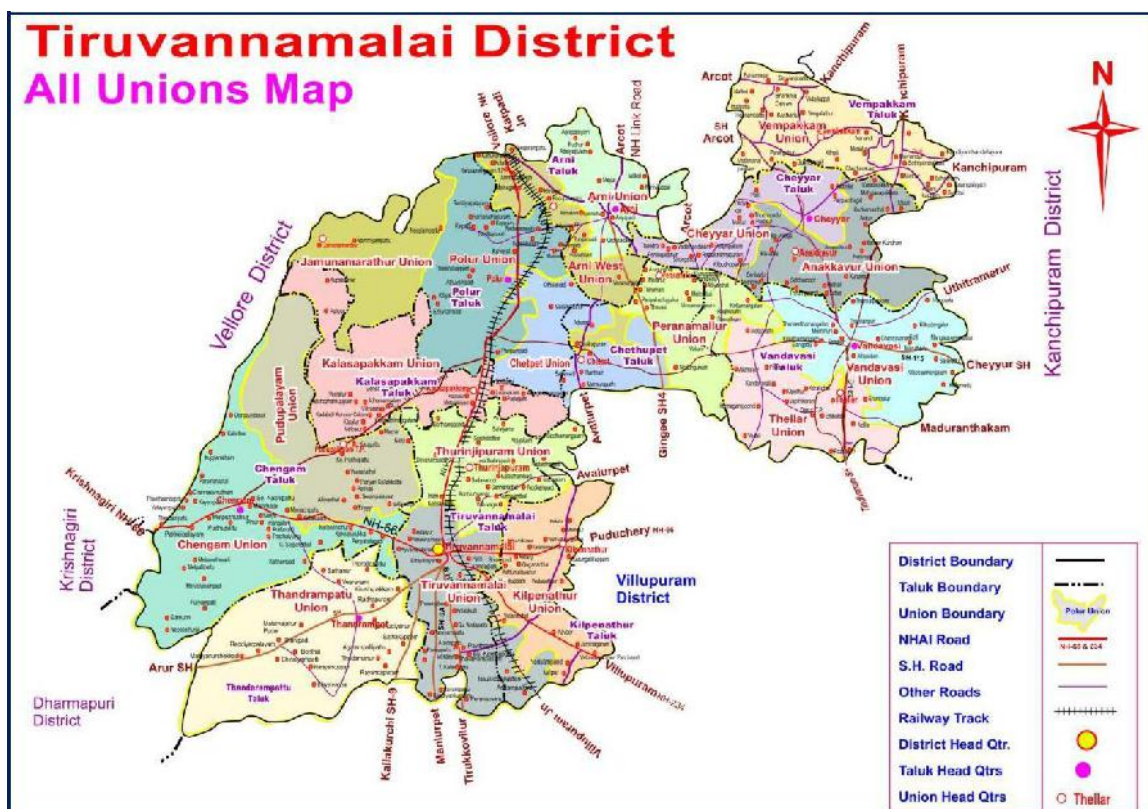


Fig.1.3 All Union Map, Tiruvannamalai District

2. OVERVIEW OF MINING ACTIVITY IN THE DISTRICT

The mineral base is found to be spread across for the district. It is one of the most important factors for the industrial development of the area. Tiruvannamalai district is enriched in with minerals deposit like Black Granite, Multi colored Granite, Blue metal, Earth and Brick Clay.

Private companies play a major role in mining activity, where as the Government agencies like TAMIN take part in mining dimension stones only. The major minerals like PGE, Gold and Iron Ore are reported in the district. This area has to be investigated by Geological Survey of India for mineral exploration purpose in detail. Steatite (Soapstone), Magnesite and Pink Granite are available in and around the reserve forest are to be considered for mining purpose.

3.LIST OF MINING LEASES
TIRUVANNAMALAI TALUK – GOVERNMENT LAND

Sl. No.	Name of the Mineral	Name & Address of the Lessee	Taluk & Village	SF. No & Extent	Lease Period	File No.	Classification
1	Rough Stone	P.Adimoolam, 57A, Tamizhnagar, Tiruavannamalai taluk	Tiruvannamalai Iynkunam	135 (Part 4), 1.00.0 hectares	01.7.2009 to 30.6.2019	130/K2/2009	Government Land – Rule 8
2	Rough Stone	D.Jaiganesh, Vettavalam village, Tiruvannamalai taluk	Tiruvannamalai Vettavalam	230/4 (Part 2) 1.00.0 hectares	10.11.2009 to 09.11.2019	614/K2/2009	
3	Rough Stone	H.Rajaram, Polur Main Road, Tiruvannamalai.	Tiruvannamalai Veraiyur	21 (Part 2), 2.00.0 Hect.	08.03.2010 to 07.03.2020	39/K2/2010	
4	Rough Stone	A.Murugesan, Nachanandhal Tiruvannamalai.	Tiruvannamalai Pavupattu	6/1 (Part 5), 1.00.0 hectares	05.4.2010 to 04.4.2020	22/K2/2010	
5	Rough Stone	R.Singaram, Thenimalai, Tiruvannamalai	Tiruvannamalai Athipadi	45/2C (Part 5), 1.00.0 hectares	05.4.2010 to 04.4.2020	73/K2/2010	

Sl. No.	Name of the Mineral	Name & Address of the Lessee	Taluk & Village	SF. No & Extent	Lease Period	File No.	Classification
6	Rough Stone	A.Nakkeeran, 3, Kardukarar Street, Vettavalam	Tiruvannamalai Vettavalam	249/5 0.77.0 Hectare	10.5.2010 to 09.5.2020	636/K2/2009	Government Land - Rule 8
7	Rough Stone	R.Arul, Melanandahal Village, Tirukovilur Taluk.	Tiruvannamalai Athipadi	45/2C (Part 1), 1.00.0 hectares	13.5.2010 to 12.5.2020	40/K2/2010	
8	Rough Stone	N.Suresh, 25/73, Ayyankula Street, Tiruvannamalai	Tiruvannamalai Meyyur	194/2 (P), 2.00.0 hectares	16.12.2010 to 15.12.2020	43/K2/2010	
9	Rough Stone	M.Selvaraj, Chengam Road, Tiruvannamalai.	Adaiyur Tiruvannamalai	91/2A (Part), 1.00.0 Hect.	16.12.2010 to 15.12.2020	74/K2/2010	
10	Rough Stone	S.Prasanth, Chengam Road, Tiruvannamalai	Tiruvannamalai Adaiyur	91/2A (Part), 0.96.5 hect.	23.12.2010 to 22.12.2020	75/K2/2010	
11	Rough Stone	S.Senthilkumar, 10, Kardukarar Street, Vettavalam.	Tiruvannamalai Vettavalam	83, 1.23.5 hectares	24.12.2010 to 23.12.2020	168/K2/2010	
12	Rough Stone	K.Thirumal, Perayampattu post and Village, Tandarampet	Tiruvannamalai Athipadi	45/2C (Part 4), 1.30.0 hectare	01.3.2011 to 28.2.2021	72/K2/2010	

Sl. No.	Name of the Mineral	Name & Address of the Lessee	Taluk & Village	SF. No & Extent	Lease Period	File No.	Classification
13	Rough Stone	N. Harijayashree, 18/7, Vadamathathi St., Tiruvannamalai	Vallivagai Tiruvannamalai	111/2 4.00.0 hectares	28.04.2012 to 27.04.2022	57/K/2012	Government Land – Rule 8
14	Rough Stone	R.Karthikeyan 23/29, Lakshmipuram, Gandhi Nagar, Tiruvannamalai-2.	Tiruvannamalai Iynkunam	135 (part 3) 1.00.0 Hect.	20.04.2011 to 19.04.2021	483/K2/2009	
15	Rough Stone	R.Sekar, S/o. Ramasamy, Mel ChinnaGoundanpatti, Tharamangalam Village, Omalur Taluk, Salem Dt.	Tiruvannamalai Koothalavadi	94/1 (part) 1.00.0 Hect.	12.09.2017 to 11.09.2022	47/K2/2015	

TIRUVANNAMALAI TALUK – PATTA LAND

Sl. No.	Name of the Mineral	Name & Address of the Lessee	Taluk & Village	SF. No & Extent	Lease Period	File No.	Classification
1	Rough Stone	P.Vinayagamoorthi, Ramana Nagar, Tiruvannamalai	Tiruvannamalai Pavitharam	4/7 0.75.5 Hect	02.03.2016 to 01.03.2021	104/K2/2015	Patta Land

CHENGAM TALUK – GOVERNMENT LAND

Sl. No.	Name of the Mineral	Name & Address of Lessee	Taluk & Village	SF.Nos. & Extent (in Hects.)	Lease Period	File No	Classification
1	Rough Stone	R.Durai Tandrapet Village, Chengam	Chengam Porasapattu	134/B (Part) 2.00.0	31.03.2009 to 30.03.2019	Rc.No.287/K2/2008	Government Land – Rule 8
2	Rough Stone	S.Vasanthkumari Uchimalaikuppam Chengam	Chengam Uchimalaikuppam	39/9 (0.27.5), 39/11 (0.35.0) 1.35.5	12.04.2010 to 11.04.2020	Rc.No.621/K2/2009	
3	Rough Stone	K.Durai 1/2, Ramalinganar Street, Tiruvannamalai	Chengam Paliapattu	58 (Part1) 1.00.0	05.05.2010 to 04.05.2020	Rc.No.27/K2/2010	
4	Rough Stone	R.Jeevanantham, 50, Avarangaatu Street, Tiruvannamalai	Chengam Chinnakolapadi	39/1 (Part2) 2.00.0	13.05.2010 to 12.05.2020	Rc.No.24/K2/2010	
5	Rough Stone	R.M.Jayavelu Chengam Road, Tiruvannamalai	Chengam Paliapattu	58/3 (Part-1) 1.50.0	03.11.2010 to 02.11.2020	Rc.No.28/K2/2010	
6	Rough Stone	M.Palani 6, Peygopuram St., Tiruvannamalai	Chengam Periyakolapadi	105/1 (Part-1A) 0.50.0	12.01.2016 to 11.01.2026	Rc.No.15/K2/2011	

Sl. No.	Name of the Mineral	Name & Address of the Lessee	Taluk & Village	SF. No & Extent	Lease Period	File No.	Classification
7	Rough Stone	Sadhaknawas, No. 25, 3rd Street, Valace Garden, Chennai-6.	Chengam Periyakolapadi	105/1 (Part-1)0.50.0	12.01.2016 to 11.01.2021	Rc.No.14/K2/2011	Government Land - Rule 8
8	Rough Stone	Tmt.S.Kanimozhi /o.Shanmugam, No.152, Old St, Avoor Village, Tiruvannamalai	Chengam Periyakolapadi	105/1 (Part-4) 1.00.0	28.07.2016 to 27.07.2021	Rc.No.48/K2/2015	

CHENGAM TALUK - PATTA LAND

Sl. No.	Name of the Mineral	Name & Address of Lessee	Taluk & Village	SF.Nos. & Extent (in Hects.)	Lease Period	File No	Classification
1	Gravel	K.Bakthavachalam, S/o. Kuppusamy Gounder, Pudhupattu Village, Chengam Taluk.	Chengam Paramanathal	294/1 (Part) 1.21.5	24.05.2018 to 23.05.2019	Rc.No.121/K2/2016	Patta Land

POLUR TALUK – GOVERNMENT LAND

Sl.No.	Name of the Mineral	Name & Address of Lessee	Taluk & Village	SF.Nos. & Extent (in Hects.)	Lease Period	File No	Classification
1	Rough Stone	M.Julia W/o. Mariyaselvam, 180, Vambalur Road, Tirumalai village, Polur taluk	Polur taluk Tirumalai	507/1A (Part A), 2.00.0 hect.	22.6.2009 to 21.6.2019	231/K2/2009	Government Land – Rule 8
2	Rough Stone	K.C.Chinnakuzhandai, Kuppam village, Polur taluk.	Polur taluk Vadamadhimangalam Village	158/6, 2.89.0 hectares	16.12.2010 to 15.12.2020	628/K2/2009	
3	Rough Stone	M.Parthiban, 27/A, Vengadathan street, Polur taluk & village.	Polur taluk Pudhupalayam	224/1 (Part A), 1.00.0 Hect.	24.12.2010 to 23.12.2020	136/K2/2010	
4	Rough Stone	R.Kumar, Kil Arsampattu village, Vellore TK & DT.	Polur Taluk Kuppam Village	140/1, 1.02.5 hect.	17.3.2011 to 16.3.2021	135/K2/2010	
5	Rough Stone	R.Kumar Kil-Arasampattu Vge., Vellore Taluk.	Polur Taluk Kuppam Village	53 (Part-2) 2.00.0	25.5.2012 to 24.5.2022	21/K2/2011	
6	Rough Stone	S.Rajakumar S/o.Subaramani 2/57, Pillaiyar koil st, Kalasapakkam.	Vasur village, Polur Taluk.	97/1A1 2.00.0 hectares	21.07.2016 to 20.07.2021	50/K/2015	
7	Rough Stone	E.Sivakumar, S/o Elumalai, No.20.26.J.30, VRS Nagar, Govindasamy street, Polur.	Pudupalayam Village Polur Taluk.	224/1 (Part-2) 2.00.0 hectares	21.07.2016 to 20.07.2021	51/K/2015	

Polur Patta Land

Sl.No.	Name of the Mineral	Name & Address of Lessee	Taluk & Village	SF.Nos. & Extent (in Hects.)	Lease Period	File No	Classification
1	Gravel	M.Vasudevan, S/o. Masilamani, Naganadhi village, Kollaimedu, Vellore Taluk & District.	Kalpattu Village Polur Taluk.	28/4A,4B 1.21.5 hectares	24.05.2018 to 23.05.2019	83/K/2016	Patta Land
2	Rough Stone	Thiru.K.S.BABURAJ, No.12/14,3rd Cross Street, Karpagam Garden, Adayar, chennai -20	Kasthambadi Village, Polur Taluk	634/2, 635/10 1.66.0 hect	14.11.2018 to 13.11.2023	101/Kanimam/2018	

THANDARAMPATTU TALUK - GOVERNMENT LAND

Sl. No.	Name of the Mineral	Name & Address of Lessee	Taluk & Village	SF.Nos. & Extent (in Hects.)	Lease Period	File No	Classification
1	Rough Stone	P.Soundarajan Kolamanjanur Village, Tandarampet	Tandarampet Kolamanjanur	1 2.00.0	31.03.2009 To 30.03.2019	Rc.No.230/K2/2009	Government Land – Rule 8
2	Rough Stone	B.L.Arunachalam Beemanandhal Village, Chengam	Tandarampet taluk, Kannakandhal	77/3 (Part2) 0.50.0	17.03.2010 To 16.03.2020	Rc.No.26/K2/2010	
3	Rough Stone	P.Radhakrishnan Mettu Street, Tiruvannamalai	Tandarampet Sathanur	249/2B, 250/5 1.03.5	12.04.2010 To 11.04.2020	Rc.No.20/K2/2010	
4	Rough Stone	M.Govindarajan, S/o. Muthukrishnan, 3/337, Allabasha Mungilthuraipattu Shankarapuram Tk.	Tandrampet Thondamanur	59 (Part-1) 2.00.0	28.06.2010 To 27.06.2020	Rc.No.79/K2/2010	
5	Rough Stone	A.Thenarmozhi Manalurmel Siruvallur Village, Sankarapuram	Tandrampet Perukulathur	535 (Part1) 2.00.0	23.08.2010 TO 22.08.2020	Rc.No.134/K2/2010	
6	Rough Stone	Tmt.K.Sarasu 53, Nehru Street, Chengam	Tandrampet Sathanur	258/5 (PartA) 1.00.0	17.03.2011 To 16.03.2021	Rc.No.626/K2/2009	
7	Rough Stone	R.Dhanakotti Varagur Village, Tandrampet	Tandrampet Varagur	3 (Part2) 1.00.0	30.03.2011 To 29.03.2021	Rc.No.18/K2/2011	
8	Rough Stone	P.PalaniKolamanjanur Village,Tandarampet.	TandrampetKolamanjanur	1 (Part2) 2.00.0	18.04.2011 To 17.04.2021	Rc.No.20/K2/2011	

Sl. No.	Name of the Mineral	Name & Address of Lessee	Taluk & Village	SF.Nos. & Extent (in Hects.)	Lease Period	File No	Classification
9	Rough Stone	M.Veeramani Royandapuram Village Thandarampattu Tk.	Thandarampattu Royandapuram	294 (Part-1) 2.00.0	24.05.2012 to 23.05.2022	Rc.No.19/K2/2011	Government Land – Rule 8
10	Rough Stone	G.Harikrishnan, Meyyur village, Tiruvannamalai.	Thandarampattu Kampattu	S.F.7/1 (P) 1.00.0	04.11.2009 to 03.11.2019	R.C.No. 293/K-2/2008	
11	Rough Stone	M.Vinothkannan, Varagur Village, Tandrapet	Thandarampattu Varagur	21/1A (Part-1) 0.40.0	20.01.2016 to 19.01.2021	Rc.No.49/K/ 2015	
12	Rough Stone	Tmt.R.Amutha W/o.S.Ramachandran, No.712, Bajanai Koil st Thandarampattu Taluk	Thandarampattu Allappanur	51 (Part) 2.00.0	11.06.2018 to 10.06.2028	Rc.No.396/K/ 2017	

THANDARAMPATTU - PATTI LAND

Sl.No.	Name of the Mineral	Name & Address of Lessee	Taluk & Village	SF.Nos. & Extent (in Hects.)	Lease Period	File No	Classification
1	Rough Stone	T.Selvaraj, Harur Main Road, Mothakkal village, Thandarampattu Tk.	Thandarampattu Taluk Mothakkal Village	144/2(P) 0.40.5	16.06.2014 to 15.06.2019	31/K/2013	Patti Land
2	Rough Stone	R.Gopi, 4/75B, Veerapathran Kovil St., Vijayappanur, Thandarampattu Tk.	Thandarampattu Varagur Village	2/1, 2/2A, 2/3 - 1.71.0	02.06.2016 to 01.06.2021	101/K/2015	Patti Land

CHEYAR TALUK - GOVERNMENT LAND

Sl. No.	Name of Mineral	Name & Address of the Lease	Taluk & Village	SF.No. & Extent	Lease Period	File No.	Classification
1	Rough Stone	S.Nagaraj Manampathy Village, Uthiramerur Taluk.	Athi Village Cheyyar Taluk.	S.No.276/1 1.53.0 Hectare.	17.12.2011 to 16.12.2021	29/K2/2011	Government land - Rule 8

CHEYAR TALUK - PATTA LAND

Sl.No.	Name of the Mineral	Name & Address of the Lessee	Taluk & Village	SF. No & Extent	Lease Period	File No.	Classifi- cation
1	Rough Stone	Thiru.R.Venkatachalam, S/o. Ramasamy, No.30, New State Bank Colony, West Tambaram, Chennai.	Cheyyar Taluk Palli Village	66/3A (1.03.0) & 66/3B (1.87.0) (2.90.0)	21.07.2016 to 20.07.2021	95/K/2015	Patta Land
2	Rough Stone	Tvl.SRC Projects (P) Ltd., 4-B, Lakshmipuram, Gandhi Road, Salem-636 007.	Cheyyar Taluk Palli Village	40/1 (Part) (0.45.5), 40/3 (0.36.5) etc 4.75.5 hect .	21.07.2016 to 20.07.2021	99/K/2015	
3	Rough Stone	Thiru.I.Prakash S/o. Inbasekaran, Senthamangalam Village S.V.Chathiram (Via), Sriperumpthur Taluk, Kanchipuram District.	Cheyyar Taluk Painkinar Village	6/5 (0.43.5) & 8/1A (0.34.5) 0.78.0 hect .	28.07.2016 to 27.07.2021	122/K/2015	Patta Land

4	Rough Stone	Thiru.S.Suresh Babu S/o. Shanmugam, No.5, Kulakkarai Street Anakkaputhur Village, Thambaram Taluk, Chennai District.	Cheyyar Taluk Kurumbur Village	110/2A (0.24.5), 110/2B (0.40.0) etc. 3.88.5 hect	28.07.2016 to 27.07.2021	147/K/2015
5	Rough Stone	Thiru.R.Velmurugan,s/o Rajaram,304, Theradi Street,Asanamapettai Village,Vembakkam Taluk.	Cheyyar TalukPalli Village	80/2(0.02.5), 81/1 (0.31.0), 81/2A(0.17.5), 81/2B (0.48.0), 84/1 (0.21.0) 1.20.0 hect .	17.09.2018 to 16.09.2023	360/K/2017
6	Rough Stone	Thiru.S.MURUGAN, S/o. Subramanian, No.62/2 , Vedanatham Village, Tiruvannamalai Taluk & District.	Cheyyar Taluk Agatheripattu Village	12/1 20/2C 20/3B etc., 2.06.5 hect.,	03.11.2018 to 02.11.2023	125/K/2015
7	Rough Stone	Thiru.M.Marimuthu, S/o. Maharajan, Kilpudupakkam Village, Cheyyar Taluk, Tiruvannamalai District.	Cheyyar, Palli	74/3,74/4 0.98.5 Hect	16.11.2018 to 15.11.2023	413/K/2017

VENBAKKAM TALUK – PATTA LAND

Sl.No.	Name of the Mineral	Name & Address of the Lessee	Taluk & Village	SF. No & Extent	Lease Period	File No.	Classifi-cation
1	Rough Stone	R.Seenuvasan, Road Street, Arasanipalai village, Vembakkam Taluk	Ezhacheri Village Vembakkam Taluk	65/4, 5, 7, 8A, 66/4 3.42.0 Hect.	27.06.2014 to 26.06.2019	176/K/2013	Patta Land
2	Rough Stone	Thiru. Ganesh Kaskar, Executive Director, RMC Ready mix (India) Sidco Industrial Estate, Thirumudivakkam, Chennai.	Sithalapakkam Village Vembakkam Taluk	16/2B, 16/8, 17/2, & etc., 4.23.5	14.07.2014 to 13.07.2019	105/K/2013	
3	Rough Stone	Thiru. D.Madhavan s/o Dhanapal, 19, Sarangapani street, Ambathur, Chennai-53.	Girijapuram Village Vembakkam Taluk	91/2B, 91/3A & etc., 0.90.0	03.03.2015 to 02.03.2020	116/K/2013	
4	Rough Stone	Thiru. R.Mohanraj s/o Rajagopal, No.33, Pillaiyar koil street, Puliyambedu village, Ambatthur Taluk.	Girijapuram Village Vembakkam Taluk	94/2B 0.81.0	13.05.2015 to 12.05.2020	242/K/2012	
5	Rough Stone	Thiru. N.Subramani s/o Nallathambi, No 210 , Mandapam Junction Arpakkam Village, Kanchipuram.	Menallur Village Vembakkam Taluk	123/18A, 123/18B, etc., 3.02.5	21.07.2016 to 20.07.2021	75/K/2014	
6	Rough Stone	Thiru. B.Sri Devi, W/o. P.Balaji, No.56, Balasundaram Street, Chandramohan Nagar, Velingapattarai, Kanchipuram .	Kundiyanthandalm Village Vembakkam Taluk	1181/2A (0.56.5), 181/2B (0.24.0), etc., 1.15.5 Hect.	28.07.2016 to 27.07.2021	12/K/2015	

Sl.No.	Name of the Mineral	Name & Address of the Lessee	Taluk & Village	SF. No & Extent	Lease Period	File No.	Classifi-cation
7	Rough Stone	Thiru.K.Kumar, S/o. Kannaiyan, No.2/32, Mandapam Junction, Arpakkam Village & Post, Kanchipuram.	Kundiyanthandalm Village Vembakkam Taluk	14B (0.12.0), 163/14C (0.12.0), etc., 2.29.5 Hect.	28.07.2016 to 27.07.2021	14/K/2015	Patta Land
8	Rough Stone	Thiru.K.Thirumalai, S/o. Kannaiyan, No.52, Pillaiyar Koil Street, M.G.R. Nagar,Kundrathur, Chennai 600 069.	Suruttal Village Vembakkam Taluk	174/1A1 (0.74.5) & 175/2 (0.75.5) 1.50.0 Hect.	28.07.2016 to 27.07.2021	29/K/2015	
9	Rough Stone	Thiru.M.Palanisamy 81, Santhi Nagar First Street, Chengalpattu, Kanchipuram District	Cheyyar Taluk Thiruppanamoor	455/6, 624/1A, 624/1C (0.90.5)	06.06.2016 to 05.06.2021	11/K/2014	
10	Rough Stone	J. Venkatesan 153-A/1, Pillaiyar Koil Street, Melapattu Vge., Cheyyar Taluk.	Vembakkam Taluk Chithathur	217/1, 217/2, 217/4(Part), 217/5 (Part) Totally 1.00.0 Hect.	14.09.2017 to 13.09.2022	06/K/2017	
11	Rough Stone	Thiru.E.Panneerselvam S/o. Elumalai, 89, Vanniya Mettu St., Arpakkam Village, Kanchipuram Tk & Dt.	Vembakkam Taluk Kundiyan-thandalam	187/3(1.43.0)	14.09.2017 to 13.09.2022	131/K/2015	
12	Rough Stone	Thiru.L.Sudhakar S/o.Loganathan, 89, Palla Street, Agaram Village, Kanchipuram Taluk.	Vembakkam Taluk Girijapuram Village	94/4, 95/2, 96/1, 103/11, 103/12 (3.51.5)	14.09.2017 to 13.09.2022	105/K/2016	

Sl.No.	Name of the Mineral	Name & Address of the Lessee	Taluk & Village	SF. No & Extent	Lease Period	File No.	Classification
13	Rough Stone	Thiru.A.ARON SAMUVEL, S/o. Arockiyathan, No.15, Sesa Nagar, Poovirnthavalli, Chennai – 600 056.	Vembakkam Taluk Kundiyanthandalam	176/6A,6B,7A,7B,7 C,9A,9B 1.83.5 Hect	17.09.2018 to 16.09.2023	80/K/2017	Patta Land
14	Rough Stone	Thiru.M.SUDHARSAN, Pl.No.37, Parvathi Nagar, 3rd Street, Madampakkam, Chennai- 600 126.	Vembakkam Taluk Kundiyanthandalam	178/,1B2,1C1,1C2, 1D1,1D2, 1D4,181/1C1, 1C2 & 1G1 3.25.0 Hect.	17.09.2018 to 16.09.2023	377/K/2017	
15	Rough Stone	Thiru.S.SRIDHAR, S/o.T.Sivaprakasam, Managing Director, SKT MINES,No.19C, Villakkadi Koil Thoppu Street,Kancheepuram.	Vembakkam Taluk Kaganam	44/11,58/7,5A,60/ 2,58/5B,59/1A,1B, 2B,60/3,5,6,7 3.96.5 Hect.	17.09.2018 to 16.09.2023	26/K/2018	
16	Rough Stone	B.Dheenan , Vembakkam Taluk	Ezhacheri Village Vembakkam Taluk	65/6 0.95.5	20.07.2018 to 01.03.2021	78/K/2014	
17	Rough Stone	THIRU.K.DEVARAJ, S/o. T.Kanniyappan, No.105, Gandhisilai Street, Lakshmipuram Village, Vembakkam Taluk, Tiruvannamalai District.	Vembakkam Taluk Girijapuram	83/11F83/11G, 83/11H,92/1B, 92/3A,92/3B 92/3C,98/13A 98/14A,91/4B 2.10.0 Hect.	17.10.2018 to 14.10.2023	248/K/2017	
18	Rough Stone	ThiruJ.K.SRINIVASANS/o. Kannan,No.782, Mariyamman Koil Street,Jambodai Village, Azhividaithangal Post,Vembakkam Taluk.	Vembakkam TalukChithathoor	260/1A2305/81.21 .54 Hect.	15.10.2018 to 14.10.2023	249/K/2017	

Sl.No.	Name of the Mineral	Name & Address of the Lessee	Taluk & Village	SF. No & Extent	Lease Period	File No.	Classifi-cation
19	Rough Stone	Thiru.M.R.AZHAGIRI, S/o. M.P.Rajalingam, No.120, Shanmuganandhar Kovil St, Sriperumbuthur Tk, Kancheepuram District.	Vembakkam Taluk Chithalapakkam	8/1A,8/1B 8/1C,8/1D & etc., 3.87.5 Hect.	17.10.2018 to 16.10.2023	85/K/2018	Patta Land
20	Rough Stone	Tvl.Golden Sands, No.15, 4th Street, VGP Lay Out, East coast Road, Chennai-115.	Vembakkam, Ezchari	1/2B2B,1/2D 1/7,1/8,1/9 1/2C, 20/3A 3.74.5 Hect	07.11.2018 to 06.11.2023	23/K/2018	
21	Rough Stone	Thiru.C.Sugumar,S/o. Chandrababu,No.18-A, V.V.Kovil Street, Walajabad Taluk,Kancheepuram District.	Vembakkam, Ezchari	20/1H, 20/1I, 20/3B,20/3C and 20/3D 1.82.5 Hect	16.11.2018 to 15.11.2023	375/K/2017	
22	Rough Stone	THIRU.E.MUTHUKRISHNAN, S/o. G.Elumalai, No.221,Chenjiamman Koil st, Chithalappakkam Village, Arasanipalayam Post, Vempakkam Taluk.	Vembakkam, Chithalapakkam	16/6 16/7 17/1 1.26.0 Hect	22.11.2018 to 23.11.2023	337/K/2017	
23	Rough Stone	Thiru.R.Venkatasubramaniyan S/o. G. Ramachandiran, No.83/1 Pillaiyar Kovil Street, Sirumayilur Village, Kancheepuram- 635 501.	Vembakkam Taluk Kundiyan-thandalam	168/2A 168/2B2 168/2C 2.43.0 Hect	04.12.2018 to 05.12.2023	05/K/2018	
24	Rough Stone	Tvl.SRC Projects (P) Ltd.,4-B, Lakshmipuram,Gandhi Road,Salem- 636 007.	Chithathur Village Vembakkam Taluk	213/1, 213/2214/1, & etc., 4.71.5 Hect	14.12.2018 to 13.12.2023	371/K/2017	

CHETHUPATTU TALUK – GOVERNMENT LAND

Sl.No	Name of the Mineral	Name & Address of the Lessee	Taluk & Village	SF. No & Extent	Lease Period	File No.	Classification
1	Rough Stone	J.M.Constructions, 88, 7th Cross Street, Anna Nagar, Pelamedu, Coimbatore – 4.	Chethupattu Taluk Thellarampattu	214/1 (Part 1), 1.00.0	25.05.2009 to 24.05.2019	136/K2/2009	Government Land – Rule 8
2	Rough Stone	J.M.Constructions, 88, 7th Cross Street, Anna Nagar, Pelamedu, Coimbatore – 4.	Chethupattu Taluk Thellarampattu	214/1 (Part 2), 1.00.0	25.05.2009 to 24.05.2019	137/K2/2009	
3	Rough Stone	K.Gopinath, Kandigai melkottaiyur post, Chengelpet taluk.	Chethupattu Taluk Avaniapuram village,	111(Part 2), 2.00.0 hectares	03.06.2011 to 02.06.2021	26/K2/2011	
4	Rough Stone	V.Rajagopal, Oorapakkam, Chengalpattu.	Chethupattu Taluk Jeganathapuram village,	63/2 (Part) 1.00.0 hectares	17.12.2011 to 16.12.2021	169/K2/2010	

VANDAVASI TALUK – GOVERNMENT LAND

Sl.No	Name of the Mineral	Name & Address of the Lessee	Taluk & Village	SF. No & Extent	Lease Period	File No.	Classification
1	Rough Stone	IVRCL building products Ltd., 30-A, 6th Cross Road, Thiru.vi.Ka Industrial Estate, Guindy, Chennai – 32.	Vandavasi taluk. Gangampoondi	172/1 (Part A), 2.00.0	12.05.2010 to 11.05.2020	604/K2/2009	Government Land – Rule 8
2	Rough Stone	IVRCL building products Ltd., 30-A, 6th Cross Road, Thiru.vi.Ka Industrial Estate, Guindy, Chennai – 32.	Vandavasi taluk. Gangampoondi	172/1 (Part B), 2.00.0	12.05.2010 to 11.05.2020	605/K2/2009	
3	Rough Stone	D.saravanan, Venkatapuram, Saidapet, Chennai – 15.	Seeyalam village, Vandavasi taluk	176 (Part A), 2.00.0	18.10.2010 to 17.10.2020	140/K2/2010	
4	Rough Stone	K.Pasupathy, Pancharai Post, Vandavasi taluk.	Seeyalam village, Vandavasi taluk	176(Part C), 2.00.0	25.10.2010 to 24.10.2020	142/K2/2010	
5	Rough Stone	R.Tamilvanan, Saidapet, Chennai – 15.	Seeyalam village, Vandavasi Tk.	176 (Part D), 2.00.0	18.10.2010 to 17.10.2020	143/K2/2010	
6	Rough Stone	R.Ramadoss, 7, Thirumanjanar Street, Sirkazhi – 609 110.	Mazhaiyur village, Vandavasi taluk	93/1, 1.77.0	08.12.2010 to 07.12.2020	29/K2/2010	
7	Rough Stone	P.Srinivasan, Pallavaram, Chennai - 43	Mazhaiyur village, Vandavasi taluk	93/6, 1.41.0	08.12.2010 to 07.12.2020	30/K2/2010	
8	Rough Stone	Mohammed Muzammil 4-th Street, Thousand Lights, Chennai-6.	Vandavasi Arungunam	70/1 (Part) 2.00.0	26.03.2012 to 25.03.2022	24/K2/2011	

VANNAVASI TALUK – PATTALAND

Sl.No.	Name of the Mineral	Name & Address of the Lessee	Taluk & Village	SF. No & Extent	Lease Period	File No.	Classification
1	Rough Stone	VIJAY RAMAKRISHNAN Door No.52, MGR Road, Kalachitra Colony, Besent Nagar, Chennai-90	Vandavasi Taluk Kizhnamandi Village	290, 291 (1.50.5)	23.09.2014 to 22.09.2019	193/K/2013	Patta Land
2	Rough Stone	Thiru. G.VASUDEVAN, S/O.Gengappan, Door No.842-D, Vengidamangalam Road, Melakkottaiyur, Chengalpattu Taluk, Kancheepuram.	Vandavasi Taluk Septangulam	393/1 1.04.0 Hectare	08.12.2016 to 07.12.2021	115/K/2015	
3	Rough Stone	Thiru. G.RAJENDRAN, S/O.Gopal, No.18, First Street, Rajiv Gandhi Nagar, Urapakkam Village, Chengalpattu .	Vandavasi Taluk Mavalavadi	22/1B (0.87.0), 22/1C (0.44.0), 33/3B (0.37.0) 1.68.0 Hectare	22.12.2016 to 21.12.2021	37/K/2014	

ARNI TALUK – GOVERNMENT LAND

Sl.No.	Name of the Mineral	Name & Address of the Lessee	Taluk & Village	SF. No & Extent	Lease Period	File No.	Classification
1	Rough Stone	V.Vijayakumar, S/o. Vellai, 3 Manikkapuram, Kollacheri, Chennai – 600 069.	Mullandiram village, Arni taluk	5.(Part 4A), 1.00.0 hectares	04.11.2009 to 03.11.2019	233/K2/2009	Government Land – Rule 8
2	Rough Stone	D.Ilanchezian, S/o. Theyvasikamani, 54, Appavu Nagar, Maangadu, Chennai – 602 101.	Mullandiram village, Arni taluk	53(Part 4), 1.00.0 hectares	04.11.2009 to 03.11.2019	756/K2/2009	
3	Rough Stone	D.Rushendrakumar, S/o. Theyvasikamani, 54, Appavu Nagar, Maangadu, Chennai – 602 101.	Sirumoor village, Arni taluk	25/1(Part A) 1.00.0 Hectare	04.11.2009 to 03.11.2019	758/K2/2008	
4	Rough Stone	J.Yamuna, T.H.Salai, Aandarasanpettai, Chennai – 602 107.	Sirumoor village, Arni taluk	25/1(Part B), 1.00.0 hectares	04.11.2009 to 03.11.2019	759/K2/2008	
5	Rough Stone	Siddique basha, Kunnathur village, Arni taluk	Melnagar ramasani kuppam ,Arni	188(Part), 2.00.0 hectares	19.11.2009 to 18.11.2019	602/K2/2009	
6	Rough Stone	S.Suresh, S/o. Sundarrajan, 3, Saradha Nagar, Agraharam Koratur, Chennai – 76.	Mullandiram village, Arni taluk	53(Part 3), 1.00.0 hectares	23.11.2009 to 22.11.2019	135/K2/2009	

Sl.No.	Name of the Mineral	Name & Address of the Lessee	Taluk & Village	SF. No & Extent	Lease Period	File No.	Classification
7	Rough Stone	M.Shajakhan 855, Bazar Street Santhavasal, Polur Tk.	Arni Taluk Melnagar	29/1 (Part-3) 1.00.0	24.05.2012 to 23.05.2022	68/K/2012	Government Land
8	Rough Stone	A.Nazeer basha, S/o. Allabasha, 520/1, C.C.Road, Vannangulam, Arni.	Ayyampalayam village, Arni taluk	149 (part), 2.00.0	14.9.2010 to 13.9.2020	51/K2/2010	

ARNI TALUK – PATTA LAND

Sl.No.	Name of the Mineral	Name & Address of the Lessee	Taluk & Village	SF. No & Extent	Lease Period	File No.	Classification
1	Rough Stone	A.C.Mani, Vetrilaikara street, Arni.	Arni Taluk Ariyapadi Village	515/2 515/3A, 3B, 3C 0.67.0	25.09.2014 to 24.09.2019	36/K/2013	Patta land
2	Rough Stone	A.G.Mohan, 43, V.A.K.Nagar, Arni Taluk	Arni Taluk Ariyapadi Village	516/3 Part 1 0.40.0	13.11.2017 to 12.11.2022	52/K/2015	

MINOR MINERAL

Sl.No.	Name of the Mineral	Name & Address of the Lessee	Taluk & Village	SF. No & Extent	Lease Period	File No.	Classification
1	Fire Clay	Ivl.Arcot Pipes No.118/259, Bazaar, Street, Virudhachalam, Cuddalore	Cheyar Cholavaram	131/2, 132/1 etc.,	4.87.5 Hect.,	R.c.No.7031/MME/04, dated.12.04.2005. Distirct.Rc.No.44/K-2/2004 dated.24.06.2005.	Patta Land

LIST OF EXISTING GRANITE QUARRY LEASES IN TIRUVANNAMALAI DISTRICT
TIRUVANNAMALAI TALUK

Sl. No.	Name of the Mineral	Name and Address of the Lessee (Tvl.)	Classification	Village	S.No.	Extent in Hect.,	Period of lease	G.O.No. & District Collector Proceedings No./dt.
1	Black Granite	Tvl.R.Radhakrishnan Karasanur Vilalge, Villupuram	Patta Land	Vazhuthangulam	78/3C	1.41.0	9.12.2010 to 8.12.2020	G.O. (3D) No. 61 /Ind (MMB-1) Dept. Dated: 03.12.2010.
2	Black Granite	Tvl.R.K.Ramesh Virukampakkam Chennai	Patta Land	Karnampoondi	6/2E, 6/3C2, & 7/4A	1.27.0	17.3.2008 to 16.3.2028	G.O. M.S. (3D) No. 12/Ind (MME-1) Dept. Dated: 06.03.2008.
3	Black Granite	M/S. Aruna Granites, 109-A Big Street, Tiruvannamalai.	Govt. Land	Nadazhaga-nandal	61/2	2.21.0	21.01.2000 to 20.01.2020	G.O.M.S. (4D) No.2/ Ind (MMB1) Dept. dated,27.8.1999
4	Black Granite	Tvl.Enterprising Exporters Chennai.	Govt. Land	Vettavalam	433/6	4.95.0	05.12.1990 to 04.12.2000 Renewal applied.	G.O.No.1375/Ind/MME-1/ dept. dated,28.11.1990. W.P.No.11954/06 dated 26.04.2006.
5	Black Granite	TAMIN 39, Kamarajar Salai Chennai.	Govt. Land	Velanandal	63/1, 71, 78	3.81.0	28.02.2000 to 27.02.2020	G.O.Ms.No.248/Ind(MME2)Dept,Dt:14.09.94 & Govt.Lr.No.31852/MME2/1993 Dt: 4.02.2000
6	Black Granite	TAMIN 39, Kamarajar Salai Chennai.	Govt. Land	Velanandal	67	1.88.0	08.01.2007 to 07.01.2027	G.O.(3D) No.38/Ind/ MME1/ Dept dated 17.6.2008
7	Colour Granite	TAMIN 39, Kamarajar Salai Chennai.	Govt. Land	Rantham	56/6 (Part)	9.30.5	12.9.2008 to 11.9.2038	G.O.Ms.No.49/Ind (MME1)Dept, Dt:22.7.2008

CHENGAM TALUK

Sl. No	Name of the Mineral	Name and Address of the Lessee (Tvl.)	Classification	Village	S.No.	Extent in Hect.,	Period of lease	G.O.No. & District Collector Proceedings No./dt.
1	Black Granite	Tvl.Regal Granites and Stone Works, No.34/66, Oomer Road, Ambur, Vellore District.	Patta Land	Palamarathur	115/1B, 115/2B, 119/2B	2.47.5	06.06.2005 to 05.06.2025	G.O.No.27/Ind, dt: 02.05.2005.
2	Black Granite	Tvl.Zohra Imbex, B2, T5, Rohini Garden Enclave, Pattabiraman Street, Thennur, Trichy-17	Patta Land	Eraiyyur	132/2 (Part)	1.00.0	01.8.2005 to 31.7.2025	G.O.50/Ind/MME-1/Dept. dated,11.7.2005
3	Black Granite	TAMIN 39, Kamarajar Salai Chennai.	Govt. Land	Eraiyyur	202/2, 203/2	2.78.5	19.10.2004 to 18.10.2034	G.O.3D.42/Ind(MME1) Dept., Dt: 21.07.2004

THANDARAMPATTU TALUK

Sl. No	Name of the Mineral	Name and Address of the Lessee (Tvl.)	Classification	Village	S.No.	Extent in Hect.,	Period of lease	G.O.No. & District Collector Proceedings No./dt.
1	Black Granite	Tvl. Sun Shine Enterprises Pvt. Ltd., Coimbatore	Patta Land	Thiruvadatha-nur	162/3, 162/14	1.17.5	10.12.2004 to 09.12.2024	G.O.No.104/Ind (MMB.1) Dept, Dt: 08.11.2004.
2	Black Granite	Tvl. Balaji Granites, Naripalli Village, Harur Taluk, Dharmapuri District.	Patta Land	Mothakkal	139/4, 144/1 144/5	1.07.5	24.12.2004 to 23.12.2024	G.O.No.107/Ind Dept, Dt: 24.11.2004.
3	Black Granite	Tvl.Madhucon GranitesLtd, Khammam A.P	Patta Land	Appunaicken-palayam	70/5, 72/1, 73/3	2.73.0	9.11.2006 to 8.11.2026	G.O.3DNo.72/ Ind/ (MME-1) dept. dated,1.11.2006
4	Black Granite	Tvl.Madhucon Granites Ltd Khammam AP	Patta Land	Edakkal	21/3C1 (Part), C3(part) etc	2.39.5	17.3.2008 to 16.3.2028	G.O. M.S. (3D) No. 10/ Ind (MME-1)Dept. Dated: 4.3.2008.
5	Black Granite	Tvl Mir .Nazim Ali, Jagadevi, Krishnagiri	Patta Land	Thenkarum-palur & Vanapuram	51/3A 2, 17/1(P)/17/2(P),17/3(P)	2.26.0	1.9.2008 to 31.8.2028	G.O.3(D) No.50/Ind/MME-1/dept. dated,22.7.2008
6	Black Granite	Tvl.Oriental Minerals stone, Sri Ram Nagar, Trichy road,Nammakkal	Patta Land	Malamnjanur	No 245/1	Ext 1.10.0	04.07.1994 to 03.07.2004 (Renewal applied)	G.O.3(D) No211/Ind/MMB-2/dept. dated,31.5.1994

7	Black Granite	Thiru.M.RamasamyS/o. Muthu Gounder,MuthuGounder Colony,Harur-636903.	Patta Land	Thondamanur	52/1 (1.52.5) & 52/2A1 (0.26.5)	1.79.0	15.05.2015 to 14.05.2035	G.O.(3D) No.7 / Industries (MMB.2) Department, Dated:10.03.2015.
8	Black Granite	Thiru.N.Viswanathan S/o. Narayanasamy, Eraiyur Village, Vanur Taluk, Villupuram District.	Patta Land	Rayandapuram	277/3A1B, 277/3A2 etc.,	1.07.5	08.12.2015 to 07.12.2035	G.O.(3D) No.30 / Industries (MMB.2) Department, Dated:29.10.2015.
9	Black Granite	Tvl.Lakshmi Sai Granites, No.4/491-C, Adhiyaman Nagar, Krishnagiri.	Patta Land	Agarampalli-pattu	98/4A, 98/4B etc.,	3.10.0	08.02.2016 to 07.02.2036	G.O.(3D) No.14/ Industries (MMB.2) Department, Dated:25.01.2016.
10	Black Granite	TAMIN 39, Kamarajar Salai Chennai.	Govt. Land	Veeranam	74(part) 126/1A, 127,132 etc	20.50.0	15.06.2004 to 14.06.2024	G.O.28/Ind/MME1 dept, dt:24.05.2004 Renewal granted
11	Black Granite	TAMIN 39, Kamarajar Salai Chennai.	Govt. Land	Appunaickan-palayam	67	4.79.5	29.11.2004 to 28.11.2034	G.O.57/Ind/MME/Dept dt:31.08.2004
12	Black Granite	TAMIN 39, Kamarajar Salai Chennai.	Govt. Land	Olagalapadi	83	29.62.0	28.11.2005 to 27.11.2035	G.O.Ms.No.112/Ind/MME-1/dept, dated.30.8.2005
13	Black Granite	TAMIN 39, Kamarajar Salai Chennai.	Govt. Land	Keelpachar	65(Part)	11.11.5	26.12.2005 to 25.12.2035	G.O.Ms.No.127/Ind/MME-1/dept, dated.18.10.2005
14	Black Granite	TAMIN39, Kamarajar SalaiChennai.	Govt. Land	Sathanur	286/1 (Part), 304/1	2.41.0	22.5.2006 to21.05.2036	G.O.Ms.No.21/Ind(MME1)Dept, Dt:27.02.2006
15	Black Granite	TAMIN 39, Kamarajar Salai Chennai.	Govt. Land	Thandaram-pattu	92	8.61.5	08.01.2007 to 07.01.2027	G.O.Ms.No.164/Ind (MME1)Dept, Dt:29.12.2006

16	Black Granite	TAMIN 39, Kamarajar Salai Chennai.	Govt. Land	T.Velur	176(Part)	10.50.0	09.02.2007 to 08.02.2027	G.O.Ms.No.23/Ind (MME1)Dept, Dt:29.01.2007
17	Black Granite	TAMIN 39, Kamarajar Salai Chennai.	Govt. Land	Thandram-pattu	4/2, 4/37,	5.57.0 1.21.5	01.09.2009 to 31.08.2029	G.O.No.21/Ind/H2/Dept, Dt:03.08.2009.
18	Black Granite	TAMIN 39, Kamarajar Salai Chennai.	Govt. Land	Kolamanjanur	125	7.27.5	20.04.2012 to 19.04.2042	G.O.Ms.(3D)No.1/Ind (MME1) Dept., Dt:25.01.2012
19	Colour Granite	TAMIN 39, Kamarajar Salai Chennai.	Govt. Land	Rayandapuram	294(Part)	10.50.0	21.02.2012 to 20.02.2042	G.O.Ms.(3D)No.61/Ind (MME1)Dept., Dt:05.12.2011
20	Black Granite	Tvl.Magam Inc, Chennai.	Govt. Land	Agarampalli-pattu	99/2	0.86.0	05.12.1990 to 04.12.2000. Renewal applied.	G.O.No.1376/Ind/ MME-1/ dept. dated,28.11.1990 W.P.No.20391/2000 dated 20.12.2002.

Vandavasi Taluk

Sl.No.	Name of the Mineral	Name and Address of the Lessee	Classification	Village	S.No.	Extent in Hect.,	Period of lease	G.O.No. & District Collector Proceedings No./dt.
1	Black Granite	Tvl.K.Vijaykumar, S/o.V.K.Sundaram No.3, Palace Nagar, Pudukotai & District.	Patta Land	Seiyalam	6/2C(Part), 7/2C1 (Part) etc,	1.07.5	18.12.2006 to 17.12.2026	G.O. (3D). No.94/ Ind Dept. Dated: 4.12.2006
2	Black Granite	Tvl.A.Gunasekaran. Balajinagar Chennai	Patta Land	Athipakkam	222/1B, (Part), 225/B(part) 225/2 (Part)	1.22.0	31.3.2008 to 30.3.2028	G.O.(M.S.) 3D No. 11 /Ind (MME-1) Dept. date:,05.3.2008.

Arani Taluk

Sl.No.	Name of the Mineral	Name and Address of the Lessee	Classification	Village	S.No.	Extent in Hect.,	Period of lease	G.O.No. & District Collector Proceedings No./dt.
1	Colour Granite	TAMIN 39, Kamarajar Salai Chennai.	Govt. Land	Nachapuram	85	22.26.0	27.04.2012 to 26.04.2042	G.O.Ms.(3D)No.02/ Ind (MME1)Dept., Dt:25.01.2012

Polur Taluk

Sl.No.	Name of the Mineral	Name and Address of the Lessee	Classification	Village	S.No.	Extent in Hect.,	Period of lease	G.O.No. & District Collector Proceedings No./dt.
1	Colour Granite	TAMIN 39, Kamarajar Salai Chennai.	Govt. Land	Sengunam	55A/1B1	22.88.5	17.10.2005 to 16.10.2034	G.O.Ms.No.111/Ind (MME1) Dept., Dt:30.08.2005

MINOR MINERAL
Leases Granted Under Rule 8C

Sl.No.	Name of the Mineral	Name and Address of the Lessee	Taluk	Village	S.No.	Extent in Hect.,	Period of lease	G.O.No. & District Collector Proceedings No./dt.
Tiruvannamalai Taluk								
1	Black Granite	TAMIN 39, Kamarajar Salai Chennai.	Tiruvannamalai	Velanandal	63/1, 71, 78	3.81.0	28.02.2000 to 27.02.2020	G.O.Ms.No.248/Ind(MME2)Dept,D t:14.09.94 & Govt.Lr.No.31852/MME2/1993 Dt: 4.02.2000
2	Black Granite	TAMIN 39, Kamarajar Salai Chennai.	Tiruvannamalai	Velanandal	67	1.88.0	08.01.2007 to 07.01.2027	G.O.(3D) No.38/Ind/ MME1/ Dept dated 17.6.2008
3	Colour Granite	TAMIN 39, Kamarajar Salai Chennai.	Tiruvannamalai	Rantham	56/6 (Part)	9.30.5	12.9.2008 to 11.9.2038	G.O.Ms.No.49/Ind (MME1)Dept, Dt:22.7.2008
Chengam Taluk								
4	Black Granite	TAMIN 39, Kamarajar Salai Chennai.	Chengam	Eraiyyur	202/2, 203/2	2.78.5	19.10.2004 to 18.10.2034	G.O.3D.42/Ind(MME1) Dept., Dt: 21.07.2004
Thandampattu Taluk								
5	Black Granite	TAMIN 39, Kamarajar Salai Chennai.	Thandampattu	Veeranam	74 (part) 126/1A, 127,132 etc	20.50.0	15.06.2004 to 14.06.2024	G.O.28/Ind/MME1 dept, dt:24.05.2004 Renewal granted

Sl.No.	Name of the Mineral	Name and Address of the Lessee	Taluk	Village	S.No.	Extent in Hect.,	Period of lease	G.O.No. & District Collector Proceedings No./dt.
6	Black Granite	TAMIN 39, Kamarajar Salai Chennai.	Thandarampattu	Appunaickan- palayam	67	4.79.5	29.11.2004 to 28.11.2034	G.O.57/Ind/MME/Dept dt:31.08.2004
7	Black Granite	TAMIN 39, Kamarajar Salai Chennai.	Thandarampattu	Olagalapadi	83	29.62.0	28.11.2005 to 27.11.2035	G.O.Ms.No.112/Ind/MME-1/dept, dated.30.8.2005
8	Black Granite	TAMIN 39, Kamarajar Salai Chennai.	Thandarampattu	Keelpachar	65 (Part)	11.11.5	26.12.2005 to 25.12.2035	G.O.Ms.No.127/Ind/MME-1/dept, dated.18.10.2005
9	Black Granite	TAMIN 39, Kamarajar Salai Chennai.	Thandarampattu	Sathanur	286/1 (Part), 304/1	2.41.0	22.5.2006 to 21.05.2036	G.O.Ms.No.21/Ind (MME1)Dept, Dt:27.02.2006
10	Black Granite	TAMIN 39, Kamarajar Salai Chennai.	Thandarampattu	Thandarampatt u	92	8.61.5	08.01.2007 to 07.01.2027	G.O.Ms.No.164/Ind(MME1)Dept, Dt:29.12.2006
11	Black Granite	TAMIN39, Kamarajar SalaiChennai.	Thandarampattu	T.Velur	176 (Part)	10.50.0	09.02.2007to08. 02.2027	G.O.Ms.No.23/Ind (MME1)Dept, Dt:29.01.2007
12	Black Granite	TAMIN 39, Kamarajar Salai Chennai.	Thandarampattu	Thandrampattu	4/2, 4/37,	5.57.0 1.21.5	01.09.2009 to 31.08.2029	G.O.No.21/Ind/H2/Dept, Dt:03.08.2009

Sl.No.	Name of the Mineral	Name and Address of the Lessee	Taluk	Village	S.No.	Extent in Hect.,	Period of lease	G.O.No. & District Collector Proceedings No./dt.
13	Black Granite	TAMIN 39, Kamarajar Salai Chennai.	Thandarampattu	Kolamanj-anur	125	7.27.5	20.04.2012 to 19.04.2042	G.O.Ms.(3D)No.1/Ind (MME1) Dept., Dt:25.01.2012
14	Colour Granite	TAMIN 39, Kamarajar Salai Chennai.	Thandarampattu	Royanda-puram	294(Part)	10.50.0	21.02.2012 to 20.02.2042	G.O.Ms.(3D)No.61/Ind (MME1)Dept., Dt:05.12.2011
Polur Taluk								
15	Colour Granite	TAMIN 39, Kamarajar Salai Chennai.	Polur	Sengunam	55A/1B1	22.88.5	17.10.2005 to 16.10.2034	G.O.Ms.No.111/Ind (MME1) Dept., Dt:30.08.2005
Arani Taluk								
16	Colour Granite	TAMIN 39, Kamarajar Salai Chennai.	Arni	Nacha-puram	85	22.26.0	27.04.2012 to 26.04.2042	G.O.Ms.(3D)No.02/Ind (MME1)Dept., Dt:25.01.2012

BLACK GRANITE

Sl.No.	Name of the Mineral	Name and Address of the Lessee	Classification	Village	S.No.	Flag Day Demand	Collection	Balance
1	Black Granite	Tvl. Sun Shine Enterprises Pvt. Ltd., Coimbatore	Patta Land	Thiruvadatha-nur	162/3, 162/14			
2	Black Granite	Tvl.Madhucon GranitesLtd, Khammam A.P	Patta Land	Appunaicken-palayam	70/5, 72/1, 73/3			
3	Black Granite	Tvl.Madhucon Granites Ltd Khammam AP	Patta Land	Edakkal	21/3C1 (Part), C3(part) etc			
4	Black Granite	Tvl.Oriental Minerals stone, Sri Ram Nagar, Trichy road, Nammakkal.	Patta Land	Malamnjanur	No 245/1		Tvl.Oriental Minerals Stone, No.5/1050, B-3, Natachathra Appartment, Rockey Nagar, Namakkal.	
5	Black Granite	Thiru.N.Viswanathan S/o. Narayanasamy, Eraiyur Village, Vanur Taluk, Villupuram District.	Patta Land	Rayandapuram	277/3A1B, 277/3A2 etc.,			
6	Black Granite	Tvl.R.K.Ramesh Virukampakkam Chennai	Patta Land	Karnampoondi	6/2E,6/3C2,& 7/4A			
7	Black Granite	Tvl.Lakshmi Sai Granites, Adhiyaman Nagar, Krishnagiri.	Patta Land	Agarampalli-pattu	98/4A, 98/4B etc.,			
8	Black Granite	Tvl.Magam Inc, Chennai.	Govt. Land	Agarampalli-pattu	99/2			
9	Black Granite	TAMIN 39, Kamarajar Salai Chennai.	Govt. Land	Thandaram-pattu	92			

**4. DETAILS OF REVENUE COLLECTED IN THE LAST FOUR YEARS IN
TIRUVANNAMALAI DISTRICT**

Sl.No.	Year	Revenue Collected
1.	2014-2015	79427432
2.	2015-2016	57100027
3.	2016-2017	64516405
4.	2017-2018	113328355
Total		314372219

**5. MINERAL WISE PRODUCTION DETAILS IN THE LAST FOUR
YEARS IN TIRUVANNAMALAI DISTRICT**

Sl.No.	Year	Name of the Mineral			
		Black Granite (in Cu.m)	Colour Granite (in Cu.m)	Rough Stone (in Cu.m)	Gravel (in Cu.m)
1.	2014-2015	4585.714	460.000	803002	194876
2.	2015-2016	4051.573	-	610182	122645
3.	2016-2017	4014.495	-	744882	122446
4.	2017-2018	4315.219	--	825787	100296

**6. DETAILS OF PRODUCTION OF SAND OR BAJARI OR MINOR MINERAL
IN (FOUR YEARS)IN TIRUVANNAMALAI DISTRICT**

Sl.No	Year	Name of the Mineral			
		Black Granite (in Cu.m)	Colour Granite (in Cu.m)	Rough Stone (in Cu.m)	Gravel (in Cu.m)
1.	2014-2015	4314	--	803002	194876
2.	2015-2016	3789.567	103.359	579633	89709
3.	2016-2017	4014.092	--	688198	94434
4.	2017-2018	4315.219	--	825787	100296

7. PROCESS OF DEPOSITION OF SEDIMENTS IN THE RIVERS

There are three main types of processes that occur in a river. These are ***Erosion, Transportation and Deposition***. All three depend on the amount of energy there is in a river.

7.1 Types of erosion

The energy in a river causes erosion. The bed and banks can be eroded making it wider, deeper and longer. Head ward erosion makes a river longer. This erosion happens near its source. Surface run-off and through flow causes erosion at the point where the water enters the valley head. Vertical erosion makes a river channel deeper. This happens more in the upper stages of a river (the V of vertical erosion should help you remember the v-shaped valleys that are created in the upper stages). Lateral erosion makes a river wider. This occurs mostly in the middle and lower stages of a river.

There are four main processes of erosion that occur in rivers. These are:

1. Hydraulic action;
2. Abrasion / corrasion;
3. Attrition; and
4. Corrosion.

7.1.1 Hydraulic action

The pressure of water breaks away rock particles from the river bed and banks. The force of the water hits river banks, and then pushes water into cracks. Air becomes compressed, pressure increases and the riverbank may, in time collapse. Where velocity is high e.g. the outer bend of meander, hydraulic action can remove material from the banks which may lead to undercutting and river bank collapse. Near waterfalls and rapids, the force may be strong enough to work on lines of weakness in joints and bedding planes until they are eroded.

7.1.2 Abrasion / Corrosion

The sediment carried by a river scours the bed and banks. Where depressions exist in the channel floor the river can cause pebbles to spin around and turn hollows into potholes.

7.1.3 Attrition

Eroded rocks collide and break into smaller fragments. The edges of these rocks become smoother and more rounded. Attrition makes the particles of rock smaller. It does not erode the bed and bank. Pieces of river sediment become smaller and more rounded as they move downstream.

7.1.4 Corrosion / Solution

Carbon dioxide dissolves in the river to form a weak acid. This dissolves rock by chemical processes. This process is common where carbonate rocks such as limestone and chalk are evident in a channel.

7.2 Transportation

Transportation of material in a river begins when friction is overcome. Material that has been loosened by erosion may be then transported along the river. There are four main processes of transportation. These are:

1. Suspension / suspended load;
2. Solution / solution load;
3. Saltation; and
4. Traction.

7.2.1. Suspension

Suspension is when material made up of very fine particles such as clay and silt is lifted as the result of turbulence and transported by the river. Faster-flowing, turbulent rivers carry more suspended material. This is why river appear muddy as they are approaching bankfull discharge and towards the mouth of the river (where velocity is greater as is the occurrence of finer sediment).

7.2.2. Solution

Solution is when dissolved material is carried by a river. This often happens in areas where the geology is limestone and is dissolved by slightly acidic water.

7.2.3. Saltation

Saltation is when material such as pebbles and gravel that is too heavy to be carried in suspension is bounced along the river by the force of the water.

7.2.4. Traction

Traction is when large materials such as boulders are rolled and pushed along the river bed by the force of the river.

The ***capacity of a river*** is the total load a river can transport at a given point.

7.3. Deposition

Deposition is the process of eroded material being dropped. This happens when a river loses energy. A river can lose its energy when rainfall reduces, evaporation increases, friction close to river banks and shallow areas which leads to the speed of the river reducing and therefore the energy reduces, when a river has to slow down it reduces its speed (and ability to transport material) and when a river meets the sea.

Sediment in rivers gets deposited as the river slows down. Larger, heavier particles like pebbles and sand are deposited first, whilst the lighter silt and clay only settle if the water is almost still. The flow of water is strongest on the outside of river bends, eroding the bank, but is slowest on the inside of the bends, allowing deposition of sand and gravel. When a river “bursts its banks” after heavy rain, flood water spreads out across the floodplain and, because this water hardly moves, finer silt and clay are deposited – often making good farmland.

When a river reaches a lake or the sea, it quickly deposits much of its sediment. This may choke up the river channel, which then divides up into distributaries, between which swamps are formed.

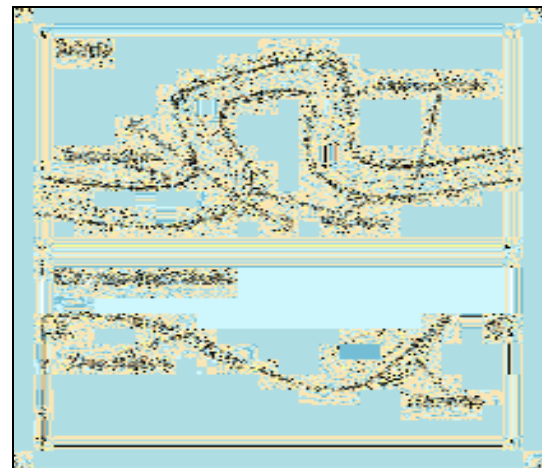
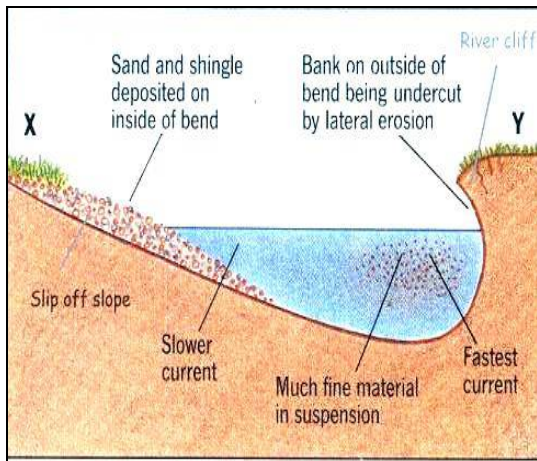
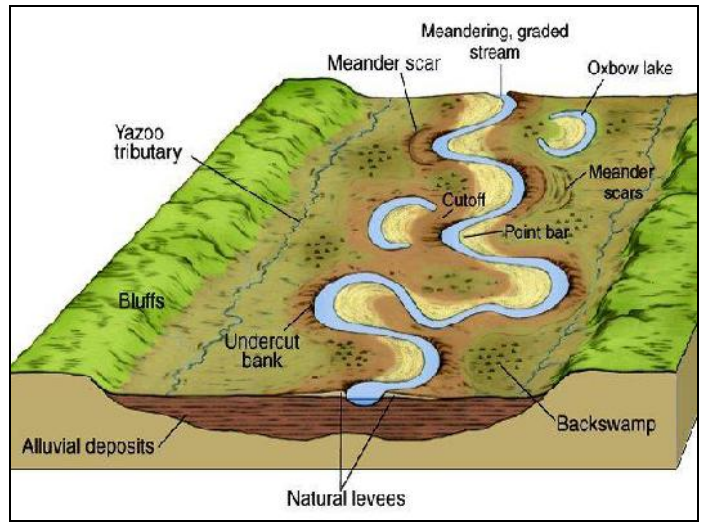
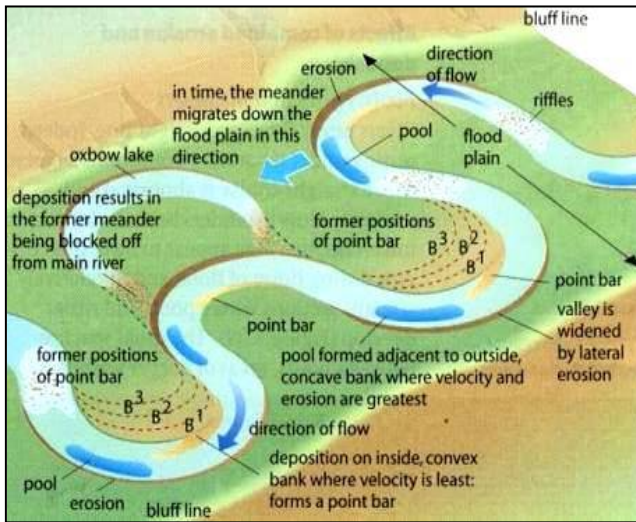


Fig.7.3.1. Schematic picture of meandering and deposition of sediments



Fig. 7.3.2 River Map of Tiruvannamalai District

7.4. Impact of sand removal from the river

Mining within or near riverbed has a direct impact on the stream's physical characteristics, such as stream roughness of the bed, flow velocity, discharge capacity, sediment transport capacity, turbidity, temperature etc. Alteration or modification of the above attributes may cause hazardous impact on ecological equilibrium of riverine regime. This may also cause adverse impact on in-stream biota and riparian habitats. This disturbance may also cause changes in channel configuration and flow-paths. The effects of sand and gravel mining are as follows: channel geometry, bed elevation, substratum composition and stability, in-

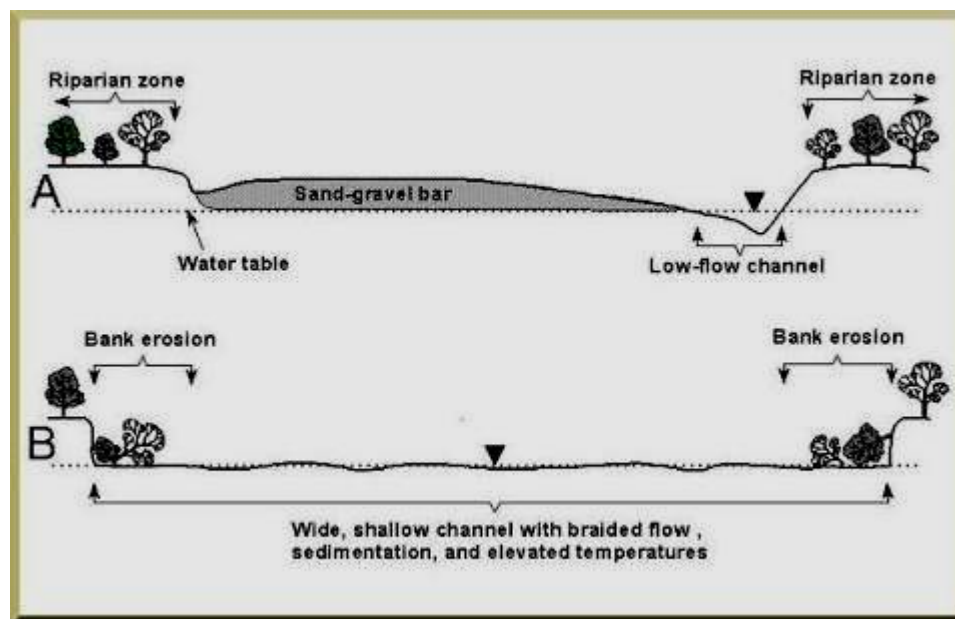


Fig.7.4.1 Impact of Sand Extraction from River

- a) Extraction of bed material in excess of replenishment by transport from upstream causes the bed to lower (degrade) upstream and downstream of the site of removal.
- b) In-stream habitat is impacted by increase in river gradient, suspended load, sediment transport and sediment deposition. Excessive sediment deposition for replenishment increases turbidity which prevents penetration of light required for photosynthesis and reduces food availability of aquatic fauna.
- c) Riparian habitat including vegetative cover on and adjacent to the river banks it controls erosion, provide nutrient inputs into the stream and prevents intrusion of pollutants in the stream through

runoff. Bank erosion and change of morphology of the river can destroy the riparian vegetative cover.

- d) Bed degradation are responsible for channel shifting, causing loss of properties and degradation of landscape, it can also undermine bridge supports, pipe lines or other structures.
- e) Degradation may change the morphology of the river bed, which constitutes one aspect of the aquatic habitat.
- f) Degradation can deplete the entire depth of gravelly bed material, exposing other substrates that may underlie the gravel, which could in turn affect the quality of aquatic habitat.

Lowering of ground water table in the flood plain because of lowering of riverbed level as well as river water level takes place because of extraction and draining out of excessive ground water from the adjacent areas. So, if a floodplain aquifer drains to the stream, groundwater levels can be lowered as a result of bed degradation.

- g) Lowering of the water table can destroy riparian vegetation.
- h) Excessive pumping of ground water in the process of mining in abandoned channels depletes ground water causing scarcity of irrigation and drinking water. In extreme cases it may create ground fissures and subsidence in adjacent areas.
- i) Flooding is reduced as bed elevations and flood heights decrease, reducing hazard for human occupancy of floodplains and the possibility of damage to engineering works.
- j) The supply of overbank sediments to floodplains is reduced as flood heights decrease.
- k) An un-scientific and unregulated sand and gravel mining tends to increase channel bank

7.5. Impacts on description

Biodiversity	:	Impacts on related ecosystems (for example, fisheries)
Land losses	:	Both inland and coastal through erosion
Hydrological functions	:	Change in water flows, flood regulation and marine currents
Water supply	:	Through lowering of the water table and pollution

- Infrastructures** : Damage to bridges, river embankments and coastal infrastructures
- Climate** : Directly through transport emissions
- Landscape** : Coastal erosion, changes in deltaic structures, quarries, pollution of rivers
- Extreme events** : Decline of protection

8. GENERAL PROFILE OF THE DISTRICT

Tiruvannamalai lies in the northern part of Tamil Nadu, and 200 Km from the state capital Chennai. The district lies between 78° 20' and 79° 50' of the eastern longitudes and 11°55' and 13° 15' of the northern Latitudes. It is bounded on the north by Vellore District, on the east by Kanchipuram District, on the south by Villupuram District, and on the west by Dharmapuri and Krishnagiri districts. The area of the district is 6312 sq.km. It consists of Two Revenue Divisions and Eleven Taluks- Tiruvannamalai, Chengam, Arani, Polur, Cheyyar, Chetpet, Vandavasi, Kilpennathur, Kalasapakkam, Thandarampattu and Vembakkam. After independence Tiruvannamalai was under North Arcot District. The revenue district of North Arcot was divided into Vellore District and Tiruvannamalai District in October 1989. Population of the district is 2469 thousand numbers as per Census 2011. The district is 20% urbanized and constitutes literacy rate of 74.21%.

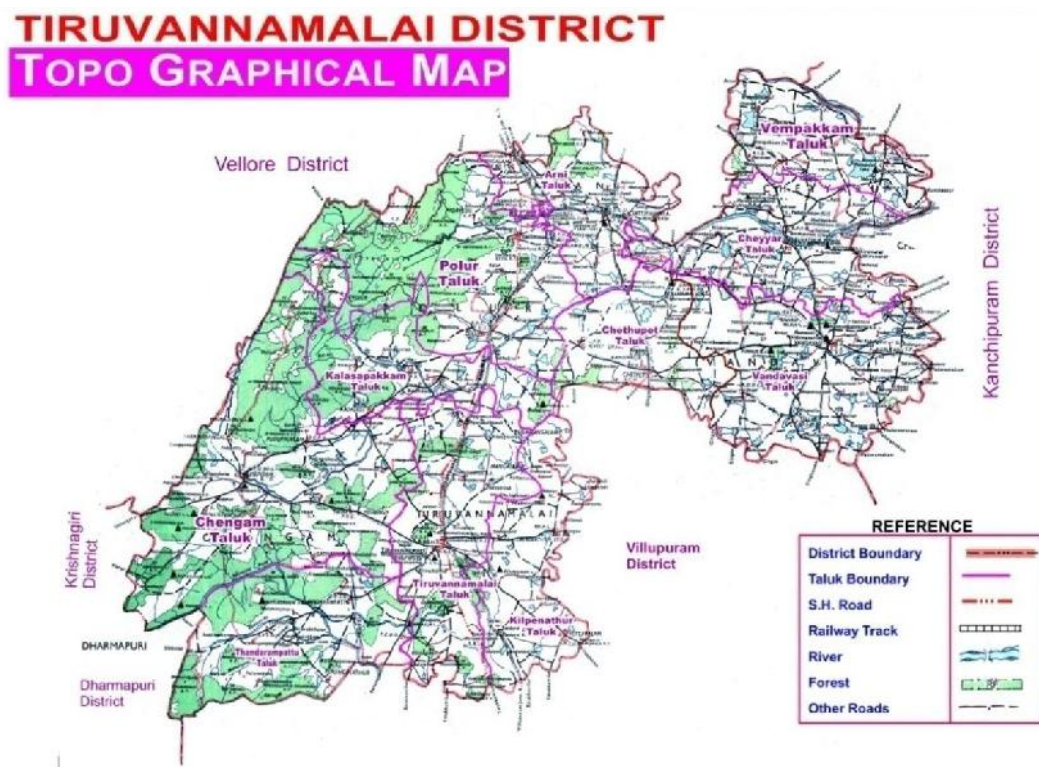


Fig.8.1.1Topographical Map of Tiruvannamalai District

8.1 Total Area

The total geographical area of the district is 6188 Sq K.M comprising the Revenue Divisions of Thiruvannamalai and Cheyyar. The district has 11 taluks viz. Thiruvannamalai, Kilpennathur, Chengam, Thandrampat, Polur, Kalasapakkam, Chetpet, Arni, Cheyyar, Vembakkam and Vandavasi. There are 18 Blocks including one tribal Block Jawadhu Hills constituting the district under Rural sector and four Municipalities viz. Thiruvannamalai, Arni, Cheyyar(Thiruvathipuram) and Vandavasi representing urban sectors along with ten Town Panchayats viz. Kilpennathur, Vettavalam, Chengam, Pudupalayam, Polur, Kalambur, Chetpat, Kannamangalam, Peranamallur, and Desur.

8.2. Physiography

The Jawadhu Hills are the highest mountains of this region. The general elevation of the Jawadhu Hills is 2500 ft with peaks rising up to 4200 ft. The district is extended upto Tirupathur taluk on the eastern part, the north-western portion of Chengam taluk and the western part of Polur taluk with spurs running in to Vellore taluk up to 9 kms. Kalrayan Hills range is on the southern part of Chengam taluk. The North-Western part of the region covers portions of Eastern Ghats and their spurs. The Hills in Tiruvannamalai and Pavala Malai at Polur taluk are famous for their spiritual sanctity. There are also a large number of small hills in Polur and Chengam taluks.

8.3. Drainage

Cheyyar river which originates from Jawadhu Hills, flows in a southern direction at first, and turns south-east near Chengam after flowing through Polur, Vandavasi and Cheyyar taluks. Palar raising near Nandidurg in Mysore enters Vellore district passing through Gudiyatham, Walajah and Arakonam taluks before entering into Cheyyar taluk of Tiruvannamalai district and there after enters into Kancheepuram district. Pennaiyar and South Pennaiyar originate from Nandidurg of Karnataka. They pass through Dharmapuri district and enter southern part of Chengam taluk before entering in to Viluppuram district. Finally, the river enters into the Bay of Bengal at Cuddalore. The river is dry for the most part of the year. Water flows during the monsoon season when it is fed by the southwest monsoon in catchment area and the northeast monsoon

in Tamil Nadu. A dam has been constructed across this river at Sathanur which is a picnic spot in this district. Sathanur Reservoir provides drinking water to Tiruvannamalai town and the water is used for irrigation when the reservoir is filled with surplus water.

8.4. Climate

This district has moderate climate. In Tiruvannamalai and Chengam taluks, the climate is cool in winter and hot during summer. The district gets rainfall during both north-east monsoon and southwest monsoon. The physiographic nature prevailing in the district forces variation in the climatic conditions. The radiation of the heat from the rocky hills and the dry weather due to sandy bed of the Palar minimises the rainfall in the region. The rainfall of the region depends on the south-west and the north-east monsoons. Except southern taluks of Cheyyar and Vandavas, the district experience moderate rainfall during north-east monsoon. In summer, from March to June, the wind is hot and uncomfortable. In the monsoon seasons, from July to November, the wind is mild and from December to February, the wind is cold. The hottest month in this district was April (36.3o C) and coldest month in this district was January (21.2° C).

8.5. Boundaries

The district is bounded on the North and West by Vellore district and on the South West by Dharmapuri district on the South Villupuram district and on the east by Kancheepuram district.

8.6. Soil

The red loamy soil is predominantly found here. However Polur taluk has concentration of red series loam. The district has also different types of soils such as ferruginous loamy and sandy loamy however black series loam is found in tanks and river beds of Cheyyar and Vandavasi Taluks.

8.7. Climate and rainfall

The general climate is tropical. The district receives rainfall from North East and South West monsoons. The total rainfall during 2016-17 districts is 635.8 mm.

8.8. Population

The total population of this district 2464875 comprising 1235889 Men and 1228986 women as per 2011 census. The urban population is 494945 constituting 20 % of the total Population, the remaining 80% ie.1969930 is rural population. The density of the population is 398 per sq.km. The total literate among male are 909803 and that of female are 717010

8.9. River

There is no perennial river in the district. Cheyyar, Thenpennai, Kamandala, Naganathi are only in seasonal. Sathanur Dam is constructed across Thenpennai River in Thandrampet taluk among Chennakesava Hills.

8.10. Water Resource

The rivers flowing in the district are Pennaiyar and Kamandala River. Sathanur dam is the major dam constructed across middle Pennaiyar River Basin among Chennakesava Hills in the district. Canals, wells, tanks and reservoirs are the sources of irrigation in the district. Several plans and schemes have been introduced for uninterrupted water supply for domestic and economic activities.

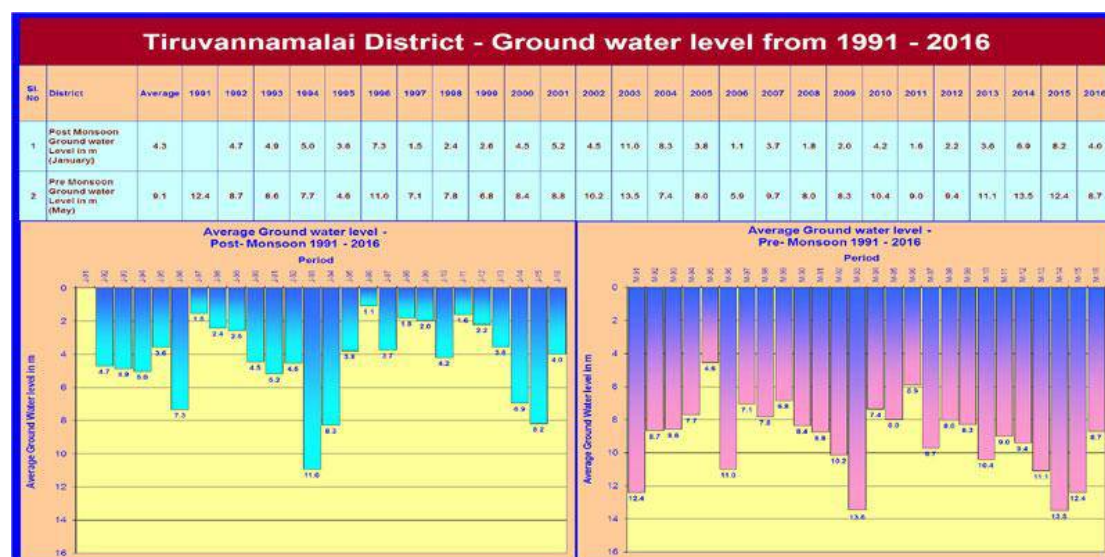


Fig: 8.10.1. Ground Water Level From 1991 – 2016

Few Schemes to enhance the water supply in the district are as follows:

Combined Water Supply Scheme (CWSS)

More than one local body are involved which consists of assistance from Minimum Needs Program, National Rural Drinking Water program and financial assistance from institutions like TUFIDCO, TNUIFSL, NABARD and ADB.

HDPE linings of major canals

High Density Polyethylene (HDPE) linings are being implemented by the state government to limit the transmission loss.

8.11. Cropping Pattern

Paddy, Groundnut, Sugarcane, Millets and pulses are the major crops, during the current fasli-1426(2016-17) 78149 /Hects of paddy, 25399 /Hects of sugarcane/ 50730 /Hects of groundnut, 34225 /Hects of pulses are cultivated.

8.12. Transport and communication

93 Km of Broad gauge rail transport in the Katpadi and Villupuram segment utilized for both passenger and goods transportation as far as road transports nearly, 1600 km of various kinds of roads are used. The district has two head post offices, 72 sub offices, 455 branch post offices, 4 Telephone divisions and nearly 18430 phone connections in use.

8.13 Industries

This district is industrially backward, the (Sevoor) Arni T.K SLS cotton spinning mill is the only major industry and Cheyyar Co-operative Sugar mill in Annakkavoor. Dharani Sugars, Polur and Bannari Amman Sugars, Gozhhuthampattu Sugar mills are functioning. However medium and small scale industries as well as cottage industries, such as modern rice mills, weaving factories, cotton, silk and mat weaving, coir manufacturing and beedi manufacturing are flourishing here. The district is enriched in mineral deposits such as black granites, multi-colored granites, soap and magnetite deposits.

8.14 Places of worship and tourist

Tiruvannamalai is one of the most venerated places in Tamil Nadu. The main Deepam festival, Maha shivarathri and Pournami girivalam attracts Tiruvannamalai and Parvathamalai devotees from far and wide throughout India and abroad. Further main features of the District attract historic places besides Tiruvannamalai, Arni, Vandavasi and Devigapuram connected to East India and French companies. It is also noticed that well-maintained tourist places such as Sathanur dam, Jawathumalai and Amirthy Game Park.

In the late Chola period the Cholan of Sambuvarayar having Padavedu near Arni as HQ ruled this district. We can now find the fort and note along with a Shiva temple namely Kailasanathar in Arni town. On the whole Tiruvannamalai is traditionally rich in Historic and Spiritual values but lacks in industrial growth.

9. LAND UTILIZATION PATTERN IN THE DISTRICT

Land and Agriculture 32% of land in Thiruvannamalai is used for agricultural activities to produce rice, ground nut and sugarcane. Another major economic activity of the district is Silk Saree weaving, a bulk of India's Silk apparels is produced by the people of Thiruvannamalai district largest concentration of Silk producers and weavers in Arni Taluk.

9.1. Cropping Pattern

Paddy, Groundnut, Sugarcane, Millets and pulses are the major crops, during the current fasli-1426(2016-17) 78149 /Hects of paddy, 25399 /Hects of sugarcane/ 50730 /Hects of groundnut, 34225 /Hects of pulses are cultivated.

9.2. Soil

The red loamy soil is predominantly found here. However Polur taluk has concentration of red series loam. The district has also different types of soils such as ferruginous loamy and sandy loamy however black series loam is found in tanks and river beds of Cheyyar and Vandavasi Taluks.

9.3. Forest and Hills

One sixth of the area of this district is covered by reserve forest and hills which is part and parcel of Eastern Ghats under Jawadhu Hills. The important hills in this district are Thiruvannamalai (2668 ft MSL), Jawadhu hills (3600-3800 ft MSL) and Kailasagiri (2743 ft MSL)

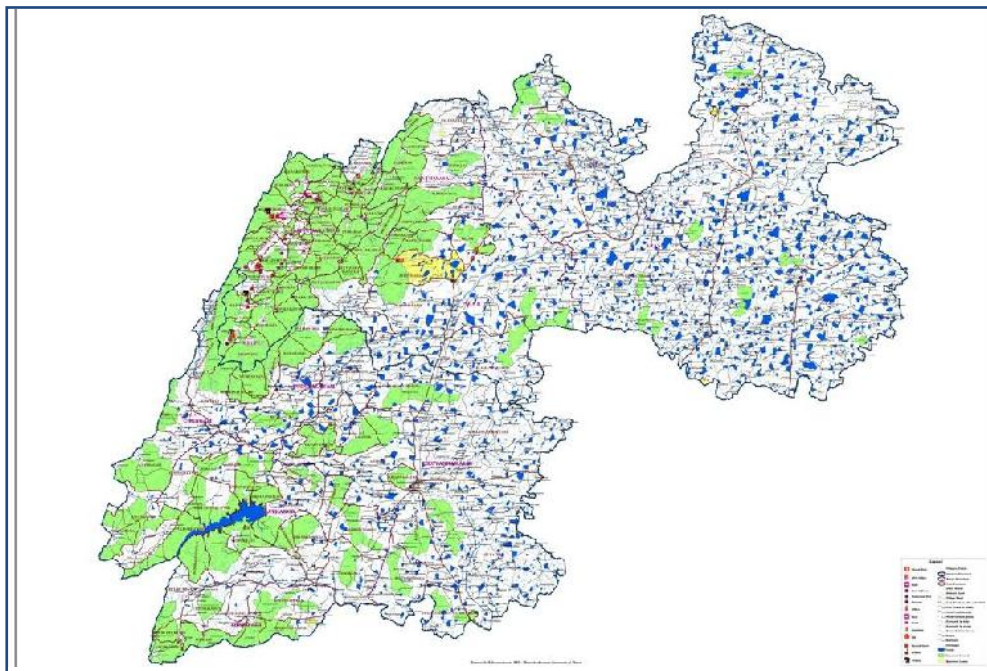


Fig.9.3.1.Forest Map of Tiruvannamalai District

9.4. Industries

This district is industrially backward, the (Sevoor) Arni T.K SLS cotton spinning mill is the only major industry and Cheyyar Co-operative Sugar mill in Annakkavoor. Dharani Sugars, Polur and Bannari Amman Sugars, Gozhhuthampattu Sugar mills are functioning. However medium and small scale industries as well as cottage industries, such as modern rice mills, weaving factories, cotton, silk and mat weaving, coir manufacturing and beedi manufacturing are flourishing here. The district is enriched in mineral deposits such as black granites, multi-colored granites soap stone and magnetite deposits.

10. PHYSIOGRAPHY

The Jawadhu Hills are the highest mountains of this region. The general elevation of the Jawadhu Hills is 2500 ft with peaks rising up to 4200 ft. The district is extended upto Tirupathur taluk on the eastern part, the north-western portion of Chengam taluk and the western part of Polur taluk with spurs running in to Vellore taluk up to 9 kms. Kalrayan Hills range is on the southern part of Chengam taluk. The North-Western part of the region covers portions of Eastern Ghats and their spurs. The Hills in Tiruvannamalai and Pavala Malai at Polur taluk are famous for their spiritual sanctity. There are also a large number of small hills in Polur and Chengam taluks.

11. RAINFALL DATA

Rain fall details of Tiruvannamalai District for the year 2015

Month	TV Malai	Chengam	Polur	Sathanur Dam	Arni	Cheyyar	Vandavasi	Total	Average
Jan 2015	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Feb 2015	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
March 2015	0.00	2.00	0.00	0.00	10.80	0.00	0.00	12.80	1.83
April 2015	174.80	162.70	135.40	126.40	204.00	48.60	43.80	895.70	127.95
May 2015	80.00	45.90	128.40	42.40	148.60	114.00	69.80	629.10	89.87
June 2015	71.80	90.80	76.00	41.20	70.20	39.00	7.00	396.00	56.57
July 2015	55.60	56.00	106.40	141.80	88.70	101.50	135.30	685.30	97.90
Aug 2015	246.70	111.80	182.50	232.60	171.80	172.60	149.80	1267.80	181.11
Sept 2015	142.20	173.60	114.20	158.40	80.40	136.00	82.00	886.80	126.68
Oct 2015	87.20	110.60	197.80	80.80	148.20	243.90	132.30	1000.80	142.97
Nov 2015	472.20	324.00	406.60	506.40	375.60	933.42	700.47	3718.69	531.24
Dec 2015	69.10	36.70	137.80	98.00	142.40	262.00	231.00	977.00	139.57
Total	1399.60	1114.10	1485.10	1428.00	1440.70	2051.02	1551.47	10469.99	1495.71

Rain fall details of Tiruvannamalai District for the year 2016

Date	TV Malai	Chengam	Polur	Sathanur Dam	Arni	Cheygar	Vandavasi	Total	Average
Jan 2016	0.00	0.00	4.80	30.20	27.8	0.00	0.00	62.80	8.97
Feb 2016	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
March 2016	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
April 2016	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
May 2016	88.40	102.60	54.60	95.20	70.00	120.80	57.30	588.90	84.13
June 2016	85.60	104.40	98.60	96.00	167.60	74.00	98.20	724.40	103.49
July 2016	104.30	79.90	173.20	78.20	142.80	114.80	120.60	813.80	116.26
Aug 2016	50.80	107.20	60.80	24.80	102.40	178.50	147.00	671.50	95.93
Sept 2016	49.20	27.60	107.20	4.20	197.00	115.00	223.00	723.20	103.31
Oct 2016	61.10	73.60	58.80	168.60	37.60	14.00	40.00	453.70	64.81
Nov 2016	28.70	1.40	3.80	6.00	0.00	3.00	0.00	42.90	6.13
Dec 2016	60.80	41.20	90.00	64.60	126.70	189.00	139.00	711.30	101.61
Total	528.90	537.90	651.80	567.8	871.9	809.10	825.10	4792.50	684.64

Rain fall details of Tiruvannamalai District for the year 2017

Date	TV Malai	Chengam	Polur	Sathanur Dam	Arni	Cheygar	Vandavasi	Total	Average
Jan 2017	22.50	20.00	50.00	69.00	94.00	37.00	36.00	329.30	47.04
Feb 2017	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
March 2017	0.00	29.40	4.60	0.00	0.00	0.00	0.00	34.00	4.86
April 2017	0.00	11.50	2.40	0.00	9.20	1.00	0.00	24.10	3.44
May 2017	13.10	118.20	70.00	114.80	24.60	7.00	0.00	347.70	49.67
June 2017	7.40	108.10	64.60	25.80	66.20	23.00	94.40	389.50	55.64
July 2017	24.80	42.60	54.8	61.80	52.60	124.50	122.40	483.50	69.07
Aug 2017	314.40	657.30	530.00	313.60	215.90	253.50	255.00	2539.70	362.81
Sept 2017	49.40	68.90	139.60	81.80	74.80	118.00	101.60	634.10	90.59
Total	431.60	1056.80	916.00	585.00	537.30	564.00	609.40	4700.10	671.44

12. GEOLOGY AND MINERAL WEALTH

11.1 An outline on Geology of Tamil Nadu:

Crystalline rocks of Archaean to late Proterozoic age occupy over 80% of the area of the state of Tamilnadu, while the rest is covered by Phanerozoic sedimentary rocks mainly along the coastal belt and in a few inland River valleys.

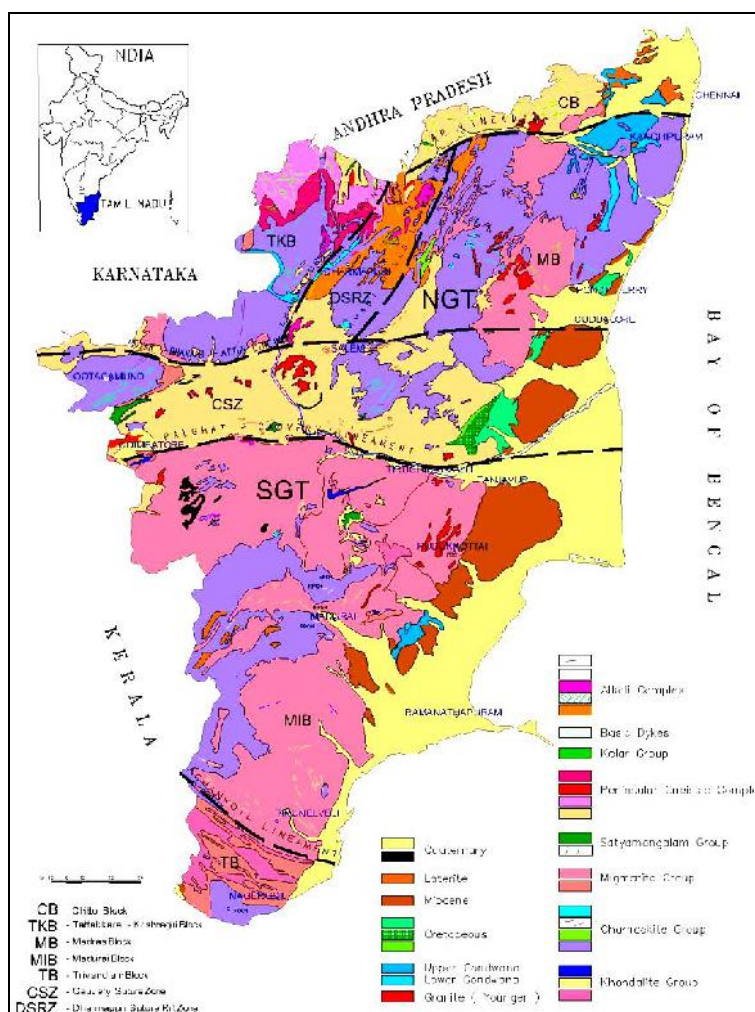


Fig 11.1.1 Geological Map Of Tamil Nadu And Puducherry

(Source: Miscellaneous Publication, GSI, SU:TN&P, Chennai)

The hard rock terrain comprises predominantly of Charnokite and Khondalite groups and their migmatitic derivatives, supracrustal sequences of Sathyamangalam and Kolar groups and Peninsular Gneissic Complex (Bhavani Group), intruded by ultramafic-mafic complexes, basic dykes, granites and syenites. The sedimentary rocks of the coastal belt include fluvial, fluvio-marine and marine sequences, such as Gondwana

Supergroup (Carboniferous to Permian and Upper Jurassic to Lower Cretaceous), marine sediments of Cauvery basin (Lower Cretaceous to Paleogene), Cuddalore /Pannambarai Formation (Mio-Pliocene) and sediments of Quaternary and Recent age.

12.2 Mineral Wealth of District

Geologically Tiruvannamalai District mainly comprises of rocks of Archaeon age. The type of rocks found in the district are Charnockite, Granitic gneiss, Amphibolite, Pyroxenite, Dunite, Migmatites, Banded Magnetite Quartzite, Shale and Clay. Dolerite dykes (Black Granite) are also noticed cutting across the country rocks.

12.2.1 Major Minerals

12.2.1.1 Iron Ore

The Magnetite quartzite deposit of Kavuthimalai, VEDIAPPANMALAI hills near Tiruvannamalai is one of the potential deposits. This Magnetite quartzite deposit is a low grade one and has to be beneficiated and also pelletised. At present there is no mining lease for mining Iron Ore in Tiruvannamalai District.

Magnetite-quartzite bands occur near Manikkavalli (12°31': 79° 17') and Arumbalur (12°32': 79°13'). The probable reserves are of the order of 2.03 million tonnes. An iron-ore containing 23-39% Fe occurs near Kelur (12°36': 79°09')-The probable reserves are of the order of 34 million tonnes within a depth of 10 m. This ore is free from sulphur and the phosphorous content is within limits for use in blast furnace.

A 4.4 km. long and 10 to 25 m. wide magnetite-quartzite band occurs about 2.0 km. to the north of Puliappattu (12°16': 79°00'). The inferred reserves upto a depth of 100 m. are of the order of 28.50 million tonnes with 30.54% Fe content. Of the five bands of magnetite-quartzite in parts of Chengam and Tiruppattur taluks, the largest measures 4 km. long and 6 m. wide and passes through the crests of hills .1451 (12°16': 78°41') and .1375 (12°17':78°42'). The inferred reserve is of the order of 2.52 million tonnes upto a depth of 30 m. with a Fe content ranging between 38.50—38.78%.

Two magnetite-quartzite bands measuring 1.6 km. x 12 m. and 1.4 km. x 7 m. are located 0.2 km. to the east and 0.4 km. to the

south-east of Durgamalai .3349 (12°28': 78°45'), respectively. The samples analysed 41.88 and 44.67% Fe and are free of phosphorous, sulphur and titanium.

Out of the eleven magnetite-quartzite bands, the biggest measures 3.6 km. x 9 m. and occurs 1.2 km. west of Pudur (12°24': 78°41') analysing 36% Fe. The total inferred reserves are of the order of 3.4 million tonnes upto an assumed depth of 30 m.

Banded magnetite-quartzite with hematite has been recorded 12 km. north-west of Tiruvannamalai (12°14' : 79°05') in Kavuthi Malai (12°18' : 79°01') and Vediappan Malai (12°18' : 79°02') and to the south of Ponakkadu. The iron-ore band is being investigated by the State Geology Department with the aid of the **U. N. D. P. (Madras Mineral Project)**. The band occurs in three detached synclinal basins on either side of Tiruvannamalai-Kanchi road (12°23' : 78°58') with converging dips of 65° to 80°. Its strike length varies from 2.5 to 4.5 km. According to the State Geology Department of Tamil Nadu, the inferred reserves are :

Vediappanmalai	...	60 million tonnes
Kavuthi Malai	...	56 million tonnes
Uchchimalai	...	20 million tonnes

Five drill holes have also been completed by them in the Kavuthi Malai iron-ore band.

12.2.1.2 Magnesite

An occurrence of ultra basic-Alkali syenite comprises with rocks like Dunite and Corundum Syenite is found near Thenmudiyar Village in Thandarampattu Taluk. Another small occurrence of Magnesite has been reported near Thorapadi in the Eraiyurmalai R.F. amidst the ultra basic complex. At present there is no mining lease for mining Magnesite in Tiruvannamalai District.



Photo:1 Eraiyur R.F



Photo:2 Magnesite, Narasinganallur



Photo:3 Serpentine / Dunite / Pyroxinite



Photo:4 Magnesite

Foliation : N50°E / 80°SE
Joint : S35°E / 63°NE
Location : Narsinganallur Eraiyur R.F., Chengam Taluk

Coordinates : 12° 18' 33.61" N,
 78° 54' 42.96" E



Photo:5 Magnesite

Foliation : N-S / 65°E
Coordinates : 12° 06' 41.53" N,
 78° 54' 42.96" E

Location : Thenmudaiyanur , Thandrampattu Taluk



Photo:6 Magnesite

Coordinates : 12° 06' 41.53" N,
 78° 54' 42.96" E

12.2.1.3 Steatite / Soapstone:

A small occurrence of steatite is located in Poomalai R.F. Royandapuram R.F., in Thandarampattu Taluk and also near Thenkarimallur and Radhapuram Villages in Thandarampattu Taluk. At present there is no mining lease for mining Steatite in Tiruvannamalai District.



Photo: 7 - 10 Steatite / Soapstone

Foliation :N85°E / 85°SW **Coordininates** :12° 07' 42.58" N,
Joint : N10°E / 85°SW 78° 57' 58.83" E
Location :Poomalai R.F. Royandapuram R.F near Radhapuram,
Thandrampattu Taluk



Photo 11 -12. Steatite / Soapstone

Location : Near Radhapuram, Thandrampattu Taluk

12.2.1.4 Fire Clay

Clay mineral suitable for making stoneware pipes, tiles, ceramic utensils etc. is available in Painkinar and Cholavaram Village of Cheyyar Taluk. At present there is one mining lease for mining Fire Clay exists in Cholavaram Village of Cheyyar Taluk.



Photo:13 – 15. Tvl. Arcot Pipes, Factory (FIRE CLAY) Cholavaram, Cheyyar Taluk



Photo:16 – 17. Fire Clay, Painkinar Village, Cheyyar Taluk. Coordinates :12°42'44.30" N; 79°32'45.55" E



Photo:18 – 19 Fire Clay, PeriyaKoil -Village, Cheyyar Taluk, Tiruvannamalai

12.2.2 Minor Minerals

12.2.2.1 Black Granite

Dolerite dyke commercially called as Black Granite play a vital role in the mineral resources of this District. Black Granite is found in Tiruvannamalai, Chengam, Thandarampattu and Vandavasi Taluks.



Photo:20. Black Granite, **Location:** Seiyalam, Vandavasi Taluk
Foliation: N65°E / 80°SE **Coordinates :** 12° 26' 40.29" N,
79° 43' 23.56" E



Photo:21. Black Granite **Location:** Atthipakkam, Vandavasi Taluk
Foliation : N-S / 60°SE **Coordinates :** 12° 27' 38.56" N, 79° 35' 53.39" E

12.2.2.2 Multi colour Granite

The granite gneisses commercially called as Multi Coloured Granite are noticed in parts of Tiruvannamalai, Arni, Thandarapattu, Polur and Chetpet Taluks.



Foliation : S80°E / 80°SW **Coordinates** :12° 30' 28.21" N,
Joint : S50°W / 80°SW 79° 18' 03.11" E
: E-W / 60°N

Photo. 22& 23: Multi Colour Granite

Location : Nachiyapuram, Chetpet Taluk

12.2.2.3 Roughstone and Jellies

Ordinary stones suitable for making Roughstones, Jelly, Ballast etc., used for road formation, construction and other purpose are available in all Taluks.



Photo.23: Charnockite (Rough Stone) Quarry

Foliation : N55°W / 70°SW **Coordinates** :12° 38' 40.04" N,

Joint : S50°W / 80°SW 79° 36' 12.21" E

Location : Athi - Village, Cheyyar Taluk



Photo .24: Rough stone crushed into Jellies, Ezhacherri, Cheyyar – Taluk

12.2.2.4 Brick Clay

Brick Clay suitable for manufacturing bricks is available in all Taluks.

12.2.2.5 Sand

Sand for construction purpose is available in Palar River and Cheyyar and other small streams in the Districts. At present there are no leases for quarrying Sand by P.W.D. in Tiruvannamalai District.

12.2.2.6 M – Sand

Manufactured Sand is defined as a purpose-made crushed fine aggregate produced from a suitable source material. Production generally involves crushing, screening and possibility washing. It is a substitute of river sand is produced from hard granite stone. The crushed sand is of cubical shape with grounded edges, washed and graded to as a construction material. The size of manufactured sand (M-Sand) is less than 4.75mm.

The precious river bed acts as not only mechanical filter but also as a biological filter with its microorganisms, formed through natural evolution over centuries which cannot be artificially replicated. Due to the depletion of good quality river sand for the use of construction, the use of manufactured sand has been increased.



Photo .25: Mining for M – Sand, Palli- Village, Cheyyar – Taluk



Photo .26: Wastage (Dust Particle) Of M- Sand



Photo .27: Powdered Rough stone for preparation of M - Sand



**Photo: 28. Crushing Unit for preparation of M - Sand
Manufactured Sand (M - Sand)**

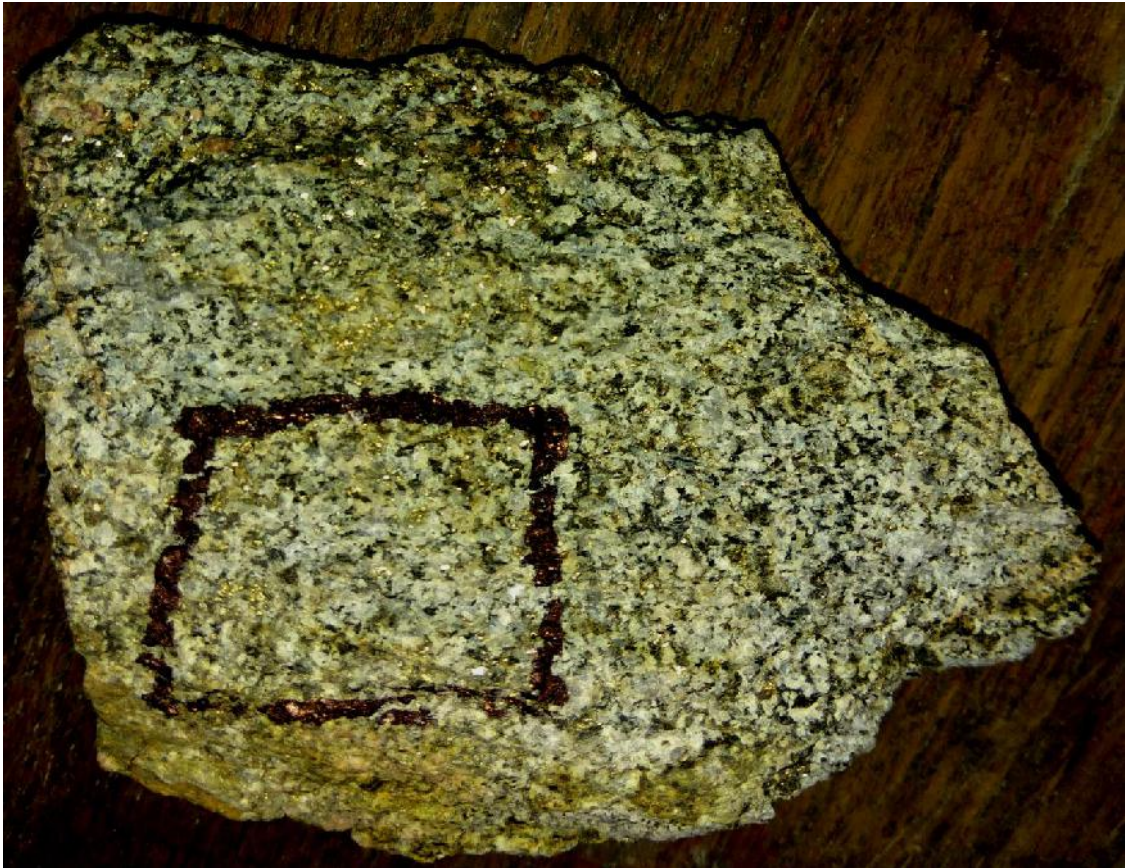


“Our Children’s Future is in Our Hand or Decision”

Our contribution to environment is by producing M-Sand as an alternative to river sand, for reducing the extracto of sand from river bed

12. NEW FIND OF GOLD IN EDATHANUR, TIRUVANNAMALAI DISTRICT

In connection with the DEIAA work of DGM, Tiruvannamalai District, Tamilnadu, field work was carried out by Shri.Paranjothi,S., Assistant Geologist, GSI, SU:TN&P, Chennai along with Smt.Mythili, Asst.Director, DGM, Tiruvanamalai District. During the field work,active panning by the locales for gold along the river Ponnaiyar was observed in Edathanur village, 22kms SW of Tiruvannamalai. It is noticed that the occurrence of **gold in bluish quartz vein associated with Epidote Hornblende Biotite Gneiss** occur along the course of Ponnaiyar river, near Edathanur village, Thandrampattu Taluk, Tiruvannamalai District. Heavies were collected by panning and treated with mercury followed by smelting under controlled heating using brass troche burner gold weighing **0.58mg** was extracted.



**Photo: 29. Gold mineralisation with Sulphide
in Epidote Hornblende Biotite Gneiss,**



Photo: 30. Pits excavated in the river course (R.Then Pennar) for removing the top gravel containing gold grains, Edathanur area, **Loc.** Edathaur and collecting weathered material for panning., **Loc.** Edathaur



Photo: 31. Close view of the bedrock hosting minute grains of visible gold, **Loc:** Edathaur



Photo:31. Visible gold grains on the weathered surface of hornblende gneiss, **Loc:** Edathaur



Photo: 32. Residue containing gold grains after panning, **Loc.** Edathaur



Photo: 33. Residue containing gold grains after panning, **Loc.**Edathaur,

13.1. Confirmation of gold by goldsmith

Field experiment was carried out by Shri.Paranjothi S, Asst.Geologist for the confirmation of gold grains. The officer has collected bed rock samples of 7 – 8 kg from weathered Epidote-Hornblende Gneiss was collected at Edathanur village to confirm the gold grain. The sample was panned and the residue consisting of heavies and gold grains, collectively weighing of about 50 gms were separated. The residue was treated with conc. nitric acid to remove elements like iron, silver and copper. After acid treatment the residue was amalgamated with mercury, followed by smelting under controlled heating using brass troche burner. After smelting gold speck weighing of **0.58mg** was extracted.

13.2. Inspection Visit of Deputy Director General, GSI, SU:TN&P

In connection with the DEIAA work of DGM, Tiruvannamalai District, Tamil Nadu, Shri Paranjothi S, Assistant Geologist of Geological Survey of India, SU:TN & P, and Smt.Mythili, Asst.Director, Directorate of Geology and Mining, Tiruvannamalai District, has carried out field work in Tiruvannamalai District during the month of July 2017. During the course of field work, the officer has witnessed Gold occurrence above the country rock ie., Epidote Hornblende Biotite Gneiss along with bluish quartz vein along the river Ponnaiyar, at Edathanur village, Thandrampattu – Taluk, Tiruvannamalai District South of Sattanur Water reservoir.

Based on the report of Shri. Paranjothi S, Assistant Geologist, Dr.S.Raju, Dy. Director General, Shri. S.B.Vijay Kumar, Senior Geologist,GSI, SU:TNP and Smt.Mythili, Asst.Director, Directorate of Geology and Mining, Tiruvannamalai District has carried out field work during 13.07.17 and 14.07.17, in the areas reported for gold panning with an objective to identify the source and mode of occurrence of mineralisation, and the scope of carrying out G4 stage exploratory work in the area for Gold.

The lithounits encountered in the area includes charnockite, charnockitic gneiss and hornblende gneiss +/- epidote. Thin quartz veins (ribbon like) is found to occur along the gneissic planes of hornblende biotite gneiss, where fine grains of gold and other sulphides were present along the contact. Stream sediment and bed rock chip samples were collected for chemical analysis and petrological studies (Annexure-1 & 2).

The team has taken field traverse in Sathanaur reservoir and Neepathurai area, reported gold panning, in the upstream side of the river.

The Sattanur reservoir lies 11 kms north of Edathanur village. It is reported that local panning for gold is being carried out in the natural course and surplus water course of the reservoir in the downstream side.

The team has visited the Neepathurai site around 25 km east of Sattanur along the upstream side where active panning was going on. The lithounits encountered in the area includes Charnockite, Charnockitic Gneiss, Mylonite with Pseudotachylites, Fault breccia and younger pegmatitic intrusives. The general trend observed in the area N45°E / S45°W with 50° westerly dip. Highly weathered (limonitic) sulphidic zones of 3.5 to 15m width cutting across the river channel, with disseminations of Pyrite, Chalcopyrite and Sphalerite? were noticed. These sulphidic zones are oxidised, yellow to brown colour, fragile with black streak and pungent smell. It is observed that the local people carry out panning mainly in the limonitised sulphidic zones. However, visible gold grains were not noted in the rock chip samples collected from various lithounits present in the area. Also, it is observed that the locales could not yield gold grains by panning compared to Edathanur. Bed rocks were collected for chemical analysis and optical studies.

The presence of fault breccia with pseudotachylite, garnet and well developed mylonitic fabric reveals that the area has undergone severe, multiple brittle-ductile deformation. It is suspected that the deformation event could have facilitated in the movement/remobilisation of gold grains within the rock units.

13.3. Study Area

The area falls in Toposheet No. 57 L/16 and bound by the latitude of 12°14'02"N - 12° 01'41"N and longitude of 78°35'57"E - 78°59'15.83"E. It is situated in 22kms SW of Tiruvannamalai town. Geomorphologically, the area is an undulating terrain with residual hills and intermittent plain lands. The area falls a part of Ponnaiyar (South Pennar) river, that originates at Nandidurga in Chikkaballapura District of Karnataka State and flows towards south-east for 400 km through Karnataka and Tamil Nadu, emptying into the Bay of Bengal at Cuddalore. The South Pennar River is known as Dakshina Pinakini in Kannada and Thenpennai in Tamil. It is also referred as Ponnaiyar. It has a catchment area of 3,690 km² located in Karnataka, Tamil Nadu and Andhra Pradesh States. Water flows during the

monsoon season when it is fed by the south-west monsoon in catchment area and the northeast monsoon in Tamil Nadu. However this water flow raises the water table throughout the river basin and feeds numerous reservoirs/tanks.



FIG: 12.3.1: IMAGE SHOWING THE AREA OF STUDY

13.4 Background Information

The area forms a part of the Archaean Granulite Terrain of Tamil Nadu, which consists of gabbro, pyroxenite, banded magnetite quartzite, pyroxene granulite, charnockite, hornblende biotite gneiss, pink granite gneiss/pink granitoid gneiss, quartzo-feldspathic gneiss, pink migmatite, epidote – hornblende gneiss, basic dykes (dolerite), granite, quartz and pegmatite veins. The general trend of the foliation is N45°E – S45°W with moderate to steep dip on either side.

During 1990-91, P. Shanmugam, et al carried out regional exploration for Au in banded iron formation in Chengam and Sankarapuram areas of Tiruvannamalai and South Arcot districts, Tamil Nadu, falling in Toposheets No. 57L/11, 15, 16 and 58I/13. Striking map of Banded Iron Formation (BIF) bands and the enclosing/neighbouring meta basic rocks on 1:50,000 scale, plotting of shear zones, silicified zones and few stream sediment heavies collected from 1st order nalas draining BIF bands. Out of the total 350 samples analysed for Au, 85 samples show Au values ranging from 0.1 to 0.4

g/t, 32 samples showing 0.5 to 0.7 g/t and one sample shows value of 0.8 g/t. Samples from magnetite quartzite with quartz veinlets show Cu values from 115 to 515 ppm. These values fall in the adjoining Toposheet of the present study area.

Geochemical Mapping (GCM) was taken up in toposheet no.57L/16 in parts of Tiruvannamalai and Villupuram District of Tamil Nadu by Dilip Kumar Yadav and Lakshmy C.S during Field Season 2012-13. The analytical results of one composite stream sediment sample show high value of Au (650 ppb), which falls in the north of Pudurnattam village, (unit cell No.119). Further the composite cell no. 174 and 178, the gold value were 34 ppb and 52 ppb respectively and the authors recommended to analyze the existing 4 unit cell samples representing the high value of Gold (Au).



Photo:34. Fault breccia with angular clasts within pseudotachylites and development of mylonitic fabric,
Loc. Neepathurai



Photo:35. Finegrained garnetiferous gneiss with pseudotachylites,
Loc. Neepathurai



Photo: 36. Oxidised sulphidic zone,
Loc. Neepathurai



Photo: 37. Oxidised sulphidic zone with malachite stains,
Loc. Neepathurai



Photo: 38. Mylonitic fabric with development of boudins,
Loc: Neepathurai



Photo: 39. Panning for gold by the locales,
Loc: Neepathurai

13.5. Laboratory studies

Subsequent to the field visit carried out, the stream sediment samples and the rock chip samples of the bed rock were subjected to the laboratory tests including hand picking of suspected gold grains from the stream sediments and mounting for petrological studies, pulverising of stream sediments and rock chip samples for chemical analysis etc.

13.6. Heavy mineral separation

About 50gm of residue after panning obtained from the local villagers engaged in panning was subjected to bromoform gravity separation process, thereby separating the lighter minerals from the heavies including the gold grains. The heavies obtained from the gravity separation was air dried and the suspected gold grains were handpicked using forceps and mounted on the thin section for petrological studies. Detailed petrographic studies were carried out including the ore microscopic techniques and grain morphometric analysis.

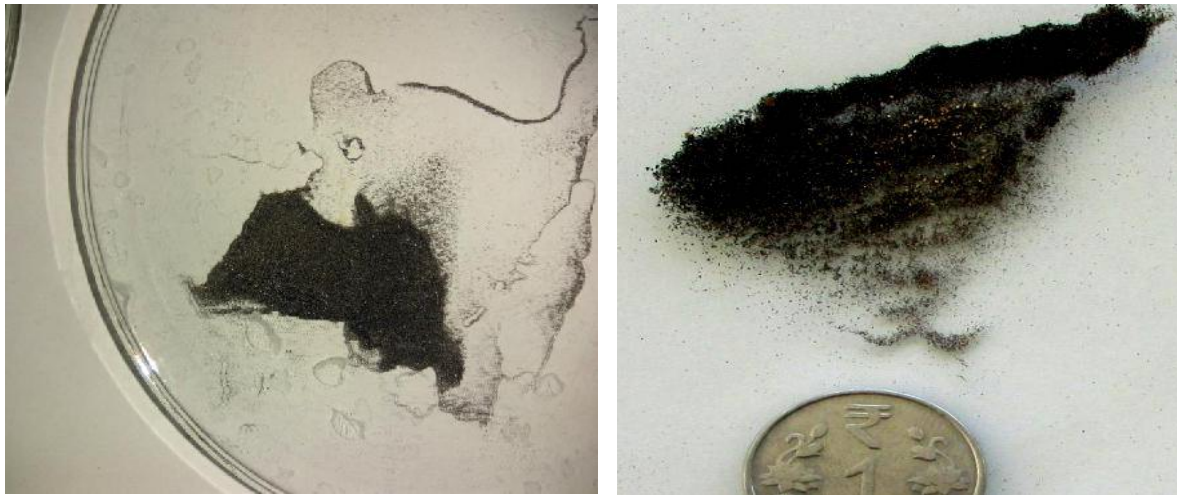


Photo: 40. Heavies containing gold grains



Photo: 41. Gold grains mounted on thin section

13.7. Petrological studies

The gold grains were identified by high reflectivity, brilliant yellow colour, absence of cleavage, isotropic, absence of internal reflection and less tarnishing effect. The gold grains are rounded and elongated, flaky in nature and shows brilliant yellow colour in low illumination. The grain size varies between 300 μm and 1500 μm . Further detailed studies including EPMA studies with corroborating chemical analysis may throw light on the identification of gold grains.

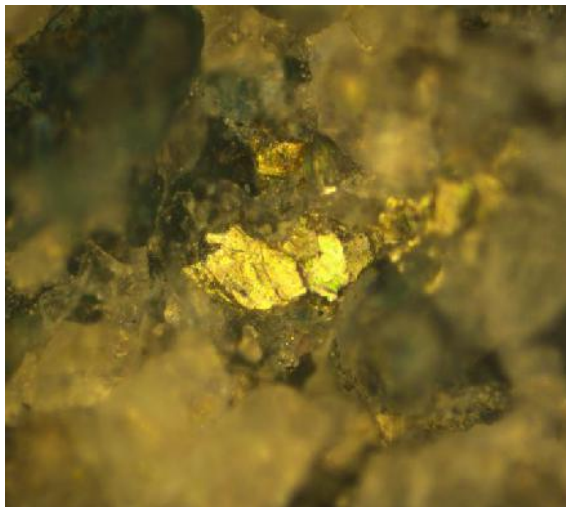
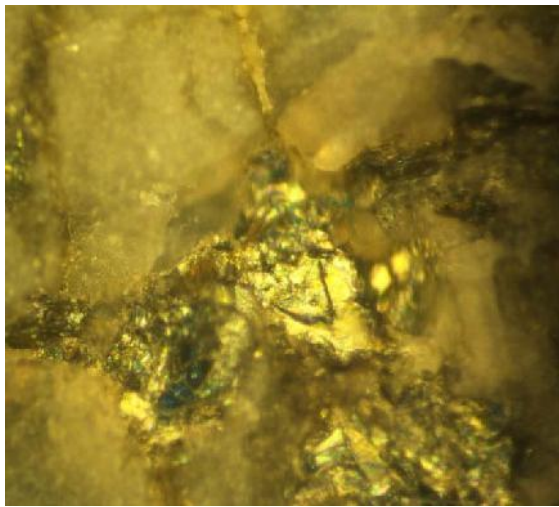
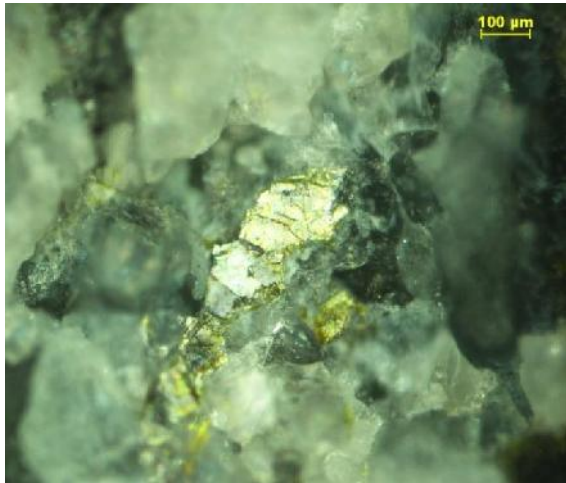
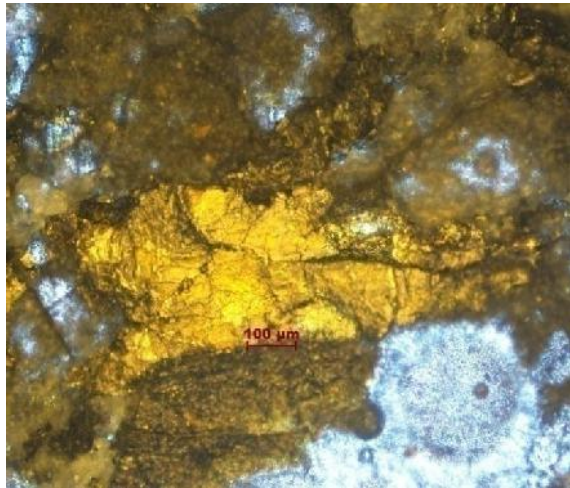


Photo: 44-47 Photomicrograph of gold grains associated with quartz grains in hornblende gneiss, **Loc:** Edathanur

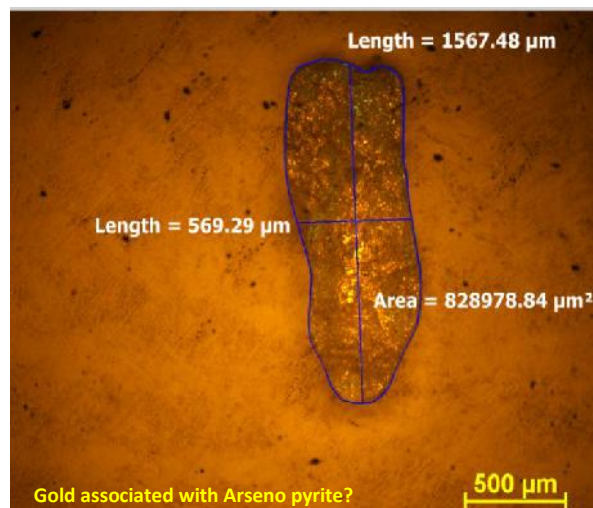
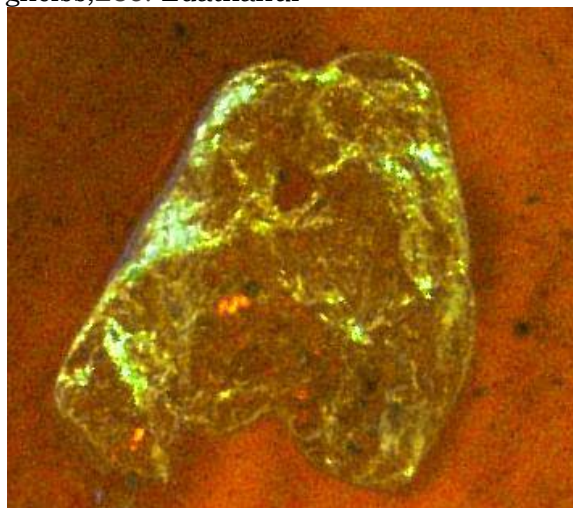


Photo: 48-49 Photomicrograph of gold grains after heavy mineral separation method, **Loc:** Edathanur

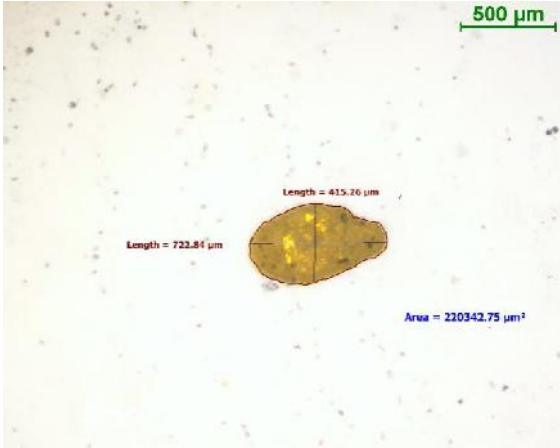


Photo: 50-51. Photomicrograph of gold grains displaying the shape and geometry

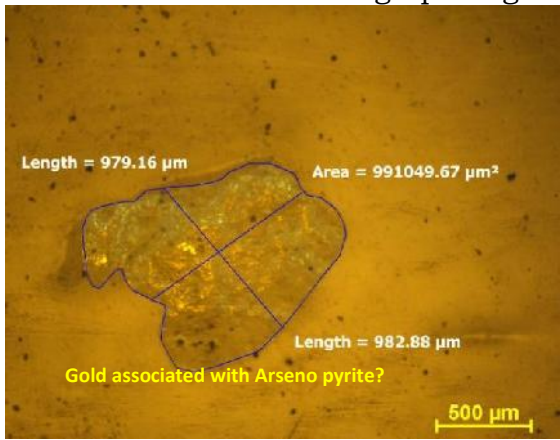


Photo: 52 - 53. Photomicrograph of gold grains displaying the shape and geometry

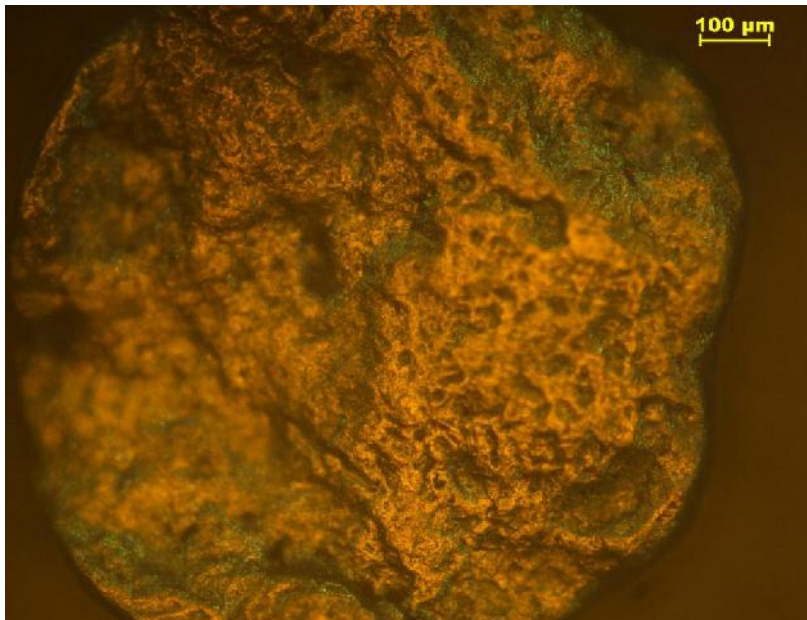


Photo: 54. Photomicrograph of gold grains displaying the shape and geometry

13.8. Chemical Analytical Result:

The analytical results of two samples analyzed in **HGML**, Karnataka indicated Gold (Au) assay value of **0.2 g/t**. The petrological studies of the same, reveals the presence of few gold grains. Which are rounded, elongated, flaky in nature and shows brilliant yellow colour in low illumination. The grain size varies between 300µm and 1500 µm.

Note: The samples are submitted for chemical analyses in GSI, SR-Hyderabad, results are awaited.

13.9. EPMA Result:

EPMA studies resulted with **Au: 74.82 wt% and Ag: 25.87wt%**, Ni: 0.03wt%, Fe: 0.05wt%

Sample details for chemical analysis:

Annexure – 1

S.No.	Sample No.	Type of Sample	Rock type	Coordinates
1	ED – 1	-200 size fraction & powdered by pulveriser	Epidote hornblende biotite gneiss	12° 06' 23.42" 78° 55' 08.10"
3	NE – 1	-200 size fraction & powdered by pulveriser	Hornblende Gneiss	12° 09' 39.20" 78° 38' 34.39"

Sample details for petrological studies

Annexure – 2

S.No.	Sample No.	Type of Section	Rock type	Coordinates
1	ED – 1	Thin/ Polished section	Epidote hornblende biotite gneiss	12°06'23.42" 78°55'08.10"
2	ED – 2 (3 nos)	Thin/ Polished section	Charnockite gneiss?	12°06'30.99" 78°55'03.75"
3	NE – 2	Thin/ Polished section	Gneissic Charnockite?	12°09'39.20" 78°38'34.39"
4	NE – 3	Thin/ Polished section	Hornblende gneiss	12°09'52.7" 78°38'38"

General characteristic of gold**Annexure – 3**

Chemical symbol	: Au	Atomic number	: 79
Group,Period,Block	: 11,6,d (Transition Element)	Atomic weight	: 197
Crystal form	: Cubic	Colour	: Golden yellow to silver white rarely orange red
Luster	: Metallic	Hardness :	: 2.5 to 3.0
Reflectivity	: 99 % of infrared rays	Troy ounce (Oz)	: 31.10428 gm
Tola	: 11.66 gm	1 carat	: 4.167 % of gold
24 carat	: 100 % of gold or 1000 fine	Alloys	: Electrum, Amalgam, Tellurides
Melting point	: 1064.43 °C (1948 °F)	Conductivity	: Electrical: 0.452*10 ⁶ /cm ohm Thermal: 300K