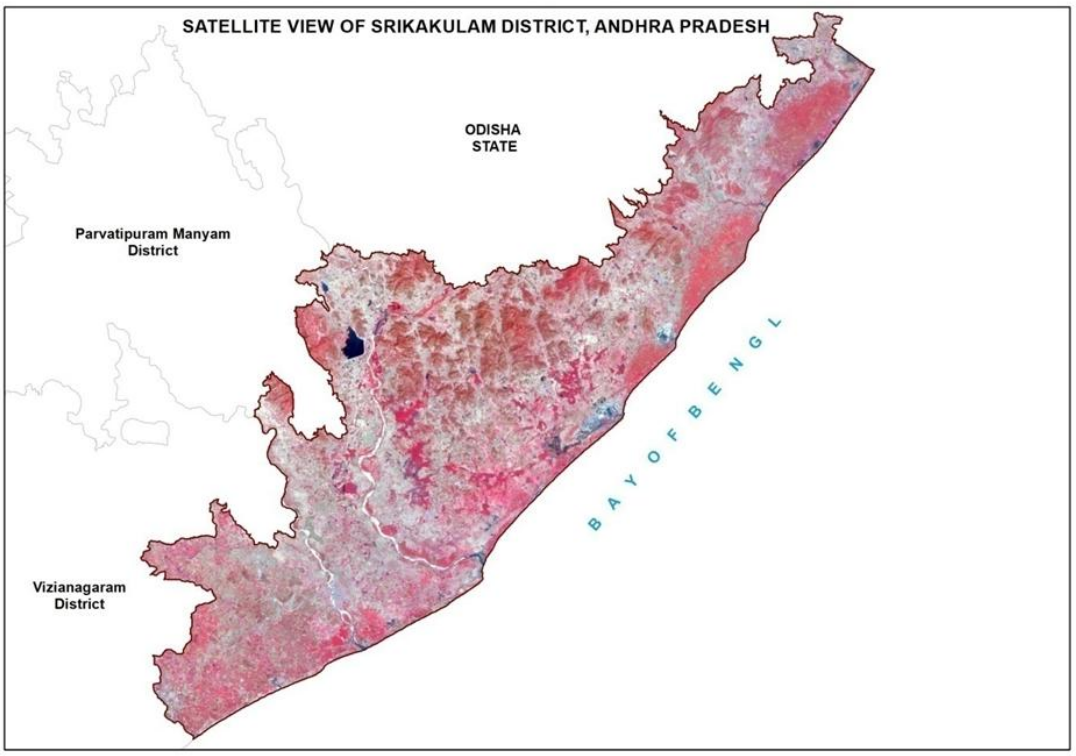
DISTRICT SURVEY REPORT
FOR SAND AND OTHER MINOR MINERALS
SRIKAKULAM DISTRICT, ANDHRA PRADESH

(FOR THE DEPARTMENT OF MINES AND GEOLOGY, GOVT. OF AP)

As per Notification No. S.O. 141 (E), 15.01.2016, S.O. 3611(E), 25.07.2018, & Enforcement & Monitoring Guidelines for Sand Mining 2020 of MOEF&CC, GoI



Prepared by

ANDHRA PRADESH SPACE APPLICATIONS CENTRE (APSAC)
ITE&C Department, Govt. of Andhra Pradesh

Submitted to

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Government of Andhra Pradesh

December 2023

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10	Technical Reviewed by	Sri. A. Nageswara Rao, Director(Technical), Sri.Dr.Govindu, Senior Consultant, APSAC		
11	Final Review	Sri.C. Chandrasekhar Reddy, Advisor, APSAC, ITE&C Dept. GoAP		
12	Affiliation of authors	Andhra Pradesh Space Applications Centre, ITE & C Department, Govt. of Andhra Pradesh		
13	Approved by :	Dr. Sundar Balakrishna, IFS Vice Chairman, APSAC ITE & C Department, Govt. of Andhra Pradesh		
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Report Scrutiny Mechanism

S. No.	Name of the Chapter	Maps Prepared/ Data Generated by (Senior Project Associate/Project Associate)	Draft Report Prepared by	Quality Checked by
1	Chapter-I	Sri. D.Krishna Smt.N.Vijayasanthi Smt. M.Vanajakshi Sri. N.Venkaiah Smt. D. Jnaneswari Sri.R.Kanaka Durgaiah, Smt. V.Sujatha Sri. G.Suresh Babu Sri. B. Ramanarasimha Rao Smt.B. Sunanda Smt. Swarajyalakshmi Dr.K. Raghuveer Naidu Smt.K.Alivelamma	Sri KLK Reddy Smt. N.Prathyusha Sri.Ch. Tata Babu Sri. Sudheer Kumar Tiwari, Sri R. Kannan, Scientist-SC Sri. N.Venkaiah Sri.R.Sriramamurty Smt.B. Sunanda Sri. G.Suresh Babu	Sri. G. Prasada Rao, Scientist-SF Dr.M.V.R.Murthy, Scientist-SF Sri. S. Chandra Sekhar, Scientist-SC Sri.Ch.Tata Babu, Scientist-SC Sri R. Kannan, Scientist-SC Sri. Sudheer Kumar Tiwari, Scientist-SC
2				
3				
4				
5				
6	Chapter-II & Chapter-III	Sri. P Raja Babu, Joint Director, DMG Dr.M.J.Ratnakanth Babu, Royalty Inspector, DMG		
7	Report compiled by	Dr.T.Vani, Scientist-SC		
8	Technical Support	Sri. M.N.Naik, Sri.A.Pavan Kumar		

PREFACE

TheNaturalresourceinventoryistheassessmentofthestatusofagivennaturalresourceofanareaatagivenpointintime.Populationpressureresultsin over-
exploitationofresources.Thebaselineinformationontheresourceswouldhelptheadministrationforbetterplanninganddecisionmaking.Themainpurposeofthereportistodisseminatedataonthenaturalresourceuptothelowestadministrativefunctionarytofacilitatemicrolevelplanninganddevelopment.Theeffortshavebeenmadetoassessanddocumenttheinformationonlanduselandcover,crop,surfacewaterresource,soils,slope,groundwaterprospects,groundwaterquality,geologicalinformation,andmineralsresourcesinSrikakulam
district,AndhraPradesh,basedonthesatelliteremotesensingdataandsocioeconomicinformation.

TheDepartmentofMinesandGeology(DMG),GovernmentofAndhraPradesh(AP)requestedtheAndhraPradeshSpaceApplicationsCenter(APSAC)toupdatethedistrictsurveyreportswithavailabilityofsandmineralinformation,majorandminormineraldetails,andrivermorphologyforallthedistrictsintheState.TheDistrictSurveyreportemphasizesandupdatedthemajorandminormineralsinthedistrictsofAP.TheDistrictSurveyreportsareupdatedfollowingthe"SustainableSandMiningguidelines"issuedin2016and2020andSO741of2016oftheMinistryofEnvironment,ForestsandClimateChangeprovidedbytheDMG.Thecommentsreceivedfromthepublic,iffoundfit,shallbeincorporatedinthereport.Alistofleasesinthedistrictwillbeprovidedbytheconcernedassistant DirectorsofMinesandGeology.

ThereportisanoutcomeoftheeffortsoftheScientistsandProjectAssociatesatAPSAC.Iheartilycongratulatetheteamforcompilingthereport.

(Dr.SundarBalakrishna,IFS)
Vice-Chairman
APSAC

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We would like to express our sincere gratitudeto **Dr. Sundar Balakrishna, IFS**, **Special Secretary to Government,** Information Technology, Electronics and Communications (ITE&C), Govt. of Andhra Pradesh and the **Vice-Chairman, APSAC** Govt. of Andhra Pradesh, for his meticulous guidance and supervision.

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We are also thankful to the **District Mines and Geology Officer,**Srikakulam District for their support in providing information

Our sincere thanks are due to the scientific staff of APSAC who has generated all the thematic maps for District Survey Reports.

APSAC

Contents

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List of Abbreviations

APSAC	: Andhra Pradesh Space Applications Centre
APMMC	: Andhra Pradesh Minor Mineral Concession
AMSL	: Above Mean Sea Level
AWiFS	: Advanced Wide Field Sensor
APWALTA	: Andhra Pradesh State Water, Land and Trees Authority
APMDC	: Andhra Pradesh Mineral Development Corporation
Bgl	: Below ground level
BT Road	: Bituminous Road
Cl	: Chlorine
CC Road	: Cement concrete
CRZ	: Coastal Regulatory Zone
CPSU	: Central Public Sector Undertaking
CGWB	: Central Ground Water Board
cu.m/day	: Cubic meter per day
DSR	: District Survey Report
DMG	: Directorate of Mines and Geology
DM&GO	: District Mines and Geology Officer
DES	: Directorate of Economics and Statistics
DEM	: Digital Elevation Model
dS/m	: Decisiemens per meter
EIA/EMP	: Environmental Impact Assessment
F	: Fluorine
FAC	: Full Additional Charge
FASAL	: Forecasting Agricultural output using Space, Agrometeorology and Land-based observations
Fe	: Iron
Ft	: feet
GD	: Geosciences Division
GIS	: Geographical Information System
GSI	: Geological Survey of India
Ha	: Hactar
Km	: Kilometer
IRS	: Indian Remote Sensing Satellite
ITE and C	: Information Technology Electronics and Communications
LISS	: Linear Imaging Self Scanning
LULC	: Land Use / Land Cover
Lps	: Litres per second

M	: meter
Mi	: mile
mm	: millimetre
MT	: Million Tonne
MoEF	: Ministry of Environment and Forests
MSL	: Mean Sea Level
NIRD	: National Institute of Rural Development
NH	: Natinal Highway
$NaNO_3$	: Sodium nitrate
NRSA	: National Remote Sensing Agency
NRSC	: National Remote Sensing Centre
PESA	: Panchayats Extension to Scheduled Areas
pH	: Power of hydrogen
PSD	: Performance Security Deposit
PSU	: Public Sector Undertakings
R2	: ResourceSat-2
RGNDWM	: Rajiv Gandhi National Drinking Water Mission
RWS and S	: Rural Water Supply and Sanitation
SAR	: Synthetic Aperture Radar
SEB	: Special Enforcement Bureau
SO_4	: Sulfate
Sq.Km	: Square Kilometre
Sq.m	: Square metre
TA	: Tantalum
TIN	: Triangular Irregular Network
TGA	: Total Geographical Area
TIS	: Tank Information System
TTD	: Tirumala Tirupati Devasthanams
WBM	: Water Bound Macadam

Chapter I – Introduction &General Profile

1.1 Administrative Setup

Srikakulam district is one of the Coastal districts of Andhra Pradeshwith a administrative headquarter as Srikakulam town. It is situated at in the extreme northeastern part of the state (in the Uttarandhra region). It has a coastline of 193 km along the Bay of Bengal.

Geographically, Srikakulam district is bounded north by Odisha State, south by Vizianagaram District and Bay of Bengal, on the west by Parvathipuram Manyam district and on the east by Bay of Bengal. The total geographical area of the district is 4,591 Sq.km. It is covered with 3 Revenue divisions namely Palasa, Srikakulam and Tekkali and comprising of 30 Revenue mandals and 1513 Revenue villages. Nandigam mandal is having maximum number of villages (112),whereas Kaviti mandal has minimum number of villages (21). Out of 30 mandals of the district, the maximum area (233.85. Sq.km.) is occupied by Mandasa mandal and minimum area by Lakshminarasupeta mandal (65.76 Sq.km).

The mandals covered in each Revenue division are shown in Table-1 and its spatial distribution is shown in Figure-1.

Table 1 List of mandals covered in each Revenue division

Srikakulam Division	**Palasa Division**	**Tekkali Division**
Amadalavalasa	Ichchapuram	Hiramandalam
Burja	Kanchili	Kotabommali
Etcherla	Kaviti	Kothuru
Ganguvarisigadam	Mandasa	Lakshminarsupeta
Gara	Nandigam	Meliaputti
Jalumuru	Palasa	Pathapatnam
Laveru	Sompeta	Santhabommali
Narasannapeta	Vajrapukothuru	Saravakota
Polaki		Tekkali
Ponduru		
Ranastalam		
Sarubujjili		
Srikakulam		

Data Source: APSAC, Vijayawada.

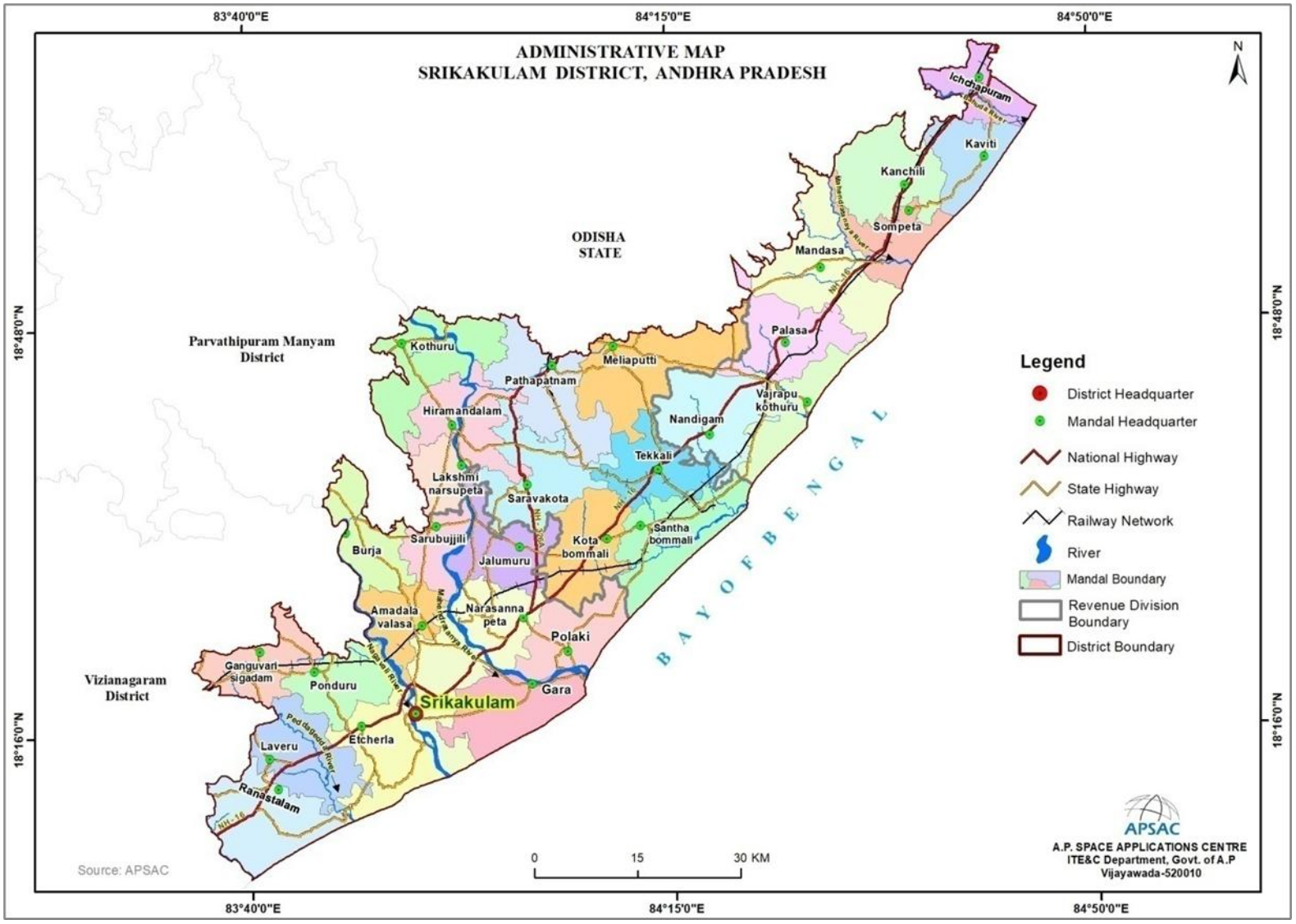


Figure-1: Administrative Map of Srikakulam district, Andhra Pradesh

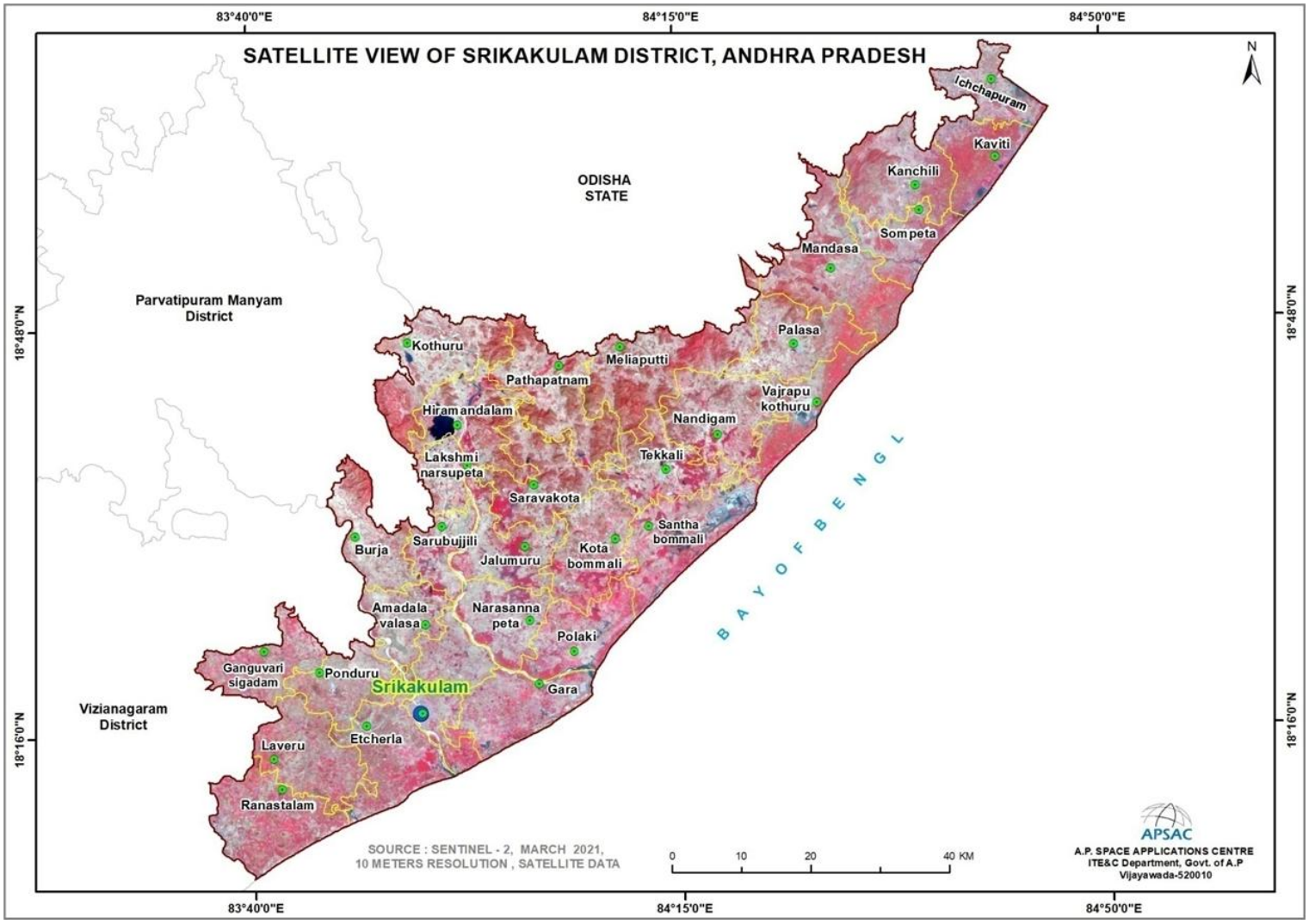


Figure-2: Satellite View of Srikakulam District

1.2 Physiography

1.2.1 Physiography

Physiographically, Srikakulam District is nearly plain for most parts of the district with areas in the north western part of the district dominated by moderately steep to steep sloping terrains. It is surrounded by the Eastern Ghats in the north.

1.2.2 Relief

The slope distribution clearly shows that a portion of the district is plain terrain with intense agriculture and the other is rocky and hilly terrain covered with forests. The slope varies from nearly level to very steep slopes throughout the district (Figure-3). It is found that about 33% of the land is under nearly level (0-1%) sloping area and can be identified in the plains. The very gently sloping areas found along with nearly level slopes and about 42% of the district land area is under very gently sloping varies from 1-3%. Gently sloping areas (3-5%) are found along scrub lands and account for about 10% of the district total. The hilly and forest regions have moderately sloping, strongly sloping, steeply sloping, and very steep slopes, which account for 2.72%, 5.04%, 4.23%, and 2.72% of the total area, respectively. These areas are concentrated in the western, central, and north-western parts of the district.

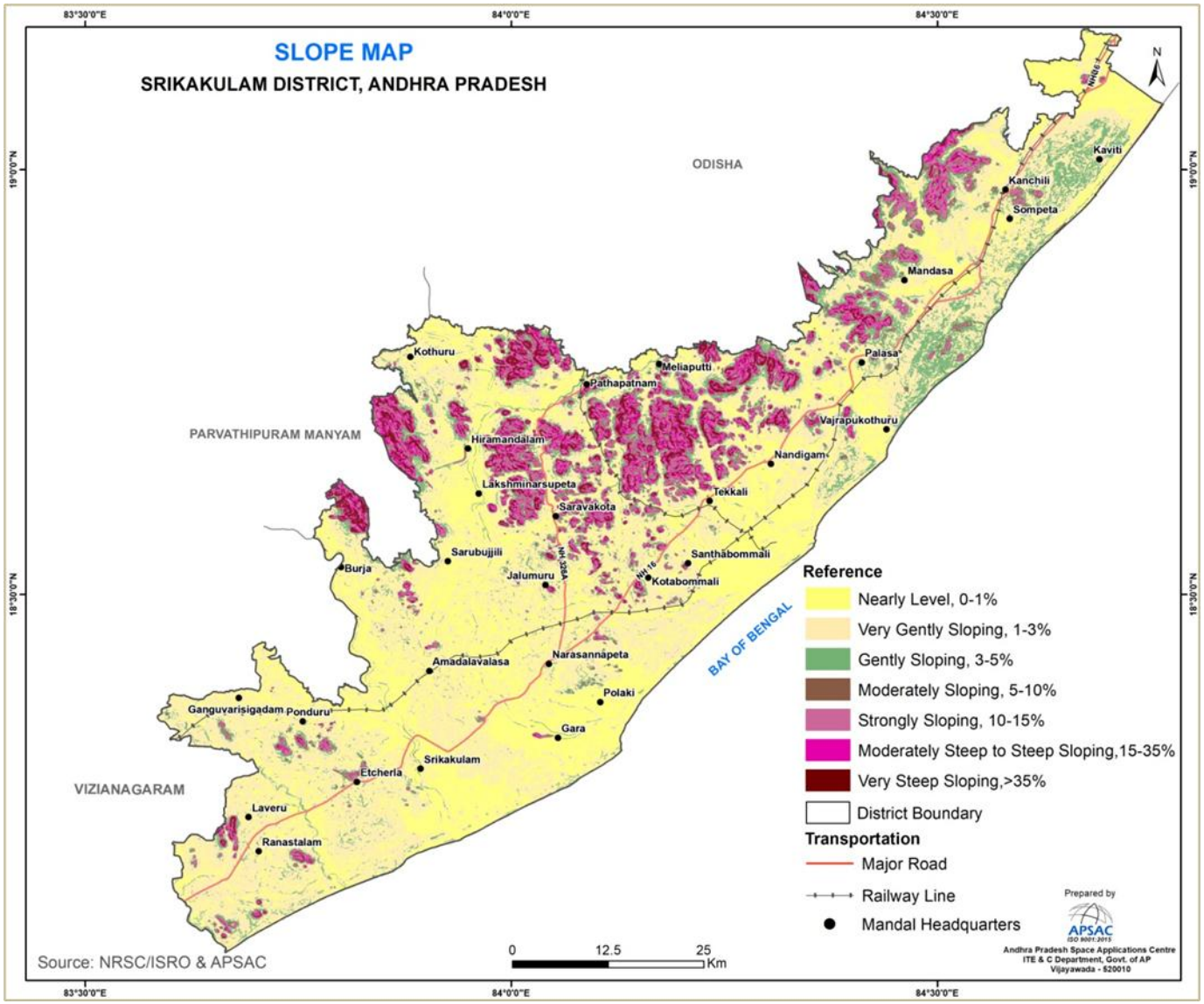


Figure-3: Slope Map of Srikakulam District

1.2.3 Climate & Rainfall

1.2.3.1. Climate:

The climate of the district is moderate and characterized by high humidity all through the year along with oppressive summer and good seasonal rainfall. The period from December to middle of February is generally the season of fine weather. The maximum and minimum temperatures 19.6° C and 35.7° C are recorded in the month of May and January respectively. The Automatic weather stations (AWS) are established at all mandals by A.P. State Developmental Planning Society (APSDPS), Planning Department, Govt. of A.P. The Automatic Weather Stations (AWS) in Srikakulam District shown in Figure-4.

1.2.3.2. Rainfall:

The average annual rainfall of the district is 1,115.5 mm, of which 713.46 mm falls as South-West (June-September) monsoon and 259.98 mm as North-East (October-December) monsoon. The mean minimum and maximum temperatures recorded in the district are 19.6° C and 35.7° C in May, respectively. The average rainfall for the last 25 years is used for the analysis. The average annual rainfall is shown in Figure-5 and details is given in Table-2.

Table 2 Average Annual Rainfall (mm) in the district, during the year 2020-2021

S.No	Month	Average Annual Rainfall (mm)
1	January	5.62
2	February	12.49
3	March	15.07
4	April	27.78
5	May	81.13
6	June	136.16
7	July	181.48
8	August	198.71
9	September	197.11
10	October	182.96
11	November	65.26
12	December	11.76
Total		**1115.5**

Data source: AWS & APSDPS, Vijayawada

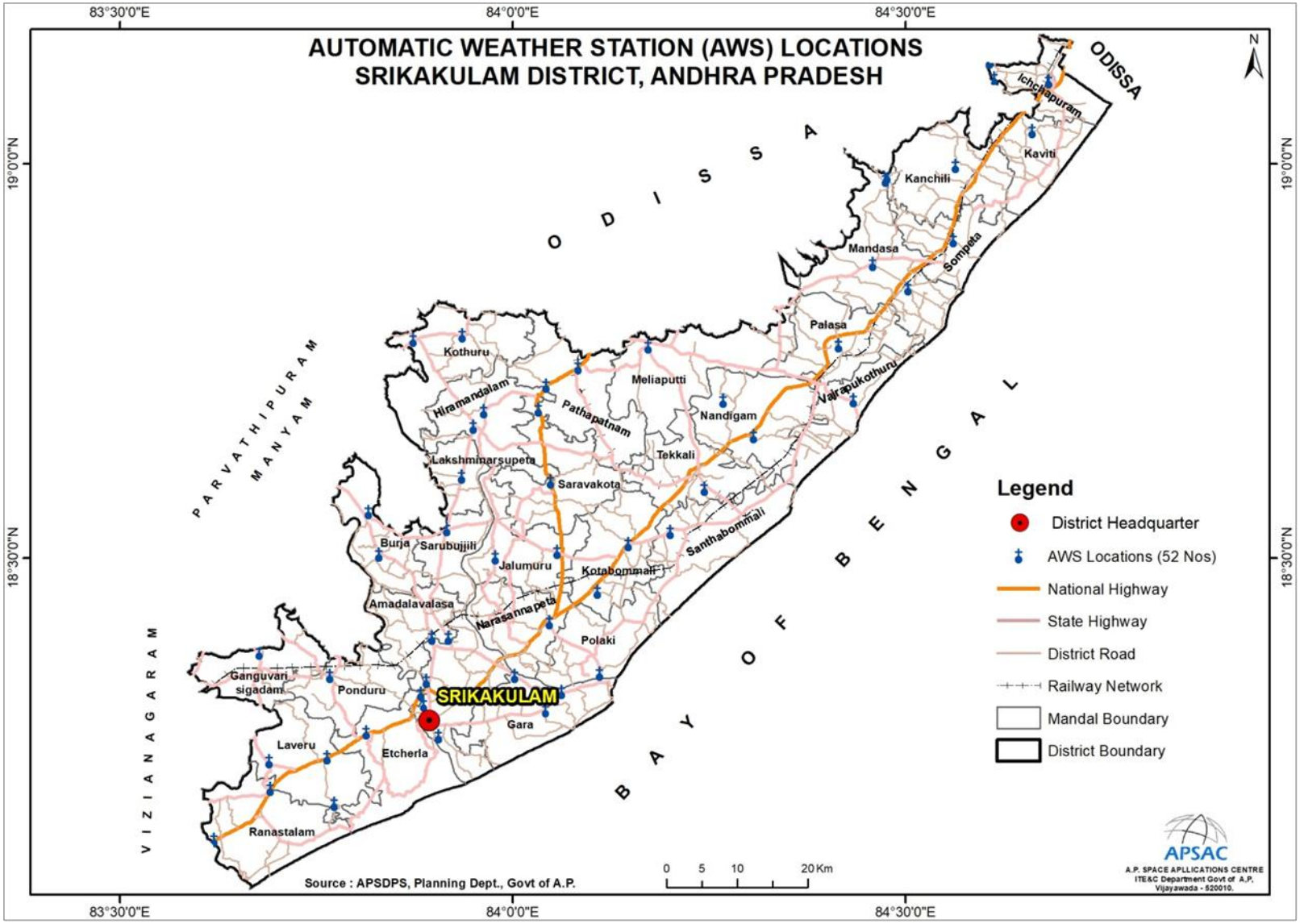


Figure-4: Locations of Automatic Weather Stations (AWS) in Srikakulam District

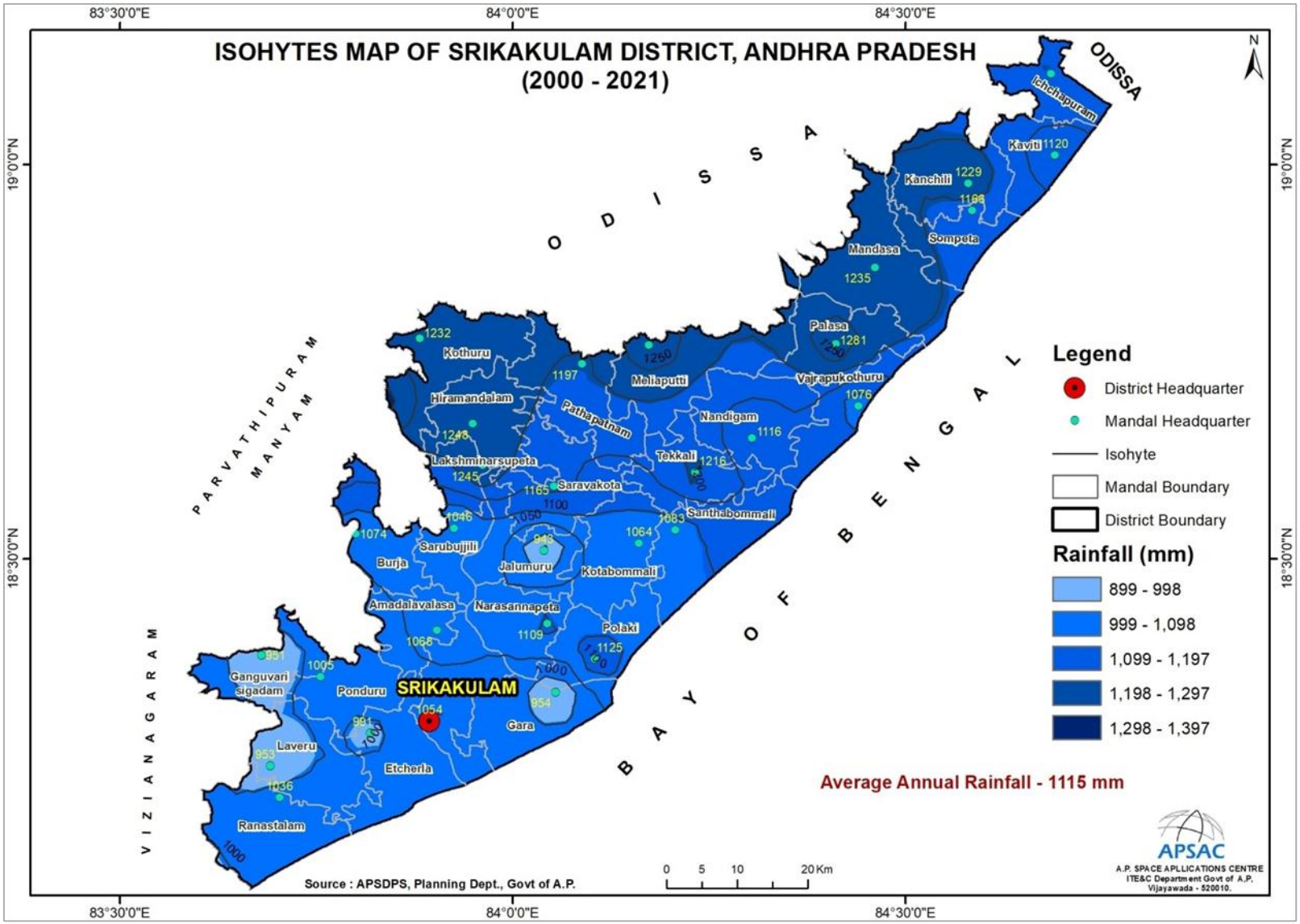


Figure-5: Rainfall distribution in Srikakulam District

1.2.4 Drainage

There are six major rivers draining the district, viz. Vamsadhara, Nagavali, Bahuda, Mahendratanya, Peddagedda, Kandivalasa and also Bendi Gedda, Desa Gedda small rivers are covered in the district. They originate in the Eastern Ghats and flowing through the district in south direction, finally joining Bay of Bengal.

The rivers Vamsadhara, Nagavali and Suvarnamukhi are perennial. The drainage in western part of the district resembles dendritic type, whereas in the central part it is parallel to sub-dendritic. The overall drainage is of medium to coarse textured towards west and north of the district, whereas in central and southern parts it is very coarse. The drainage density varies from less than 0.2 to 1 km/km2.

1.3 Population and Literacy

1.3.1. Population:

The total population of the district is 21,91,437 (as per the 2011 census); of which male and female are 10,88,142 and 11,03,295 respectively. Among allthe mandals, Srikakulam Mandal is having maximum population of 2,20,332; where as Lakshminarsupeta Mandal is having minimum population of 29,107.

The total schedule caste(SC) population in the district is 1,85,890; of which male and female are 91,187 and 94,703 respectively. The schedule tribe (ST) population is 94,371; of which male and female are 46,402 and 47,969 respectively.Themandal wise population is shown in the Table-3,and its spatial distribution is depicted in Figure-6.

1.3.2. Literacy:

The total literates in the district are 12,36,354, of which male and female are 7,08,172 and 5,28,182 respectively. The total illiterates are 9,55,083, of which male and female are 3,79,970 and 5,75,113 respectively.The mandal wise literacy popuration is shown in Table-4.

1.3.3. DetailsoftheOccupationalHealthissuesintheDistrict(Lastfive-yeardataofnumberofpatientsofSilicosis):Nocaseswerereportedduringlast5yearsduetominingactivity.

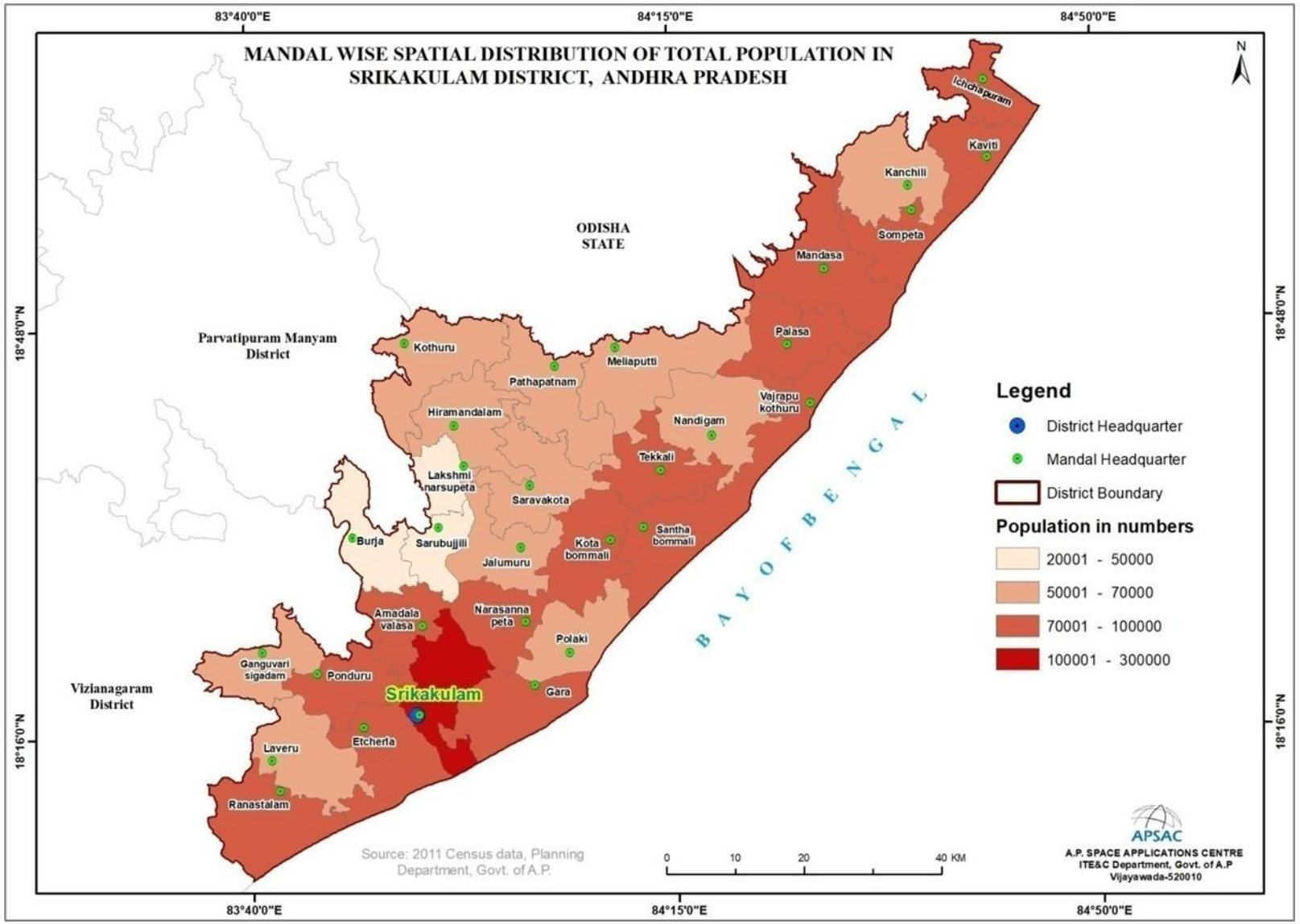


Figure-6: Mandal wise Spatial Distribution of Population in Srikakulam district, Andhra Pradesh

Table 3Mandal wise Population Statistics

S. No	Mandal Name	No. of House Holds	Total Population	Male Population	Female Population	Total SC Population	Male SC Population	Female SC Population	Total ST Population	Male ST Population	Female ST Population
1	Amadalavalasa	22564	84093	41907	42186	6789	3308	3481	317	141	176
2	Burja	11123	42308	21426	20882	6243	3349	2894	1254	628	626
3	Etcherla	21805	87847	44660	43187	7147	3785	3362	445	226	219
4	Ganguvarisigadam	14811	57543	29111	28432	7139	3639	3500	292	145	147
5	Gara	20126	79617	39729	39888	4688	2357	2331	282	131	151
6	Hiramandalam	13719	50018	24967	25051	7049	3504	3545	5386	2689	2697
7	Ichchapuram	20394	88965	42958	46007	3084	1500	1584	1566	762	804
8	Jalumuru	15719	59599	29413	30186	4589	2230	2359	391	183	208
9	Kanchili	16319	66657	32916	33741	3072	1645	1427	8089	4092	3997
10	Kaviti	18977	75974	36365	39609	1413	681	732	5629	2632	2997
11	Kotabommali	19240	74718	37760	36958	6984	3437	3547	1086	541	545
12	Kothuru	17148	67093	33532	33561	10801	5236	5565	8911	4407	4504
13	Lakshminarsupeta	7537	29107	14638	14469	2853	1463	1390	1052	528	524
14	Laveru	16925	68621	34886	33735	9475	4714	4761	515	276	239
15	Mandasa	20596	82699	40252	42447	5695	2542	3153	11901	5785	6116
16	Meliaputti	12851	52737	25911	26826	3866	1886	1980	14908	7068	7840
17	Nandigam	14090	56443	28032	28411	6873	3129	3744	3223	1742	1481
18	Narasannapeta	19922	77321	37993	39328	5312	2430	2882	419	187	232
19	Palasa	24307	97551	47915	49636	8205	3945	4260	3831	1948	1883

S. No	Mandal Name	No. of House Holds	Total Population	Male Population	Female Population	Total SC Population	Male SC Population	Female SC Population	Total ST Population	Male ST Population	Female ST Population
20	Pathapatnam	16074	64639	31896	32743	8133	3772	4361	9376	4681	4695
21	Polaki	17064	65622	32880	32742	3057	1548	1509	177	85	92
22	Ponduru	19242	73890	37197	36693	6515	3207	3308	323	163	160
23	Ranastalam	21380	85872	43787	42085	10392	5223	5169	211	106	105
24	Santhabommali	17400	70561	35284	35277	3851	1915	1936	545	262	283
25	Saravakota	13425	52243	25871	26372	5872	2954	2918	6757	3246	3511
26	Sarubujjili	8845	33254	16563	16691	3789	1908	1881	591	192	399
27	Sompeta	19874	78908	38161	40747	4068	1907	2161	1214	668	546
28	Srikakulam	55095	220332	109713	110619	18360	8817	9543	1508	967	541
29	Tekkali	18762	73993	36206	37787	9227	4506	4721	4002	1835	2167
30	Vajrapukothuru	18505	73212	36213	36999	1349	650	699	170	86	84
Grand Total		**553839**	**2191437**	**1088142**	**1103295**	**185890**	**91187**	**94703**	**94371**	**46402**	**47969**

Data Source: 2011 Census data, Planning Department & DES.

Table 4Mandal wise Literacy statistics

S.No	Mandal Name	Total Literacy	Male Literacy	Female Literacy	Total Illiterates	Male Illiterates	Female Illiterates
1	Amadalavalasa	52996	30208	22788	31097	11699	19398
2	Burja	23115	13878	9237	19193	7548	11645
3	Etcherla	44235	25996	18239	43612	18664	24948
4	Ganguvarisigadam	27970	16585	11385	29573	12526	17047
5	Gara	42222	24402	17820	37395	15327	22068
6	Hiramandalam	26767	15328	11439	23251	9639	13612
7	Ichchapuram	51755	29422	22333	37210	13536	23674
8	Jalumuru	30453	17839	12614	29146	11574	17572
9	Kanchili	38353	22387	15966	28304	10529	17775
10	Kaviti	42600	24307	18293	33374	12058	21316
11	Kotabommali	39022	23243	15779	35696	14517	21179
12	Kothuru	34275	20312	13963	32818	13220	19598
13	Lakshminarsupeta	14998	8856	6142	14109	5782	8327
14	Laveru	32265	19151	13114	36356	15735	20621
15	Mandasa	49648	27766	21882	33051	12486	20565
16	Meliaputti	28300	16140	12160	24437	9771	14666
17	Nandigam	30351	17636	12715	26092	10396	15696
18	Narasannapeta	46331	25749	20582	30990	12244	18746
19	Palasa	61913	34552	27361	35638	13363	22275
20	Pathapatnam	36178	20608	15570	28461	11288	17173
21	Polaki	34142	20050	14092	31480	12830	18650
22	Ponduru	40052	23751	16301	33838	13446	20392
23	Ranastalam	39597	23415	16182	46275	20372	25903
24	Santhabommali	36221	21446	14775	34340	13838	20502
25	Saravakota	27449	15972	11477	24794	9899	14895
26	Sarubujjili	17684	10353	7331	15570	6210	9360
27	Sompeta	47324	26336	20988	31584	11825	19759
28	Srikakulam	152916	82939	69977	67416	26774	40642
29	Tekkali	44437	24864	19573	29556	11342	18214
30	Vajrapukothuru	42785	24681	18104	30427	11532	18895
Grand Total		**1236354**	**708172**	**528182**	**955083**	**379970**	**575113**

Data Source: 2011 Census data, Planning Department & DES

1.4 Land Utilization Pattern

1.4.1 Land Use / Land Cover

The Land Use / Land Cover (LULC) pattern of any region is an outcome of various physical and cultural factors and their utilization by man in time and space. Land use refers to the type of utilization to which man has put the land. It also refers to the evaluation of the land with respect to various natural characteristics. But land cover describes the vegetal attributes of the land. For a proper understanding of the influence of the various human-induced land-use practices on environmental change, it is essential to help simulate the land-use changes.

1.4.2 Spatial Distribution of Land Use / Land Cover

Under level 3 classification, various land use / land cover categories have been delineated using three seasons (Kharif, Rabi, and Zaid) satellite data. Visual image interpretation techniques i.e., size, shape, color, tone, texture, association, and pattern have been considered for the land use/land cover classification (NRSA, 2006). This data is used for general planning at the mandal and district levels. The broad categories are built-up, agricultural land, forest, wastelands, wetlands, and water bodies. A major part of the district is arable land with substantial forest cover in the north and northwest of the district. The spatial distribution of land use/land cover of the Srikakulam district is shown in Figure-7 and area statistics are presented in Table-5.

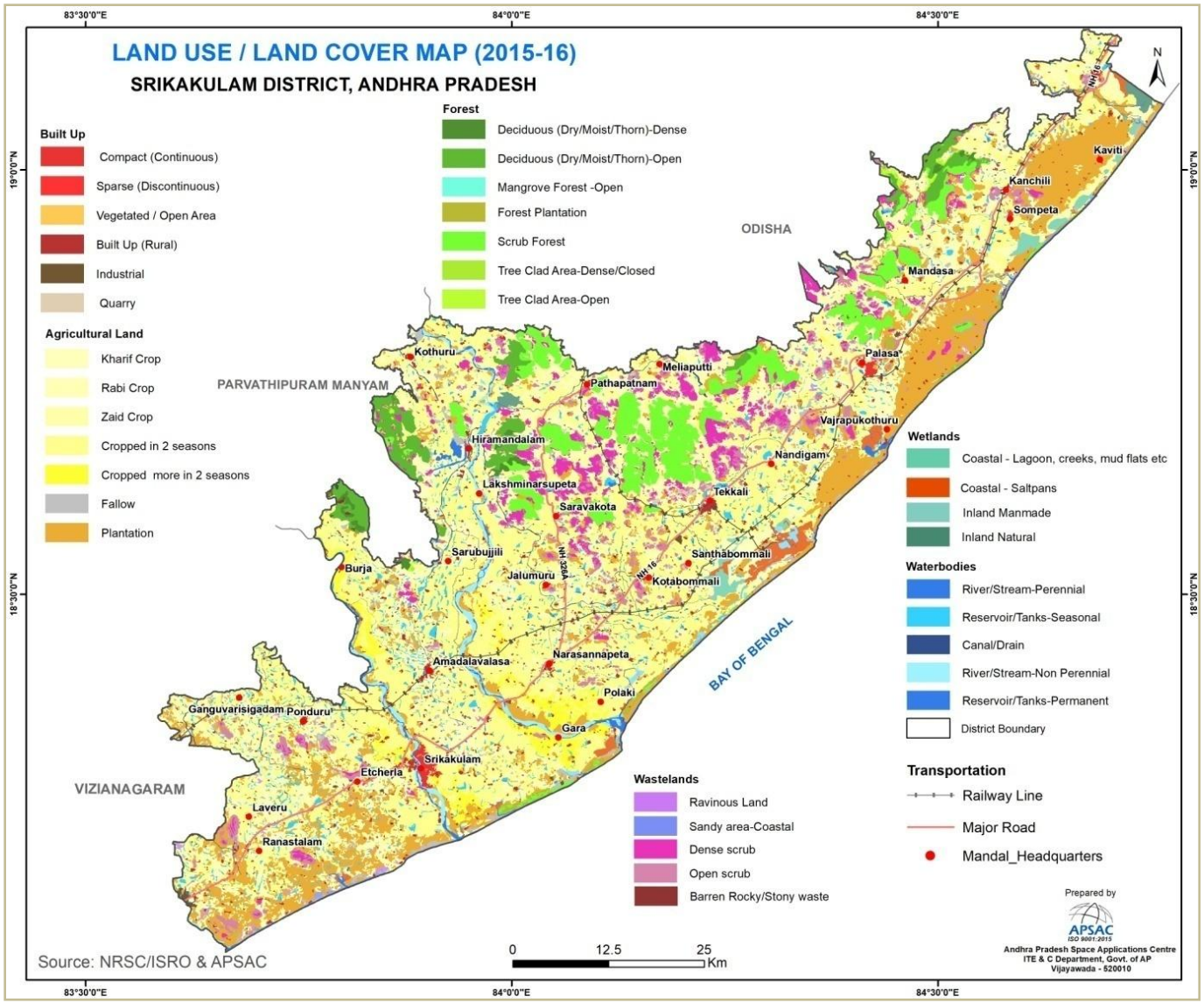


Figure-7: Land use / land cover map of Srikakulam District 2015-16

Table 5 Category-wise distributions of Land Use/Land Cover during 2015-16

S. No	LULC categories	Area in sq. km	% to total
Built up		**131.73**	**2.87**
1	Compact (Continuous)	12.41	0.27
2	Sparse (Discontinuous)	3.72	0.08
3	Vegetated / Open Area	2.30	0.05
4	Rural	96.80	2.11
5	Industrial	5.62	0.12
6	Mining - Abandoned	0.20	0.00
7	Quarry	10.68	0.23
Agricultural Land		**3373.24**	**73.48**
8	Kharif Crop	1000.97	21.80
9	Rabi Crop	5.97	0.13
10	Zaid Crop	0.28	0.01
11	Cropped in 2 seasons	1496.94	32.61
12	Cropped more in 2 seasons	90.59	1.97
13	Fallow	74.37	1.62
14	Plantation	695.08	15.14
15	Aquaculture	9.04	0.20
Forest		**426.69**	**9.29**
16	Mangrove Forest -Open	0.43	0.01
17	Deciduous Dense	13.40	0.29
18	Deciduous Open	107.67	2.35
19	Forest Plantation	13.64	0.30
20	Scrub Forest	280.30	6.11
21	Tree Clad Area-Dense	2.96	0.06
22	Tree Clad Area-Open	8.29	0.18
Wastelands		**326.82**	**7.12**
23	Ravinous Land	7.60	0.17
24	Sandy area-Coastal	22.01	0.48
25	Dense scrub	151.22	3.29
26	Open scrub	143.11	3.12
27	Barren Rocky/Stony waste	2.89	0.06
Wetlands		**78.08**	**1.70**
28	Lagoon, creeks, mud flats etc.	30.72	0.67

29	Saltpans	35.97	0.78
30	Inland Manmade	0.29	0.01
31	Inland Natural	11.11	0.24
Water bodies		**254.43**	**5.54**
32	River/Stream-Perennial	31.57	0.69
33	River/Stream-Non Perennial	53.45	1.16
34	Canal/Drain	22.84	0.50
35	Reservoir/Tanks-Permanent	16.21	0.35
36	Reservoir/Tanks-Seasonal	130.36	2.84
Total		**4591.00**	**100.00**

Data source: NR Census 3rd cycle mapping, NRSC/ISRO & APSAC, GoAP

1.4.2.1. Built-up

These are human habitation areas with buildings, transportation, and communication, utilities associated with water, vegetation, and vacant lands. It consists of built-up (compact and sparse), vegetated / open area, rural, industrial and mining/quarry. It covers 131.73 sq. km, which is about 2.87% of the district's total geographical area.

1.4.2.2. Built up - Compact (Continuous)

The majority of the land is covered by buildings, roads, and artificially surfaced areas that cover nearly the entire area. The built-up (compact) class is assigned when urban structures and transportation networks (i.e., impermeable surfaces) occupy more than 80% of the surface area. This category is occupies 12.41 sq. km.,and is found in the urban areas of Srikakulam, Tekkali, and Palasa.

1.4.2.3. Built up - Sparse (Discontinuous)

Most of the land is covered by structures such as buildings, roads, and artificially surfaced areas, which are associated with vegetated areas and bare soil and occupy discontinuous but significant surfaces. Between 30-80% of the total surface should be impermeable. Scattered blocks of residential flats, hamlets, and small villages are delineated under this category. It covers an area of 3.72 sq. km., and is located in the peri-urban areas of Srikakulam, Tekkali, and Palasa towns.

1.4.2.4. Vegetated / Open Area

These are vegetated areas within urban agglomeration (situated within or in contact with urban areas). The vegetation cover of trees, shrubs, and herbs

covers the surface area, and it has been delineated. Open areas used as Parks, sports and leisure facilities, camping grounds, sports grounds, leisure parks, golf courses, and race courses, including formal parks etc, are considered in this category. This category occupies an area of 2.30 sq. km.

1.4.2.5. Built up – Rural

These are the lands used for human settlement of size comparatively less than the urban settlements of which more than 80% of the people are involved in the primary agriculture activity and associated with non-commercial and allied classes are identified as built up (rural) category. The rural area contribution is about 96.80 sq. km and is distributed throughout the district.

1.4.2.6. Industrial

Non-linear impervious surfaces are included in this class which is related to trade, manufacturing, distribution, and commerce. These are areas where human activity is observed in the form of manufacturing along with other supporting establishments for maintenance. The industrial area occupies an area of 5.62 sq. km, which is observed in and around towns. The industrial areas are located closer to the major towns of Srikakulam and Palasa.

1.4.2.7. Mining – Abandoned

These are the areas where large-scale surface operations of removal of economically important ores were carried out in the past but presently kept abandoned due to various reasons like economic, operational, viability, disturbances, etc. Only 0.20 sq. km comes under this category.

1.4.2.8. Quarry

These are manifestations of surface mining operations, in which small-scale excavation of land surfaces is carried out for sand, gravel, clay-phosphate mines, limestone quarries, and so on. They are primarily distinguished by their proximity to urban areas. It contributes an area is about 10.68 sq. km.

1.4.2.9. Agricultural Land

The land use category is primarily used for the production of food, fiber, and other commercial and horticultural crops. It includes land under crops namely cropland, fallow land, agricultural plantation, and aquaculture. The agricultural category is found as the major category covering 3373.24 sq.

km during 2015-16. Rain-fed farming is the characteristic feature of agriculture in the district; most of its area is cultivated purely under rain-fed conditions. Agriculture is the main occupation of the district and the major crops grown in the district are Paddy, Peanuts, Mesta, Sugarcane, Green gram, Black gram, and Horse gram. The important horticultural crops are Mango, Onion, and Chilli.

1.4.2.10. Kharif Crop

Agricultural area cultivated between June/July to September/October coinciding with the southwest monsoon season is considered a Kharif crop. It is associated with rain-fed crops under dryland farming with limited or no irrigation and areas of rain-fed paddy and other dry crops. Kharif is found to be the major agricultural category with an extension of 1000.97 sq. km (21.80%) in the district. Most of the Kharif cropland is in rain-fed areas and is seen throughout the district.

1.4.2.11. Rabi Crop

These areas are cultivated between November/December to February/March. It is associated with areas under assured irrigation irrespective of the source of irrigation. However, Rabi-cropped areas also occur in rain-fed regions, under residual soil moisture conditions especially in black soil areas with high rainfall during the Kharif season. The extent of the Rabi cropped area is about 5.97 sq. km (0.13%). The Rabi-cropped areas are found along the irrigated areas of canals and reservoirs.

1.4.2.12. Zaid Crop

These are the areas that are grown during the summer (April to May), and they are only found in plains and delta regions. They are mostly connected to irrigated areas with fertile soils. This category occupies an area of 0.28 sq. km during the period.

1.4.2.13. Cropped in two seasons

These are the areas that are cropped during two cropping seasons that are often seen associated with irrigated areas. Normally Kharif + Rabi and Kharif + Zaid combination is possible in double-cropped areas. It is found that this is the second major agricultural category with an extent of 1496.94 sq. km (32.61%). This category can be found along the river's course and is grown using groundwater in the district.

1.4.2.14. Cropped in more than two seasons

These are the areas that are cropped in more than two cropping seasons. It includes triple-cropped areas (Kharif, Rabi, and Zaid), and areas under multiple cropping. Long-duration crops like sugarcane, bananas, etc., are considered under this category. It contributes an area of 90.59 sq. km (1.97%). It is found along the river banks of Nagavali and Vamsadhara.

1.4.2.15. Fallow land

The agricultural land which is being used for cultivation but is temporarily allowed to rest or un-cropped for one or more seasons, but not less than a year and for not more than five years is referred to as fallow land. The fallow land occupies an area of 74.37 sq. km, which is due to the non-availability of water resources in the district.

1.4.2.16. Agricultural Plantation

These are the areas under agricultural tree crops planted adopting agricultural management techniques. These also include the areas of land use systems and practices wherein the cultivation of herbs, shrubs, and vegetable crops are deliberately integrated with crops mostly in irrigated conditions for ecological and economic reasons. These areas are separable from cropland, especially with the data acquired during the Rabi/Zaid season. Plantations appear in dark-red to red tones of different sizes with regular and sharp edges indicating the presence of a fence around them. It is found in an area of 695.08 sq. km. The plantations include species like Cashew, Mango, Lemon, Coconut, Guava, Jackfruit, Custard Apple, Sapota, and Teak. Most of the Cashew plantation is observed in and around Palasa and Kaviti.

1.4.2.17. Aquaculture

These are the locations used for the commercial breeding and rearing of fish and shrimp. The majority of aquaculture ponds are situated near the coast or in estuaries, lakes, and rivers. This category is mostly found along the coast with an area of 9.04 sq. km.

1.4.2.18. Forest

Land with a tree canopy cover of more than 10% and a size of more than 0.5 ha is referred to as a forest. The notified forest boundaries are considered to contain a forest if there are both trees and no other dominant land uses there. Within the notified forest boundaries, the trees must be

capable of growing to a minimum height of 5 meters. Around 426.69 sq. km (9.29%) of the land area is covered by forest. The important species are teak, nalla maddi, rosewood, devadari, etc. Forests can be found in Kotthuru, Hiramandalam, Pathapatnam mandals, and other places.

1.4.2.19. Deciduous (Dry/Moist/Thorn)-Dense

Most of the species in this category only lose their leaves once a year, usually in the summer. The majority of these tropical forests are broad-leaved and have a yearly leaf-falling tendency. This category includes all the areas where the canopy cover/density is more than 40% and contributed 13.40 sq. km.

1.4.2.20. Deciduous (Dry/Moist/Thorn)-Open

This category is predominantly composed of species, which shed their leaves once a year, especially during summer. These are mostly broad-leaved tropical forests with a tendency to shed their leaves annually. This category includes all the forest areas where the canopy cover/density ranges between 10 - 20 percent. An area of 107.67 sq. km is attributed to this category.

1.4.2.21. Forest Plantation

These are the areas of tree species of forestry importance, raised and managed especially in notified forest areas. Most of these are located in uplands, coastal areas within notified areas. Many of these can be identified based on the sharp boundaries exhibited by them. Forest plantations, mainly teak, bamboo, casuarinas, etc have been delineated with an area of 13.64 sq. km during the period.

1.4.2.22. Scrub Forest

These are the forest areas that are generally seen at the fringes of dense forest cover and settlements, where there is biotic and abiotic interference. Most times they are located closer to habitations. Forest blanks which are the openings amidst forest areas, devoid of tree cover, observed as openings of assorted sizes and shapes as manifested in the imagery are also included in this category. Most of the scrub forests are found in fringe areas of reserved forests and account for 280.30 sq. km (6.11%), which are generally prone to the conversion of forest plantations and other development activities within the notified forest.

1.4.2.23. Tree Clad Area-Dense

Areas with tree cover lying outside the notified forest area with a woody perennial plant with a single, well-defined stem carrying a more-or-less-defined crown and being at least 3 m tall. Plants essentially herbaceous but with a woody appearance (e.g. Bamboo and ferns) are also classified as trees if the height is more than 5 m and as shrubs, if the height is less than 5 m. This category includes all the areas where the canopy cover/density is more than 40%. It occupies an area of 2.96 sq. km, which is found along with notified forest areas.

1.4.2.24. Tree Clad Area-Open

Areas with tree cover lying outside the notified forest area with a woody perennial plant with a single, well-defined stem carrying a more-or-less-defined crown and being at least 3 m tall. Plants essentially herbaceous but with a woody appearance (e.g. Bamboo and ferns) are also classified as trees if the height is more than 5 m and as shrubs, if the height is less than 5 m. This category includes all the forest areas where the canopy cover/density ranges between 10 - 40%. It covers an area of 8.29 sq. km.

1.4.2.25. Wastelands

Wasteland is described as degraded land which can be brought under vegetative cover with reasonable effort and which is currently underutilized and land which is deteriorating due to lack of appropriate water and soil management or on account of natural causes. Wastelands can result from inherent/imposed disabilities such as location, environment, chemical and physical properties of the soil, or financial or management constraints. The area under the wasteland category was mapped at 326.82 sq. km (7.12%) during the study, which consists of further subcategories of gullied land, ravinous land, dense scrub, open scrub, coastal sand, and barren rocky/stony waste.

1.4.2.26. Ravinous land

The word ravine is usually associated not with an isolated gully but an intricate network of gullies formed generally in deep alluvium and entering a nearby river, flowing much lower than the surroundings. Ravines are extensive systems of gullies developed along the river course. It covers an area of 7.60 sq. km.

1.4.2.27. Dense scrub

The scrub is usually confined to topographically elevated areas, on the hill slopes generally surrounded by agricultural lands. These areas possess shallow and skeletal soils, at times chemically degraded, extremes of slopes, severely eroded, and lands subjected to excessive aridity with scrubs dominating the landscape. It is found with varying sizes of small to large areas having a contiguous or dispersed pattern. The dense scrub is mostly identified on the hills and occupies an area of 151.22 sq. km.

1.4.2.28. Open scrub

This category has a similar description as mentioned in the dense scrub except that they possess sparse vegetation or devoid of scrub and have thin soil cover. The open scrub areas are found at the foothills and moderate to gentle slopping areas are surrounded by agricultural lands. The open scrub category occupied an area of 143.11 sq. km.

1.4.2.29. Coastal Sand

Coastal sands are the sands that are accumulated as a strip along the seacoast. Very high reflectance exhibited by this category, especially in the near-infrared region of the spectrum enables their separation with the salt-affected land. It is found along the coast and occupies an area of 22.01 sq. km.

1.4.2.30. Barren Rocky/Stony waste

The barren rock exposures are especially confined to hilly terrain with down slopes with rock outcrops, stony waste, and fragments. Barren rocky areas have been observed as rocky outcrops in the forest and scrubland. It is found that most of the barren rocky areas are being quarried for various construction activities in the district. The area under this category is 2.89 sq. km.

1.4.2.31. Wetlands

All submerged or water-saturated lands, natural or man-made, inland or coastal, permanent or temporary, static or dynamic which necessarily have a land-water interface, are defined as wetlands. The wetland category occupies an area of 78.08 sq. km.

1.4.2.32. Coastal - Lagoon, creeks, mud flats, etc.

These are the areas which are submerged by high tides at some stage of the annual tidal cycle. Non-wooded areas are tidally, seasonally, or permanently

waterlogged with brackish or saline water. These include estuaries, lagoons, creeks, backwaters, bay tidal flat/mud flat, mangrove, salt marsh/marsh with vegetation and other hydrophytic vegetation. These are contributed to an area of 30.72 sq. km.

1.4.2.33. Inland Manmade

The majority of the year, these are the areas flooded or prone to flooding by fresh, brackish, or standing water, with specific vegetation coverage consisting of low shrub, semi-ligneous, or herbaceous species. Waterlogged areas (seasonal and perennial) are formed as a result of the negative effects of human management practices and are vegetated. This is attributed to an area of 0.29 sq. km.

1.4.2.34. Inland - Natural

These are the areas that include ox-bow lakes, cut-off meanders, waterlogged, swamp, marsh, peat bogs, etc (with vegetation). This category contributes 11.11 sq. km of the district total.

1.4.2.35. Coastal - Saltpans

Saltpans are flat expanses of areas covered with salt usually white under the Sum. Saltpans are manmade saline ecosystems from which crude salt is extracted during summer. These are un-drained, usually small and shallow, natural depressions or hollows in which brackish water accumulates and evaporates leaving behind salt deposits. This category is found nearer to the coastal area and occupies an area of 35.97 sq. km. It is found in and around Naupada, which is the only salt-growing area in North Coastal Andhra.

1.4.2.36. Water Bodies

This category includes locations with surface water, either flowing as streams, rivers, canals, etc., or being impounded in the form of ponds, lakes, and reservoirs. According to the water's depth, these are visible on the satellite image in a distinct blue to dark blue or cyan color. The water body category covers about 254.43 sq. km, which is 5.54% of the district's total area. The major rivers flowing through the district are Nagavali and Vamsadhara.

1.4.2.37. River/Stream-Perennial

Rivers/streams are the natural course of water flowing on the land surface along a definite channel/slope regularly or intermittently towards a sea in most cases or a lake or an inland basin in desert areas or a marsh or another river. These are the rivers/streams that flow continuously throughout the year as considered perennial. It contributes an area of 31.57 sq. km. The Nagavali and Vamsadhara are the major rivers in the district. Other rivers are Mahendratanaya, Champavati, Bahuda, Kumbhikota Gedda, Suvarnamukhi, Vegavati, Gomukhi. These rivers originate in the Eastern Ghats and flow through the district before joining the Bay of Bengal.

1.4.2.38. River/Stream-Non Perennial

The water covers the surface for less than nine months each year considered as non-perennial. This also includes the dry part of the river generally characterized by the presence of sand or exposed rocks. It is found that most of the streams are under the non-perennial category and contribute an area of 53.45 sq. km.

1.4.2.39. Canal/Drain

Canals and drains are artificial watercourses constructed for irrigation, navigation or to drain out excess water from agricultural lands. It is found mostly in plains with an area of 22.84 sq. km.

1.4.2.40. Reservoir/Tanks-Permanent

The reservoir is an artificial lake created by the construction of a dam across the river specifically for hydel power generation, irrigation, and water supply for domestic/ industrial needs, and flood control, either singly or in combination. Tanks are small lakes of impounded waterways constructed on land surface for irrigation. They are associated with croplands, low lands, and reservoirs surrounded by hills without vegetation. This includes all reservoirs/tanks with water spread seen at least during one season in a year is considered under the permanent category. This category occupies an area of 16.21 sq. km.

1.4.2.41. Reservoir/Tanks-Seasonal

Dry reservoirs/tanks are those which do not have water spread throughout the year and are considered seasonal. During the mapping period, where the water spread is not found in the three seasons, those areas are mapped in

this category. It is found that many of the tanks fall under the seasonal category with an area of 130.36 sq. km.

1.4.3 Forest Cover Distribution

The interpretation of various topographical maps from different sources and satellite data were used to create the forest cover maps. Land with a tree canopy cover of more than 10% and a size of more than 0.5 ha is referred to as a forest. If there are both trees and no other dominant land uses within the notified forest boundaries, the area is considered as forest. The trees should be able to reach a minimum height of 5 m within the notified forest boundaries.

Based on IRS R2 LISS III data interpretation (2015–16), the district's forest cover is 426.69 sq. km, accounting for 9.29% of the district's geographical area. There are two distinct natural divisions in the district. The district is divided into a plain area with extensive agriculture and a rocky, hilly area covered with forests. The district has a variety of vegetation types rich in flora and fauna. Its varied topography ranging from the hills of Eastern Ghats and plains supports varied ecosystems. The district's forest cover can be found in the west, central, and northwestern parts of the district. The district has a fairly wide distribution of bamboo and timber species throughout the area. The forests are deciduous in nature and spread throughout the hilly region. The district's forests are divided into seven forest classes according to the land use / land cover manual (NRSC 2016). The scrub forest category is the predominant in the forest categories with an area of 280.30 sq. km. The spatial distribution of forest cover and its statistics for the Srikakulam district are shown in Figure-8 and Table-6.AspertheForestDepartment,GovernmentofAndhraPradeshtheForestboundarymapispresentedinFigure-9.

Table 6 Forest cover distribution in Srikakulam District

S. No	Forest Category	Area in sq. km	% to district total
1	Mangrove Forest -Open	0.43	0.01
2	Deciduous Dense	13.40	0.29
3	Deciduous Open	107.67	2.35
4	Forest Plantation	13.64	0.30
5	Scrub Forest	280.30	6.11
6	Tree Clad Area-Dense	2.96	0.06
7	Tree Clad Area-Open	8.29	0.18
	Total	**426.69**	**9.29**

Data source: NR Census 3rd cycle mapping, NRSC/ISRO & APSAC, GoAP

1.4.4 Agricultural Resources in Srikakulam District

Over the past two decades, APSAC has effectively employed remote sensing technology in agriculture, encompassing both spatial and temporal dimensions across various projects. The continuous evolution of satellite remote sensing technology has facilitated systematic monitoring of crop conditions and vigor across extensive regions. Within the realm of spectral vegetation indices derived from remote sensing data, the Normalized Difference Vegetation Index (NDVI) stands out as the most widely utilized for operational drought assessment. Its popularity stems from its straightforward calculation, ease of interpretation, and the capacity to mitigate the impacts of atmospheric conditions, illumination geometry, and other variables.

APSAC conducted in-season crop condition assessments at the Mandal level in Andhra Pradesh. This initiative aimed to provide administrators and planners with crucial insights for strategic decision-making regarding drought management, import-export policies, and trade negotiations.The NDVI is calculated using the formula (NIR–Red)/(NIR+Red), where NIR and Red represent the reflectance in the visible and near-infrared channels, respectively. Water, clouds, and snow exhibit higher reflectance in the visible region, causing NDVI to assume negative values for these features. Bare soil and rocks, with similar reflectance in both visible and near-infrared regions, yield index values close to zero. NDVI values for vegetation typically range

from 0.2 to 0.6, with higher values associated with greater green leaf area and biomass. The Shortwave Infrared (SWIR) band is sensitive to soil and crop canopy moisture. Early in the cropping season, when soil background dominates, SWIR is sensitive to top 12 cm soil moisture. As crop growth progresses, SWIR becomes sensitive to leaf moisture content, providing surface wetness information.

The Normalized Difference Wetness Index (NDWI), computed using SWIR data, complements NDVI for drought assessment, especially in the early cropping season. NDWI is derived as follows: NDWI=(NIR-SWIR)/(NIR+SWIR), where NIR and SWIR represent reflected radiation in the Near-Infrared and Shortwave Infrared channels. Higher NDWI values indicate increased surface wetness.

For satellite-based crop condition anomalies indicating agricultural drought, the Vegetation Condition Index (VCI) of both NDVI and NDWI can be computed. When combining VCI values of NDVI and NDWI, the minimum of the two can be considered. For instance, if at least one is categorized as severe, the overall category is considered severe. If at least one is moderate, the overall category is taken as moderate. The vegetation conditions and corresponding ranges are detailed in Table-7.

Table 7 Vegetation condition and range in percentage

VCI range (%)	Vegetation Condition	Description
60-100	Normal	Crop condition is Normal
40-60	Moderate	Crop condition is Moderate
0-40	Severe	Crop condition is Severe

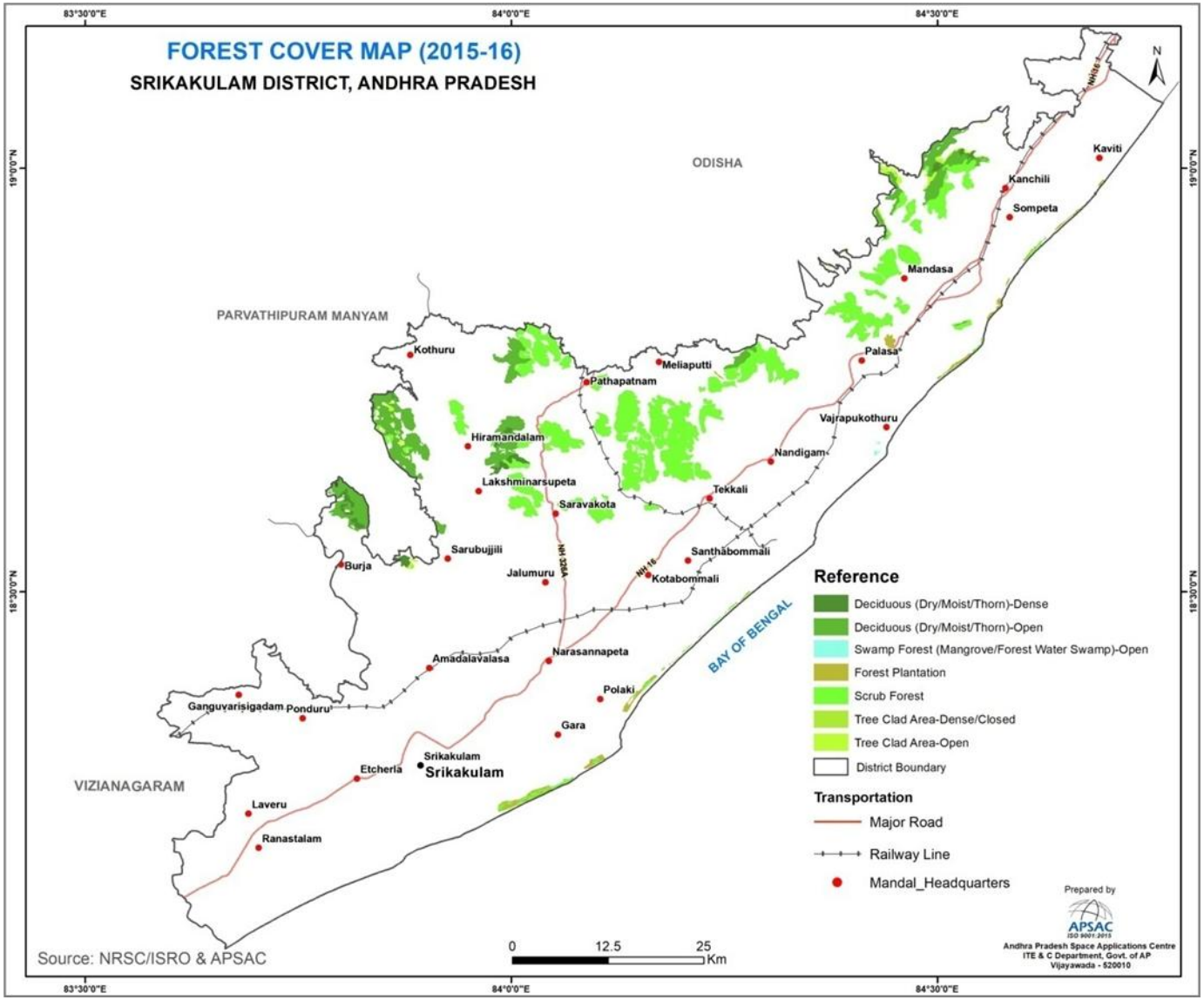


Figure-8: Forest cover map of Srikakulam District

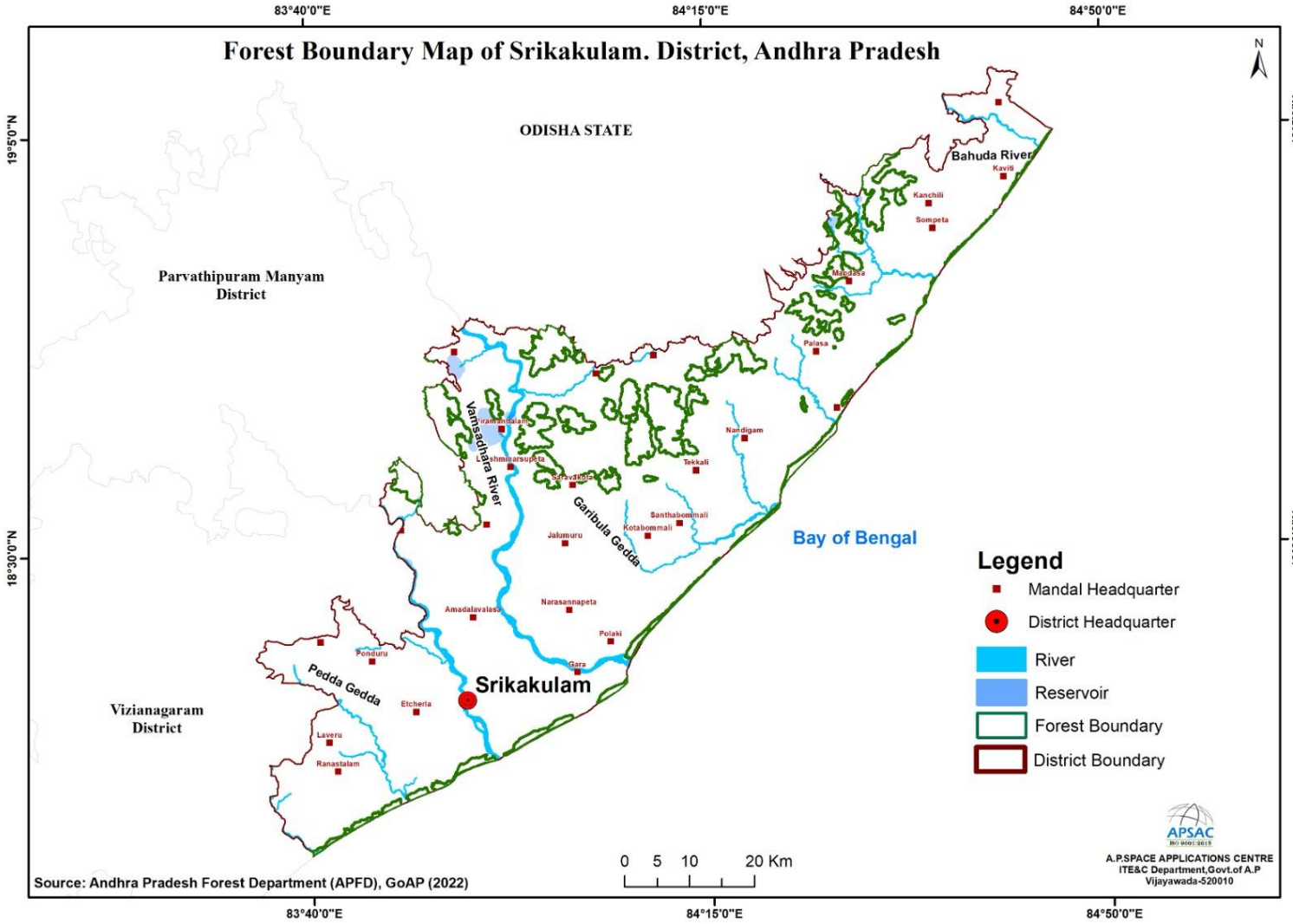


Figure-9: Forest boundary map of Srikakulam District

1.4.4.1 Kharif Crop Condition Assessment

Andhra Pradesh Space Applications Centre (APSAC) conducted a crop condition assessment in Srikakulam district during Kharif 2022-23 utilizing MODIS (Moderate Resolution Imaging Spectroradiometer) satellite data. The assessment revealed that out of the total mandals in the district, 18 were categorized as having a normal crop condition, 03 were classified as moderate, and 09 were identified as severe. Notably, urban and forest cover mandals were excluded from the vegetation condition assessment. This comprehensive evaluation provides valuable insights into the agricultural landscape of Srikakulam district, aiding in targeted interventions and resource allocation to mitigate the impacts of varying crop conditions.

1.4.4.2 Rabi Crop Condition Assessment

During Rabi 2022-23, The assessment identified 15 mandals with normal crop conditions,06 mandals categorized as moderate, and 09 were identified as severe. Notably, mandals predominantly covered by urban or forest areas were excluded from the vegetation condition assessment. This evaluation provides valuable insights into the agricultural status of Srikakulam district during the Rabi season, facilitating informed decision-making and resource allocation to support agricultural sustainability and productivity.

1.4.5 Soil Resources of the Srikakulam District

In the Srikakulam district of Andhra Pradesh, various soil types contribute to its diverse terrain. The predominant soil types in the district include clayey to gravelly clayey moderately deep dark brown soils, covering 2088.91 sq. km (47.56%). Following closely are loamy to clayey skeletal deep reddish brown soils, spanning 1636.96 sq. km (37.27%). Additionally, loamy to gravelly clay deep dark reddish brown soils extend over 259.2 sq. km (5.9%), while moderately deep calcareous black soils cover 257.94 sq. km (5.87%). Light gray deep sandy soils occupy 65.13 sq. km (1.48%), gravelly loamy moderately deep grassland soils cover 64.92 sq. km (1.48%), and deep black clayey soils are present in an area of 19.45 sq. km (0.44%). This variety of soil types contributes to the agricultural and ecological diversity of the region.The soil resource map of the district is shown in Figure-10 and the soil category with areais shown in Table-8

Table 8 Soil classes in Srikakulam district

S.No	Classification	Area in Sq.km	Percentage (%)
1	Clayey to gravelly clayey moderately deep dark brown soils	2088.91	47.56
2	Deep black clayey soils	19.45	0.44
3	Gravelly loamy moderately deep grass land soils	64.92	1.48
4	Light gray deep sandy soils	65.13	1.48
5	Loamy to clayey skeletal deep reddish brown soils	1636.96	37.27
6	Loamy to gravelly clay deep dark reddish brown soils	259.2	5.90
7	Moderately deep calcareous black soils	257.94	5.87
	Total[#]	4392.51	100.00

[#]*Excluding the Urban and Water bodies area*

DataSource:APSAC,Vijayawada

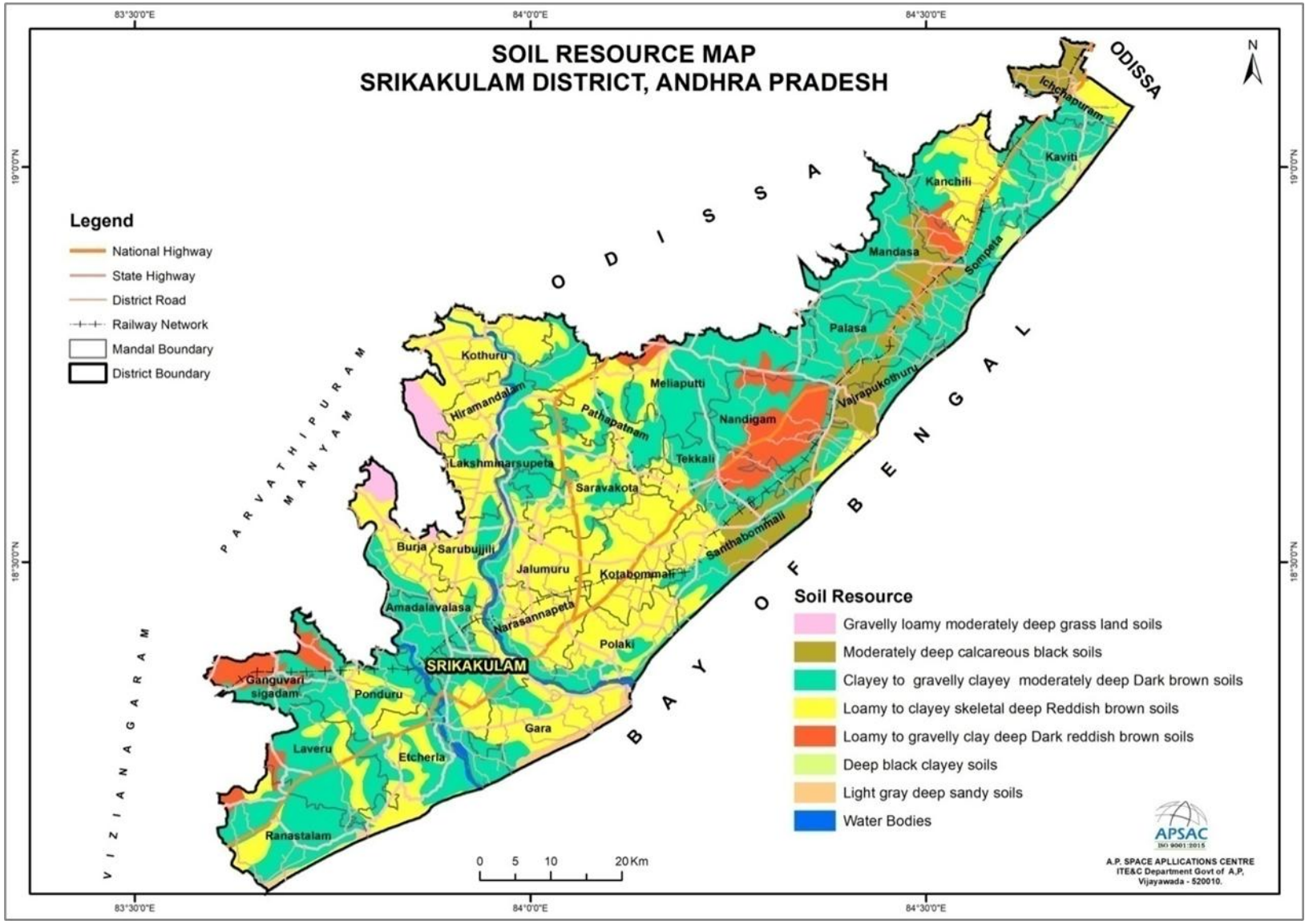


Figure-10: Soil resource map of Srikakulam District

1.4.6 Horticulture

Horticulture is a science, as well as, an art of production, utilization and improvement of horticultural crops, such as fruits and vegetables, spices, ornamental, plantation, medicinal and aromatic plants. It also includes plant conservation, landscape restoration, landscape, garden design, construction, maintenance,arboriculture, ornamental treesand lawns.

In the Srikakulam district, Coconut is the major horticulture crop, cultivated in an area of 156.95 ha. followed by Oil Plam (47.49ha.), Guava (3.76ha.), Mangoes (2.88ha.). Overall, the total area dedicated to horticultural crops in the district amounts to 218.86 hectares. The horticulture crop-wise detail is shown in the Table-9.

Table 9 Area of horticultural crops in Srikakulam district

S.No	Crop	Area in ha
1	Lime/Lemon/Citrus	2.43
2	Dragon Fruit	1.71
3	Banana	0.6
4	Mangoes	2.88
5	Guava	3.76
6	Oil Palm	47.49
7	Cashew Nut	2.19
8	Coconut	156.95
9	Mulberry	0.85
	Total Area	**218.86**

Source: Government of Andhra Pradesh Rashtriya Krishi Vikas Yojana-2022-23.

1.4.7 Coastal Resources and Aqua Culture of Srikakulam District

1.4.7.1 Shoreline Change Status of Srikakulam District

The shoreline change estimation was conducted for the entire Srikakulam coast, spanning approximately 167.65 km in length. In this study, shorelines were extracted from satellite images for the years 1989, 1999, 2005, 2010, and 2012 through visual interpretation. The coastline rate of change was calculated using Digital Shoreline Analysis Software (DSAS) and two different statistical techniques: End Point Rate (EPR) and Linear Regression

Rate of Change (LLR). Baselines were constructed seaward and parallel to the general trend of the shorelines. DSAS was employed to space transects 200m apart. Rates of shoreline change were then calculated at each transect using linear regression. The most significant changes were observed along the Srikakulam coast as a result of these analyses. Summary statistics for the rate of change are provided in Table-10 and Figure-1. Shoreline changes, particularly erosion, are emphasized as they represent critical natural coastal risks, especially for coastal wetlands. Table-10 summarizes rates of shoreline change, incorporating both erosion and accretion. Coastal land loss primarily results from natural changes in the coastal system and human activities such as agriculture, irrigation, reclamation, and fisheries.

Table 10 Shoreline Characteristics and statistics for Srikakulam Coast

Classification of Coast	Extent (km)	Percentage of Coast (%)	Cumulative (%)
Length of coastline Including River Mouth and Ports	167.67		
High Erosion	0	0.00	
Moderate Erosion	1.34	0.80	
Low Erosion	8.13	4.85	5.64*
Stable	62.86	37.49	37.49
Low Accretion	63.90	38.11	
Moderate Accretion	22.98	13.71	
High Accretion	8.46	5.05	56.87$
Number of port/Harbour	2		
Number of Breakwater / Groyne /Seawall	1		

** (High Erosion % + Medium Erosion % + Low Erosion %)*
$(High Accretion % +Medium Accretion % + Low Accretion %)
Data Source: APSAC, Vijayawada

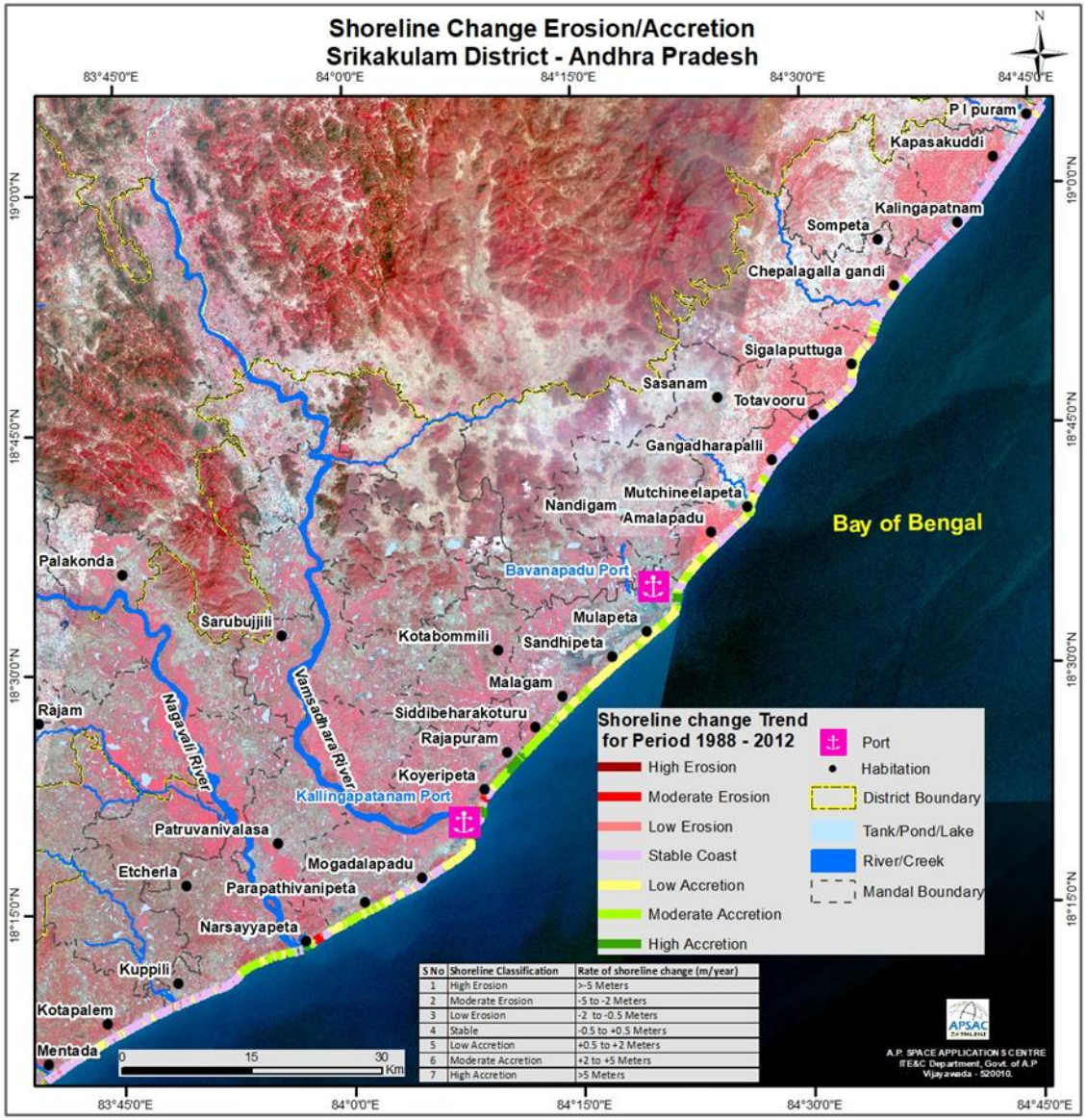


Figure-11: shoreline changes along the coastline of Srikakulam district

1.4.7.2 Aquaculture in Srikakulam District

Using high resolution satellite data coupled with ground survey existing aquaculture sites, potential areas for aquaculture development and abandoned aquaculture regions are mapped in the Srikakulam district and mandal wise/ village wise area statistics are generated and shown in the following Table-11.

The spatial distribution of the aquaculture is shown in Figure-12. It is observed that the total area suitable for acquaculture in the district is 441491 Ha, of which 968 Ha is presently under Aquaculture, 4336 Ha under abandoned /dry/ potential aqua area. The predominant area suitable for acquaculture is distributed in Polaki, Santhabommali and Vajrapukothuru mandals. The details are as shown below Table-11.

Table 11 Mandal - wise Aquaculture in Srikakulam District (Area in Ha)

SNo	Mandal Name	Aquaculture	Dry/ Abandoned/ Potential	Saltpans	Total
1	Etcherla	46.44	192.97		17046.11
2	Gara	95.00	659.47	32.79	15604.65
3	Ichchapuram	3.17	828.55		9262.52
4	Kaviti	11.44	294.33		11109.08
5	Laveru	0.89	4.93		16271.88
6	Polaki	201.58	126.35		13389.15
7	Ranastalam	0.40	35.83		19054.48
8	Santhabommali	433.24	1054.77	416.04	16833.25
9	Sarubujjili	6.13			7994.29
10	Sompeta	17.92	662.52		10348.69
11	Srikakulam	25.31	63.06		15415.79
12	Vajrapukothuru	126.51	402.30	47.72	11459.62
	Total	**968.01**	**4336.64**	**496.54**	**441491.38**

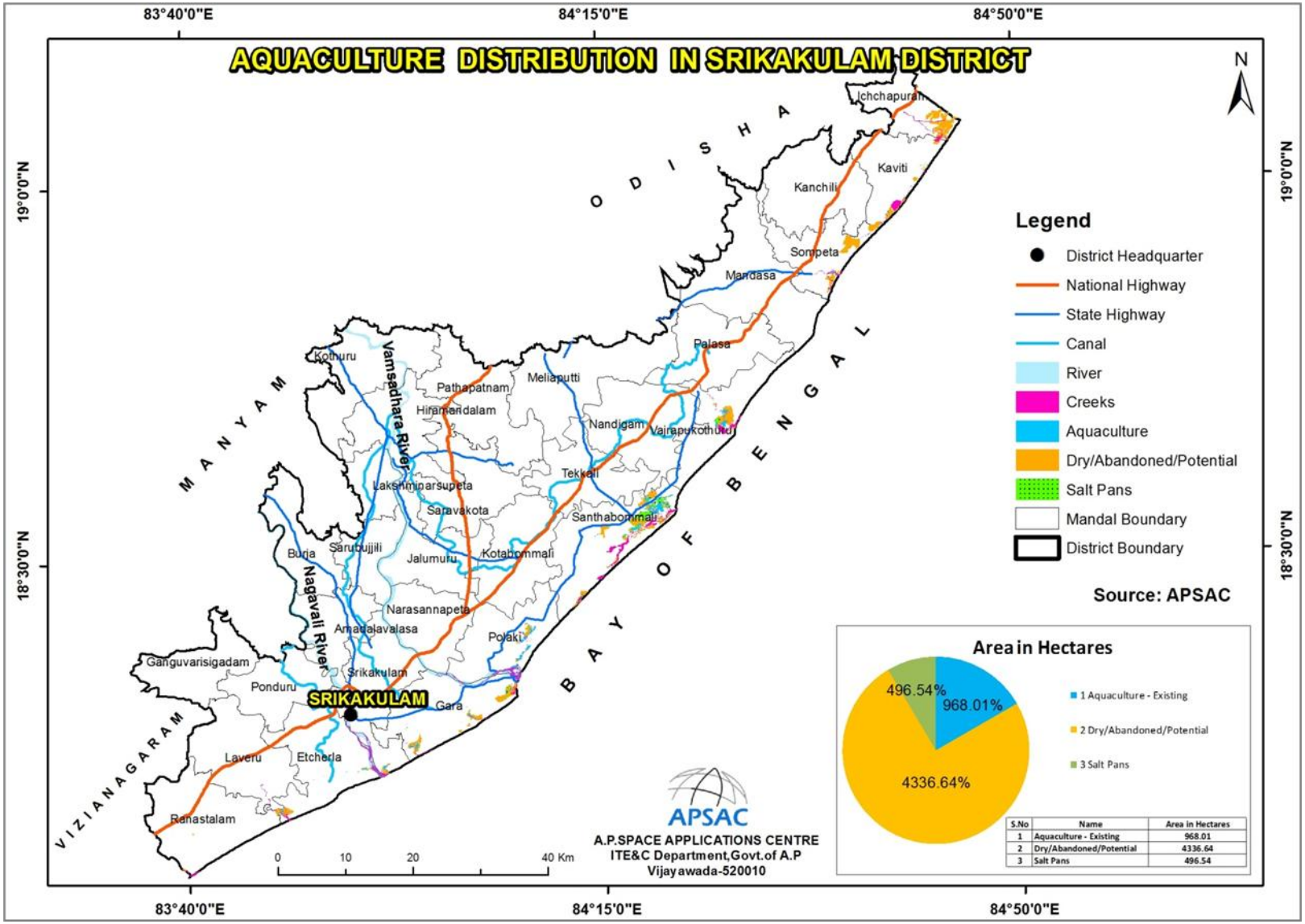


Figure-12: Area of Aquaculture Distribution in Srikakulam District

1.5 Ground Water Prospects in the District:

Groundwater occurs in almost all geological formations, and its potential depends on the nature of geological formations, geographical setup, and incidence of rainfall, recharge, and other hydrogeological characteristics of the aquifer. In consolidated formations, groundwater occurs under unconfined to semi-confined conditions. Groundwater in these formations is typically developed through dug wells, dug cum bore wells, and bore wells tapping weathered and fractured zones

From a groundwater perspective, the aquifers in the district can be broadly classified into hard rocks (such as Khondalites, Quartzites, Charnockites, Granitic Gneisses, etc.) and soft rocks (including sandstones, river alluvium, coastal alluvium, etc.). Groundwater occurs under unconfined to semi-confined conditions in hard rock formations, while it is typically under unconfined to confined conditions in soft rock formations. Yields in the weathered zones of Khondalites and Charnockites are very limited, ranging from 10 to 20 m^3/d. In weathered granitic gneisses, yields range from 10 to 40 m^3/d. Bore wells constructed in hard rocks generally tap into fractured and fissured zones, with yields ranging from <1 lps to 3 lps>. Higher yields are limited to the available thickness of fractured, fissured, and jointed zones, with fractures typically occurring between 30 to 40 m bgl, occasionally extending down to 70-100m bgl.River alluvium, being unconsolidated sediment with high porosity and permeability, forms a potential aquifer system, with yields generally ranging from 3 to 5 lps. Occasionally, yields of 7 to 9 lps are observed in sediments consisting of thick sand and gravel beds. Coastal alluvium has good yield potential in the range of 2 to 4 lps, depending on the availability of sand beds. Yields in sandstone formations range between 6 and 19 lps, with the granularity of the sandstone bed being the deciding factor in yield potential, as higher yields are recorded in wells tapping coarse sandstone beds.

Groundwater resources for each mandal are estimated. Net annual groundwater availability is 411.30 MCM in the command area and 515.86 MCM in the non-command area, with a total of 927.16 MCM in the entire district. The gross groundwater draft for all uses in the command area is approximately 80.75 MCM, while it is around 191.42 MCM in the non-command area, resulting in a total gross groundwater draft of 272.17 MCM for the district. Out of this resource, 23.41 MCM in the Command area and 68.29 MCM in the non-command area, totaling 92.103 MCM for

the entire district, are allocated to cater to the domestic and industrial needs of the population as of 2025. Net groundwater availability for future irrigation use is estimated at 318.49 MCM in the command area, 287.26 MCM in the non-command area, and 605.75 MCM in the entire district.All the mandals in the district are categorized as safe except Ranasthalam (Exploited) and Laveru (Semi-Critical) mandals. The groundwater prospects map of Srikakulam district is shown in Figure-13.

1.6 Infrastructure

1.6.1 Transport Network

Srikakulam district has a well-connected by various modes of transportation such as Road and Rail. The connectivity of each category is also depicted in Figure-14. The detail of each transport network distribution in the district isas given below.

1.6.1.1. Road Transport: The road network of the district has been delineated by using high resolution satellite data under Space Based Information Support for Decentralized Planning (SIS-DP) project and arrived the lengths of each type of road network. It can be observed that Srikakulam district has a well-developed road network that facilitates connectivity to all towns within the district, and to other major cities and towns of nearby districts. The major road network includes National Highways (NH), State Highways (SH), and District Roads (DR). The rural areas of the district also good connectivity by Panchayat Raj roads / village roads. The total length of the road network in the district is about 8039.99 km, of which the length of the National Highways is about 212.30 km, State Highways connecting all major towns and cities in the districtis having a length of about 671.49 km. The district roads are connecting all towns and mandals having a length of 1422.40 km. The length of each road category covered in the district are shown in Table-12.

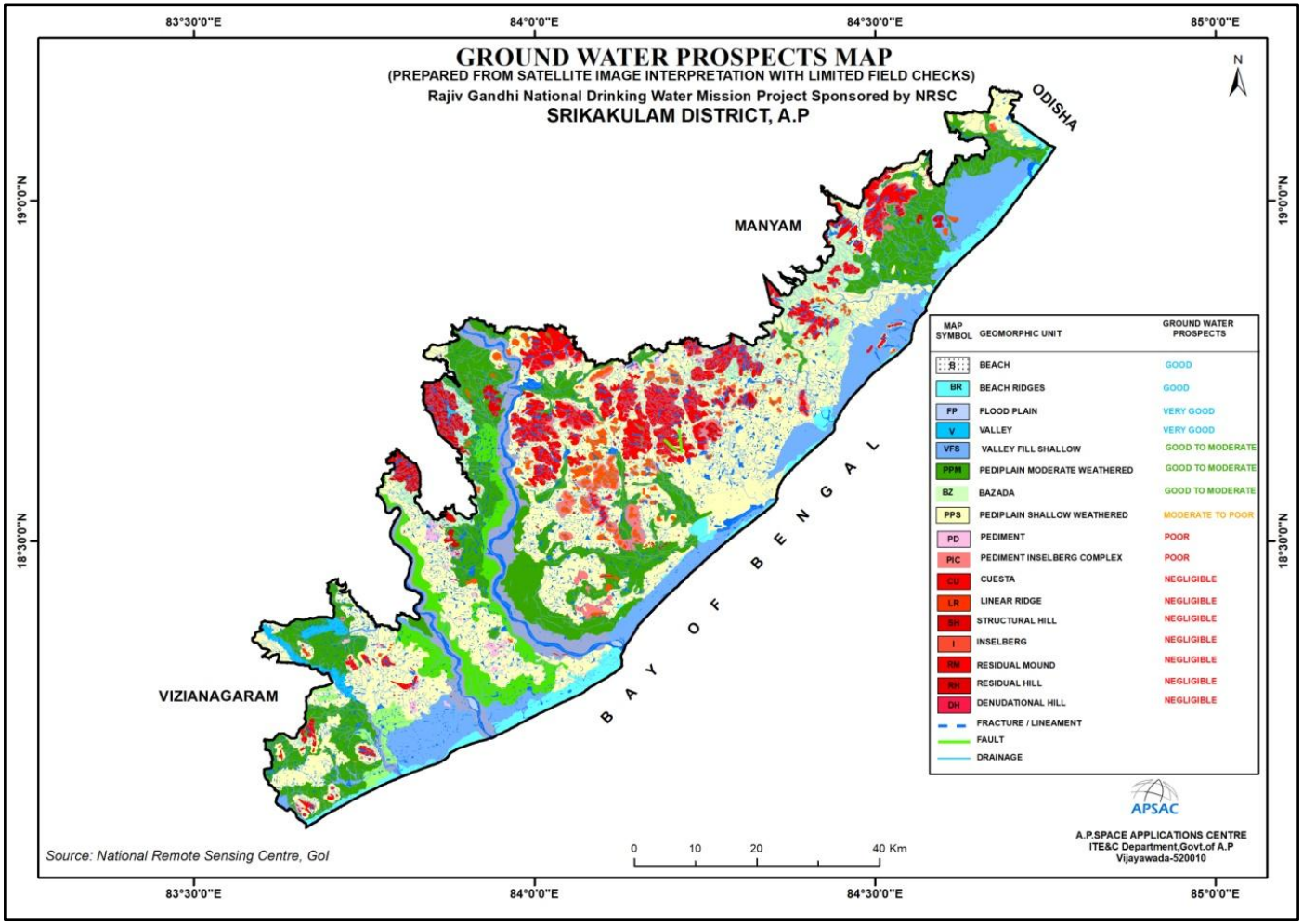


Figure-13: Ground Water prospects in Srikakulam District, Andhra Pradesh

Srikakulam district is traversed by two National Highways. The traverse and description of each highway is as given below:

1.6.1.1.1. National Highway 16 (NH16): The NH16 is runs along east coast of West Bengal, Odisha, Andhra Pradesh and Tamil Nadu states. It is a part of the Golden Quadrilateral project to connect India's major cities.The NH starts at Odisha border which passes through the coastal districts in Andhra Pradesh and it enters in Srikakulam district at Ichchapuram Mandal. It traverses through Srikakulam District via Ichchapuram, Kaviti, Kanchili, Sompeta, Mandasa, Palasa, Nandigam, Tekkali, Kotabommali, Narasannapeta.

1.6.1.1.2. National Highway 326A (NH326A): National Highway NH 326A starting from Mohana of Odisha and ends at Narasannapeta road of Narasannapeta mandal Srikakulam district, Andhra Pradesh. National Highway NH 326A is passes in Srikakulam district through the Pathapatnam, Saravakota, Hiramandalam Jalamuru, Kotabommali mandals and connects to National Highway 16 at Narasannapeta mandal, Srikakulam District.

Some important State Highway segments covered in the district are given below.

Srikakulam – Amadalavalasa – Palakonda Road (SH001)
Amadalavalasa - Sarubujjili -Hiramandalam -Kothuru Road (SH002)
Sompeta-Kaviti-Icchapuram Road (SH082
Santhabommali-Tekkali-Meliaputti Road (SH090)
Vajrapukothuru- Meliaputti Road (SH091)
Kotabommali- Jalumuru - Hiramandalam Road (SH106)

Table 12 Road Category wise Lengths

S.No	Road Type	Length in Km
1	National Highway	212.30
2	State Highway	671.49
3	District Road	1422.404
4	Village Road	4281.59
5	Cart Track	1327.97
6	Foot Path	124.25
Total Length		**8040.00**

Data Source: R&B Department & APSAC, Vijayawada.

1.6.1.2. Railways: Srikakulam district is traversed by a significant railway line that connects various parts of the district and provides connectivity to neighbouring regions. Khurda Road-Visakhapatnam Section of Howrah-Chennai main line and administered under waltair railway division of South Coast Railway Zone. The Howrah-Chennai main line is a broad gauge type railway line facilitates the movement of people and goods. Howrah-Chennai main railway line passes 160 km in Srikakulam district. This line passes through Palasa, Amadalavalasa, Kanchili, Ichchapuram, Tekkali, Jalamuru, Santhabommali, and Ponduru Important Railway stations and passes through Mandasa Road, Sigadam, Dusi, Pundi, Summadevi, Baruva, Jhadupudi, Dindu Gopala Puram Halt, Routhpuram Halt, Urlam, Batuva and Harishchandrapuram Stations. Naupada junction - Gunupur (Odisha State) railway line is passes 36 kms in this district. It passes through Pathapatnam , Ganguwada, Temburu, Peddasana, Tekkali Halt and Naupada Junction railway stations.

1.6.1.3. Seaport: Andhra Pradesh has the 2nd longest coastline of 974 km in the eastern peninsular India. Srikakulam District has 3 Green Field ports namely Kalingapatnam Port, Bhavanapadu Port and Meghavaram Port.

Kalingapatnam is a minor port located in the state of Andhra Pradesh, it is situated in the Gara mandal of Srikakulam district, along the eastern coast of India and is used for fishing operations can be carried out at this port with Catamarans and Navas.

Bhavanapadu is a minor port is in the district of Srikakulam in Andhra Pradesh. It is a green field port. Also, there is a fishing harbour constructed in this port. This port is also under consideration to be developed by the government of India .

Meghavaram is a minor port located in the state of Andhra Pradesh, it is situated in the Santhabommali mandal of Srikakulam district, along the eastern coast of India. It is a Captive port. This port is under consideration to be developed by the government of India .

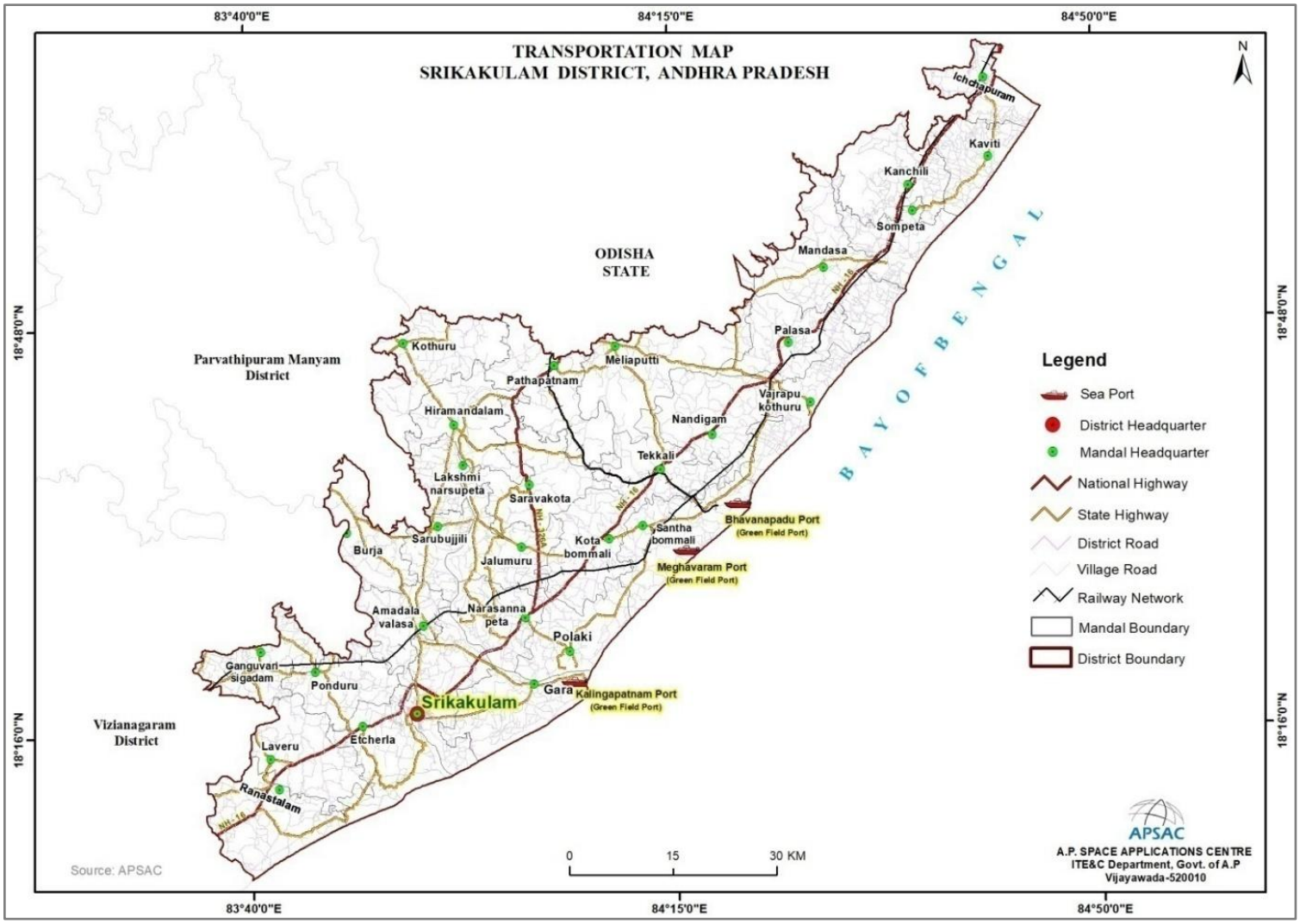


Figure-14: Transport Network of Srikakulam District

1.6.2 Irrigation

Major and Medium Irrigation Projects in Srikakulam district:

Irrigation has assumed an increasing significance in agriculture in the context of new technology, where high yielding varieties and multiple cropping are being practiced. The main reasons for low yields are inadequate rainfall, uneven and uncertain rains during the period of crop growth. It is generally found that the introduction of irrigation is associated with changes in the cropping pattern. The shift from a traditional cropping pattern to the most advantageous cropping pattern is possible only in the presence of irrigation facilities. The new agricultural technology is highly based on sufficient moisture conditions. Thus, the development of irrigation is crucial for increasing agricultural production. The irrigation projects are classified as major, medium and minor irrigation details are shown in Table-13 and Figure-15.

1.6.2.1. Major Irrigation Projects:

In Srikakulam district there are seven major irrigation projects i.e., Thotapalli Regulator, BRR Vamsadhara Project Stage-I, Narayanapur Anicut projects are completed projects and BRR Vamsadhara Project Phase-I Stage-II, BRR Vamsadhara Project Phase-II Stage-II, Babu Jagjeevan Ram Uttarndhra Sujala Sravanthi (BJRUSS) projects are ongoing projects.

1.6.2.2. Medium Irrigation Projects:

In Srikakulam district there are five medium projects i.e., SGSN Maddhuvalasa Reservoir Project Stage-I, Pydigam Projects are completed projects and Flood Flow Canal (FFC-Mahendratanaya), Mahendratanaya Offshore Project, SGSN Maddhuvalasa Reservoir Project Stage-II projects are ongoing projects.

There are 30 minor lift irrigation schemes (Completed) in the district under Andhra Pradesh State Irrigation Development Corporation Limited (APSIDC), an extent of 20,390 Ac. The Water Resources Department 764 nos of minor irrigation tanks (above 100 Ac ayacut) covered in the district an extent of 1,08,707 Ac and 5,262 nos of Small minor irrigation (P.R.) tanks (bellow 100 Ac ayacut) covered in the district an extent of 1,19,697 Ac. Check Dams 200Nos in SMI Division, Seethampeta an extent of 5,310 Ac, Open Head Channels, Gedda Systems, Anicuts & Other sources (Above 100 Ac) 80Nos (Combined district) an extent of 5,310 Ac and Open Head Channels, Gedda Systems, Anicuts & Other sources (Below

100 Ac) 21Nos (Combined district) an extent of 5,310 Ac of Srikakulam district.

Table 13 Major and Medium Irrigation Projects in Srikakulam District

S. No	Project Type	Name of the Project	Status	Ayacut in Ac
1	Major	Thotapalli Regulator **(Combined district)**	Completed	55,285
2		BRR Vamsadhara Project Stage-I		1,48,230
3		Narayanapur Anicut		35,215
4		Sardar Gouthu Lachanna Thotapalli Barrage Project	Ongoing	41,078
5		BRR Vamsadhara Project Phase-I Stage-II		62,280
6		BRR Vamsadhara Project Phase-II Stage-II		37,918
7		Babu Jagjeevan Ram Uttarndhra Sujala Sravanthi (BJRUSS)		65,274
8	Medium	SGSN Maddhuvalasa Reservoir Project Stage-I **(Combined district)**	Completed	24,700
9		Pydigam Project		5,187
10		Flood Flow Canal (FFC - Mahendratanaya)	Ongoing	24,600
11		Mahendratanaya Off Shore Project		2,500
12		SGSN Maddhuvalasa Reservoir Project Stage-II		12,500
13	Minor	Minor Irrigation schemes (6 Nos) **(Combined district)**	Completed	11,958
14		Open Head Channels, Gedda Systems, Anicuts & Other sources (Above 100 Ac.) --80Nos **(Combined district)**		40,339
15		Open Head Channels, Gedda Systems, Anicuts & Other sources (Below 100 Ac.) --21Nos **(Combined district)**		1,069
16		Check Dams - SMI Division,Seethampeta (200 Nos)		5,310
17		Lift Irrigation Schemes under APSIDC (30 Nos)		20,390
18		Minor Irrigation Tanks -- 764 Nos (Ayacut above 100 Acres)		1,08,707
19		Small Minor Irrigation Tanks (P.R.Tanks) -- 5,262 Nos (Ayacut bellow 100 Acres)		1,19,697
20		Minor Irrigation schemes (3 Nos)	Ongoing	2,285
21		Lift Irrigation Schemes under APSIDC (4 Nos) **(Combined district)**		5,910
			Total	**8,30,432**

Data source: WRD, APWRIMS, Govt. of A.P.

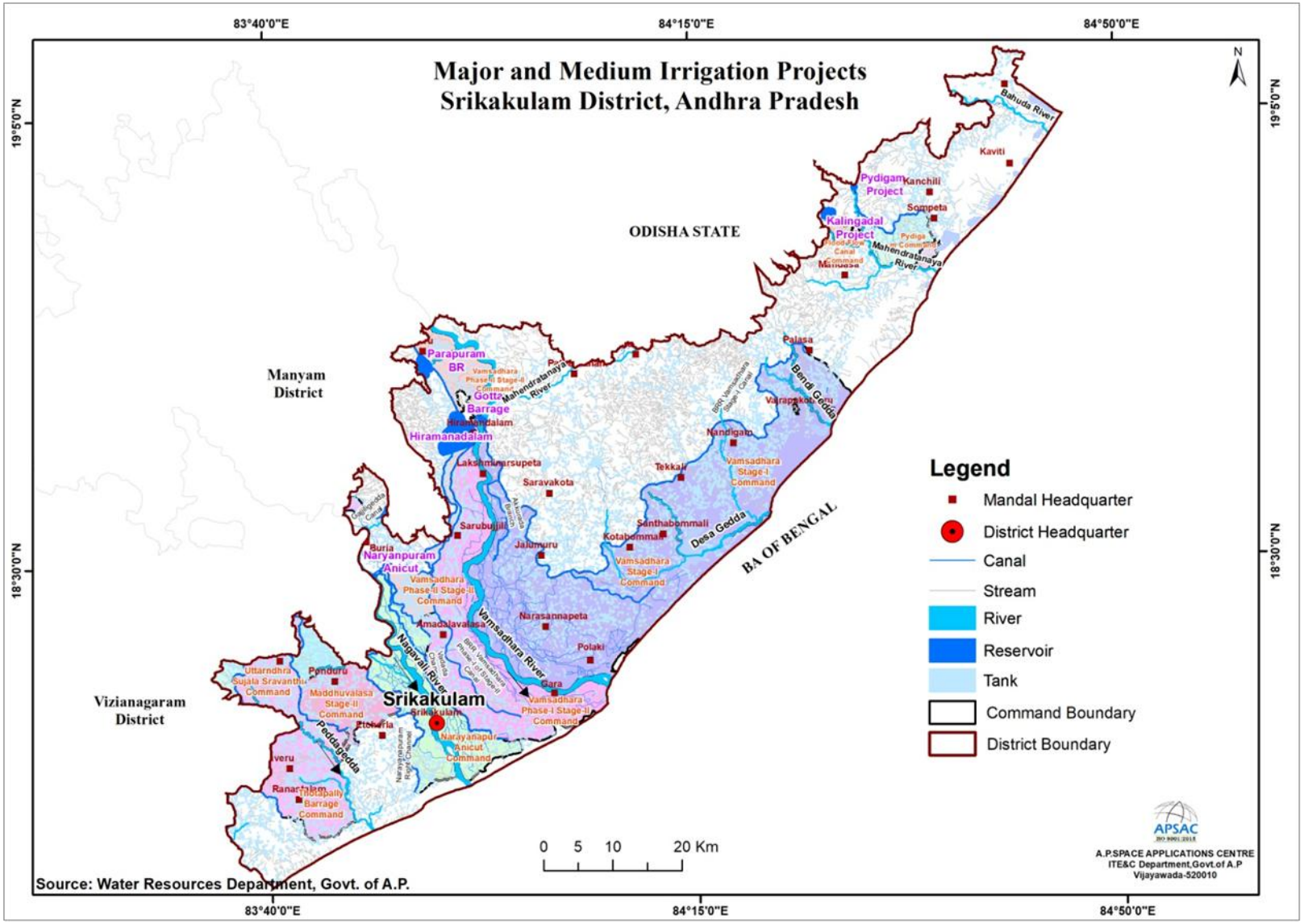


Figure-15: Major and Medium Irrigation Projects of Srikakulam District

1.6.2.3. Tank Information System

As per the information of Water Resources Departmental portal, Andhra Pradesh Water Resources Information & Management System (APWRIMS) and the URL:https://apwrims.ap.gov.in/ in Srikakulam District has 6,421 minor irrigation tanks. The Designed Storage Capacity of minor irrigation tanks in Srikakulam District is 9,847.94 mcft and Current Storage Capacity is 9,170.17 mcft. The mandal wise minor irrigation tanks details of Srikakulam District are shown in Table-14.

Table 14 Mandal wise Minor Irrigation Tanks details of Srikakulam district

S.No	Mandal	No. of MI Tanks	Designed Storage Capacity (mcft)	Current Storage Capacity (mcft)
1	AMADALAVALASA	1	0.6	0.6
2	BURJA	298	278.31	273.63
3	ETCHERLA	199	142.77	142.77
4	GANGUVARI SINGADAM	321	450.38	450.04
5	GARA	91	82.31	82.31
6	HIRAMANDALAM	156	185.46	185.46
7	ICHCHAPURAM	163	151.66	147.16
8	JALUMURU	329	691.08	549.38
9	KANCHILI	242	353.31	340.52
10	KAVITI	111	148.36	145.77
11	KOTABOMMAL	321	576.58	545.48
12	KOTHURU	385	795.6	610.85
13	LAVERU	340	399.37	399.37
14	LAXMINARASAMPET	170	393.05	393.06
15	MANDASA	176	193.01	190.2
16	MELIAPUTTI	287	400.14	315.89
17	NANDIGAM	401	602.43	576.5
18	NARASANNAPETA	93	309.32	301.45
19	PALASA	190	185.85	176.74
20	PATHAPATNAM	307	472.43	367.54
21	POLAKI	154	406.07	404.72
22	PONDURU	131	176.78	172.87
23	RANASTALAM	348	374.04	374.04
24	SANTHABOMMALI	189	216.15	185.74
25	SARAVAKOTA	347	786.61	775.17
26	SARUBUJJILI	92	256.42	256.42
27	SOMPETA	70	92.51	91.32
28	SRIKAKULAM MANDAL	136	213.44	213.44
29	TEKKALI	216	312.49	304.35
30	VAJRAPUKOTHURU	157	201.38	197.35
	TOTAL	**6,421**	**9,847.94**	**9,170.17**

Data source: WRD, APWRIMS, Govt. of A.P.

1.6.3 Eco-sensitive areas and Important places

Srikakulam district is blessed with several tourist attractions that offer a mix of historical, cultural, and natural wonders. The important popular tourist, religious and cultural places to visit in the Srikakulam district are shown in Table-15 and the geographical location of each place is depicted in Figure-16.

Table 15 Important places of Tourism in Srikakulam district.

S.No	***Name***	***Village***	***Mandal***
1	*Baruva Beach*	*Baruva*	*Sompeta*
2	*Budithi*	*Budithi*	*Saravakota*
3	*Ganagallavanipeta Beach*	*Mofusbandar*	*Srikakulam*
4	*Iskon Ranasthalam*	*Ponnada*	*Etcherla*
5	*Jamia Masjid*	*Srikakulam*	*Srikakulam*
6	*Kalingapatnam*	*Kalingapatnam*	*Gara*
7	*Kalingapatnam Beach*	*Kalingapatnam*	*Gara*
8	*Kotammathalli Temple*	*Kotabommali*	*Kotabommali*
9	*Mandasa Vasudeva Perumal Temple*	*Mandasa*	*Mandasa*
10	*Mogadalapadu Beach*	*Korlam*	*Gara*
11	*Nagavali river view park*	*Srikakulam*	*Srikakulam*
12	*Neelamaniammavaru Temple*	*Pathapatnam*	*Pathapatnam*
13	*Ponduru Cotton Sarees*	*Ponduru*	*Ponduru*
14	*Salihundam Buddhist Heritage Site*	*Salihundam*	*Gara*
15	*Sivasagar Beach*	*Akkupalle*	*Vajrapukothuru*
16	*Sri chevitamma thalli Ammavari Gudi*	*Ampolu*	*Gara*
17	*Sri Kurmanatha swamy Temple*	*Srikurmam*	*Gara*
18	*Sri Suryanarayana Swamy Temple*	*Arasavilli (Rural)*	*Srikakulam*
19	*Sri Venkateswara Swamy Temple*	*Rajam*	*Sompeta*
20	*Srimukhalingeswara Temple*	*Mukhalingam*	*Jalumuru*
21	*Telineelapuram Bird Nesting Area*	*Ravivalasa*	*Tekkali*
22	*Venugopala Swamy Temple*	*Meliaputti*	*Meliaputti*

Data Source: Tourism Department, Government of Andhra Pradesh.

A brief description of certain tourist places are given below:

1.6.3.1. Baruva Beach:

Baruva in Sompeta Mandal is situated at a distance of 109 km from Srikakulam town. The famous Sri Kotilingeswara Swamy and Janardhana Swamy temples are located at this place. Thousands of people take sea bath during festivals. Baruva was once an important seaport. Two obelisks, one of black and the other of white, of fifty feet height above the sea level, mark the seaport.

1.6.3.2. Budithi:

Budithi bronze work has made a place for itself in the national and international market. The intricate weaving in bronze is a unique feature and the products are much sought after by tourists as well as locals. Tourists from India and abroad place orders for articles of their choice.

1.6.3.3. Ganagallavanipeta Beach:

Gangallapeta is a small village in Srikakulammandal**.** It comes under Mofusbandar panchayat. It is located 9 km towards south from district head quarters Srikakulam. It is near to Bay of Bengal. There a chance of humidity in the weather.

1.6.3.4. Kalingapatnam Beach:

Kalingapatnam beach is located on the coast of Kalingapatnam, where Vamsadhara River empties into Bay of Bengal. It is located a distance of 30 km from Srikakulam town. The beach is also known as Open Road Sea, due to the road ending in the sea shore bed.

1.6.3.5. Mogadalapadu Beach:

It is located at korlam village, Gara mandal of Srikakulam district. It is a beautiful tourist destination situated in the district.

1.6.3.6. Sivasagar Beach:

Sivasagara beach close to Akkupalli village, Vajrapu Kothuru mandal in Srikakulam district. The sheer beauty of the beach makes the 75 km journey from Srikakulam.

1.6.4 Places of Religious and Cultural importance

1.6.4.1. Iskon Ranasthalam: It is located at Ponnada village, Etcherla mandal of Srikakulam district. It is about 26 km from Srikakulam town.

1.6.4.2. Jamia Masjid: There is one famous mosque known as Jama Masjid. Probably it is the oldest standing structure in Srikakulam, built in 1641 with support from Sher Muhammad Khan, the first Fouzdar of Chicacole circle of the Qutbshahi dynasty of Hyderabad. The garden around the Masjid gave the town its old name Gulshanabad, meaning city of the Garden.

1.6.4.3. Kalingapatnam: Kalingapatnam Village placed in Gara Mandal, It is situated at a distance of 25 km from Srikakulam. Dargha Shariff (Tomb of religious persons) Shaik Madeena Acquiline is situated at this place. People of all religions worship Madeenababa in darga and it speaks for the Hindu- Muslim unity. Once it was a minor port and some European merchants resided during East India Company regime. There is one Light House functioning here focusing to a distance of 23 km. The river Vamsadhara joins the Bay of Bengal in this village.

1.6.4.4. Kotammathalli Temple: It is located about 42 km towards East from District head quarters of Srikakulam.

1.6.4.5. Mandasa Vasudeva Perumal Temple: This place is situated at a distance of 26 km from Srikakulam. The residential palace of the erstwhile Jamindars of Mandasa is a picturesque building. This palace known as the Mandasa fort and it is a place of tourist interest.

1.6.4.6. Neelamaniammavaru Temple: It is located at Pathapatnam, Pathapatnam mandal in Srikakulam district. It is located 95 km from head quarter of the district. This temple dedicated to Neelamani Durga Ammavaru.

1.6.4.7. Ponduru Cotton Sarees: Ponduru is situated at a distance of 21 km from Srikakulam town. The village is famous for the production of fine quality Khadi which is popular throughout India.

1.6.4.8. Salihundam Buddhist Heritage Site: Salihundam Village palced in Gara Mandal, Salihundam is situated at a distance of 18 km from Srikakulam town. The village assumed Archeological importance due to the excavation of Buddist Stupas. The Archeology Department has taken all precautionary measures to preserve these monuments. Two big Stupas – one on the top of the hill and the other at the base- trace the antiquity of the monument to the 2nd Century B.C.

1.6.4.9. Sri Chevitamma Thalli Ammavari Gudi: It is located at Ampolu village in Gara mandal. It is located at a distance of 17 km from Srikakulam town.

1.6.4.10. Sri Kurmanatha Swamy Temple: Srikurmam Village is situated at a distance of 14.5 km to the South-East of Srikakulam town. The village was named after the temple, the presiding deity of which is Lord Vishnu in Kurmavatara. Srikurmam is a famous place of pilgrimage and the temple here is the only one of its kind in the whole of India. The temple is noted for its architectural beauty and contains many inscriptions ranging from the Eleventh Century to the Ninteenth Century A.D.

1.6.4.11. Sri Suryanarayana Swamy Temple: It is situated at a distance of about 1.6 km. from Srikakulam District head quarters The original name is derived to have been Arasavalli or abode of joy. Another Version Credits this place with curing of piles and indicates the name of the village as Arsohari. The famous Sun-God temple existing in our State. The Sthalapurana of this temple narrates that Lord Devendra had found this temple and installed the existing idol of the Sun-God commonly known as Lord Suryanarayana Swamyvaru. The temple is built in such a way that the Sunrays fall on the feet of the idol a few minutes through the five entrance gates of the temple remain closed.

1.6.4.12. Sri Venkateswara Swamy Temple: It is located on the outskirts of the city and is dedicated to Lord Vekateswara, one of the most important incarnations of Lord Vishnu. The temple is believed to have been built in the 10th century and is famous for its intricate carvings and sculptures. It is located at the distance of 1.5 km from Srikakulam.

1.6.4.13. Srimukhalingeswara Temple: Srimukhalingam is placed in Jalumuru Mandal, Mukhalingam Village. It is situated on the left bank of the river Vamsadhara at a distance of about 48Km from Srikakulam District.It is famous for the temple of Srimukhalingeswara (Siva) believed to have been built in 9th Century A.D. The sculpture in this temple is remarkably elegant and precise and represents the Indo-Aryan style of Architecture. This Temple is known as North Kasi of Andhra Pradesh.

1.6.4.14. Telineelapuram Bird Nesting Area: Telineelapuram, which is nearly Tekkali Mandal, Ravivalasa Village 60 Kms from Srikakulam District, it is a Bird sanctuary. Pelican Birds come here from Siberia (U.S.S.R) in winter for their breeding and stay on the trees. They hatch and then feed their young ones with fish from the nearby sea. Tourists

and bird watchers from all over the State visit this place during winter. It is an acknowledged picnic centre too.

1.6.4.15. Venugopala Swamy Temple: Venugopala Swamy Temple of Meliaputti is one of the most beautiful temple of the district. The temple history says that it was built by Veera Veerendra Prathapa Rudra Gajapathi Narayana Deo exclusively for the puja purpose of his queen. The temple was built in pure Odyssey architecture. The beautiful carvings on the temple walls are supposed to convey the message of the four Vedas. The dome is decorated with 108 lotus flowers, but each flower has its own unique shape. (Source: https://www.wikipedia.org, http://ipltours.in)

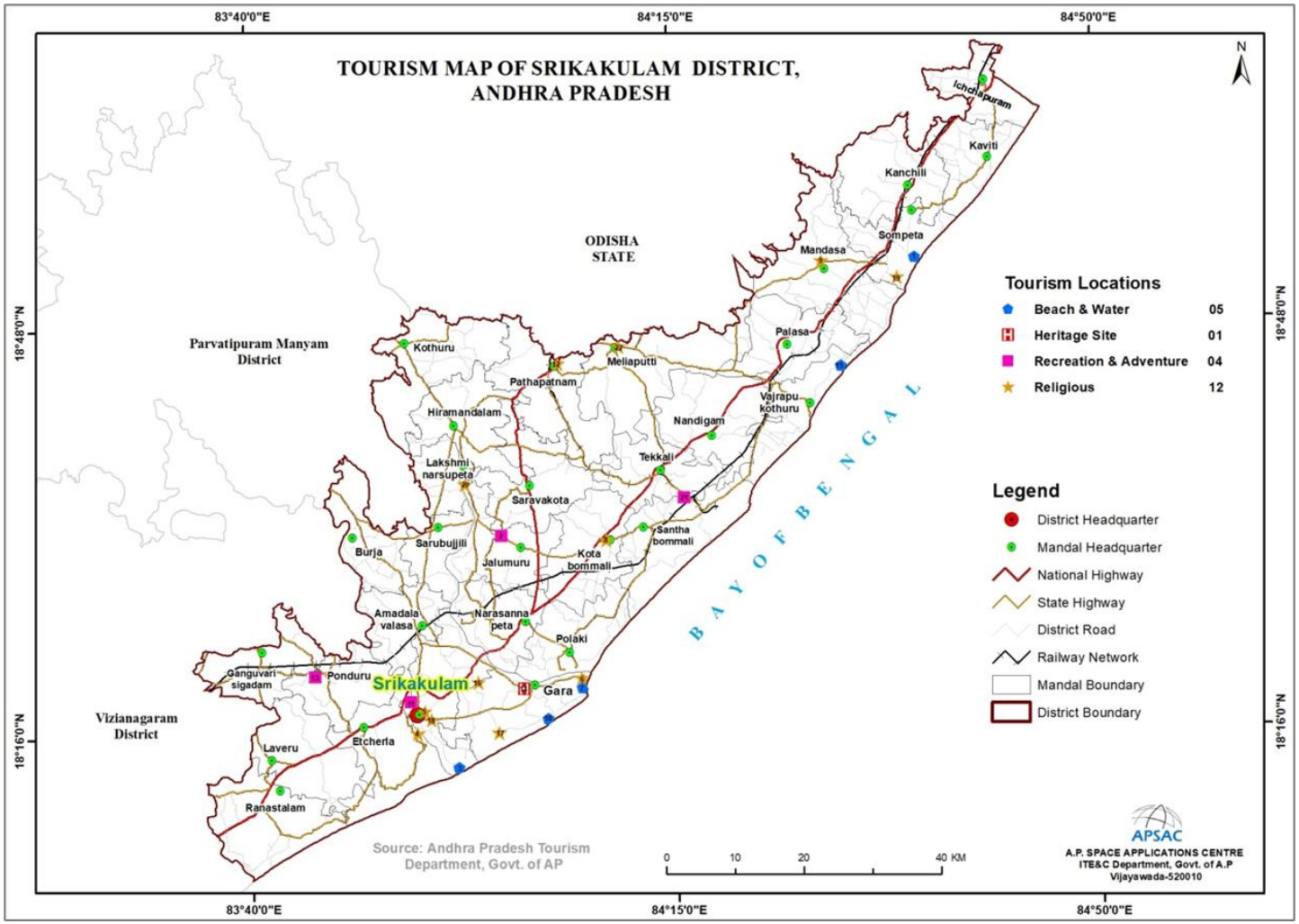


Figure: 16: Tourism Map of Srikakulam district, Andhra Pradesh

1.7 Drainage Pattern

1.7.1 Drainage

There are six major rivers draining the district, viz. Vamsadhara, Nagavali, Bahuda, Mahendratanya, Peddagedda, Kandivalasa and also Bendi Gedda, Desa Gedda small rivers are covered in the district. They originate in the Eastern Ghats and flowing through the district in south direction, finally joining Bay of Bengal.

The rivers Vamsadhara, Nagavali and Suvarnamukhi are perennial. The drainage in western part of the district resembles dendritic type, whereas in the central part it is parallel to sub-dendritic. The overall drainage is of medium to coarse textured towards west and north of the district, whereas in central and southern parts it is very coarse. The drainage density varies from less than 0.2 to 1 km/km2.

The Vamsadhara is the main river that flows towards south direction for 80 Km and the catchment area is 1465.86 Sq.km in the district. It is also known as Banshadhara river in Odisha State. The Vamsadhara river originates in the border of Thuamul Rampur in the Kalahandi district and Kalyansinghpur in Rayagada district of Odisha State and runs for a distance of about 254 km, where it joins the Bay of Bengal at Kalingapatnam, Andhra Pradesh.

The Nagavali river originates in the Eastern Ghats near Lakhbahal, located at an altitude of 1,300 metres in the Kalahandi district of the state Odisha and joining to Bay of Bengal near Mofuzbander in Srikakulam district. It is also known as Langulya river and the important tributaries are Suvarnamukhi river, Vegavathi river and Vottigedda.

The Bahuda river originates from the Ramgiri hills of Gajapati District. It then passes through Ganjam District and enters Srikakulam district of Andhra Pradesh, where it joins into the Bay of Bengal at Bhurjapadu village, Ichchapuram mandal in Srikakulam district. The length of the river is 20 km and has a catchment area of 257.57 Sq.km. Figure-17 Illustrates the drainage system and the surface water bodies.

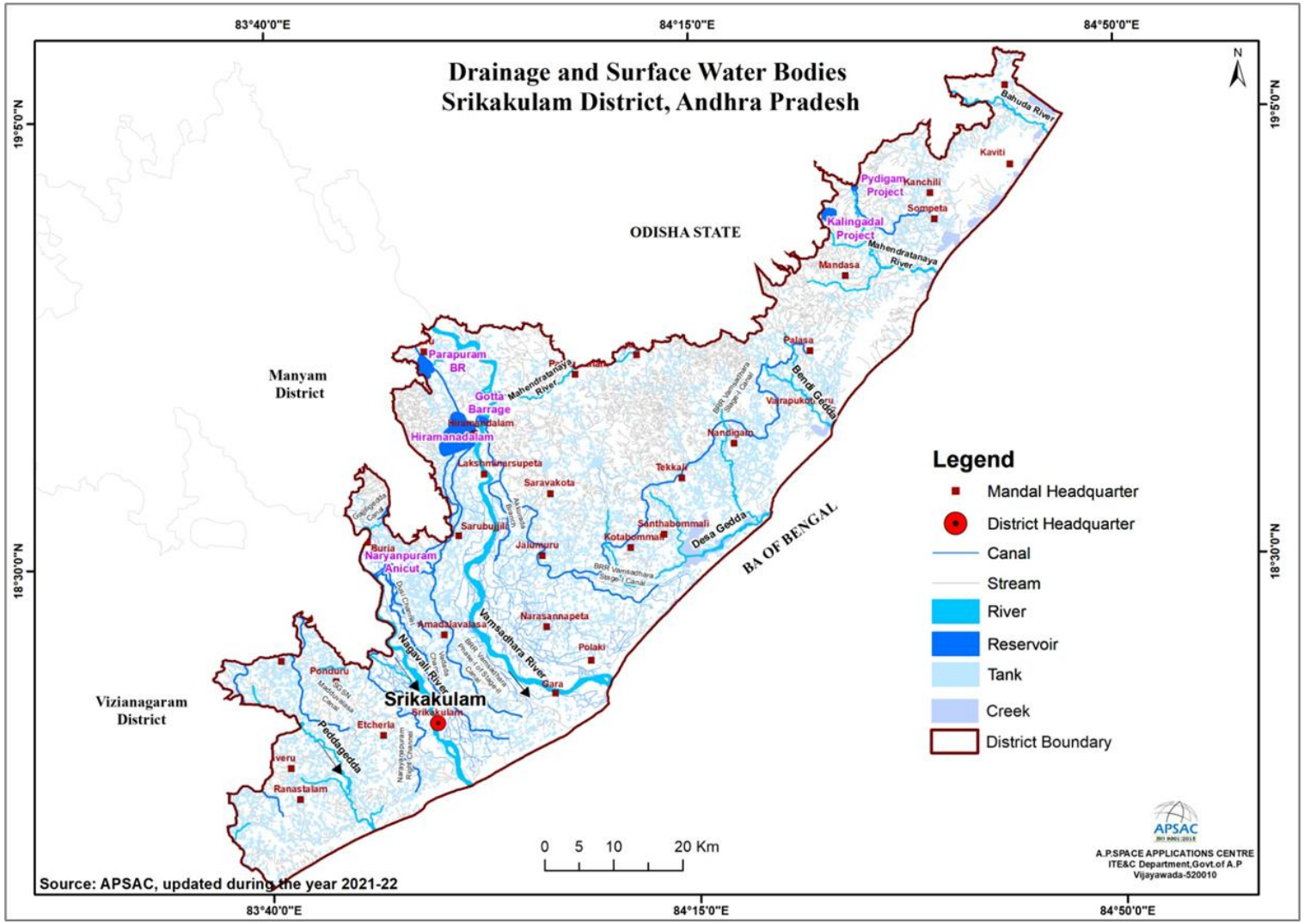


Figure - 17: Drainage Network and Surface Water Bodies of the Srikakulam District

1.7.2 Geomorphology of the District:

Using IRS satellite data and GIS, a detailed geological, geomorphological, and structural map of Srikakulam District was generated in accordance with the Rajiv Gandhi National Drinking Water Mission (RGNDWM) guidelines on a 1:50,000 scale. The objective is to map lithology, geomorphology, and structural characteristics of an area at a 1:50,000 scale and integrate them to locate potential groundwater prospect zones and recommend suitable structures for groundwater recharge. Various hydrogeomorphic units are delineated, and suitable recharge structures are proposed for villages affected by drinking water issues under this project. The description of geomorphic units of different origins (Figure-18) mapped in the Srikakulam District is presented below.

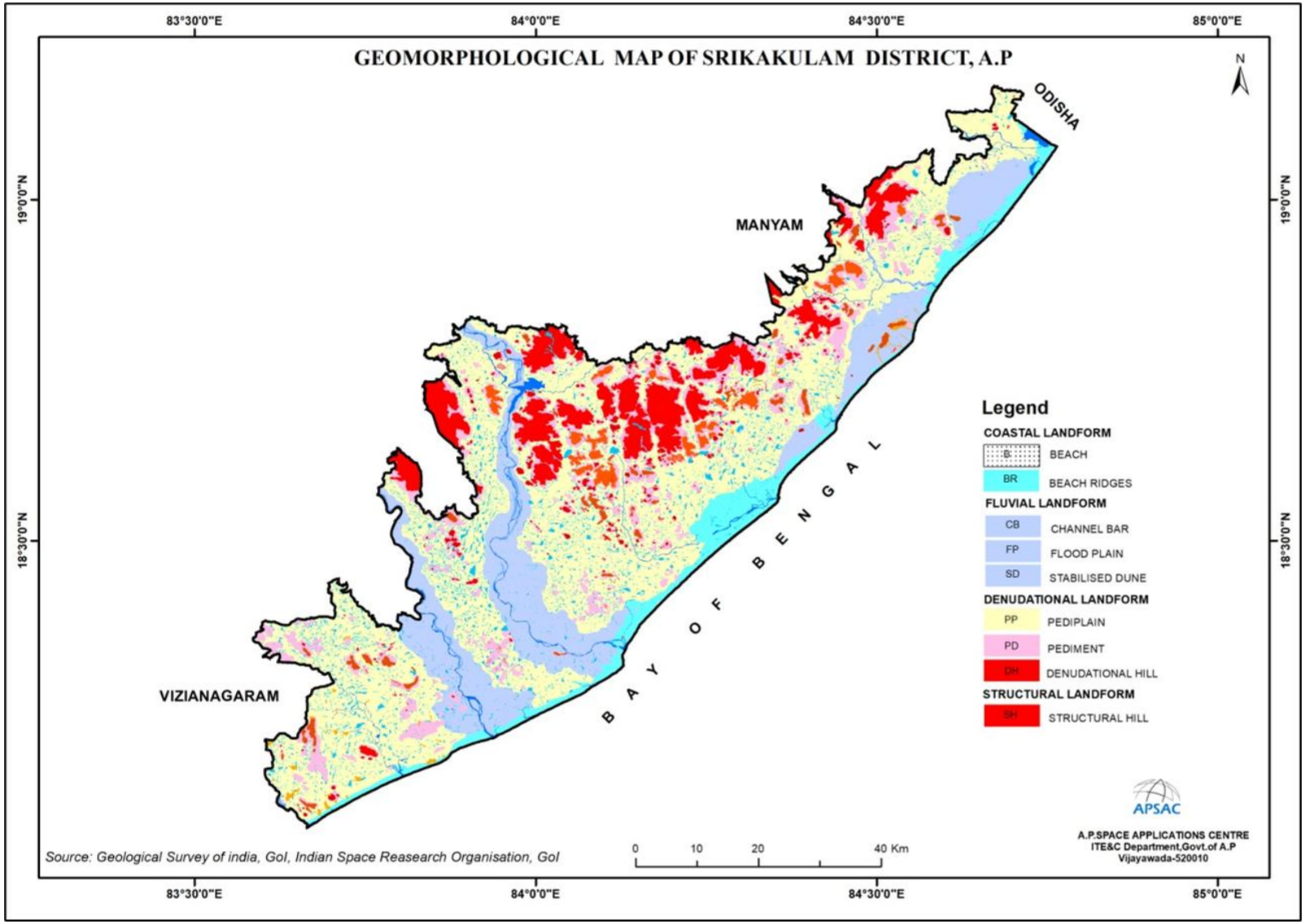


Figure 18: Geomorphology of Srikakulam District, Andhra Pradesh

1.7.3 Landforms of Fluvial origin

The word 'fluvial' is used in earth science to refer to processes and landforms produced by running water. Like other surficial processes, running water can either erode material from the Earth's landscape or deposit layers of sediment. The resulting landforms can be classified as either erosional or depositional. The incredible power of running water in carving various erosional and depositional landforms is well known. Although the quantity of water in a stream is small at certain times of the year, very large volumes of water move through the channel, forming an important component of the hydrological cycle. Fluvial dissection of the landscape consists of valleys and their included channel ways organized into a system of connections known as a drainage network. Drainage networks display many types of quantitative regularity that are useful in analyzing both fluvial systems and the terrains they dissect (NRSA, 2007).

Floodplain: The surface or strip of relatively smooth land adjacent to a river channel constructed (or in the process of being constructed) by the present river in its existing regimen and covered with water when the river overflows its banks during times of high water. It is built of alluvium carried by the river during floods and deposited in the sluggish water beyond the influence of the swiftest current.

Delta: The low, nearly flat, alluvial tract of land deposited near the mouth of a river, commonly forming a triangular or fan-shaped plain of considerable area enclosed and crossed by many distributaries of the main river. It may extend beyond the general trend of the coast and results from the accumulation in a wider body of water (usually a sea) of sediment supplied by a river in such quantities that it is not removed by tides, waves, and currents.

1.7.4 Landforms of Coastal origins

Coasts are the loci of a unique assemblage of erosional and depositional processes. Various landforms of coastal areas are almost exclusively the result of the action of ocean waves. Wave action creates some of the world’s most spectacular erosional landforms. Where wave energy is reduced, depositional landforms like beaches are created. The source of energy for coastal erosion and sediment transport is wave action. A wave possesses potential energy as a result of its position above the wave trough and kinetic energy caused by the motion of the water within the wave. This wave energy is generated by the frictional effect of winds moving over the ocean surface. The higher the wind speed and the longer

the fetch or distance of open water across which the wind blows and waves travel, the larger the waves and the more energy they possess. Long open ocean waves or swells travel faster than short, locally generated sea waves. They also have longer wave periods, distinguishing them from the short sea waves upon reaching the coast. Long swells, which have traveled hundreds of kilometers, may have wave periods of up to 20 seconds. Smaller sea waves have wave periods of 5 to 8 seconds. When ocean depths are greater than the length of the waves, wave motion does not extend to the ocean floor and remains unaffected by it. As the ocean depth falls below half the wavelength, the bottom increasingly affects the wave motion. With decreasing water depth, wave height increases rapidly, and wavelength decreases rapidly. Thus, the wave becomes more peaked as it approaches the shore, finally curling over as a breaker and breaking on the shore. As the wave breaks, its potential energy is converted into kinetic energy, providing a large amount of energy for the wave to work along the shoreline. Transportation by waves and currents is necessary to move rock particles eroded from one part of a coastline to a place of deposition elsewhere. One of the most important transport mechanisms results from wave refraction.

Since waves seldom break onto a shore at right angles, the upward movement of water onto the beach (swash) occurs at an oblique angle. However, the return of water (backwash) is perpendicular to the beach, resulting in the lateral movement of beach material. This lateral movement is known as beach drift, a phenomenon observable on all beaches. Often, backwash and rip currents fail to remove water from the shore zone as swiftly as it is accumulated by waves, leading to a buildup of water and sediment movement just offshore in the direction of wave action. The currents generated by this lateral movement are termed longshore currents. The movement of sediment along the shoreline is referred to as longshore drift, which differs from the beach drift described earlier, operating within the beach zone. The combined transport of sediment through longshore drift and beach drift is termed littoral drift.

Tidal currents along coasts also play a significant role in sediment movement. While incoming and outgoing tides generate currents in opposing directions daily, one direction usually prevails, resulting in a net one-way transport of sediment. Longshore drift, longshore currents, and tidal currents collectively determine the overall direction of sediment transport and areas of deposition. Utilizing multi-temporal satellite data can elucidate the dynamic nature of coastal processes (NRSA, 2007).

1.7.4.1. Beach: A gently sloping zone, typically with a concave profile, of unconsolidated material that extends landward from the low-water line to the point where there is a distinct change in material or physiographic form (such as a cliff), or to the line of permanent vegetation, usually marking the effective limit of the highest storm waves.

1.7.4.2. Beach Ridge: A low, essentially continuous mound of beach or beach and dune material (sand, gravel, shingle) heaped up by the action of waves and currents on the backshore of a beach beyond the present limit of storm waves or the reach of ordinary tides. These ridges occur singly or as part of a series of approximately parallel deposits, running roughly parallel to the shoreline, representing successive positions of an advancing shoreline.

1.7.4.3. Tidal Flat: An extensive, nearly horizontal, marshy or barren tract of land that is alternately covered and uncovered by the rise and fall of the tide. It consists mainly of unconsolidated sediment, primarily mud and sand, and may form the top surface of a deltaic deposit.

1.7.5 Landforms of Structural Origin

Landforms of structural origin are closely linked to the underlying structural characteristics of an area. The genesis of most landforms in this category is intricately tied to the geological structure beneath them. Structure significantly impacts the resistance of rock, leading to various geomorphic features, ranging from minor variations to large-scale formations. These mega-scale features wield considerable influence over landform genesis, with their mapping indirectly revealing the structural configuration of the area. Mega-scale structural elements such as faults and folds play pivotal roles in shaping structural landforms, their impact profoundly affecting landscape formation. The influence of geological structures on landscape development and appearance is striking, ranging from overarching features that dictate the entire landscape's form to smaller features that shape individual landforms and associated geomorphic processes. Structural control may stem from active structures, whose imprint is directly visible on the contemporary landscape, or from ancient structural features whose influence on modern landscapes is primarily manifested through differential erosion (NRSA, 2007).

Structural Hills: These are hills and valleys formed as a result of tectonic processes and are extensively dissected by drainage lines. They can be categorized based on the degree of dissection, ranging from highly dissected to moderately and low dissected, depending on the density of joints and drainage. Interpretation of these features is primarily conducted using planimetric satellite data, and the classification is inherently subjective.

1.7.6 Landforms of denudational origins

The landforms of denudational origin are shaped by the predominant process of denudation, wherein material is gradually removed through erosion and weathering. These landforms typically result from a combination of mechanical and chemical weathering processes. Denudation, characterized by the removal of material by erosive forces and weathering agents, directly influences the relief of an area, often leading to the leveling of terrain towards a base level. The primary agents of denudation include water, ice, and wind. Various factors such as geology, climate, tectonics, and human activities play significant roles in influencing denudation processes. All rocks and minerals near the surface undergo physical and chemical processes, albeit with varying degrees of resistance to change. Consequently, weathering and erosion sculpt diverse landforms with distinctive shapes and characteristics. Weathering is an integral component of the rock cycle, wherein parent materials or rocks are broken down into smaller fragments, and certain minerals are dissolved and carried away by water and other agents. This process of material removal, known as erosion, is facilitated by various forces such as running water, wind, and glaciers. Weathering also provides the raw materials for the formation of sedimentary rock and soil (NRSA, 2007).

1.7.6.1. Denudational Hill: This is a highly dissected hill where the original geological structures have been largely eroded away.

1.7.6.2. Inselberg: A distinctive, isolated, steep-sided residual knob, hill, or small mountain formed by circumdenudation. Inselbergs rise abruptly from an extensive and mostly level erosion surface, particularly notable in hot, arid regions like the deserts of southern Africa or Arabia. They are typically smooth and rounded, though partly covered by debris from their own slopes. Inselbergs are characteristic features of arid or semiarid landscapes in the later stages of the erosion cycle.

1.7.6.3. Pediment: A broad, flat or gently sloping erosion surface, often with a rocky floor, typically formed by subaerial processes such as running water in arid or semiarid regions. Pediments are found at the base of steep mountain fronts or plateau escarpments and are underlain by bedrock, occasionally overlain by older alluvial deposits. They may be bare or partially covered by a discontinuous layer of alluvium derived from nearby upland areas.

1.7.6.4. Pediplain: An extensive erosion surface characterized by multiple concave profiles, formed by the merging of two or more adjacent pediments and occasional desert domes. Pediplains represent the mature stage of the erosion cycle, known as the "peneplain." They are classified based on the thickness of weathering into shallow, moderate, and deep pediplains.

1.7.7 Structural Features of Srikakulam District

The Eastern Ghats, covering an area of approximately 5,837 square kilometers in Srikakulam, are geologically characterized by Khondalites, Charnockites, and granites. Geological mapping of the region revealed a trend of formations varying from Northeast (NE) to Southwest (SW), transitioning through East-West to Northwest (NW) to Southeast (SE). This trend deviates from both the NE-SW trend typical of the Eastern Ghats and the NW-SE trend observed in the hinterland of the Eastern Ghats, between the Godavari and Mahanadi rivers. This deviation is attributed to the area's location within an intensely folded and faulted region on the eastern margin of the Eastern Ghats. The rivers Nagavali and Vamsadhara follow some of the mega-lineaments oriented north-northwest (NNW) to south-southeast (SSE).

Srikakulam District comprises consolidated formations, including crystalline rocks such as Khondalites, Charnockites, and granitic gneisses, as well as metamorphic sediments like dolomites, shales, phyllites, and quartzites from the Archaean and Precambrian periods, respectively. The Khondalite Group of rocks forms prominent hill ranges in the area (CGWB, 2013). The district has been divided into four engineering geological provinces based on geotechnical characteristics: 1. Alluvium: Comprising sand and silt, characterized by very high permeability with low to medium bearing capacity and poor foundation characteristics. 2. Laterite: Exhibiting variable permeability with low to medium bearing capacity and poor foundation characteristics. 3. Granite and Charnockite: Featuring low permeability, high bearing capacity, and excellent foundation

characteristics. 4. Gneiss and Khondalite: Showing low permeability, medium bearing capacity, and good foundation characteristics. The district falls within seismic zones I and II, with the majority lying in zone I. The structural map of Srikakulam district is presented in Figure-21, while the distribution of piezometer observation wells is depicted in Figure-19.

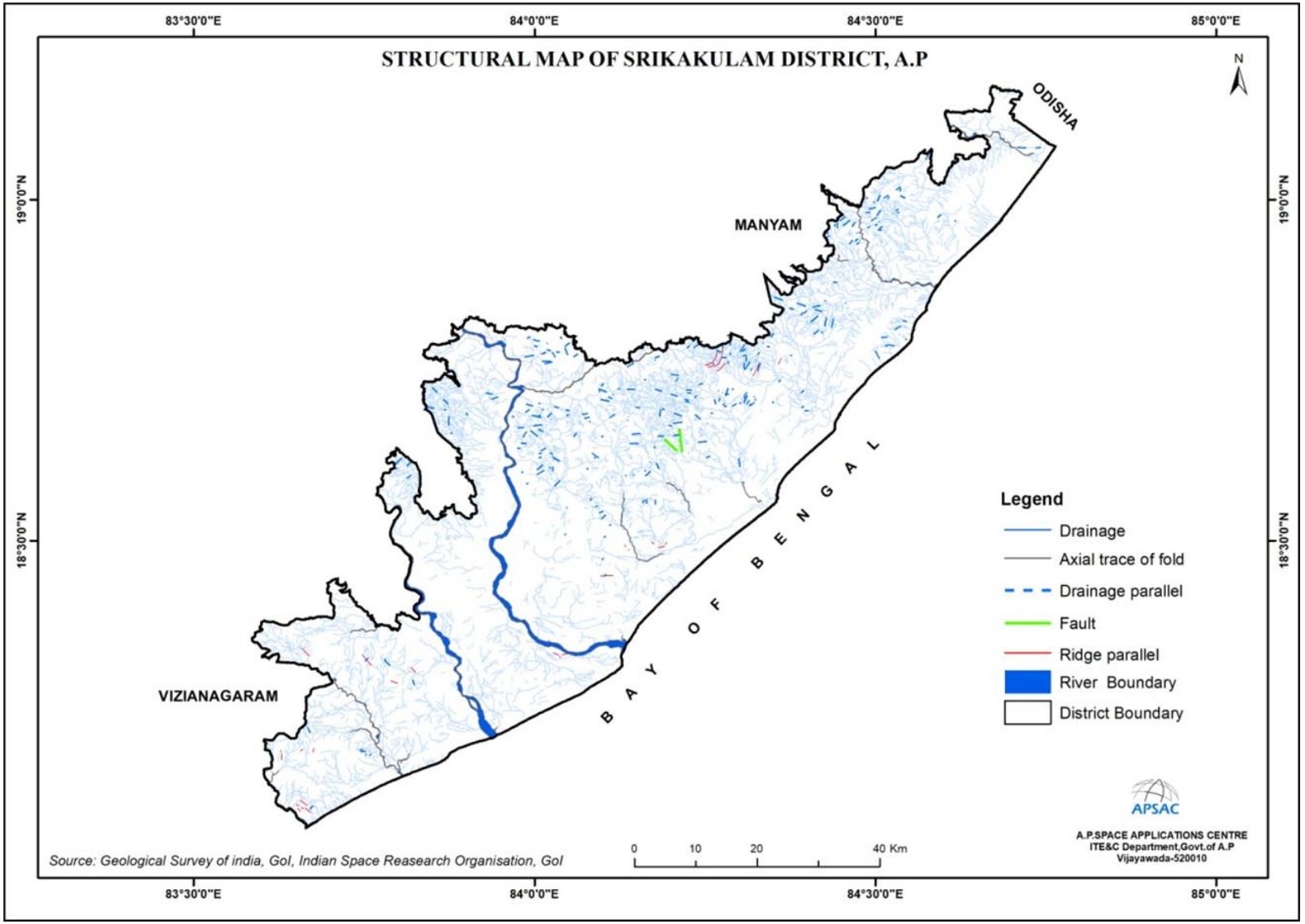


Figure-19: Structural Map of Srikakulam District, Andhra Pradesh

1.7.8 Ground Water Quality in Srikakulam District

Groundwater quality laboratory analysis was conducted for physicochemical parameters including Total Dissolved Solids, Total Hardness, Chlorides, Nitrate, pH, Fluoride, Iron, Alkalinity, and Sulphate using standard techniques. Groundwater quality samples were collected for two seasons, namely post-monsoon and pre-monsoon, from the Rural Water Supply and Sanitation Department (RWS&S). These samples were compared with the Bureau of Indian Standards, 2015 Groundwater Quality guidelines, categorizing water quality into desirable, permissible, and non-potable classes. Blue, yellow, and red colors indicate pre-monsoon quality, while +, -, symbols denote post-monsoon quality for desirable, permissible, and non-potable classes, respectively. The groundwater quality map of Srikakulam district is depicted in Figure-20.

From the analysis, it was observed that groundwater is polluted both in pre-monsoon and post-monsoon periods, with approximately 40% of the area falling under the non-potable category due to high concentrations of Nitrate, Total Dissolved Solids, and Total Hardness. Moreover, about 30% of the area falls into the potable category, while the remaining 30% of the area is covered by hills and water bodies in the district. The occurrence and movement of groundwater in an area are influenced by various factors such as topography, lithology, geological structure, depth of weathering, drainage patterns, climate conditions, and their interrelationships.

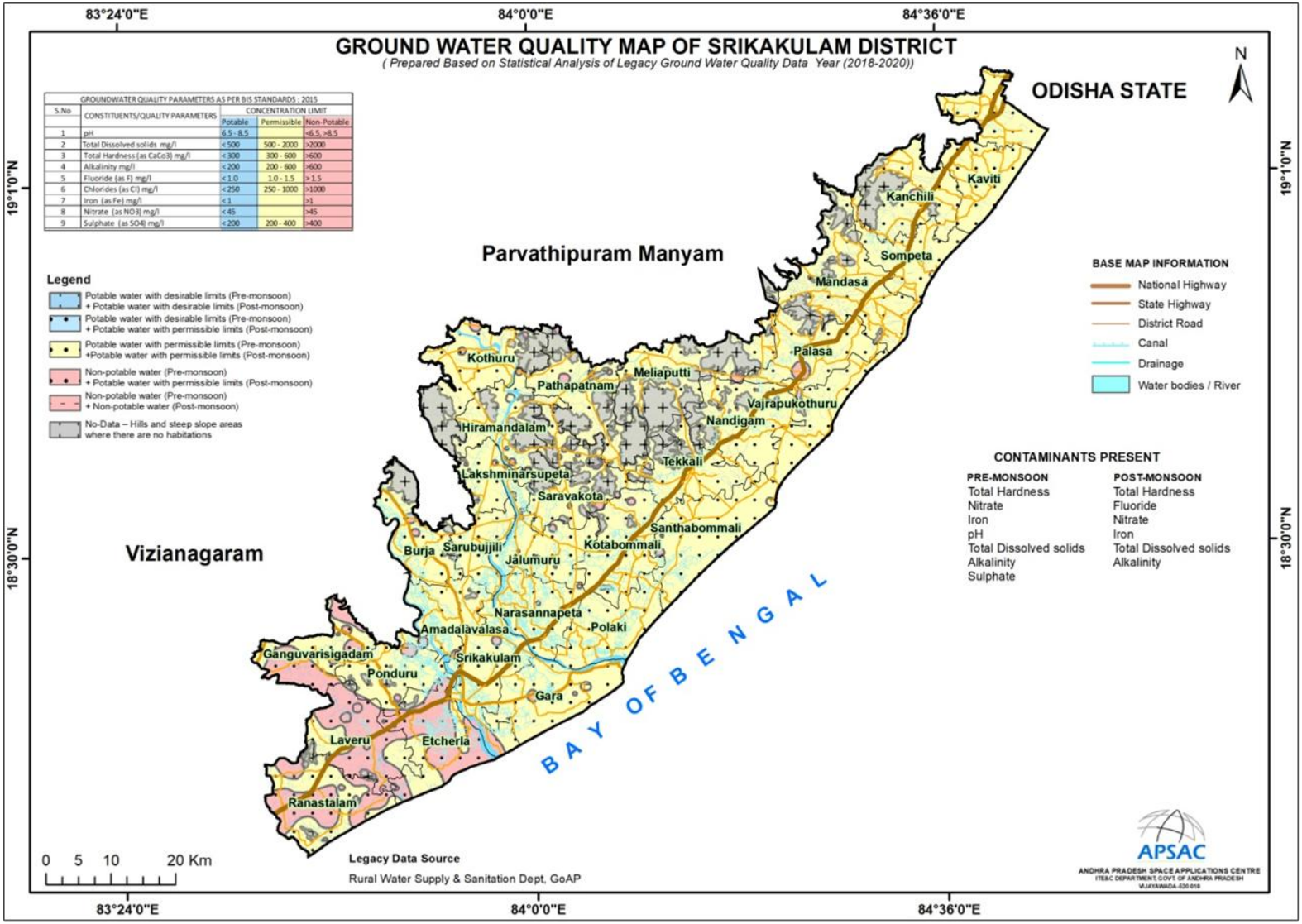


Figure-20: Ground Water Quality Map of Srikakulam District

Chapter – II Minor Minerals

2.1 Overview of Mining Activity

The following leases exist in this Srikakulam office jurisdiction. Mineral Regulatory, the important functioning of this office in these aspects are:-

i. Achievement of Targets of Mineral Revenue collections being fixed to this office annually
ii. Receiving and processing of the Mineral Concession Applications duly conducting the technical inspection, Survey and demarcation of the Mineral bearing applied areas
iii. Execution and Regulation of the operations of the Mining / Quarry leases in accordance with the Acts and Rules
iv. Issuing of dispatch permits duly collecting the Advance Royalty / Seig.fee from the lease holders on the minerals produced and intend to dispatch from their leased areas through online permit system
v. Controlling the illegal Mining / Quarrying and transportation by conducting the periodical inspections of the Mines and Quarries and also conducting the surprise vehicular checking and imposing the penalties
vi. Finalisation of Demand, Collection and Balance statements of the leases on annual basis

Srikakulam District is one of the chief minor minerals producing districts in the state and endowed with rich & varied minor mineral resources such as colour granite (Srikakulam Blue), gravel, quartzite, road metal.

It is estimated that during the year 2022-23,15,811 Cum of Color Granite, 32,379Cum of Srikakulam Blue Granite are produced and The notable Colour of Granite is Srikakulam blue due to the presence of Bluish opalescent Quartz and Bluish grey Feldspar.

2.2 Geology of the District

Genaralized Litho-stratigraphic Succession of Andhra Pradesh

Geological Time (a)	Supergroup (b)	Group (c)	Formation (d)
Holocene	-	-	Alluvium, river terraces, beach sands and soils
Pleistocene	-	-	Laterite and Gravel
Mio-Pilocene	-	-	Rajahmundry Fm.

Late Cretaceous Eocene	-	-	Deccan Trap with infra-and inter-trappeans	
Lower Cretaceous to Upper Carboniferous	Gondwana	Upper Gondwana	Godavari Valley (Fluviatile) Chikiala Fm. Gangapur Fm.	Coastal Area (Fluvio-marine) Tirupati Fm. (Vejendla Fm) Raghavapuram Fm. (Vemavaram), Kandukuru, Sriperambadur Fms) Gollapalle Fm. (Satyavedu Fm.) Kamthi Fm. Barren Measures, Barakar Fm. Talchir Fm.
		Lower Gondwana	Kota Fm. Maleri Fm.	
			Cuddapah Basin	**Pakhal Basin**
Middle to Upper Proterzoic (980-500 m.y)		Kurnool	Sullavai Sandstone Nandyala Shale Koilakuntla Limestone Panyam Quarzite Owk Shale Narji Limestone Banaganapalli Quartzite	Putnur Limestone Penganga Group Takalapalle Arkose

			Srisailam Quartzite	**Alabaka Sandstone**
		Nallamalai	Cumbum Fm.	Lankavaram Shale Pattipalle Quartzite
			Mulug Group	Polavaram Fm. Jakaram Arkose
Middle Proterozoic (1600-1300 m.y.)	Cuddapah	Chitravathi	Bairankonda Quartzite Gandikota Quartzite	Pandikunta Shale
			Tadipatri Fm.	Gunjeda Dolomite
			Pulivendula Quartzite Mallampalli Group	
		Papaghni	Vempalle Fm. Gulcheru Quartzite	Bayyaram Quartzite Bolapalle Fm.

EPARCHAEAN INTERVAL

Middle Proterozoic to Late Archean (2600-970 m.y)	Eastern Ghats		Charnockite	Charnockite with megacrystic k-feldspar charnockite
			Khondalites	Two pyrozene granulite / amphibolite Calc-silicate / granulite, Garnet-sillimanite-quartz-graphite gneiss (biotite-k-feldspar (Khondalite) Quartzite (gernet, sillimanite)
Late Archaean (2700 m.y)	Dharwar	Ramagiri-Penakacherla, Kolar, Kadiri, Gadwal-Narayanpet, Jonnagiri, Veligallu Peddavuru Schist		Pyroclastic Rocks, local conglomerate / event conglomerate Metabasalt (Pillowed), Acid volcanics, minor andesite, dacite, rhyodacite, amphibolites, metaultramafics, minor quartzite, calcsilicates,

		Belts & W.Part of Nellore Belt.	phyllites, intrusives of basic rocks and granites, rare lamprophyres.
Middle Archaean (3100-2900 y.m)	Older Supracrustals (Sargur)	Eastern and Southern parts of Nellore.	High Grade schists include include garnet, staurolite, kyanite, sillimanite, cordierite (rarely sapphirine-kornuropine as in Karimnagar) Mica schists, calcilicate rocks, crystalline limestone (minor). BIF, fuchsite quartzite, hornblende granulite, amphibolite, migmatite streaky biotite gneiss.
Gneissic Complex			Banded Tonalite-Trondhjemite Gneiss.

Geologically, the State of Andhra Pradesh forms a part of peninsular India and is one of the most ancient land masses. The geological formations of Andhra Pradesh range from the oldest to the recent.

The Sargur Supracrustals are the oldest rocks in Southern India, primarily occurring as enclaves within the migmatitic gneiss. These supracrustals are prominently found in the eastern and southern parts of the Nellore schist belt. The lithology of the Sargur formation mainly comprises garnet, staurolite, kyanite schists, Banded Iron Formations (BIFs), quartzites, granulites, and amphibolites.The gneissic complex consists of banded tonalite trondhjemite gneiss, which serves as the basement rock in the study area, alongside migmatitic gneiss and biotite granite gneiss. Tonalite-trondhjemite-granodiorite (TTGs) are prevalent in the region, characterized by sodic, quartz-bearing granitic plutonic rocks, with plagioclase as the dominant feldspar and varying amounts of K-feldspar.

Dharwarian rocks in Andhra Pradesh are exposed in the western part of the Nellore belt and several other areas such as Anantapur, Ramagiri-Penakacherla, Kolar, Kadiri, Gadwal-Narayanpet, Jonnagiri, Veligallu Peddavuru Schist Belts, and the western part of the Nellore Belt. The lithology predominantly consists of Metabasalt (Pillowed), Acid volcanics, minor andesite, dacite, rhyodacite, amphibolites, metaultramafics, minor

quartzite, calcsilicates, phyllites, intrusives of basic rocks and granites, rare lamprophyres, and some Pyroclastic Rocks. Additionally, local conglomerates or event conglomerates are observed, indicating stratigraphic hiatuses in the study area.Rocks from the middle Proterozoic to late Archaean periods are exposed in the Eastern Ghats mobile belt, characterized by extremely high-grade metamorphism, falling under the granulite metamorphic facies.

The Eastern Ghats predominantly consist of khondalites and charnockites. The metamorphic facies of rocks in the Eastern Ghats extends up to the granulite facies. Charnockite, characterized by megacrystic K-feldspar, two-pyroxene granulite/amphibolite, calc-silicate/granulite, and garnet-sillimanite-quartz-graphite gneiss (Biotite-K-feldspar, Quartzite with garnet and sillimanite) are commonly exposed across most of the state.The Cuddapah Basin, a part of the Dharwar Craton, is the second-largest Purana basin in Peninsular India, marking the significant Eparchaean unconformity in early literature. This basin exposes rocks from the late Proterozoic to upper Proterozoic periods and is divided into four groups: Nallamalai, Chitravathi, Papaghni, and Kurnool. Papaghni comprises dolomites and limestones, Chitravathi comprises shale, dolomite, and quartzites, Nallamalai comprises shale, quartzites, and arkosic sandstones, while Kurnool comprises shales, quartzites, and limestones. The Cuddapah Basin is characterized by a rhythmic pattern of quartzite-shale-carbonate cycles, with occurrences of uraniferous limestone reported.

Major exposures of Purana rock formations are found in Prakasam, Kurnool, Cuddapah, Chittoor, and Nellore. The Deccan Traps are located in the East and West Godavari districts, with exposures near Rajahmundry. Tertiary formations are found in East and West Godavari and Visakhapatnam districts, while Quaternary sediments, occurring as thick blankets of alluvium, are found in river valleys, deltas, and along the East coast.The geological formations encountered in the Srikakulam district encompass the Precambrian Eastern Ghats Supergroup, Upper Gondwana, Tertiary, and Recent formations. The Eastern Ghats Supergroup, situated along the east coast of India, constitutes a vast granulite terrain, exposing not only granites but also migmatites, anorthosites, and alkaline rocks. This granulite belt has undergone extensive mountain-building processes from the late Archaean to the late Proterozoic era. Over this prolonged period, the Eastern Ghats mobile belt experienced recurrent folding and potentially polycyclic metamorphism.

Recent findings suggest interruptions between orogenic cycles and a Proterozoic reworking of Archaean granulites. The intense temperature-driven crustal metamorphism under fluid-absent conditions and crustal anatexis, leading to the formation of leptynites from thick pelitic to psammitic protoliths, are significant outcomes of recent investigations in the Eastern Ghats mobile belt. Although different generations of Charnockites are present in the Eastern Ghats belt, the Charnockitisation of granitic gneisses remains undocumented. Some nascent growths, such as the patchy Charnockites in the Chilka area, are identified as remnants of older Charnockitic rocks that underwent granulite-facies metamorphism and accompanying migmatization.

The geological map, along with a detailed legend depicting the stratigraphic sequence of the Srikakulam District, is provided in Figure-21. Khondalite Rock: Khondalite, a foliated metamorphic rock also known as Bezwada Gneiss and Kailasa Gneiss in India, was named after the Khond tribe of Odisha and Andhra Pradesh, as well-formed examples of this rock were discovered in the hills inhabited by these tribes in eastern India.

Khondalite is quartz-manganese-rich garnet-rhodonite schist, possibly containing sillimanite and graphite. Feldspar may also be present in some cases. These metasedimentary rocks were formed during the Archaean era. The Eastern Ghats belt underwent faulting and burial, later being uplifted to bring these metamorphic rocks to the surface. Despite their susceptibility to weathering, Khondalites have been utilized in buildings and temples, such as the Konark Sun Temple and Jagannath Temple. Charnockite, once thought to be exclusively igneous, is now recognized as metamorphic. Despite experiencing high temperatures and pressures, the original protolith never fully melted. However, some orthopyroxene-bearing granite with distinct igneous features exists. Therefore, the term Charnockite refers not to a single rock type but to an assemblage of rock types connected by their origin from the same parent magma. The banded structure commonly observed in these rocks is partly due to original flow in a viscous crystallizing intrusive magma and partly due to differentiation or segregation into bands of different chemical and mineralogical composition. Earth movements and injection of dikes have also contributed to the observed structure.

Migmatite is a rock formed from a mixture of metamorphic and igneous components. It is created when a metamorphic rock like gneiss partially

melts, and the resulting melt recrystallizes into an igneous rock, forming a blend of unmelted metamorphic material with recrystallized igneous rock. Migmatites form under extreme temperature conditions during prograde metamorphism, where partial melting occurs in pre-existing rocks. Unlike rocks crystallized from molten material, migmatites typically occur within highly deformed rocks at the base of eroded mountain chains, often within Precambrian cratonic blocks. Migmatites often exhibit tightly folded dikelets, veins, and segregations of light-colored granitic composition known as leucosome, within a darker amphibole and biotite-rich material referred to as the melanosome. The mesosome, if present, usually represents an unmodified remnant of the original parent rock (protolith). The light-colored material in migmatites has the appearance of being mobilized or molten.

A leucosome constitutes the lightest-colored part of migmatite, while the melanosome is darker and occurs between two leucosomes or, if remnants of the unmodified parent rock (mesosome) are still present, it is arranged in rims around these remnants. When present, the mesosome is intermediate in color between the leucosome and melanosome.Migmatite textures result from the thermal softening of metamorphic rocks. Schlieren textures, a common example of granite formation in migmatites, are often observed in restite xenoliths and around the margins of S-type granites.Ptygmatic folds are formed by highly plastic ductile deformation of the gneissic banding and thus have little or no relationship to a defined foliation, unlike most regular folds. Ptygmatic folds can occur restricted to compositional zones of the migmatite, for instance, in fine-grained shale protoliths versus coarse granoblastic sandy protoliths.

During partial melting, some minerals will melt (neosome, i.e., newly formed), while others remain solid (paleosome, i.e., older formation). The neosome comprises lightly-colored areas (leucosome) and dark areas (melanosome). The leucosome lies in the center of the layers and is mainly composed of quartz and feldspar, while the melanosome is composed of cordierite, hornblende, and biotite, forming the wall zones of the neosome.Quartz vein intrusives, including pegmatite and quartz veins, are defined as very coarse-grained igneous rocks, typically of granitic composition, enriched in normally rare elements such as lithium, beryllium, tantalum, and others. While most pegmatites have granitic composition, those of basic, intermediate, or alkaline rocks are also known. Therefore, it is recommended to use a modifier such as "granitic"

to clearly state the composition of the pegmatite under consideration. Pegmatites contain rare metals and valuable resources in economically significant amounts, particularly in granitic pegmatites.Metamorphism refers to the alteration of minerals or geologic texture (distinct arrangement of minerals) in pre-existing rocks (protoliths) without the protolith melting into liquid magma (a solid-state change). This change primarily occurs due to heat, pressure, and the introduction of chemically active fluids. Although the rock remains solid, the chemical components and crystal structures of its minerals may change. Changes occurring at or just beneath the Earth's surface due to weathering or diagenesis are not classified as metamorphism. Metamorphism typically occurs between diagenesis (maximum 200°C) and melting (~850°C).

The upper boundary of metamorphic conditions is determined by the onset of melting processes within the rock. Typically, the maximum temperature for metamorphism ranges between 700 and 900 °C, depending on the pressure and composition of the rock. Migmatites are rocks formed at this upper limit, containing pods and veins of material that have begun to melt but have not fully segregated from the refractory residue. Since the 1980s, it has been recognized that rocks are rarely dry enough and of a sufficiently refractory composition to record "ultra-high" metamorphic temperatures of 900 to 1100 °C without melting. Metamorphic Rocks: The Eastern Supergroup of rocks constitutes the highly metamorphosed sector of the Precambrian belt of India. Rocks belonging to the Khondalite and Charnockite Groups have undergone metamorphism under granulite facies conditions. The Eastern Ghats belt extends in a NE-SW direction from Ongole in the southern part of Andhra Pradesh to the Brahmani River in Orissa, parallel to the east coast of India, covering a distance of 900 km. It encompasses parts of the eastern coastal districts of Prakasam, Bapatla, Guntur, Krishna, East and West Godavari, Visakhapatnam, Vizianagaram, and Srikakulam. It is over 600 km in length with a maximum width of 100 km in the northern part, tapering down to less than 50 km in the south. It exhibits a broad arcuate trend with a westward convexity, aligning with the shapes of the Nellore schist belt and the eastern margin of the Cuddapah basin to the west.

The mobile belt is divided into three longitudinal zones viz., the Western Charnockite Zone (WCZ), the Central Khondalite Zone (CKZ) and the Eastern Migmatite Zone (EMZ).

SUCCESSION OF THE EASTERN GHATS SUPERGROUP

Granitoid Suite	Granitoid with megacrystic k-feldspar	Intrusives	Layered anorthosite and associated mafic and chromiferous ultramafics.
	Undifferentiated (with migmatitic diatexite, augen / porphyroblastic granite, gneisses, garnet + biotite homophanous granite / gneiss leptynite, local charnockitic neosomes and relicts.	Charnochkite Group	Charnokite with magacrystic k-feldspar Charnockite Two pyroxene granulite / amphibolite
		Khondalite Group	Calc-silicate, granulite
			Garnet + sillimanite + quartz + biotite + k-feldspar + graphite gneiss (khondalite) Quatzite + garnet + sillimanite

(P.K.Ramam and V.N. Murthy)

The EGMB is one of the major constituents of Indian Precambrain forming a part of the Proterozoic mobile belt which amalgamates the Archaen cratons.The temperature and pressure of peak metamorphism in EGMB is high and this metamorphism implies the crust that has been subjected to heat from the mantle forming the basic magma which occurs as Pyroxene granulite.

The differentiation of crustal material is carried out by partial melting forming Migmatitic rocks from the granitic melt at Ult4ra high temperature conditions.

Migmatite is a composite rock consisting of two or more petrographically different parts, one is country rock more or less metamorphic and the other is of pegmatitic/ gtranitic. Migmatite can be recognised as a product of partial melting and it is well exposed in Tekkali, Srikakulam district.

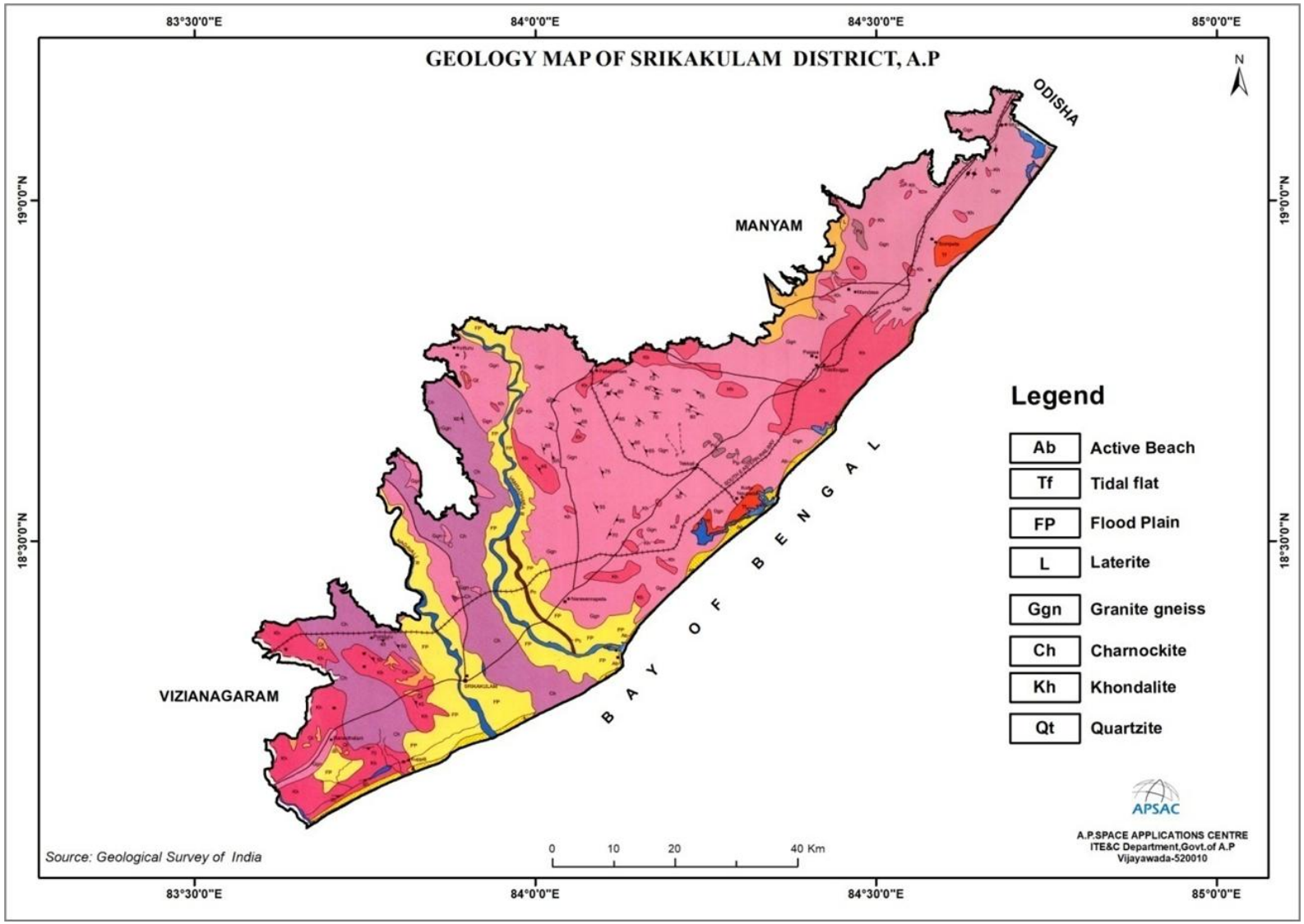
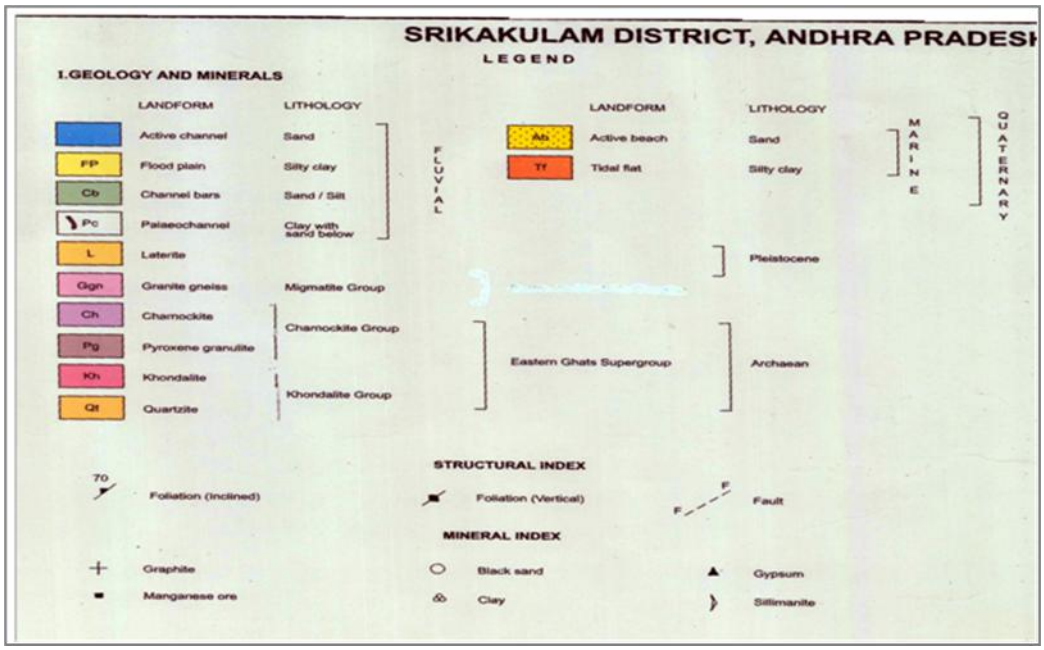


Figure 21: Geology of Srikakulam District, Andhra Pradesh (Source: GSI, 2000)



Detailed Legend with Stratigraphic Sequence of Srikakulam District

2.3 Minor Mineral Resources of Srikakulam District:

The following minerals are available in Srikakulam District and the details are shown in Figure-22.

2.3.1. Building Stone: Building stone is utilized for various construction purposes, including foundations, walls, lintels, columns, arches, dams, retaining walls, harbors, lighthouses, barrages, piers, and abutments of bridges. This mineral is available in several locations such as Sundarayyapeta and Thotavada villages in Burja Mandal, Muddada village in Etcherla Mandal, Jalumuru village in Jalumuru Mandal, Jalantrakota village in Kanchili Mandal, Kurudu and Yelamanchili villages in Kotabommali Mandal, Kusumala village in Mandasa Mandal, Littigam village in Nandigam Mandal, Edurapalle, Loddabhadra, Purushothapuram, and Rajagopalapuram villages in Palasa Mandal. Additionally, building stone can be found in Gathalavalasa, Kondalakkivalasa, and Thotada villages in Polaki Mandal, Lolugu, Rapaka, and Venkatarayunigudem villages in Ponduru Mandal, Akkayapalem, Kondamulagam, and Naruva villages in Ranastalam Mandal, Govindapuram village in Santhabommali Mandal, and Jarali and Pedalamba villages in Saravakota Mandal, as well as Lingalavalasa and Raghunadhapuram villages in Tekkali Mandal.

2.3.2. Road Metal: Road metal is utilized for the construction or repair of roads or railways. This mineral can be found in various locations, including Haripurampallapuram, Koragam, Sundarayyapeta, and

Thotavada villages in Burja Mandal, Kondaragolu village in Hiramandalam Mandal, Jalumuru village in Jalumuru Mandal, Jalantrakota village in Kanchili Mandal, Siligam village in Kaviti Mandal, Chinasana, Kurudu, Pattuouram, Regulapadu, Tatiparthi, and Yelamanchili villages in Kotabommali Mandal, Dimili and Shobanapuram villages in Kothuru Mandal. Road metal is also available in Kusumala and Pidimandsa villages in Mandasa Mandal, Purushothapuram and Sunnada villages in Palasa Mandal, Gathalavalasa, Kondalakkivalasa, Thotada, and Yetlabasivalasa villages in Polaki Mandal, Lolugu, Rapaka, and Venkatarayunigudem villages in Ponduru Mandal, Govindapuram village in Santhabommali Mandal, Jarali and Pedalamba villages in Saravakota Mandal, Kondraguda village in Sarbujjili Mandal, and Singupuram village in Srikakulam Mandal, as well as Lingalavalasa and Raghunadhapuram villages in Tekkali Mandal.

2.3.3. Gravel: Gravel is used for the formation of kacha roads and filling low-level areas. It is available in Haripurampallapuram village in Burja Mandal, Muddada village in Etcherla Mandal, Jalantrakota village in Kanchili Mandal, Kurudu village in Kotabommali Mandal, and Purushothapuram village in Palasa Mandal. Additionally, gravel can be found in Venkatarayunigudem village in Ponduru Mandal, Akkayapalem, Kondamulagam, and Naruva villages in Ranastalam Mandal, Govindapuram village in Santhabommali Mandal, and Kondraguda village in Sarbujjili Mandal.

2.3.4. Colour Granite: This variety of colored granite is predominantly used for monuments and also as dimension stones for flooring and wall tiling purposes. The mineral is available in several locations, including Haripurampallapuram village in Burja Mandal, Kongaram and Muddada villages in Etcherla Mandal, Anthakapalle, Kittalapadu, and Mjjigudem villages in Hiramandalam Mandal. Additionally, it can be found in Jaminivalasa village in Jalumuru Mandal, Bhyripuram, Gangadharapuram, Kanchili, and Nuvagada villages in Kanchili Mandal, Akkayyavalasa, Chinasana, Danta, Kasturipadu, Kurudu, Pattuouram, Regulapadu, and Tatiparthi villages in Kotabommali Mandal. Other locations where this colored granite is available include Bogabanda, Hamsarali, and Kusumala villages in Mandasa Mandal, Cheepurapalle, Dabbaguda, Gokarnapuram, Kodukoligam, Peddakedari, Surjini, and Vasandhara villages in Meliaputti Mandal. It is also present in Bharthupuram, Littigam, Madigapuram, Majjigopalapuram, Savararamakrishnapur, Savararampuram, and Sontinooru villages in Nandigam Mandal, Gopivallabhapuram, Rajagopalapuram, S.govindapuram, and Tarlakota village in Palasa

Mandal. Additionally, it can be found in Routhupuram village in Pathapatnam Mandal, Kondalakkivalasa and Rallagodayavalasa villages in Polaki Mandal, Rapaka village in Ponduru Mandal, Ambada and Appapuram villages in Regidiamadalavalasa Mandal, Anguru, Bonthu, Chodasamundram, Govardhnapuram, Gummapadu, Jamachakram, Jarali, Kommusariapalle, Kummarigunta, and Kurmanadhapuram villages in Saravakota Mandal. Further locations include Singupuram and Thandemvalasa villages in Srikakulam Mandal, and Addukonda, Chintamani, Gudem, Lingalavalasa, Meelasathivada, Mokhalingapuram, Ravivalasa, Tekkali, and Veeraramakrishnapura villages in Tekkali Mandal.

2.3.5. Quartzite: Used to cover walls, as roofing tiles, flooring, and stair steps, quartzite is available in Venkatarayunigudem village in Ponduru Mandal.

2.3.6. Black Granite: Black granite, used for countertops, kitchen islands, facades, floors, bathrooms, and all kinds of funerary art, is available in Govardhnapuram village in Saravakota Mandal.

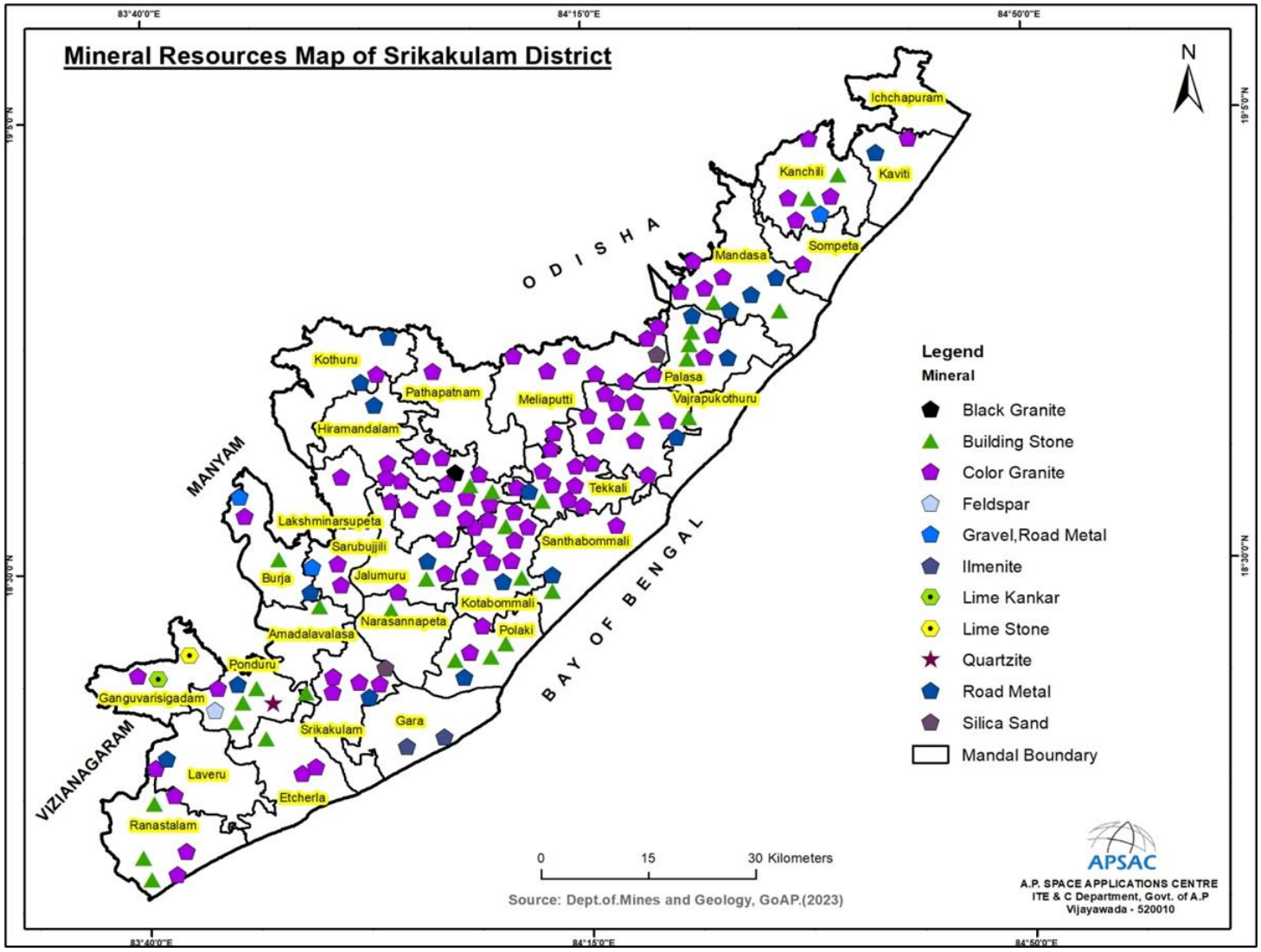


Figure-22: Mineral Resurce Map of Srikakulam District

The Details List of statement showing the Leases wise for Minor Minerals during the period described in Table-16:

Table 16 The List of Existing Leases in Respect of O/O Asst. Director Of Mines And Geology, Srikakulam District (Erstwhile)

Sl. No.	Name of the Minerals	Name of the Leassee	Address & Contact No. of the Lessee	Minining Lease Grant Order No. & Date	Area of quarry lease (ha)	Period of quarry Lease (initial)		Period of quarry Lease (1st & 2nd renewal)		Date of commencement of Mining Operation	Satus (Working/ Non-working / Tem.working for dispatch etc.,	Captive. Non-Captive	Obtained environmental clearnce (Yes/No), if Yes Letter No. with date of gran of EC	Location of the quarry lease (Latitude & Longitude	Method of quarry (Opencast/ Under ground)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	Quartzite	M/s Dinesh Das & Sons Mines & Steels (P) Ltd.,	M/s Dinesh Das & Sons Mines & Steels pvt. Ltd., Head office..Gottivalasa village & post, Garugubilli Mandalam, parvaiipuram, ' Vizianagaram Dist, pin-535463.	granted vide G.O.Ms.No.163 Ind &Com (M-Iii) Dept. Dt.18.04.2002	8.903	08-07-2002	08-06-2022	-	-	08-07-2002	Working	Non-Captive	SEIAA/AP/SKM/MIN/12/2016/255 dt.28.01.2017	18°17'05.40"N 83°48'31.00"E	Opencast
2	Color Granite	M/s. Pokarna Ltd.,	M/s .Pokarna Ltd.Secunderabad	3162/R1-3/0219-11-04	1.86	26-11-2002	25-11-2022	-	-	26-11-2002	Working	Non-Captive	No	18°21'15.31"N 83°57'51.91"E	Opencast
3	Colour Granite	M/s. Madhucon Granites	M/s Madhucan Granites Limited1-7-70 Jublipura,Khammam.	13758/R1-3/2003, Dt.14-11-2003	6	28-11-2003	27-11-2023	-	-	28-11-2003	Working	Non-Captive	No	18°15'8.31"N 83°52'41.52"E	Opencast
4	Color Granite	M/s. Pokarna Ltd.,	M/s. Pokarna Ltd., Surya Towers, 105, Sardar Patel Road, Secunderabad - 500003. Telangana State.	28799/R13/0329-12-04	1.62	17-04-2004	16-04-2024	-	-	17-04-2004	Working	Non-Captive	No	18°21'21.43"N 83°57'42.08"E	Opencast
5	Color Granite	M/s. Terra Granites	M/s Terra Granites, Door.No. 3-349, Rotary Nagar, Near APGVB, Tekkali Village & Mandal, Srikakulam District.	28480/R13/2002 Dt.6-5-2004	1	22-05-2004	21-05-2024	-	-	22-05-2004	Working	Non-Captive	No	18°39'34.66"N 84° 1'30.82"E	Opencast

Sl. No.	Name of the Minerals	Name of the Leassee	Address & Contact No. of the Lessee	Minining Lease Grant Order No. & Date	Area of quarry lease (ha)	Period of quarry Lease (initial)		Period of quarry Lease (1st & 2nd renewal)		Date of commencement of Mining Operation	Satus (Working/ Non-working / Tem.working for dispatch etc.,	Captive. Non-Captive	Obtained environmental clearnce (Yes/No), if Yes Letter No. with date of gran of EC	Location of the quarry lease (Latitude & Longitude	Method of quarry (Opencast/ Under ground)
6	Colour Granite	Tulip Granites (P) Ltd	Tulip Granites Pvt Ltd., C/o T.V.Narasimha Rao, Tulip House, D.No.99C/MLA Colony, Road No.12, Banjara Hills, Hyderabad-500072.	9067/R13/2003 Dt.12-3-2004.Transfer Proc.No.54785/R1-1/2012 Dt.3-5-2013	2.25	18-08-2004	17-08-2024	-	-	18-08-2004	Working	Non-Captive	No	18°20'46.76"N 83°56'19.93"E	Opencast
7	Colour Granite	Tuilp Granites (P) Ltd.,	Tulip Granites Pvt Ltd., C/o T.V.Narasimha Rao, Tulip House, D.No.99C/MLA Colony, Road No.12, Banjara Hills, Hyderabad-500072.	Proce No 54786/R1-1/2012Dt.30.05.2013	4.86	24-10-2004	23-10-2024	-	-	24-10-2004	Working	Non-Captive	No	18°20'45.75"N 83°56'22.55"E	Opencast
8	Color Granite	M/S. Eureka Granites	M/s Eureka GranitesProp:Smt.A.SumatiPlot No. 11,Visakha 'A' ColonySrikakulam	11770/R1-1/2006, Dt.17-4-2007	2	06-05-2007	06-04-2027	-	-	06-05-2007	Working	Non-Captive	No	18°34'49.72"N84° 6'55.26"E	Opencast
9	Colour Granite	M/s. Virgin Rocks (P) Ltd.,	M/s. Virgin Rocks (P) Ltd., Plot No. 32, 1st Floor, Srinivas Nagar, 80 Feet Road, PSN Mill Junction, Srikakulam District - 532001.	7005/R1-1/2010 Dt.24-4-2010	40	02-09-2007	02-08-2027	-	-	02-09-2007	Working	Non-Captive	No	18°34'58.88"N 84° 0'23.61"E	Opencast
10	Colour Granite	Ishwarya Granites & Minerals	M/s. Ishwarya Granites & Minerals, M/p: Smt Medarametla Lakshmi, W/o. Sarveswara Rao, D.No.1-62/33, Jahnavi Enclave, Phase -2, Plot No.302, Behindra Nagar, Shipyard Colony, Madhuravada, Visakhapatnam Transferred from M/s Golden Rock Exports ,	22642/R1-1/08 Dt.15-11-2008, Transfer Proc.No.55221/R1-1/2012 Dt. 27-4-2013	2.6	31-12-2008	30-12-2028	-	-	31-12-2008	Working	Non-Captive	No	18°31'21.13"N 84° 6'30.59"E	Opencast
11	Colour Granite	Lalitha Minerals	M/s. Lalitha Minerals, Prop. Smt.K.Hima Bindhu, 6-14,	17945/R1-1/2008, Dt.23-10-	1	21-12-2009	20-12-2029	-	-	21-12-2009	Working	Non-Captive	No	18°35'15.18"N 84° 9'30.20"E	Opencast

Sl. No.	Name of the Minerals	Name of the Leassee	Address & Contact No. of the Lessee	Minining Lease Grant Order No. & Date	Area of quarry lease (ha)	Period of quarry Lease (initial)		Period of quarry Lease (1st & 2nd renewal)		Date of commencement of Mining Operation	Satus (Working/ Non-working / Tem.working for dispatch etc.,	Captive. Non-Captive	Obtained environmental clearnce (Yes/No), if Yes Letter No. with date of gran of EC	Location of the quarry lease (Latitude & Longitude	Method of quarry (Opencast/ Under ground)
			Indiranagar, SKL.	2009											
12	Feldspar, Quartz	A.D.V.P.Naidu Babu	A.D.V.P.Naidu Babu, S/o Sanyasi, Murapaka Village , Laveru Mandal, Srikakulam District.	Granted vide G.O.Ms.No.65 Dt.30-6-2010 I&C Dept.	4	07-07-2010	07-06-2030	-	-	07-07-2010	Working	Non-Captive	No	18 19 22.35 E 83 46 10.15 N	Opencast
13	Colour Granite	Eastern King Granites	M/s Eastern King Granites, 30/1, Kamalamma Nilayam, 2nd cross, Chikkanna Garden, Sankarapuram, Bangalore -560004.	1361/R1-1/2011 Dt.31-10-2011	2.907	12-12-2011	12-11-2031	-	-	12-12-2011	Working	Non-Captive	No	18°30'6.38"N 84° 7'17.82"E	Opencast
14	Color Granite	Viswam Granties	M/s. Viswam GranitesM/p. Sri K.Vijaya Bhaskar,Door No.15-2-17,Muppidi Colony, Maharanipeta, Vsp.,.	41929/R1-1/2008 Dt.30-3-2012	4	04-10-2012	04-09-2032	-	-	04-10-2012	Working	Non-Captive	No	18°30'29.47"N 84° 5'56.62"E	Opencast
15	Colour Granite	M/s. Virgin Rocks (P) Ltd.,	M/s. Virgin Rocks (P) Ltd., Plot No. 32, 1st Floor, Srinivas Nagar, 80 Feet Road, PSN Mill Junction, Srikakulam District - 532001.	21987/R1-1/2010 Dt.25-6-2012	16.59	07-11-2012	07-10-2032	-	-	07-11-2012	Working	Non-Captive	No	18°35'14.53"N 84° 0'44.27"E	Opencast
16	Colour Granite	M/s. Virgin Rocks (P) Ltd.,	M/s. Virgin Rocks (P) Ltd., Plot No. 32, 1st Floor, Srinivas Nagar, 80 Feet Road, PSN Mill Junction, Srikakulam District - 532001.	Proc.No.42713/R1-1/2012 Dated 08-8-2013	2.83	12-06-2013	12-05-2033	-	-	12-06-2013	Working	Non-Captive	No	18°35'9.92"N 84° 0'41.15"E	Opencast
17	Colour Granite	M/s. M.R.Granites	M/s. M.R. Granites, Prop: Sri M.V.Mohan Chand, 70-10/1, Santhi Nagar, N.M.S.School Road, Patamata, Vijayawada.	50117/R1-1/2011 Dated 16-7-2013	10	08-12-2013	08-11-2033	-	-	08-12-2013	Working	Non-Captive	No	18°36'40.26"N 84° 5'27.70"E	Opencast

Sl. No.	Name of the Minerals	Name of the Leassee	Address & Contact No. of the Lessee	Minining Lease Grant Order No. & Date	Area of quarry lease (ha)	Period of quarry Lease (initial)		Period of quarry Lease (1st & 2nd renewal)		Date of commencement of Mining Operation	Satus (Working/ Non-working / Tem.working for dispatch etc.,	Captive. Non-Captive	Obtained environmental clearnce (Yes/No), if Yes Letter No. with date of gran of EC	Location of the quarry lease (Latitude & Longitude	Method of quarry (Opencast/ Under ground)
18	Colour Granite	M/s. Sundar Durag Granites	M/s. Sundar Durag Granites, Prop: Sri Varudu Vamsi Krishna, S/o. Babji Rao, Aludu Village, Saravakota Mandal, Srikakulam District	Proc.No.35763/R1-1/2011 Dt. 22-1-2014	5	02-05-2014	02-04-2034	-	-	02-05-2014	Working	Non-Captive	No	18°38'37.20"N 84° 6'15.09"E	Opencast
19	Colour Granite	M/s. Devi Granites	M/s. Devi Granites, Prop: Sri Varudu Devi Prasad, S/o. Babji Rao, Aludu Village, Saravakota Mandal, Srikakulam District	Proc.No.35765/R1-1/2011 Dt. 22-1-2014	5	02-05-2014	02-04-2034	-	-	02-05-2014	Working	Non-Captive	SEIAA/AP/SKLM/MIN/11/2019 / 1386-219 Dt.11.02.2020	**18°38'36.62"N 84° 6'12.41"E**	Opencast
20	Colour Granite	Tulip Granites (P) Ltd	Tulip Granites Pvt Ltd., C/o T.V.Narasimha Rao, Tulip House, D.No.99C/MLA Colony, Road No.12, Banjara Hills, Hyderabad-500072.	Proce No 42502/R1-1/2011 Dt.22.05.2014	6.079	06-05-2014	06-04-2034	-	-	06-05-2014	Working	Non-Captive	No	**18°20'47.59"N 83°56'18.37"E**	Opencast
21	Colour Granite	Smt Mamidi Mangamma	Smt. Mamidi Mangamma,W/o. M.Srinivasa, D.No.3-77, K.C.B. Quarters, Tekkali Village and mandal, Srikakulam District	7081/R1-1/2011, Dt.9-7-2015	7	09-04-2015	09-03-2035	-	-	09-04-2015	Working	Non-Captive	No	18°32'55.32"N 84° 5'54.75"E	Opencast
22	Color Granite	SAMPRA PROJECTS PVT LTD	M/s. Sampra Projects (P) Limited, Director: Sri K.Ramesh Babu, D.No.301, R.V.Padma Chambers, Opp: Sadhana College, Khairathabad, Hyderabad . Transferred from M/s. Jayasri Granites, Prop: Sri Mothe Bala Krishna Rao,	Proc.No.40096/R1-1/2012 Dated 01-2-2014Transfer Proc.No. 11542/R1-1/2015, dated 06-06-2015	10.52	18-06-2015	02-06-2034	-	-	18-06-2015	Working	Non-Captive	No	18°35'5.81"N 83°59'54.55"E	Opencast

Sl. No.	Name of the Minerals	Name of the Leassee	Address & Contact No. of the Lessee	Minining Lease Grant Order No. & Date	Area of quarry lease (ha)	Period of quarry Lease (initial)		Period of quarry Lease (1st & 2nd renewal)		Date of commencement of Mining Operation	Satus (Working/ Non-working / Tem.working for dispatch etc.,	Captive. Non-Captive	Obtained environmental clearnce (Yes/No), if Yes Letter No. with date of gran of EC	Location of the quarry lease (Latitude & Longitude	Method of quarry (Opencast/ Under ground)
23	Colour Granite	Smt.MARPU VIJAYALAKSHMI	Smt.Marupu Vijaya Lakshmi, W/o. Raman Rao, Peddagujjivada Village, Saravakota Mandal, Srikakulam District	40219/R1-1/2011 Dt.24-6-2015	3.8	07-07-2015	07-06-2035	-	-	07-07-2015	Working	Non-Captive	No	18°31'21.62"N 84° 6'41.46"E	Opencast
24	Colour Granite	M/s Excellent Granite	M/s. Excellent Granites, Prop: Sri R.Rajasekaran, D.No.7-17-17/1, Flat No.302, Vrundavan Apartments, Kirlampudi Layout, Visakhapatnam-530017	16239/R1-1/2008 Dt.18-8-2015	3.39	30-09-2015	29-09-2035	-	-	30-09-2015	working	Non-Captive	No	18°35'19.02"N 84° 4'20.32"E	Opencast
25	Colour Granite	M/s Excellent Granite	M/s. Excellent Granites, Prop: Sri R.Rajasekaran, D.No.7-17-17/1, Flat No.302, Vrundavan Apartments, Kirlampudi Layout, Visakhapatnam-530017	3431/R1-1/2011 Dt.23-7-2015	6	13-11-2015	12.11.2035	-	-	13-11-2015	working	Non-Captive	No	18°35'14.80"N 84° 4'24.24"E	Opencast
26	Colour Granite	M/s. Pallava Granites Industries India (P) Ltd.,	Pallava Granites Ind. India(P) Ltd10, Sriramanagar,North street, Chennai.	48743/R1-1/2010, Dt.18-8-2015	2.63	15-02-2016	11-10-2031	-	-	15-02-2016	Working	Non-Captive	No	18°35'15.20"N 84° 4'18.09"E	Opencast
27	Colour Granite	SMT.MARPUVIJAYALAKSHMI	Smt Marpu Vijayalakshmi, W/o Ramana Rao, Peddagujjawada Village, Saravakota Mandal, Srikakulam District.	40980/R1-1/2011, Dt.01.06.2017	5	30-07-2017	29-07-2037	-	-	30-07-2017	Working	Non-Captive	No	18°37'31.83"N 84° 5'46.15"E	Opencast
28	Colour Granite	ZEN GRANITES	M/s Zen Granites, Managng Partner: Smt. C.Sulochana., W/o Sri C.Gopala Reddy,6/69,G.Rama Rao Street, Kadapa, Andhra Pradesh	Procd. No. 2181/R1-1/2016, dated 30.08.2018	8	10-04-2018	10-03-2038	-	-	10-04-2018	Working	Non-Captive	SEIAA/AP/SKM/MIN/05 2018/579 Dt.11.06.2018	18°34'25.84"N 84° 9'39.51"E	Opencast

Sl. No.	Name of the Minerals	Name of the Leassee	Address & Contact No. of the Lessee	Minining Lease Grant Order No. & Date	Area of quarry lease (ha)	Period of quarry Lease (initial)		Period of quarry Lease (1st & 2nd renewal)		Date of commencement of Mining Operation	Satus (Working/ Non-working / Tem.working for dispatch etc.,	Captive. Non-Captive	Obtained environmental clearnce (Yes/No), if Yes Letter No. with date of gran of EC	Location of the quarry lease (Latitude & Longitude	Method of quarry (Opencast/ Under ground)
29	Colour Granite	M/s Sunrise Mines & Minerals	Sri Chowdary Suresh, D.No. 1-227,Karanam Street,Saravakota Village & Mandal, Srikakulam	Procd.No: 10042/R1-1/2017, dt:04.06.2018	7.85	30-07-2018	29-07-2038	-	-	30-07-2018	Working	Non-Captive	SEIAA/AP/SKM/MIN / -03/ 2018/192-2 Dt.05.09.2022	18 35 03.86 N 84 05 27.48 E	Opencast
30	Color Granite	C.Mari Muttu	Sri C. Mari Muthu., S/o Chinnathambi, 2/00, Malayanur, Pudupalasamuthiram Village Ramkondaalli Post, Pennagaram Mandal, Dharmapuri District - 636810	Proce No 4351/R1-1/2017 Dt.05.07.2019	6	24-08-2018	23-08-2038	-	-	24-08-2018	Working	Non-Captive	SEIAA/AP/SKM/MIN/10/2018/701 dt.06-12-2018	18 34 48.39 N 84 04 46.41 E	Opencast
31	Building Stone,Road Metal	SRI DURGA STONE CRUSHER	M/s Sri Durga Stone Cruhser, Prop: Sri S. Siva Sanakara Rao, S/o Krishna, D.No. 2-136, Gatlapadu, Village, Kotabommali Mandal, Srikakulam District.	Procd. No. 3089/Q4S/2017, dated 20.08.2018	4	22-09-2018	21-09-2028	-	-	22-09-2018	Working	Non-Captive	No	18°24'52.33"N 84° 7'25.05"E	Opencast
32	Color Granite	K JAGANNADH	Sri K. Jagannadh, S/o Chinnapeddaiah, D.No.3/879, Tailors Colony, Tadipatri, Ananthapuram District, A.P	Procd.No: 905/R1-1/2017, dt:09.10.2018	3.35	16-10-2018	15-10-2038	-	-	16-10-2018	Working	Non-Captive	No	18 39 04.85 N 84 01 48.81 E	Opencast
33	Color Granite	K JAGANNADH	Sri K. Jagannadh, S/o Chinnapeddaiah, D.No.3/879, Tailors Colony, Tadipatri, Ananthapuram District, A.P	Procd.No: 908/R1-1/2017, dt:09.10.2018	1.44	20-10-2018	19-10-2038	-	-	20-10-2018	Working	Non-Captive	DEIAA/AP/SKM-14/2018 Dt.08.07.2018	18 39 11.72 N 84 02 03.37 E	Opencast

Sl. No.	Name of the Minerals	Name of the Leassee	Address & Contact No. of the Lessee	Minining Lease Grant Order No. & Date	Area of quarry lease (ha)	Period of quarry Lease (initial)		Period of quarry Lease (1st & 2nd renewal)		Date of commencement of Mining Operation	Satus (Working/ Non-working / Tem.working for dispatch etc.,	Captive. Non-Captive	Obtained environmental clearnce (Yes/No), if Yes Letter No. with date of gran of EC	Location of the quarry lease (Latitude & Longitude	Method of quarry (Opencast/ Underground)
34	Colour Granite	M/s Sunrise Mines & Minerals	Sri Chowdary Suresh, D.No. 1-227,Karanam Street,Saravakota Village & Mandal, Srikakulam	Procd.No: 10044/R1-1/2017, dt:03.10.2018	4.93	22-10-2018	21-10-2038	-	-	22-10-2018	Working	Non-Captive	DEIAA/AP/SKLM-3/2018 Dt 08.07.2018	18 34 59.14 N 84 05 16.19 E	Opencast
35	Colour Granite	CHOUDHARY SURESH	Sri Chowdary Suresh, D.No. 1-227,Karanam Street,Saravakota Village & Mandal, Srikakulam	Procd.No: 10043/R1-1/2017, dt:03.10.2018	4.94	22-10-2018	21-10-2038	-	-	22-10-2018	Working	Non-Captive	SEIAA/AP/SKM/MIN/09/2017/473074 Dt.01.03.2018	18 34 57.57 N 84 05 29.02E	Opencast
36	Colour Granite	P.Rama Krishna Reddy	P.Rama Krishna Reddy, S/o P.Venkat Reddy, Door.No. 2-6-5/33, Happy Homes Colony, Hyderabad - 500048	Procd. No. 5266/R1-1/2011, dated 29.06.2018	4.88	22-10-2018	21-10-2038	-	-	22-10-2018	Working	Non-Captive	DEIAA/AP/SKM-06/2018/Dt.08.07.2018	**18°39'45.62"N 84°01'04.50"E**	Opencast
37	Building Stone,Road Metal	SRI R APPALA NAIDU	Sri R. Appala Naidu, S/o Late Veranaidu, D.No.1-25-19, RIMS Hospital Road, Balaga, Srikakulam District.	Proceeding No.877 /Q1S/2007 Dt.12.05.2011	4.17	29-11-2018	28-11-2028	-	-	29-11-2018	Working	Non-Captive	SEIAA/AP/SKM/MIN/06/2019/1027 dt.10.08.2019	18 29 10.94 N 83 52 47.86 E	Opencast
38	Color Granite	M S VIJAYALAKSHMI GRANITES	M/s Vijaya Lakshmi Granites, Prop: Sri Varudu Raghavendra., S/o Ramachandra Rao, Aludu Village,Saravakota Mandal , Srikakulam District	Procd. No. 56909/R1-1/2010, dated 08.08.2018	5	12-12-2018	12-11-2038	-	-	12-12-2018	working	Non-Captive	No	18° 34' 31.22" N 84° 03' 42.91"E	Opencast
39	Building Stone,Road Metal	Aditya Stone Crusher	M/s Aditya Stone Crusher, Prop: Smt M. Bharathi, W/o Ananda Rao, D.No.5-2, Mamidivanipeta Village, Yelamanchili Post, Kotabommali Mandal, Srikakulam District.	Proc. No 368/Q4S/2018 Dt.20.08.2019	1.28	09-04-2019	09-03-2034	-	-	09-04-2019	Working	Non-Captive	No	**18°29'53.84"N 84°09'14.36"E**	Opencast

Sl. No.	Name of the Minerals	Name of the Leassee	Address & Contact No. of the Lessee	Minining Lease Grant Order No. & Date	Area of quarry lease (ha)	Period of quarry Lease (initial)		Period of quarry Lease (1st & 2nd renewal)		Date of commencement of Mining Operation	Satus (Working/ Non-working / Tem.working for dispatch etc.,	Captive. Non-Captive	Obtained environmental clearnce (Yes/No), if Yes Letter No. with date of gran of EC	Location of the quarry lease (Latitude & Longitude	Method of quarry (Opencast/ Underground)
40	Building Stone,Road Metal	Sri Jogi Hema Sundara Rao	Sri Jogi Hema Sundara Rao, S/o Srinivasa Rao, D.No. 9-296, Ramadasupeta Village, Tekkali Mandal, Srikakulam District.	Proce No 3345/Q1S/2018 Dt.09.08.2019	1.3	17-10-2019	16-10-2029	-	-	17-10-2019	Working	Non-Captive	SEIAA/AP/SKM/MIN/01/2019/822195 dt.03-05-2019	18 24 02.39 N 84 04 45.07 E	Opencast
41	Road Metal & Building Stone	Sri P. Ramana Murthy	Sri Pathivada Ramana Murthy, S/o Sanyasappadu, Boyammathota, Chinnabondilipuram, Near Vamsadhara Office, Srikakulam – 532001	Proc No 656/Q4S/2019 Dt.06.11.2019	1.27	18-11-2019	17-11-2029	-	-	18-11-2019	Working	Non-Captive	No	**18°20'42.16"N 83°46'42.31"E**	Opencast
42	Road Metal & Building Stone	Sri B.Anudeep	Sri B.Anudeep, D.No.11-264, Kondra Veedhi, Tekkali Mandal, Srikakulam District	Procd.No: 107/Q1S/2018, dt: 23.03.2020	1.8	28-04-2020	27-04-2030	-	-	28-04-2020	Working	Non-Captive	SEIAA/AP/SKM/MIN/10/2019/1332142 dt.07.01.2020	18 23 56.86 N 84 05 34.21 E	Opencast
43	Building Stone,Road Metal	M/s V B R Infra structures	M/s V.B.R. Infrastructures Mg. Ptr V.Vamsi Krishna, Aludu Village & Post, Saravakota Mandal, Srikakulam District	Procee No . 426/Q/SKLM/2018 Dt.10.01.2020	4.759	02-05-2020	02-04-2030	-	-	02-05-2020	Working	Non-Captive	SEIAA/AP/SKLM/MIN/09/2019/1288-49 Dt.18.12.2019	**18°38'13.79"N 84°50'05.49"E**	Opencast
44	Colour Granite	M/s Devi Granites	M/s Devi Granites, Prop:Sri V.Devi Prasad, Aludu Village, Saravakota Mandal, Srikakulam District	Proce No 1816/D1/2019 Dt.16.07.2020	2.805	31-08-2020	30-08-2040	-	-	31-08-2020	Working	Non-Captive	SEIAA/AP/SKM/MIN/11/2019/1386-219 Dt.11.02.2020	18 38 40.19 N 84 06 08.71E	Opencast

Sl. No.	Name of the Minerals	Name of the Leassee	Address & Contact No. of the Lessee	Minining Lease Grant Order No. & Date	Area of quarry lease (ha)	Period of quarry Lease (initial)		Period of quarry Lease (1st & 2nd renewal)		Date of commencement of Mining Operation	Satus (Working/ Non-working / Tem.working for dispatch etc.,	Captive. Non-Captive	Obtained environmental clearnce (Yes/No), if Yes Letter No. with date of gran of EC	Location of the quarry lease (Latitude & Longitude	Method of quarry (Opencast/ Under ground)
45	Building Stone,Road Metal	Lolugu Venkata Hima Madhuri	Smt.Lolugu Venkata Hima Madhuri, W/o Venkata Rajasekhar, D.No.0-0, Main Street, Lolugu Village, Ponduru Mandal, Srikakulam District	Proce No 1431/Q/SKLM/2019 Dt.18.08.2020	0.81	31-08-2020	30-08-2030	-	-	31-08-2020	Working	Non-Captive	SEIAA/AP/SKLM/MIN/02/2020/1703-284 Dt.08-07-2020	18°19'21.44"N 83°46'26.34"E	Opencast
46	Road Metal & Building Stone	M/s Adilakshmi Stone Crusher	M/s Adhilakshmi Stone Crusher, Proprietor: Smt V,Sakunthala Plot No. 1, Visakha B Colony, Srikakulam -532001	Proc.No 877/Q4S/2019 Dt.17.08.2020	2.496	20-10-2020	19-10-2035	-	-	20-10-2020	Working	Non-Captive	No	18°30'16.81"N 84° 03'07.25"E	Opencast
47	Colour Granite	SRI DHARMANA LAKSHMAN DAS	Sri Dharmana Lakshmanadas, Mabagam Village & Post, Polaki Mandal, Srikakulam District - 532421	Proceedings No.4418/D1-/2019/Dt. 15.10.2020	4.808	17-11-2020	16-11-2040	-	-	17-11-2020	Working	Non-Captive	SEIAA/AP/SKM/MIN/01/2020/1668271 dt.06-07-2020	18 35 43.37 N 84 04 42.87 E	Opencast
48	Colour Granite	M/s Bhavani Granite Enterprises Pvt Ltd	M/s Bhavani Granite Enterprises Pvt. Ltd., Legal Heir: Sri V. Kalyan Chakravarthy, Aludu Village & Post, Saravakota Mandal, Srikakulam District.	Pros 1147/D1-1/2011 Dt.22.01.2021	4.9	19-03-2021	18-03-2041	-	-	19-03-2021	Working	Non-Captive	No	**18°37'47.93"N 84°01'48.01"E**	Opencast

Sl. No.	Name of the Minerals	Name of the Leassee	Address & Contact No. of the Lessee	Minining Lease Grant Order No. & Date	Area of quarry lease (ha)	Period of quarry Lease (initial)		Period of quarry Lease (1st & 2nd renewal)		Date of commencement of Mining Operation	Satus (Working/ Non-working / Tem.working for dispatch etc.,	Captive. Non-Captive	Obtained environmental clearnce (Yes/No), if Yes Letter No. with date of gran of EC	Location of the quarry lease (Latitude & Longitude	Method of quarry (Opencast/ Under ground)
49	Colour Granite	M/s Bhavani Granites	M/s Bhavani Granite Prop: V Vamsi Krishna Aludu Village and Post Saravakota Mandal Srikakulam	Proc.No 38819/D1-1/2011 Dt.22.01.2021	5	20-03-2021	19-03-2041	-	-	20-03-2021	Working	Non-Captive	No	18 37 02.17 N 84 06 31.60 E	Opencast
50	Colour Granite	M/s Gallop Mines	M/s Gallop Mines, Partner: Sri A.Abhinay Reddy, 31-1-23, J.P Road, Rajahmundry East Godavari District.	Procd. No. 12353/D1-2/2018, dated 04.03.2020	4.979	29-04-2021	28-04-2041	-	-	29-04-2021	Working	Non-Captive	SEIAA/AP/SKM/MIN/10/2019/1326-150 Dt.07.01.2020	18 34 49.33 N 84 06 14.73 E	Opencast
51	Colour Granite	M/s Lionel Mines	M/s Lionel Mines, Partner: Sri A.Abhinay Reddy, 31-1-23, J.P Road, Rajahmundry, East Godavari District.	Procd. No. 6927/D1-1/2019 Dt.28.04.2021	4.938	23-06-2021	22-06-2041	-	-	23-06-2021	Working	Non-Captive	SEIAA/AP/SKLM/MIN/04/2020/1814/503 Dt.25.11.2020	18 34 38.44 N 84 10 17.09 E	Opencast
52	Building Stone,Road Metal	M/s SAI BALAJI STONE CRUSHER	Smt. B. Bhagya Lakshmi, Mg. Ptnr. M/s Sai Balaji Stone Crusher, W/o Barri Apparao, D.No. 13-16-24, Kundanapu street, Near Zilla Parishad, Srikakulam Mandal & District	Procd. No. 962/Q4S/2019 Dt.06.07.2021	2	30-07-2021	29-07-2036	-	-	30-07-2021	working	Non-Captive	SEIAA/AP/SKLM/MIN/01/2020/1951/166.60 Dt.10.12.2020	18 30 35.68 E 83 50 52.18 N	Opencast

Sl. No.	Name of the Minerals	Name of the Leassee	Address & Contact No. of the Lessee	Minining Lease Grant Order No. & Date	Area of quarry lease (ha)	Period of quarry Lease (initial)		Period of quarry Lease (1st & 2nd renewal)		Date of commencement of Mining Operation	Satus (Working/ Non-working / Tem.working for dispatch etc.,	Captive. Non-Captive	Obtained environmental clearnce (Yes/No), if Yes Letter No. with date of gran of EC	Location of the quarry lease (Latitude & Longitude	Method of quarry (Opencast/ Under ground)
53	Building Stone,Gravel	Sri L.Sankara Rao	Sri L.Sankara Rao, S/o Bangaru Rao, D.No. 1-37, B.C. Colony, Akkayyapalem Village, Ranasthalam Mandal, Srikakulam District - 532409	Proce No 1456/Q/SklM /2019 Dt.27.01.2021	3	02-11-2021	02-10-2031	-	-	02-11-2021	Working	Non-Captive	SEiAA/AP/SK//M/MIN/07/2020/2005-668 Dt.01.12.2020	18 05 54.84 N 83 39 35.63 E	Opencast
54	Road Metal	M/s Sri R. chencheyya	Sri Ravada Chenchayya,S/o. Late Rama Murthy,D.No.8-5, Main Street,Padmapuram Village,Saravakota Mandal,Srikakulam District,	Proceedings No. 2934/Q4S/2018 Date: 21-11-2021	2.389	23-12-2021	12/22/2031	-	-	23-12-2021	working	Non-Captive	No	18°34'51.80"N 84° 5'18.05"E	Opencast
55	Colour Granite	M/s. Madhucon Granites	M/s. Madhucon Granites Ltd.1-7-70, JubilipuraMadhucomplex ,Khammam	17623/R1-1/2004 Dt.23-10-2006	4	21-03-2007	20-03-2027	-	-	21-03-2007	Working	Non-Captive	No	18 34 53.32 N 84 06 51.50 E	Opencast
56	Colour Granite	M/s. Salasr Granites	M/s. Salasr Granites, M/p. Sri Arjunlal, Narasingapalli Village, Sy.No.280/12 & 5B of Pedabammidi Post, Kotabommali Mandal, Srikakulam District. Transferred from Sri R.Appala Naidu	23831/R1-1/2007, Dt.3-6-2008.Transfer Proc. No.20093/R1-1/2013 Dt.25-10-2013	4	31-07-2008	30-07-2028	-	-	31-07-2008	Working	Non-Captive	SIA/AP/SKM-128/2013 Dt 25.10.2013	18°39'57.97"N 84° 1'25.28"E	Opencast
57	Color Granite	Sri Vysya Raju Venkat Raju	Sri Vysya Raju Venkat Raju,S/o. Appala Raju,Door No.3-386, N.T.R.Nagar,Tekkali Village and MandalSrikakulam District	22518/R1-1/2010 Dt.2-11-2012	5	26-12-2012	25-12-2032	-	-	26-12-2012	working	Non-Captive	No	18°33'27.00"N 83°09'30.30"E	Opencast

Sl. No.	Name of the Minerals	Name of the Leassee	Address & Contact No. of the Lessee	Minining Lease Grant Order No. & Date	Area of quarry lease (ha)	Period of quarry Lease (initial)		Period of quarry Lease (1st & 2nd renewal)		Date of commencement of Mining Operation	Satus (Working/ Non-working / Tem.working for dispatch etc.,	Captive. Non-Captive	Obtained environmental clearnce (Yes/No), if Yes Letter No. with date of gran of EC	Location of the quarry lease (Latitude & Longitude	Method of quarry (Opencast/ Under ground)
58	Color Granite	M/s. Pokarna Ltd.,	M/s. Pokarna Ltd., Surya Towers, 105, Sardar Patel Road, Secunderabad - 500003. Telangana State.	9103/R1-3/0318-8-2003Transfer Proc.No.42927/R1-1/2013 Dt.8-4-2012	1.713	09-01-2003	31-08-2023	-	-	09-01-2003	Working	Non-Captive	No	18°21'21.43"N 83°57'42.08"E	Opencast
59	Color Granite	MILLENIUM GRANITES	M/s Millenium Granites, Prop: Sri Hari Naidu, House No. 14-16-49, O Line, P.N.Colony, Opposite New Central School, Srikakulam District.	Proceedings No. 9110/R1-3/2003 Date: 08-04-2005	1.6	06-06-2005	06-05-2025	-	-	06-06-2005	Working	Non-Captive	No	18 36 15.07 N 83 47 32.30 E	Opencast
60	Colour Granite (Srikakulam Blue)	GBR Minerals	M/s G.B.R.MineralsPrivate Limited.Plot.No.40, Visakha “B” Colony, Srikakulam	23266/R1-3/2005, Dt23-12-2005	3.42	20-02-2006	19-02-2026	-	-	20-02-2006	Working	Non-Captive	No	18 30 18.73 N 84 06 43.71 E	Opencast
61	Colour Granite	M/s Katyayani Granites	M/s Katyayani granitesSri.M.RameshAnguru VillageSaravokota MandalSrikakulam Dist.	40041/R1-1/2006 Dt.14-4-2007	3.85	07-07-2007	07-06-2027	-	-	07-07-2007	Working	Non-Captive	No	18°38'11.97"N 84° 1'59.06"E	Opencast
62	Colour Granite (Srikakulam Blue)	M/s Linga Raj Rocks	M/s. Linga Raj Rocks, Prop: Sri Lalit Kumar Mola, P.No.516/1767/3100, Kiit College Road, Patia, Bhubaneswara, Odissa StateTransferred from M/s . Ellamman Granites	31900/R1-1/0617-4-07DMG, Hyd., 45302/R1-1/2012 Dt.21-3-2013	5	06-11-2007	06-10-2027	-	-	06-11-2007	Working	Non-Captive	No	18 34 51.12 N 84 06 26.34 E	Opencast
63	Road Metal	M/s. Sri Sai Lakshmi Stone Crusher	Sri Sai Lakshmi Stone Crusher, Sri N.Govinda Rao, Yelamanchili (Post), Kotabommali (M), Sklm.,	3706/Q1/06 Dt.8-8-07	1	12-11-2007	12-10-2022	1 St		12-11-2007	Working	Non-Captive	No	18°29'51.35"N 84° 07'25.67"E	Opencast

Sl. No.	Name of the Minerals	Name of the Leassee	Address & Contact No. of the Lessee	Minining Lease Grant Order No. & Date	Area of quarry lease (ha)	Period of quarry Lease (initial)		Period of quarry Lease (1st & 2nd renewal)		Date of commencement of Mining Operation	Satus (Working/ Non-working / Tem.working for dispatch etc.,	Captive. Non-Captive	Obtained environmental clearnce (Yes/No), if Yes Letter No. with date of gran of EC	Location of the quarry lease (Latitude & Longitude	Method of quarry (Opencast/ Under ground)
64	Color Granite	G.B.R Minerals	G.B.R Minerals Sri R.GunasekharanGopalapuram Chennai-86.	622/R1-1/2007 Dt.27-9-2007	1.448	29-12-2007	28-12-2027	-	-	29-12-2007	Working	Non-Captive	No	18°30'18.74"N 84° 6'43.72"E	Opencast
65	Road Metal	M/s. Jaya Durga Stone Crusher	Sri S . Rama Rao,M/s. Jaya Durga Stone Crusher,Sri Durga - 9848265397	4425/Q1/993-11-2011	1.136	10-03-2011	10-02-2026	-	-	10-03-2011	Working	Non-Captive	No	18 20 56.99 N 83 47 21.69E	Opencast
66	Color Granite	Archana Granites	Archana Granites, Mng Ptnr: Sri S.Venkateswara Rao, D.No.5-19(1), Main Road, Cheemakurthy - 523226, Prakasam District.	36615/RI-1/2006 Dt.3-5-2007 of the D.M.&G, HYD.	4	31-05-2007	30-05-2027	-	-	31-05-2007	Non Working	Non-Captive	No	18 33 47.34 N 84 06 23.62 E	Opencast
67	Color Granite	M/s. R.S.P.Granites	M/s. R.S.P.Granites,Prop: R.Rajasekarn, D.No.7-17-17/1, Flat No.302, Vrundavan Apartments, Kirlampudi Layouts, Visakhapatanam. Transferred from M/s Bindu Granites.	18026/R1-1/2007 Dt. 28-9-2007	7	23-10-2007	22-10-2027	-	-	23-10-2007	Non Working	Non-Captive	No	18°39'43.45"N 84° 1'10.40"E	Opencast
68	Color Granite	Archana Granites	M/s Archna Granites,M/p Sri S.Venkateswara Rao,S.V.R. Complex ,Mangammdora, Ongole Prakasam dt.	4212/R1-1/2007, Dt.11-8-2008	4.3	10-10-2008	10-09-2028	-	-	10-10-2008	Non Working	Non-Captive	SIA/AP/SKM-53/2013 Dt.10.07.2013	18 33 46.33 N 84 06 22.55 E	Opencast
69	Color Granite, Building Stone,,Gravel,Road Metal	M/s. Vijayalakshmi Minerals	M/s. Vijayalakshmi Minerals M/p. Sri K..Krishna Reddy,East Godavari District.Transferred from Sri S.Krishna Reddy	41716/R1-1/2011, Dt5-11-2011	3	12-06-2005	12-05-2025	-	-	12-06-2005	Non Working	Non-Captive	No	**18°33'31.52"N 84°09'46.22"E**	Opencast

Sl. No.	Name of the Minerals	Name of the Leassee	Address & Contact No. of the Lessee	Minining Lease Grant Order No. & Date	Area of quarry lease (ha)	Period of quarry Lease (initial)		Period of quarry Lease (1st & 2nd renewal)		Date of commencement of Mining Operation	Satus (Working/ Non-working / Tem.working for dispatch etc.,	Captive. Non-Captive	Obtained environmental clearnce (Yes/No), if Yes Letter No. with date of gran of EC	Location of the quarry lease (Latitude & Longitude	Method of quarry (Opencast/ Under ground)
70	Road Metal	M/s Sri Seetharama Constructions	M/s Sitha Rama Constructions (Transferred from Sai Ram Stone CrusherSri Ch.V.Jagannadha P.N.Colony SKL	749/Q1S/201418-2-2015	5.2	23-02-2000	22-02-2030	-	-	23-02-2000	Non Working	Non-Captive	No	18 20 00.28 N 83 46 34.98 E	Opencast
71	Road Metal	M/s. Soma Enterprises	M/s Soma Enterprises, Sri.S.N.Jitendra, Moduguvalasa VillageL.N.Peta Mandal, SKLM	405/Q4S/ 29-9-2016	2	22-12-2006	20-12-2026	-	-	22-12-2006	Non Working	Non-Captive	No	18°42'14.52"N 83° 58'01.22"E	Opencast
72	Road Metal	M/s. Sri Adilakshmi Stone Crusher	Sri Adilakshmi Stone Crusher,Smt.V.Sakuntala P.No1,Visakha B colony, Srikakulam	738/Q1/0720-9-07	1.9	18-12-2007	18-09-2027	-	-	18-12-2007	Non Working	Non-Captive	SIA/AP/MIN/23586/2018	18°30'17.22"N 84° 03'08.14"E	Opencast
73	Road Metal	M/s. Sri Sita Rama Constructionsn	Sri Sitha Rama Construction Sri Ch.V.JaganandhaSwamy Rajam Mandal,SKL	30810/R1-1/0815-9-08	1.6	16-10-2008	07-02-2028	-	-	16-10-2008	Non Working	Non-Captive	SIA/AP/MIN/28548/2018	18 20 57.23 N 83 47 22.18E	Opencast
74	Road Metal	M/s. Sri Sitha Rama Constructions	Sri Sitharama ConstructionSri Ch.V.Jagannadha Swamy, Rajam (M)SKLM, Rangababu - 9440197249 , Ramanamurthy.	1839/Q1/1999 Dt.29-10-2014	2.1	11-10-2009	11-09-2024	-	-	11-10-2009	Non Working	Non-Captive	SIA/AP/MIN/28544/2018	18 20 02.28 N 83 46 35.18 E	Opencast
75	Road Metal	G.nageswar Rao	G.Nageswara RaoS/o Chinnapannah.No.9-6-47/7Shivajipalem VSP.	627/Q1S/201022-4-2010	0.575	19-06-2010	18-06-2020	-	-	19-06-2010	Non Working	Non-Captive	SIA/AP/MIN/29037/2018	18 26 21.35 E 83 53 58.19 N	Opencast
76	Road Metal	S.Rama Chandra Rao	Sri S.Ramachandra Rao,S/o. Late Rama Rao,Near Killivari Quarters,Amadalvalsa V & M,Srikakulam District	5713/Q1S/2011Dt.29-11-2011	1	24-02-2012	23-02-2027	-	-	24-02-2012	Non working	Non-Captive	No	18 26 22.45 E 83 53 59.25 N	Opencast
77	Road Metal	M/s. Sri Sai Geetha Stone Crusher	M/s. Sri Sai Geetha Stone Crusher, Sri Konchada Venkata Ramanayya, Nivagam	Proceedings No: 3458/Q1S/2001,	1.6	10-03-2012	10-02-2022	-	-	10-03-2012	Non Working	Non-Captive	No	18 45 14.56 E 83 56 57.63 N	Opencast

Sl. No.	Name of the Minerals	Name of the Leassee	Address & Contact No. of the Lessee	Minining Lease Grant Order No. & Date	Area of quarry lease (ha)	Period of quarry Lease (initial)		Period of quarry Lease (1st & 2nd renewal)		Date of commencement of Mining Operation	Satus (Working/ Non-working / Tem.working for dispatch etc.,	Captive. Non-Captive	Obtained environmental clearnce (Yes/No), if Yes Letter No. with date of gran of EC	Location of the quarry lease (Latitude & Longitude	Method of quarry (Opencast/ Under ground)
			Village, Kotturu Mandal,Srikakulam District.	Dt.25.03 .2014											
78	Road Metal	S.Mangamma	Smt.S.Mangamma,W/o. Sri S.Govinda Rao Ward No.16, Subhalai Colony, Hiramandalam (V) & (M), Skl.	5319/Q1S/2011Dt.31-12-2012	1	03-01-2013	28-02-2023	-	-	03-01-2013	Non Working	Non-Captive	SIA/AP/MIN/28632/2018	**18°42'24.22"N 83°56'53.24"E**	Opencast
79	Road Metal	Sri Perla Mahesh	Sri Perla Mahesh,S/o. Late Kama Raju,D.No.8-7-8, Perla Street, Srikakulam .	879/Q1T/201415-3-2014	1	27-03-2014	26-03-2024	-	-	27-03-2014	Non Working	Non-Captive	SIA/AP/MIN/28558/2018	18°21'16.30"N 83°57'52.22"E	Opencast
80	Road Metal	SRI J APPALARAJU	Sri J Appalaraju S/o Guru naidu, Door No 3-5, main street, Chilakapalem Village, Etcheral Mandal, Srikakulam	Proc.No 421/Q1/2022 Dt.18.04.2002	0.8	14-06-2017	13-06-2027	1St Renuwal 22.08.2023	21.08.2033	14-06-2017	Non Working	Non-Captive	No	18 20 02.44123 N , 83 46 23.78232 E	Opencast
81	Road Metal,Building Stone,Gravel,	Ch Siva Kumar	Sri Ch.Siva Kumar, S/o Raja Rao, Railway Station Street, Konchada Village, Laidam Post, Ponduru Mandal, Srikakulam District	Proce No 662/Q/SKLM/2019 13/08/2020	4.95	23-09-2020	22-09-2030	-	-	23-09-2020	Non working	Non-Captive	SEIAA/AP/SKLM/MIN/122019154-65 Dt.11.06.2020	18 19 14.89 N 83 47 21.01 E	Opencast
82	Color Granite	Aswini Enterprises	Aswini Enterprises, # 19/10, Sri Raman nagar North Street, Alwarpet, Chennai- 600018, Tamilanadu State.	14261/R1-1/2007, Dt.10-12-2007	3.262	02-01-2008	31-01-2028	-	-	02-01-2008	Non Working	Non-Captive	SEIAA/AP/SKLM-51/2013-2465, Dt.10-7-2013	18 31 19.27 N 84 06 40.73 E	Opencast

Sl. No.	Name of the Minerals	Name of the Leassee	Address & Contact No. of the Lessee	Minining Lease Grant Order No. & Date	Area of quarry lease (ha)	Period of quarry Lease (initial)		Period of quarry Lease (1st & 2nd renewal)		Date of commencement of Mining Operation	Satus (Working/ Non-working / Tem.working for dispatch etc.,	Captive. Non-Captive	Obtained environmental clearnce (Yes/No), if Yes Letter No. with date of gran of EC	Location of the quarry lease (Latitude & Longitude	Method of quarry (Opencast/ Under ground)
83	Color Granite	N SIMHACHALAM	Sri N.Simhachalam, S/o. Late Appanna, D.No. 7-7-105/1, Prakasa Nagar Colony, Kotabommali – 532 195, Srikakulam District, A.P.	5395/R1-1/2017, dt:24.01.2018 of DM&G, Ibrahimpatnam	3.67	13-03-2018	03-12-2038	-	-	13-03-2018	Non Working	Non-Captive	No	18 34 49.42 N 84 04 47.40 E	Opencast
84	Color Granite	T.Siva Nageswara Rao	Sri T.Siva Nageswara Rao, Flat No.202, Sri Nilayam Apartments, Sri Nagar Colony, Gannavaram - 510 011, Krishna District, A.P	DM&G Procd.No.30304/R1-1/2017, dt.03-12-2018.	5	27-02-2020	26-02-2040	-	-	27-02-2020	Non Working	Non-Captive	No	18 38 48.83 N 84 04 43.56 E	Opencast
85	Color Granite	M.Rudra Murthy	M Rudra Murthy Door No.8-3-320 F.No 204C Keerthi Apartments Yellareddy Guda, Hyderabad	Proce No 30303/R1-1/2017 Dt.15.11.2018	5	27-02-2020	26-02-2020	-	-	27-02-2020	Non Working	Non-Captive	DEIAA/AP/SKLM-05/2018/Dt.08.07.2018	**18°38'41.91"N 84°04'50.38"E**	Opencast
86	Road Metal	MS SOMAPATEL ASI JV	M/s Soma Patel ASI(JV), Modaguvalasa Village, Pedakota Post, LN Peta Mandal, Srikakulam District-S 32. 458	Procee No . 3988/Q4S/2017 Dt.17.07.2018	5	28-07-2018	27-07-2025	-	-	28-07-2018	Non working	Non-Captive	No	**18°42'23.26"N 83°56'52.31"E**	Opencast
87	Color Granite	M/s. Pokarna Ltd.,	M/s. Pokarna Ltd., Surya Towers, 105, Sardar Patel Road, Secunderabad - 500003. Telangana State.	28798/R13/04 29-12-2004	1.93	09-01-2003	31-08-2023	-	-	09-01-2003	Non Working	Non-Captive	No	18°20'16.20"N 83°46'52.08"E	Opencast
88	Color Granite	M/s. Eureka Granites	M/s. Eureka Granites, Smt A.R.Sumathi, 2-34, Rotary Nagar-II, Tekkali Village, Post & Mandal, Srikakulam District.	36730/R1-3/2002 Dt.23-12-2002	6	17-01-2003	16-01-2023	-	-	17-01-2003	Non Working	Non-Captive	SIA/AP/MIN/53274/2020	18°34'49.72"N 84° 6'55.26"E	Opencast

Sl. No.	Name of the Minerals	Name of the Leassee	Address & Contact No. of the Lessee	Minining Lease Grant Order No. & Date	Area of quarry lease (ha)	Period of quarry Lease (initial)		Period of quarry Lease (1st & 2nd renewal)		Date of commencement of Mining Operation	Satus (Working/ Non-working / Tem.working for dispatch etc.,	Captive. Non-Captive	Obtained environmental clearnce (Yes/No), if Yes Letter No. with date of gran of EC	Location of the quarry lease (Latitude & Longitude	Method of quarry (Opencast/ Under ground)
89	Color Granite	Lalitha Minerals	M/s Lalitha MineralsMgp. Smt K.Hima Bindu 6-14, of IndiranagarColony, Srikakulam	20883/R1-1/2003 Dt.22-5-2006	1	24-09-2006	23-09-2026	-	-	24-09-2006	Non Working	Non-Captive	No	18°35'16.28"N 84° 9'31.24"E	Opencast
90	Road Metal	K.Ramesh	Sri K.Ramesh, S/o Mohana Rao, D.No. 1-19, Main Street, Mathala Village, Kotturu Mandal, Srikakulam District	Proce.No 1693/Q15/2005 Dt.10.05.2007	1.5	16-06-2007	14-06-2027	-	-	16-06-2007	Non Working	Non-Captive	SIA/AP/MIN/23832/2018	18 47 59.71 N 83 58 49.63 E	Opencast
91	Road Metal	M/s. Sri Srinivasa Stone Crusher Industries	M/s Srinivasa Stone crusher , Prop: V.Surpannaidu S/o Lakhsminaidu Late, Rapaka Village Ponduru Mandal, Srikakulam	1316/Q1s/0826-6-08	1.21	23-09-2008	30-04-2019	-	-	23-09-2008	Non Working	Non-Captive	SIA/AP/MIN/25585/2018	18°20'52.16"N 83° 47'13.79"E	Opencast
92	Road Metal	S.Charan Kumar	Sri Sahukari Charan Kumar Street Subalaya Colony, Hiramandalam Village & Mandal Srikakulam	3206/Q1s/20079-6-2008	2	24-02-2009	23-02-2024	-	-	24-02-2009	Non working	Non-Captive	SIA/AP/MIN/28630/2018	18°42'13.84"N 83° 58'00.47"E	Opencast
93	Road Metal	Bhavani Stoen Crusher	M/s Bhavani Stone Crusher, Prop:Smt. M. Adilakshmi, W/o Late M. Someswara Rao, Yedlabasivalasa Village , Peruvada Post, Polaki Mandal, Srikakulam District.	4392/Q1S/2008, Dt.16-05-2009	1	08-07-2009	08-06-2019	-	-	08-07-2009	Non Working	Non-Captive	SIA/AP/MIN/26240/2018	18°24'53.11"N 84° 05'43.24"E	Opencast
94	Road Metal	M/s. Sri Srinivasa Stone Crusher Prop Smt.V.Satyavathi	Sri Srinivasa Stone Crusher V.Satyavathi W/o V Nageswara rao .Rapaka Village, Ponduru Mandal, SKL , Surpanaidu- 9441406019	797/Q1/2001 29-9-2011	1	15-09-2011	14-09-2026	-	-	15-09-2011	Non Working	Non-Captive	No	18°20'52.20"N 83° 47'13.47"E	Opencast

Sl. No.	Name of the Minerals	Name of the Leassee	Address & Contact No. of the Lessee	Minining Lease Grant Order No. & Date	Area of quarry lease (ha)	Period of quarry Lease (initial)		Period of quarry Lease (1st & 2nd renewal)		Date of commencement of Mining Operation	Satus (Working/ Non-working / Tem.working for dispatch etc.,	Captive. Non-Captive	Obtained environmental clearnce (Yes/No), if Yes Letter No. with date of gran of EC	Location of the quarry lease (Latitude & Longitude	Method of quarry (Opencast/ Under ground)
95	Road Metal	J.APPALA RAJU	Sri M.Srinivasa RaoS/o. Satyanarayana,Plot No.39, 2nd Lane,P.N.Colony, Srikakulam, G.AppalaRaju, Gadi Ramarao - 9989759764	Proce No 1021/RQL/SQl/2023 Dt.22.08.2023	1	24-05-2012	23-05-2022	-	-	24-05-2012	Non Working	Non-Captive	SIA/AP/MIN/25564/2018	18 20 28.32 N 83 47 10.12E	Opencast
96	Road Metal	M/s. Ushodaya Stone Crusher	M/s. Ushodaya StoneCrusher,Prop: Ravada Illayya,S/o. Simmayya,Mamidivalasa (V), Srikakulam (M & Dist)	5018/Q1S/2010Dt.29-5-2015	1.43	06-03-2015	06-02-2030	-	-	06-03-2015	Non Working	Non-Captive	SIA/AP/MIN/26190/2018	18°21'22.33"N 83°57'43.10"E	Opencast
97	Road Metal	M/s Sri Seetharama Constructions	M/s Sri Seetharama Constructions, Mg. Ptnr: Sri C.V. Jagannadha Swamy, Main Road, Rajam, Srikakulam District	2504/Q1S/2007 Dt.7-7-2015	1.154	27-08-2015	26-08-2025	-	-	27-08-2015	Non Working	Non-Captive	SIA/AP/MIN/28546/2018	18 20 27.98 N 83 47 02.82E	Opencast
98	Color Granite	Archana Granites	M/s Archna Granites,M/p Sri S.Venkateswara Rao,S.V.R. Complex ,Mangammdora, Ongole	24908/R1-1/2007, Dt.11-8-08	6	10-10-2008	10-09-2028	-	-	10-10-2008	Non working	Non-Captive	No	18°21'15.31"N 83°57'51.91"E	Opencast
99	Road Metal, Building Stone & Gravel	Sri Sai krishna Koyyana	H.No 27-09-9/3, Gurunadha rao Colony , Near Pertorl Bunk, Gajuwaka, Visakhapatnam-530026	Procee No. 183/Q/2022 Dt.29.10.2022	2	12.01.2023	11.01.2033	-	-	29.10.2022	Working	Non-Captive	SEIAA/AP/SKLM/MIN/9/2021/3491/177.64/174.43 Dt.18.03.2022	**18°28'51.47"N 83°53'09.07"E**	Opencast
100	Road Metal, Building Stone & Gravel	Sri K Narsireddy	K. Narsireddy, Door No 7-698, Dharani kota, Anaparthi Village and Mandal, East Godavari, Andhrapradesh	Proce. No 1498/Q/2021 Dt.27.08.2022	2.92	11.11.2022	10.11.2032	-	-		Working	Non-Captive	No	**18°33'30.94"N 84°09'45.20"E**	Opencast

Sl. No.	Name of the Minerals	Name of the Leassee	Address & Contact No. of the Lessee	Minining Lease Grant Order No. & Date	Area of quarry lease (ha)	Period of quarry Lease (initial)		Period of quarry Lease (1st & 2nd renewal)		Date of commencement of Mining Operation	Satus (Working/ Non-working / Tem.working for dispatch etc.,	Captive. Non-Captive	Obtained environmental clearnce (Yes/No), if Yes Letter No. with date of gran of EC	Location of the quarry lease (Latitude & Longitude	Method of quarry (Opencast/ Under ground)
101	Building Stone & Gravel	Sri Lankalapalli Santhosh	Sri Lankalapalli Santhosh S/o Ramarao H.No 1-90, Main Street, Akkayyapalem Village Ranasatalam Mandal Srikaulam Dist	Proce.No 184/Q/2021 Dt.29.06.2022	1.5	7/18/2022	7/17/2032	-	-	7/18/2022	Working	Non-Captive	SEIAA/AP/SKLM/MIN/03/2022/4076/184.88/181.60 Dt.17.05.2022	**18°06'32.56"N 83°39'59.44"E**	Opencast
102	Building Stone & Gravel	Gundu Kailasarao	Gundu Kailasarao Door no 1-42, Main Steet Akkayyapalem Ranastalam Mandal Srikakulam	Proce.No 2504/Q/2021 Dt.29.04.2022	1.99	5/16/2022	5/15/2032	-	-	5/16/2022	Working	Non-Captive	SEIAA/AP/SKLM/MIN/12/3855/2021/178.23/175.12 Dt.18.03.2022	**18°05'56.54"N 83°39'49.52"E**	Opencast

Data Source: Assistant Director of Mines and Geology, Srikakulam District, Andhra Pradesh

Table-16: The List of Leases in Respect of O/O Asst. Director Of Mines And Geology, Tekkali District (Erstwhile)

S.NO	Name of the Mineral	Name of the Lessee	Address & Contact No. of the Lessee	Mining Lease Grant Order No. & Date	Area of mining lease (ha)	Period of Mining Lease (Initial)		Period of Mining Lease (1st & 2nd …renewal)		Date of commencement of Mining Operation	Status (Working/non-working/ Temp.working for dispatch etc.,)	Captive/Non-captive	Obtained environmental clearance (YES/No), if Yes Letter No. with date of grant of EC	Location of the Mining Lease (Latitude & Longitude)	Method of Mining (Opencast/Underground)
						From	To	From	To						
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	Colour Granite	M.S.P.Granites	No.34, Old No.925 H-Block, 17th Main Road,	14447/R1-1/2007 dt: 09.09.2010	4.4	06-11-2010	05-11-2030	…	…	06-11-2010	Working	Non-Captive	SEIAA/AP/SKM-148/2013-5709, Dt.25.10.2013	19° 03' 53.85756"N 84° 34' 06.93542"E	Opencast

S.NO	Name of the Mineral	Name of the Lessee	Address & Contact No. of the Lessee	Mining Lease Grant Order No. & Date	Area of mining lease (ha)	Period of Mining Lease (Initial)		Period of Mining Lease (1st & 2nd …renewal)		Date of commencement of Mining Operation	Status (Working/non-working/ Temp.working for dispatch etc.,)	Captive/Non-captive	Obtained environmental clearance (YES/No), if Yes Letter No. with date of grant of EC	Location of the Mining Lease (Latitude & Longitude)	Method of Mining (Opencast/Underground)
			Anna Nagar West Chennai												
2	Colour Granite	M/s. VBS Projects & Infra	M/s. VBS Projects & Infra, Prop: Sri B.Seshank, S/o. Sri B.Vasudeva Naidu, MIG-359, Phase -1, KPHB Colony, Tirumalagiri JNTU, Kukatpally, Hyderabad - 800085	Proc.No. 5964/D1-2/2018, dated.04.09.2020	4.48	29-10-2020	28-10-2040	…	…	29-10-2020	Non Working	Non-Captive	SEIAA/AP/SKM/MIN/05/2019/976-7, Dt.29.10.2020	18° 57' 41.74”N 84° 31' 3.59”E	Opencast
3	Colour Granite	Sakthi Mooga mbiga Granites	S/o late Govindaswamy H.No:41-A, Pudhu colony, Cheran Nagar, Periyasimapur road, Erode-638004	41528/R1-1/2009 28/10/2010	4.16	18-11-2010	17-11-2030	…	…	18-11-2010	Non Working	Non-Captive	No	19° 4' 8.79”N 84° 34' 8.53”E	Opencast
4	Colour Granite	Rana Granites	M/s. Rana Granites and Minerals, Managing Partner Sri Saravan Ram Bidasar, D.No.15-262, Kodanda Rama Street, Tekkali Post and Mandal, Srikakulam	25383/R1-3/2002 Dt:03/03/2003	1.82	07-05-2003	06-05-2023	…	…	07-05-2003	Non Working	Non-Captive	SEIAA/AP/SKM-260/MIN/2015, Dt.29.07.2021	19° 03' 17.47931”N 84° 33' 27.86570”E	Opencast

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			District-532 201.												
5	Colour Granite	M.S.P.Granites	No.34, Old No.925 H-Block, 17th Main Road, Anna Nagar West Chennai	14449/R1-1/2007 dt: 04.12.2010	3.4	29-01-2011	28-01-2031	…	…	29-01-2011	Non Working	Non-Captive	SEIAA/AP/SRK-147/2013-5624, Dt.25.10.2013	19° 03' 45.10”N 84° 33' 49.70”E	Opencast
6	Colour Granite	Vysyaraju Venkatraju	S/o Appalaraju, D.No:6-386, NTR Nagar, Tekkali Vill and Man, Srikakulam	7783/R1-1/2012 02/11/2012	2.91	07-12-2012	06-12-2032	…	…	07-12-2012	Working	Non-Captive	SEIAA/AP/SKM/146/2013, Dt.25.10.2013	18° 51' 27.31253”N 84° 23' 00.11032”E	Opencast
7	Colour Granite	M/s. Sri Venkata Sai Granites	M/s. Sri Venkata Sai Granites, Mgp: Smt Pentyala Amruthavalli,W/o. Sri Pentyala Maheswar Rao, D.No.19-262/1A, Red Cross Street, Mittor Chittoor,Chittoor District – 517001 A.P.	3373/R1-1/2012, Dt.23.04.2018	1.444	19-06-2018	18-06-2038	…	…	19-06-2018	Working	Non-Captive	DEIAA/AP/SKM-01/2017, Dt.17.11.2017	18° 51' 27.82”N 84° 24' 38.37”E	Opencast

S.NO	Name of the Mineral	Name of the Lessee	Address & Contact No. of the Lessee	Mining Lease Grant Order No. & Date	Area of mining lease (ha)	Period of Mining Lease (Initial)		Period of Mining Lease (1st & 2nd …renewal)		Date of commencement of Mining Operation	Status (Working/non-working/ Temp.working for dispatch etc.,)	Captive/Non-captive	Obtained environmental clearance (YES/No), if Yes Letter No. with date of grant of EC	Location of the Mining Lease (Latitude & Longitude)	Method of Mining (Opencast/Underground)
8	Colour Granite	L.Srinivas	1-142 Tekkali Village and Mandal Srikakulam District	51632/R1-1/2010 dt:10 Jun 2012	16.214	20-06-2012	19-06-2032	…	…	20-06-2012	Non Working	Non-Captive	SEIAA/AP/SKLM/MIN/VIO/09/2017/430.818, Dt.18.12.2020	18° 49' 49.4"N 84° 25' 48.7"E	Opencast
9	Colour Granite	PVR Enterprises	2/184, Majjiramudupeta Village Kundamamidivalasa Post Regidi, Amudalavalasa Srikakulam District	10419/R1-1/2005 dt: 01.06.2015	3	04-02-2011	03-02-2031	…	…	04-02-2011	Non Working	Non-Captive	No	18° 50' 33.52"N 84° 24' 33.42"E	Opencast
10	Colour Granite	P.V.R. Enterprises	2/184, Majjiramudupeta Village Kundamamidivalasa Post Regidi, Amudalavalasa Srikakulam District	294/R1-1/2015 dt: 20.01.2015	1.85	25-06-2008	24-06-2028	…	…	25-06-2008	Non Working	Non-Captive	No	18° 50' 34.08"N 84° 24' 38.19"E	Opencast
11	Colour Granite	Rajyog Minerals (P) Ltd	B-16/01, Pashim Marg, DLF Phase-I, Gurgoan (Haryana)	13602/R1-1/10 Dt:30/04/2016	21.3	24-06-2016	23-06-2036	…	…	24-06-2016	Working	Non-Captive	J-11015/170/2014-IA.II(M), Dt.24.06.2016	18° 47' 15.9"N 84° 13' 20.9"E	Opencast
12	Colour Granite	Rajyog Minerals (P) Ltd	D.No:8-16/01, Pashim Marg, DLF Phase-I, Gurgaon, Haryana.	26734/R1-1/2009 Dt:02.09.2009	10	18-11-2009	08-06-2029	…	…	18-11-2009	Working	Non-Captive	J-11015/171/2014-IA.II(M), Dt.09.06.2009	18° 47' 48.89"N 84° 13' 30.69"E	Opencast
13	Colour Granite	Sri Mouneesh Kunapa Reddy	Sri Mouneesh Kunapa Reddy, D.No.55-5-2, Addepalli Colony, Rajamahindravaram, East	Proc.No.13328/D1-2/2021, dated.18.05.2022	4	03-06-2022	02-06-2042	…	…	03-06-2022	Working	Non-Captive	SEIAA/AP/SKLM/MIN/03/2022/4059, Dt.31.03.2022	18° 44' 30.55691"N 84° 12' 17.84858"E	Opencast

S.NO	Name of the Mineral	Name of the Lessee	Address & Contact No. of the Lessee	Mining Lease Grant Order No. & Date	Area of mining lease (ha)	Period of Mining Lease (Initial)		Period of Mining Lease (1st & 2nd …renewal)		Date of commencement of Mining Operation	Status (Working/non-working/ Temp.working for dispatch etc.,)	Captive/Non-captive	Obtained environmental clearance (YES/No), if Yes Letter No. with date of grant of EC	Location of the Mining Lease (Latitude & Longitude)	Method of Mining (Opencast/Underground)
			Godavari District, A.P.533 103												
14	Colour Granite	Everglow Enterprises	C/o V.Muttu, Rotary Nagar, Tekkali, Srikakulam Dist.	15885/R1-3/2004 dt 09.07.2004	1.285	17-07-2004	16-07-2024	…	…	17-07-2004	Non Working	Non-Captive	No	18° 39' 17.92"N 84° 12' 28.98"E	Opencast
15	Colour Granite	K.K.Granites	Mgp: Sri Y.Vidya Kiran, #201/2nd floor, Sigma Wing, Rajendra Towers, 177, Mound Road, Chennai-600002	4131/R1-1/2015 dt: 07.03.2015	15	01-08-2015	22-08-2027	…	…	01-08-2015	Non Working	Non-Captive	No	18° 47' 42.76520"N 84° 13' 25.07264"E	Opencast
16	Colour Granite	M Dhanunjaya Reddy	D.No.49-54-15, flat No,101, radhakrishna nagar, balaji satri layout, seethammadhara, visakhapatnam	33454/R1-1/2012 dt:31/12/2013	1.8	28-09-2005	27-09-2025	…	…	28-09-2005	Non Working	Non-Captive	No	18° 48' 37.6"N 84° 20' 58.8"E	Opencast
17	Colour Granite	Sri S.Shiva Prakash	S/o Rambrahmam, D.No:1-273, Rotary nagar, Tekkali-532201	12130/R1-1/2006, Dt:09.05.2006	3	18-05-2006	17-05-2026	…	…	18-05-2006	Non Working	Non-Captive	No	18° 46' 32.39"N 84° 14' 36.43"E	Opencast

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18	Colour Granite	Sakthi Moogambiga Granites	S/o late Govindaramaswamy H.No:41-A, Pudhu colony, Cheran Nagar, Periyasimapur road, Erode-638004	35623/R1-1/2010, Dt:05/07/2012	7.1	28-11-2012	27-11-2032	…	…	28-11-2012	Non Working	Non-Captive	No	18° 46' 28.25265"N 84° 13' 40.62143"E	Opencast
19	Colour Granite	Sri Anil Kantiprasad Poddar	Sri Anil Kantiprasad Poddar,82B, Paradise Apartment, Nepeansea Road, Mumbai – 400006	05/TKL/2022, dt. 31.05.2023	4.99	7/22/2023	7/21/2043	…	…	7/22/2023	Working	Non-Captive	SEIAA/AP/SKLM/MIN/10/2022/4640/202.09&199.08, dt.30.11.2022	18° 44' 18.36783"N 84° 11' 27.73904"E	Opencast
20	Colour Granite	Dalam Chand	House No 167, Ward No 4, Ellanabad, Dist Sirisa ,Haryana	9571/R1-1/2012 dated 19/09/2014	8.5	18-10-2014	24-01-2027	…	…	18-10-2014	Working	Non-Captive	SEIAA/AP/SKM/MIN/10/2016/216, Dt.30.12.2016	18° 41' 53.50"N 84°17' 48.90"E	Opencast
21	Colour Granite	T.N Balasubramanya	S/o late Nagaraju H.No:2433, 14th Main, 17th cross, II stage, Kumaraswamy Layout, Bangalore-560070.	35635/R1-1/2007 date:07/11/2013,16200/R1-1/2014 Dt:27.01.2015	5	27-03-2015	27-11-2023	…	…	27-03-2015	Working	Non-Captive	SEIAA/AP/SKM-56/MIN/2013-502, Dt.29.07.2021	18° 41' 27.35515"N 84°19' 24.6726"E	Opencast
22	Colour Granite	Duvvada Srinivas	S/o. Krishna Murty (Late) Venkateswara Colony, Tekkali Village and Mandal, Srikakulam District	31850/R1-1/2007, dated.27.09.2009	16.6	26-12-2008	25-12-2028	…	…	26-12-2008	Working	Non-Captive	SEIAA/AP/SKLM/MIN/11/2020/2362817, Dt.18.12.2020	18° 38' 57.7"N 84°14' 34.7"E	Opencast

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23	Colour Granite	M/s.SAS Exports	M/s. SAS Exports, Par: Sri G. Ramanjaneyulu, 1st Floor, Palakendra Back side, Venkateswara Colony, Tekkali Village. Srikakulam District, A.P-532001.	1588/R1-1/2012, dated.11.06.2018	9	01-10-2021	30-09-2041	…	…	01-10-2021	Working	Non-Captive	SEIAA/AP/SKM-252/3015, Dt.15.10.2015	18° 43' 22.35”N 84°16' 44.91”E	Opencast
24	Colour Granite	M/s. P.L.R.S. Stones	M/s. P.L.R.S.Stones, Prop: Sri P.M.Sridhar Reddy, S/o. Sri P.M.Madhava Reddy, D.No.2-17, D.B.Thimmapalli Village, Marakalakuppam Post, Gudipala Mandal, Chittor District – 517132 A.P.	Proc.No.1889/D1-2/2021, dated.10.03.2022	4.5	07-04-2022	06-04-2042	…	…	07-04-2022	Working	Non-Captive	SEIAA/AP/SKLMN/MIN/4/2021/3105, Dt.07.04.2022	18° 40' 28.02347”N 84° 14' 42.80119”E	Opencast

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25	Colour Granite	M/s. M.S.J.Exports	M/s. M.S.J.Exports, Mgp: Sri M.C.Vijayanand a Reddy, S/o. Sri M.A.Chinnabba Reddy, D.No.1251/4, Nikhil Anand Apartments,Nal anda Nagar, B.V.Reddy, Colony, Chittor District – 517001 A.P	Proc.No.1888/ D1-2/2021, dated.10.03.20 22	3.41	07-04-2022	06-04-2042	…	…	07-04-2022	Working	Non-Captive	SEIAA/AP/VZM /MIN/4/2021-3117, Dt.07.04.2022	18° 40' 18.36548”N 84°14' 41.80850”E	Opencast
26	Colour Granite	Sri M.Anil Kumar	Sri M.Anil Kumar, D.No.21-9/2-46, Jayalakshmi Nilayam, 2nd Floor, Opp: Rama Devi School, Madura Nagar, Vijayawada - 520001, A.P	Proc.No.5087/ D1-2/2021, dated.25.03.20 22	4.703	01-04-2022	31-03-2042	…	…	01-04-2022	Non Working	Non-Captive	SEIAA/AP/SKL M/MIN/12/2021/ 3777, Dt.01.04.2022	18° 40' 10.11281”N 84° 15' 56.24595”E	Opencast
27	Colour Granite	Sri Ponnavo lu Karthik Reddy	Sri Ponnavolu Karthik Reddy, D.No.1-56/1, Raja Street, Kanuparthipadu Village, Nellore Mandal, SPSR Nellore District, A.P	Proc.No.5020/ D1-2/2021, Dt. 30.03.2022	2.963	26-04-2022	25-04-2042	…	…	26-04-2022	Non Working	Non-Captive	SEIAA/AP/SKL M/MIN/11/2021/ 3556, Dt.06.01.2022	18° 40' 11.47456”N 84° 16' 07.80124”E	Opencast

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28	Colour Granite	Sri L. Srinivas	Sri L.Srinivas, S/o. Late Venkata Ramana, Door No.1-142, Venkateswara Colony, Tekkali Village and Mandal, Srikakulam District	3499/D1-2/2019, dated.14.02.2022	10	22-02-2022	21-02-2042	…	…	22-02-2022	Non Working	Non-Captive	SEIAA/AP/SKLM/MIN/11/2020/2484, Dt.22.02.2022	18° 39' 04.11486”N 84° 14' 32.04276”E	Opencast
29	Colour Granite	M/s Annan Granites	Do.20.530, an street,mittoor, chittor dist	17842/R1-1/2008 dt: 27.07.2010	1	17-09-2010	16-09-2030	…	…	17-09-2010	Non Working	Non-Captive	No	18° 39' 47.00203”N 84°14' 52.28918”E	Opencast
30	Colour Granite	Anantha Padmanabha Granites	D.No:1-142,Venkateswara colony, Tekkali, Srikakulam Dist	3008/R1-1/2014, Dt:17.04.2015	6	20-04-2015	19-04-2035	…	…	20-04-2015	Non Working	Non-Captive	SEIAA/AP/SKM-193/2014-1321, Dt.28.01.2015	18° 38' 53.40”N 84°14' 26.74”E	Opencast
31	Colour Granite	Sri V.Gopala Krishnan	Sri V.Gopala Krishnan, S/o. (Late) Venkata Subramanyam, No.573, 6th A'Cross, 8th Main, H.A.L. 3rd Stage, Jeevan Bheema Nagar, Bengaluru - 560 075	D.Dis. Memo.No.9300/D1-2/2020, dated.23.12.2020	7.83	08-02-2021	07-02-2041	…	…	08-02-2021	Non Working	Non-Captive	SEIAA/AP/SKM/MIN/05/2018/565, Dt.11.06.2018	18° 51' 28.00607”N 84° 23' 3.98152”E	Opencast
32	Colour Granite	L.Srinivas	S/o Venkata Ramana (late), D.No:1-142, Venkateswra Colony,Tekklai, Srikakulam Dist	36328/R1-1/2010 dated 26.8.2015	5	16-09-2015	15-09-2035	…	…	16-09-2015	Non Working	Non-Captive	SEIAA/AP/SKM-253/2015-2812, Dt.16.09.2015	18° 42' 58.91761”N 84° 16' 50.18292”E	Opencast

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33	Colour Granite	Sri L.Srinivas	Sri L.Srinivas, S/o. Venkata Ramana, Door No.1-142, Venkateswara Colony, Tekkali Village and mandal	Proc.No.3500/ D1-2/2020, Dt. 16.07.2020	3	21-07-2020	20-07-2040	…	…	21-07-2020	Non Working	Non-Captive	SEIAA/AP/SKLM/MIN/01/2020/ 1669/07, Dt.11.06.2020	18° 43' 02.00718”N 84° 16' 48.73446”E	Opencast
34	Colour Granite	S.K.S Exports	2-15, Rotary Nagar, Tekkali, Srikakulam	40599/R1-1/2007 dt:15/04/2008	6	09-05-2008	08-05-2028	…	…	09-05-2008	Non Working	Non-Captive	SEIAA/AP/SKLM /MIN/10/2016/221, Dt.03.12.2016	18° 40' 22.74”N 84° 14' 53.54”E	Opencast
35	Colour Granite	Sri U.Ankala Rao	S/o. Sri Vykunta Rao, Flat.N. 204, Sri Nilayam Enclave, Beside New Science College,Ameerpet, Hyderabad - 500016, Telangana State	28995/R1-2/2010, 28.06.2018	3	24-08-2018	23-08-2038	…	…	24-08-2018	Non Working	Non-Captive	SEIAA/AP/SKM-104/2013-4858, Dt.25.10.2013	18° 41' 23.13”N 84° 15' 34.76”E	Opencast
36	Colour Granite	Smt. Vajja Manjula,	W/o. Sri V.V.Ramana, Door No.104, Venkateswara Colony, Tekkali, Srikakulam District.	14263/R1-1/2007, dated.11.06.2018	4.9	09-07-2018	08-07-2038	…	…	09-07-2018	Non Working	Non-Captive	SEIAA/AP/SKM-175/2014/4101, Dt.09.07.2018	18° 43' 14.04”N 84° 16' 50.61”E	Opencast
37	Colour Granite	D.Ramesh Kumar	Polavaram Village,Tekkali Manadal, Srikakulam DIst	28997/R1-1/2010 dated 1.4.2015	15.513	16-05-2015	15-05-2035	…	…	16-05-2015	Working	Non-Captive	SEIAA/AP/SKLM-186/2014-1311, Dt.28.01.2015	18° 42' 52.61”N 84° 16 48.51”E	Opencast
38	Colour Granite	Rajendra Kumar Karnani	D.No:4-175, Visakha B Colony, Srikakulam.	28998/R1-1/2010 dt:25/03/2015	14	01-05-2015	30-04-2035	…	…	01-05-2015	Working	Non-Captive	SEIAA/AP/SKM-189/2014, Dt.28.01.2015	18° 43' 11.07642”N 84° 17' 12.66991”E	Opencast

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39	Colour Granite	Panchamukha Granites Exim	2-98,Srikakulam ,Palasa,PALASA	12463/R1-1/2014 16 May 2014	4	11-06-2014	18-12-2032	…	…	11-06-2014	Working	Non-Captive	SEIAA/AP/SKM-145/2015, Dt.16.01.2016	18° 47' 28.09"N 84° 23' 38.08"E	Opencast
40	Colour Granite	Smt Dumpala Jayasree,	Smt Dumpala Jayasree, W/o. Rama Rao, D.No.1-120, Pedda Street, Tholapi Village, Ponduru Mandal, Srikakulam District, Andhra Pradesh.	Proc.No. 809/R1-1/2018, dated.01.01.2019	14.5	22-02-2019	21-02-2039	…	…	22-02-2019	Working	Non-Captive	SEIAA/AP/SKM/MIN/05/2018/606-1120, Dt.15.10.2018	18° 47' 55.40"N 84° 23' 52.24"E	Opencast
41	Colour Granite	Narahari Sahu	Padma Nagar Street, Aska Road, Berhampur, Odisha-760006	25971/R1-1/2011 DT: 14.07.2016	1.015	08-09-2016	07-09-2036	…	…	08-09-2016	Non Working	Non-Captive	SEIAA/AP/SKM-197/2015-4108, Dt.21.09.2015	18° 44' 59.86"N 84° 20' 09.38"E	Opencast
42	Colour Granite	Sreevaree Enterprises	39/7/43, Murali nagar, Visakhapatnam-7.	11389/R1-1/2016 Dt:13.08.2016	1.71	15-09-2016	11-08-2035	…	…	15-09-2016	Non Working	Non-Captive	SEIAA/AP/SKM-224/2015-32, Dt.04.04.2015	18° 48' 43.33891"N 84° 23' 57.50659"E	Opencast
43	Colour Granite	Rock India Exports	LI Meher appartments VIP Road CBM Compound Visakhapatnam	32318/R1-1/2010 dt: 23 Oct 2010	2.36	09-12-2010	26-11-2029	…	…	09-12-2010	Non Working	Non-Captive	SEIAA/AP-SRK-96/2013, Dt.25.10.2013	18° 47' 13.27843"N 84° 24' 07.57862"E	Opencast
44	Colour Granite	Madhucon Granites Ltd	H.No:1-7-70,Madhucon complex, Jublipura, Khammam	904/R1-1/2005 Dt: 03.08.2009	2.37	29-09-2009	28-09-2029	…	…	29-09-2009	Non Working	Non-Captive	SEIAA/AP/SKM-106/2013, Dt.25.10.2013	18° 45' 44.99425"N 84° 03' 00.48863"E	Opencast

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45	Colour Granite	APMDC Ltd	HIG-90, 39-33-5/3, Madhurawada, Vuda Layout, Visakhapatnam	17398/R1-3/2004 Dt:15.03.2005	4	07-04-2005	06-04-2025	…	…	07-04-2005	Working	Non-Captive	No	18° 37' 22.03"N 84° 12' 26.89"E	Opencast
46	Colour Granite	Archana Granites	SVR Complex, MM Road, Ongole, Prakasam Dist.	24889/R1-1/2009 Dt:06.07.2009	2	31-08-2009	30-08-2029	…	…	31-08-2009	Working	Non-Captive	SEIAA/AP/SKM-65/2013-2784, Dt.30.07.2013	18° 37' 09.60"N 84° 12' 54.25"E	Opencast
47	Colour Granite	Blue Rock Minerals	S.No.33/16-17, Ampolu Village, Gara Mandal,Srikakulam ,Tekkali,LINGALAVALASA	24308/R1-1/2012 dt:02/08/2014	2	28-08-2013	27-08-2033	…	…	28-08-2013	Working	Non-Captive	SEIAA/AP/SKM-76/2013, Dt.28.08.2013	18° 36' 32.52484"N 84° 10' 04.89285"E	Opencast
48	Colour Granite	Everglow Enterprises	C/o V.Muttu D.No.1-604, Roatary Nagar, Tekkali, Srikakulam Dist	40567/R1-1/2007 dt:14/11/2011	4	11-01-2012	10-01-2032	…	…	11-01-2012	Working	Non-Captive	SEIAA/AP/SRK-155/2013, Dt.25.10.2013	18° 36' 22.37"N 84° 10' 31.46"E	Opencast
49	Colour Granite	Golden Rock Export	1-128,Srikakulam ,Tekkali,ADDUKONDA	6233/R1-3/2005 29/07/2005	11.53	24-12-2003	23-12-2023	…	…	24-12-2003	Working	Non-Captive	SEIAA/AP/SKM/MIN/99/2018/684-1498, Dt.12.07.2019	18° 37' 30.64010"N 84° 12' 28.93304"E	Opencast
50	Colour Granite	Goura Associates	D.No.7-5-12/1P, pandurangapuram Viskhapatnam	47472/R1-1/2012 dt:5/12/2013	2.2	29-01-2008	28-01-2028	…	…	29-01-2008	Working	Non-Captive	SEIAA/AP/SKM-178/2014.1032, Dt.08.01.2015	18° 37' 09.43419"N 84° 11' 19.41801"E	Opencast
51	Colour Granite	Indian Mineral & Granite co	51/2, Gopalaswamy Road, Opp Valmiki Hostrel, Gandhi Nagar, Bellary, Karnataka.	46550/R1-1/2009 Dt:29/03/2010	4.621	04-07-2005	03-07-2025	…	…	04-07-2005	Working	Non-Captive	SEIAA/AP/SKM-66/2013, Dt.12.08.2013	18°37' 40.932248"N 84° 14' 00.923588"E	Opencast

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52	Colour Granite	M/s. Earth Stein Pvt. Ltd.,	TNHP No:327, Kaveripatnam, Krishnagiri Dist, Chennai, Tamilnadu State	27404/R1-3/1997 dt: 22.12.1998	7.8	15-02-1999	2/14/2014	2/15/2014	2/14/2034	15-02-1999	Working	Non-Captive	SEIAA/AP/SKLM/MIN/VIO/19/2017, Dt.13.07.2021	18° 36' 31.91637”N 84° 10' 23.80479”E	Opencast
53	Colour Granite	Krishna Merchants (P) Ltd	7, Thakurbari Road, Opp Rash Beharilake Mall, Kolkata - 700026	6441/R1-1/2010 Dt:31/03/2010	15	05-01-2004	12/18/2012	12/19/2012	12/18/2032	05-01-2004	Working	Non-Captive	SEIAA/AP/SKM/MIN/08/2016/195, Dt.31.10.2016	18° 37.0' 12.83”N 84° 12.00' 11.19”E	Opencast
54	Colour Granite	Lalitha Impex	Flat No:505 Kranthi Mansion, Opp Diamond Park, Srikakulam-532001	964/R1-1/1999 21 Feb 2015	2.59	21-04-2015	20-04-2035	…	…	21-04-2015	Working	Non-Captive	DEIAA/AP/SKM/2018-8, Dt.25.10.2018	18° 36' 59.49”N 84° 9' 17.36”E	Opencast
55	Colour Granite	M.S.P.Granites	d.No:3-41, Venkateswara Nagar, ,Srikakulam ,Tekkali,TEKKALI	46003/R1-1/2012 dt: 27.05.2015	3	6/23/1993	6/24/2013	25-06-2013	24-06-2033	25-06-2013	Working	Non-Captive	SEIAA/AP/SRK-150/2013.5320, Dt.25.10.2013	18° 36' 45.74”N 84° 9' 57.71”E	Opencast
56	Colour Granite	M/s. Tirumala Granites	M/s. Tirumala Granites, Prop: Sri Chintada Venkata Ramana, D.No.2-45, Polavaram Village and Post, Tekkali Mandal, Srikakulam District – 532 201, A.P.	14397/R1-1/20105 Dt: 23.07.2015	1.6	09-03-2012	08-03-2032	…	…	09-03-2012	Working	Non-Captive	DEIAA/AP/MIN/SKM/2018-19, Dt.07.03.2003	18° 36' 19.28502”N 84° 10' 24.03434”E	Opencast

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57	Colour Granite	Bayrock Granites Private Ltd	50-92-18/5, 3rd Floor, Santhipuram, Visakhapatnam-530016	6647/R1-1/2015 dt:09/04/2015	9	…	4/15/2015	4/16/2015	09-05-2027	16-04-2015	Working	Non-Captive	SEIAA/AP/SKM-259/2015, Dt.31.10.2016	18° 37' 09.50646"N 84° 12' 04.64399"E	Opencast
58	Colour Granite	Golden Rock Export	D.No.1-125,Vamsadhara colony Tekkali, Srikakulam Dist	29733/R1-3/2004 11/03/2004,1828/R1-1/2014 dt:16/07/2014	1.2	12-04-2004	11-04-2024	…	…	12-04-2004	Working	Non-Captive	No	18° 37' 22.51601"N 84° 12' 41.29334"E	Opencast
59	Colour Granite	Kranthi Granites	S/o Simhachalam, C/o Kranthi Nurshing Home, Tekkali,Srikakuklam dist	2453/R1-1/2013 20 Jan 2016	4	03-02-2016	02-02-2036	…	…	03-02-2016	Working	Non-Captive	SEIAA/AP/SKM-249/2015-4095, Dt.03.02.2016	18° 36' 31.96"N 84° 10' 24.12"E	Opencast
60	Colour Granite	PG Exports	Prop: Sri M.P.Govindaraju, S/o. Palaniappan, NO.19, RAMASAMY NAGAR, NARASAOPATHY, SALEM-636004	39007/r1-1/2007 DT: 01.12.2007	3	11-02-2008	11-01-2028	…	…	11-02-2008	Working	Non-Captive	SEIAA/AP/SKM-127/2013, Dt.25.10.2013	18° 37' 26.1"N 84° 13' 45.0"E	Opencast
61	Colour Granite	Rapid Rocks & Minerals Pvt Ltd	3-100,Srikakulam ,Tekkali,TEKKALI	17505/R1-1/2011 26/02/2014	8	19-04-2014	18-04-2034	…	…	19-04-2014	Working	Non-Captive	SEIAA/AP/SKM/MIN/09/2016/210, Dt.19.04.2014	18° 37' 54.71098"N 84° 13' 24.03759"E	Opencast
62	Colour Granite	Stone Plus	Plot No.54 ocean Drive, Sagarnagar,Visakhaptnam Dist	25954/R1-1/2011 Dated 7.6.2013	4.853	2/27/1997	2/27/2012	7/25/2012	26-02-2032	27-02-2012	Working	Non-Captive	SEIAA/AP/SKLM/MIN/12/2020/2675/155.&160.124645, Dt.31.08.2013	18° 34' 42.34662"N 84° 14' 26.89792"E	Opencast

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63	Colour Granite	Stone Plus	Plot no 54, Ocean Drive,sagar Nagar, Visakhapatnam,	38732/R1-1/2007 dated 10.10.2013	5.86	08-11-2013	07-11-2033	…	…	08-11-2013	Working	Non-Captive	SEIAA/AP/SKM-57/2013-2526, Dt.17.07.2013	18° 34' 41.04142”N 84° 14' 06.25201”E	Opencast
64	Colour Granite	Mudunuri Srinivas	50-92-18/5,3rd floor, Shanthipuram, Visakhaptnam-16	6646/R1-1/2015 dt:09/04/2015	3.3366	10-05-2007	09-05-2027	…	…	10-05-2007	Working	Non-Captive	SEIAA/AP/SKM-257/2015, Dt.21.09.2015	18° 37' 05.37”N 84° 11' 49.80”E	Opencast
65	Colour Granite	M/s. Sirini Exports	M/s. Srini Exports, Mgp: Sri E. Madhu Viswanadh, D.No.23,153, Maruthi Nagar, Narasannapeta Village & Mandal, Srikakulam District.	25953/R1-1/2011 08 Aug 2011	3	09-09-2003	08-09-2023	…	…	09-09-2003	Working	Non-Captive	SEIAA/AP/SKM-237/MIN/2015/164.41, Dt.25.10.2021	18° 37' 57.26952”N 84° 13' 24.06972”E	Opencast
66	Colour Granite	Primus Exports	D.No.59-10-1/1, Gayathri Nagar, Vijayawada Krishna District	17652/R1-1/2011 dt: 26.07.2011	3	09-09-2011	18-07-2027	…	…	09-09-2011	Working	Non-Captive	SEIAA/AP/SKM-47/2013.1727, Dt.14.06.2013	18° 36' 53.54”N 84° 08' 16.35”E	Opencast
67	Colour Granite	Pure Minerals	TN HPN No.327, Kaveripatnam Krishnagiri Dist, Tamil Nadu	26090/R1-1/2010 dt:20.8.2010	7	27-08-2010	26-08-2030	…	…	27-08-2010	Working	Non-Captive	SEIAA/AP/SKLM/MIN/VIO/19/2017, Dt.24.06.2021	18° 36' 43.90”N 84° 11' 20.60”E	Opencast

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68	Colour Granite	M/s. MPK Exports	M/s. MPK Exports, represented by its Managing Partner Sri G.Palaniswamy Panneer, S/o. Palaniswamy, R/o. No.31, Ilnago Adikai Street, K.K.Nagar, Alavandan, Gandi Nagar (Maooma), Madurai, North Maduraim Tamil Nadu-625020	26536/R1-1/2013 dt:24/09/ 2014	3.3	04-07-2014	03-07-2034	…	…	04-07-2014	Working	Non-Captive	SEIAA/APSKM-139/2013/166.05, Dt.24.11.2021	18° 36' 57.75417”N 84° 11' 21.08648”E	Opencast
69	Colour Granite	Sterling Stonex (P) Ltd	H.No:2-14, Rotary Nagar-2, Tekkali-532201	9976/R1-1/2015, dt:25/05/2015	20.31	22-03-2003	21-03-2023	…	…	22-03-2003	Working	Non-Captive	SEIAA/AP/SKLM/MIN/09/2016/202, Dt.31.10.2016	18° 37' 24.91406”N 84° 12' 16.38084”E	Opencast
70	Colour Granite	P.Rama Krishna Reddy	P.Rama Krishna Reddy, S/o. P.Venkat Reddy, Plot No.33, Door No.2-6-5/33, Happy Homes Colony, Hyderguda, Hyderabad - 500 048, Telangana State	13032/R1-1/2017, dated.23.08.2018	4.54	22-10-2018	21-10-2038	…	…	22-10-2018	Working	Non-Captive	DEIAA/AP/SKM-15/2018, Dt.08.07.2018	18° 37' 50.83”N 84° 11' 51.89”E	Opencast

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71	Colour Granite	Smt S.Chandra	W/o. G.Kumaravel, Flat No.3B, P55, Trinity Terrace, 6th Avenue Road, Annagar, Chennai-600 040,Tamilnadu State	51054/R1-3/2017, dated.09.10.2018	3	06-12-2018	05-12-2038	…	…	06-12-2018	Non Working	Non-Captive	DEIAA/AP/SKM-01/2017, Dt.06.12.2018	18° 36' 43.6"N 84° 09' 43.8"E	Opencast
72	Colour Granite	Sri Vysyaraju Venkata Raju	Sri Vysyaraju Venkata Raju, S/o. Appala Raju, D.No.6-386, NTR Nagar, Tekkali Village and Mandal, Srikakulam District, Andhra Pradesh	1057/R1-1/2018, dated.10.01.2019	1.17	04-02-2019	03-02-2039	…	…	04-02-2019	Working	Non-Captive	DEIAA/AP/SKM/2018/5, Dt.25.10.2018	18° 36' 21.79"N 84° 10' 04.89"E	Opencast
73	Colour Granite	M/s. Ellamman Granites	M/s. Ellamman Granites, represented by its Prop: Sri Potha Raju, S/o. Perumal Raju, Rotary Nagar-3, Tekkali - 532 201, Srikakulam District, A.P	9015/R1-1/2009, dated.08.01.2019	1	07-02-2019	06-02-2039	…	…	07-02-2019	Working	Non-Captive	SEIAA/AP/SKM/MIN/06/2018/629/1140, Dt.15.10.2018	18° 39' 28.63"N 84° 13' 07.20"E	Opencast

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74	Colour Granite	M/s. Khasim Khan Granites	M/s. Khasim Khan Granites, Represented by its Prop: Sri K.Khasim Khan, Police Line Road, Near Govt. Urdu High School, Millerpet, Ballari - 583 101, Karnataka State	16121/R1-1/2017, dated.10.01.2019	2.97	01-03-2019	28-02-2039	…	…	01-03-2019	Working	Non-Captive	DEIAA/AP/SKM/2018, Dt.25.10.2018	18° 37' 33.70"N 84° 14' 14.50"E	Opencast
75	Colour Granite	M/s. Priyanka Granites	M/s. Priyanka Granites, represented by its Prop: Smt M.Sarojini, W/o. V.Muthu, Rotary Nagar-Tekkali - 532 201, Srikakulam District, A.P	30261/R1-1/2017, dated.05.07.2019	4.9	12-07-2019	11-07-2039	…	…	12-07-2019	Working	Non-Captive	SEIAA/AP/MIN/99/2018/684-1498, Dt.12.07.2019	18° 37' 45.60"N 84° 10' 52.30"E	Opencast
76	Colour Granite	Gandi Suryanarayana	Sri Gandi Suryanarayana, S/o. Veera Swamy Reddy, Venkateswara Colony, Tekkali Village and Mandal, Srikakulam District	Proc.No.1733/R1-1/2018, dated.02.12.2019	2	27-01-2020	26-01-2040	…	…	27-01-2020	Working	Non-Captive	SEIAA/AP/SKM/MIN/01/2019/806-217, Dt.27.01.2020	18° 37' 42.6081"N 83° 13' 37.5960"E	Opencast

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77	Colour Granite	M/s. Narmada Blue Rocks	Peop: Smt Gandi Narmada, W/o. Sri Gandi Suryanarayana, Venkateswara Colony, Tekkali Village and Mandal, Srikakulam District	6246/D1/2018, dated.27.12.2019	2.25	01-02-2020	31-01-2040	…	…	01-02-2020	Working	Non-Captive	SEIAA/AP/SKM/MIN/05/2019/961-1, Dt.01.02.2020	18° 37' 51.81"N 84° 14' 0.09"E	Opencast
78	Colour Granite	M/s. Ever Stone Granites	M/s. Ever Stone Granites, represented by its Prop: Smt. Bagadi Suseela, W/o. Venkata Ramana Murthi, Chinna Bonthilipuram, Srikakulam Town and District	Proc.No.9425/D1-2/2018, dated.02.07.2020	3	28-08-2020	27-08-2040	…	…	28-08-2020	Working	Non-Captive	SEIAA/AP/SKM/MIN/08/2019/1205, Dt.28.08.2020	18° 37' 31.75541"N 84° 13' 30.39721"E	Opencast
79	Colour Granite	Vanasree Mines & Minerals	D.No:1-131,Rotary Nagar, Tekkali, Srikakulam Dist	16757/R1-1/2007 Dt: 16.05.2007	4	17-07-2007	19-10-2026	…	…	17-07-2007	Working	Non-Captive	SEIAA/AP/SM/MIN/10/2019/1337-39, Dt.18.12.2019	18° 37' 19.28847"N 84° 13' 00.35783"E	Opencast
80	Colour Granite	M/s Dastagiri Swamy Minerals	Sri K.Yadavulu, S/o. Chinnavadu, Palavalasa Village, Nandigam Mandal, Srikakulam District	Proc.No.8219/D1-2/2018, Dt.21.10.2022	4.021	15-11-2022	14-11-2042	…	…	15-11-2022	Working	Non-Captive	SEIAA/APSKLM/MIN/03/2022/4072, Dt.15.11.2022	18° 37' 5.56"N 84° 12' 53.76"E	Opencast

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81	Colour Granite	Sri Veedi Ramprasad	Sri Veedi Ramprasad, 302, Baba Nagar, Rajamahendravaram Rural, Rajamahendravaram, East Godavari District -533 102 A.P.	Proc.No.3626/D1-2/2021, dated.18.05.2022	1.8	03-06-2022	02-06-2042	…	…	03-06-2022	Working	Non-Captive	SEIAA/AP/SKLM/MIN/02/2022/3951, Dt.26.03.2022	18° 37' 22.72764"N 84° 12' 29.25118"E	Opencast
82	Colour Granite	M.S.P.Granites	D.No:3-41, Venkateswara Nagar, Tekkali,Srikakulam ,Tekkali,TEKKALI	8084/R1-1/2015 dt:26/05/2015	4.517	7/13/2000	7/14/2015	15-07-2015	26-07-2027	15-07-2015	Working	Non-Captive	SEIAA/AP/SKM-152/2013-5375, Dt.25.10.2013	18° 36' 27.89755"N 84° 10' 12.64127"E	Opencast
83	Colour Granite	Designer Rocks (P) Ltd	201, Archana Appertments Begampet, Hyderabad	4285/Q1/93 Dt:11/29/93	2	11-12-2009	10-12-2019	4/1/2023	3/31/2033	11-12-2009	Working	Non-Captive	SEIAA/AP/SKLM/MIN/01/2021/2747/161.18&158.13-466, Dt.29.07.2021	18° 37' 10.32505"N 84° 11' 42.21486"E	Opencast
84	Colour Granite	Designer Rocks (P) Ltd	201, Archana appertments Begampet, Hyderabad	10615/R1-3B/2001 dt:01.06.2001	3	20-06-2001	09-11-2022	4/1/2023	3/31/2033	20-06-2001	Working	Non-Captive	SEIAA/AP/SRK-2012-6301, Dt.26.03.2013	18° 37' 02.57763"N 84° 11' 43.78453"E	Opencast
85	Colour Granite	Devinarayana Exports Pvt Ltd	No.2, Link street, second floor, kotturu gradens, chennai	7010/D1-2/2023, dt.22.06.2023 23286/R1-3/2002 Dt:19.10.02.2002,13599/R1-3/2004 Dt:27.05.2004	4	10/21/2002	10/20/2022	4/1/2023	3/31/2033	01-04-2023	Working	Non-Captive	SEIAA/AP/SKM/MIN/04/2019/917, Dt.25.11.2019	18° 36' 45.45"N 84° 10' 09.46"E	Opencast

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86	Colour Granite	Ch Hanumantha Rao	697, Road No.3 Srinikethan colony Banjara hills Hyderabad-34	8921/R1-1-3B/95 dt:14/08/2003	3.5	16-08-2003	15-08-2018	…	…	16-08-2003	Working	Non-Captive	SEIAA/AP/SKM/5/2022/4240/200, Dt.16.12.2022	18° 37' 15.42464"N 84° 11' 54.62868"E	Opencast
87	Colour Granite	Ganesh Gayathri Granites	Koona Ravi Kumar, Rotary nagar,Srikakulam ,Tekkali	31893/R1-3F/1997 Dt:21.12.1998	1.5	17-02-1999	16-02-2019	…	…	17-02-1999	Working	Non-Captive	SEIAA/AP/SKM-256/2015.4052, Dt.21.09.2015	18° 36' 44.64451"N 84° 10' 22.24068"E	Opencast
88	Colour Granite	K Muralidhar	1st Floor, KCB Quarters Tekkali, Srikakulam Dist	17840/R1-1/2008 dt:02/06/2010	4.87	18-06-2010	17-06-2030	…	…	18-06-2010	Working	Non-Captive	SEIAA/AP/SKM-124/2013-5286, Dt.25.10.2013	18° 37' 15.55"N 84° 12' 00.15"E	Opencast
89	Colour Granite	Free world Exports (P) Ltd	D.No:45, 2nd floor, First main road, Gandhinagar, Adiyar, Chennai, Tamil nadu.	17300/R1-1/2008 dt: 21.07.2008	2	01-02-2008	31-01-2028	…	…	01-02-2008	Working	Non-Captive	SEIAA/SKM-190/2015, Dt.03.02.2016	18° 37' 20.6"N 84° 13' 37.9"E	Opencast
90	Colour Granite	Free world Exports (P) Ltd	D.No:43, 2nd floor, First main road, Gandhinagar, Adayar, Chennai, Tamilnadu	17846/R1-1/2008 dt: 25.10.2008	2.68	22-12-2008	21-12-2028	…	…	22-12-2008	Working	Non-Captive	SEIAA/SKM-191/2015, Dt.03.02.2016	18° 37' 29.9"N 84° 13' 46.2"E	Opencast
91	Colour Granite	Sakthi Moogambiga Granites	S/o late Govindaswamy H.No.41-A, Pudhu Colony, Cheran nagar, peryasemur Post Erode- 38004, Tamilnadu	41771/R1-1/2009 11/12/2009	1.8	19-12-2009	18-12-2029	…	…	19-12-2009	Non Working	Non-Captive	SEIAA/AP/SKM-60/2013/2744, Dt.30.07.2013	18° 39' 21.73572"N 84° 13' 12.79165"E	Opencast
92	Colour Granite	Srinidhi Granites	W/o Krishna Rao, D.No:5-6-7, Punyapu	44670/R1-1/2012 Dt:02.06.2012	3	18-09-2012	17-09-2032	…	…	18-09-2012	working	Non-Captive	SEIAA/AP/SKM-88/2013-4483, Dt.23.10.2013	18° 39' 28.52402"N 84° 13' 02.91350"E	Opencast

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			Street, Srikakulam.												
93	Colour Granite	M/s. Sai Amrutha Exports	M/s. Sai Amrutha Exports, Mgp: Sri Thotakura Sambasiva Rao, S/o. Adiseshaiah, Dhruvaparadise Apartment, Syamala Nagar, 11th Line, Guntur, A.P.	Proc.No.2233/ D1-2/2018, dated.18.02.2022	4.46	24-03-2022	23-03-2042	…	…	24-03-2022	Non Working	Non-Captive	SEIAA/AP/SKLM/MIN/11/2019/ 1456-255, Dt.24.03.2022	18° 36' 40.60”N 84° 11' 5.66”E	Opencast
94	Colour Granite	Ellamman Granites	Rotary Nagar Tekkali Village and Mandal Srikakulam Dist	28905/R1-1/2009 16 Sep 2009	8	06-08-2010	31-05-2027	…	…	06-08-2010	working	Non-Captive	SEIAA/AP/SKM/MIN/08/2016-192, Dt.31.10.2016	18° 39' 04.53”N 84° 12' 38.44”E	Opencast
95	Colour Granite	Smt Eriginenii Damayanthi	Smt E.Damayanthi, W/o Sri E.Rama Rao Venkateswara Colony, Tekkali, Srikakulam District	Proc.No.10056/D1-2/2018, Dt.22.09.2022	3	19-11-2022	18-11-2042	…	…	19-11-2022	Working	Non-Captive	SEIAA/AP/SKLM/MIN/01/2020/ 1667-511, Dt.19.11.2022	18° 37' 45.71”N 84° 13' 38.78”E	Opencast
96	Colour Granite	Sri Bellam Haneesh Chowdary	Sri Bellam Haneesh Chowdary, D.NO. 12-249, Vani Nagar, Tanguturu Post, Prakasham Dist	Proc.No.4764/ D1-2/2021, Dt: 09.06.2022	2.218	30-09-2022	29-09-2042	…	…	30-09-2022	Non Working	Non-Captive	SEIAA/AP/SKLM/MIN/03/2022/ 4028, Dt.01.04.2022	18° 35' 02.22223”N 84° 14' 24.29261”E	Opencast

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97	Colour Granite	Sri Nithesh Pothina	Sri Nithesh Pothina, S/o. Venkata Prasad, D.No.39-2-1-19/8A, Plot No.10A, apseb City Central Colony, Labbipet, Vijayawada-520 010.	Proc.No.4763/ D1-2/2021, Dt: 09.06.2022	1.372	30-09-2022	29-09-2042	…	…	30-09-2022	Non Working	Non-Captive	SEIAA/AP/SKLM/MIN/03/2022/ 4031, Dt.01.04.2022	18° 35' 04.92177"N 84° 14' 31.12490"E	Opencast
98	Colour Granite	Ajitesh Granites	H.No:11-12-129/1, IT Colony, Sorrur Nagar, Hyderabad	1864/R1-1/2014 16 Jul 2014	4.995	19-05-2004	18-05-2024	…	…	19-05-2004	Non Working	Non-Captive	No	18° 37' 50.89068"N 84° 13' 23.98713"E	Opencast
99	Colour Granite	Chennis Granite Pvt Ltd	D.No:1-29A, Balaji Nagar, Opp RTC Garage, Tekkali.	51051/R1-1/2011, Dt. 28 Feb 2014	10	24-04-2014	23-04-2034	…	…	24-04-2014	Non Working	Non-Captive	SEIAA/AP/SKM/86/2013-4567, Dt.23.10.2013	18° 35' 53.76588"N 84° 09' 00.44458"E	Opencast
100	Colour Granite	Continental Granites	1215, Anna Nagar, westend colony, Chennai-600050	7111/R1-1/2010 dt:19/03/2010	4	27-07-1993	7/26/2007	7/27/2007	7/26/2028	27-07-1993	Non Working	Non-Captive	No	18° 37' 01.98675"N 84° 12' 35.36610"E	Opencast
101	Colour Granite	Dinesh Granite Exports	3A, Siva sai sannidhi, Plot No:32, Opp Shirdi Sai Baba Temple, Hindinagar, Panjagutta, Hyderabad	35198/R1-3/2002 dt:29.04.2003	5	19-06-2003	18-06-2023	…	…	19-06-2003	Non Working	Non-Captive	No	18° 37' 12.92583"N 84° 12' 24.24099"E	Opencast
102	Colour Granite	Eastern King Granites	S/o Nanjappa Regd. office No: 567, IInd cross IInd Block, R.T Nagar Bangalore-	13027/R1-1/2009 Dt:26.08.2009	3	20-05-2010	19-05-2030	…	…	20-05-2010	Non Working	Non-Captive		18° 37' 19.50679"N 84° 11' 50.74235"E	Opencast

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			560032												
103	Colour Granite	Enterprising Exports	regd. office No.B-254, 50th street, ashok nagar, Chennai-600083	5782/R1-3/2003 dt: 10.04.2003	1.618	16-04-2003	15-04-2023	…	…	16-04-2003	Non Working	Non-Captive	SEIAA/AP/SKM-134/2013, Dt.25.10.2013	18° 34' 26.15"N 84° 14' 14.51"E	Opencast
104	Colour Granite	Free world Exports (P) Ltd	D.No:45, 2nd floor, First main road, Gandhinagar, Adiyar, Chennai, Tamil nadu.	13678/R1-1/2008 dt: 21.07.2008	6.54	01-06-2007	31-05-2027	…	…	01-06-2007	Non Working	Non-Captive	No	18° 37' 29.5"N 84° 13' 36.9"E	Opencast
105	Colour Granite	Galaxy Enterprises	No.8, II street, Ganapathi Colony, Gopalapuram, Chennai	13703/R1-1/2008 dt:17/09/2009	5	12-10-2009	06-11-2027	…	…	12-10-2009	Non Working	Non-Captive		18° 36' 55.83"N 84° 11' 8.37"E	Opencast
106	Colour Granite	Global Golden Rocks	D.no:1-359, Rotary nagar, Tekkali (V) and (M), Srikakulam District.	31876/R1-1/2013, Dt:24/6/2013	2.7	11-11-2013	10-11-2033	…	…	11-11-2013	Non Working	Non-Captive	SEIAA/AP/SKLK-16/2012-3212, Dt.18.10.2012	18° 37' 41.30"N 84° 11' 22.90"E	Opencast
107	Colour Granite	Golden Rock Export	D.No.1-128, vamsadhara colony, Tekkali, srikakkulam dist	33288/R1-3/2002 dt:15/02/2003, 13912/R1-1/2013 dt:28/02/2015	2.4	05-03-2003	04-03-2023	…	…	05-03-2003	Non Working	Non-Captive	No	18° 37' 10.03"N 84° 12' 43.30"E	Opencast
108	Colour Granite	Goura Associates	D.No.7-5-12/1P, pandurangapuram Viskhapatnam	47480/R1-1/2012 dt:13/08/2015	2	05-05-2004	04-05-2024	…	…	05-05-2004	Non Working	Non-Captive	No	18° 37' 09.52295"N 84° 11' 10.58663"E	Opencast

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109	Colour Granite	Goura Associates	7-18-5/16,Visakhapatnam ,Visakhapatnam (U),Chinawaltair	47473/R1-1/2012 dt:05/12/2013	6.3	03-02-2014	05-09-2030	…	…	03-02-2014	Non Working	Non-Captive	SEIAA/AP/SKM-176/2014, Dt.08.01.2015	18° 37' 15.28135”N 84° 11' 04.45064”E	Opencast
110	Colour Granite	Krishna Merchants (P) Ltd	S/o Ashok Gupta, H.No:7, Thakurbari Road, Opp Rash Beharilake Mall, Kolkata - 700026.	6443/R1-1/2010 dt:31/03/2010	7.5	15-05-2010	20-07-2018	…	…	15-05-2010	Non Working	Non-Captive	No	18° 37' 14.6”N 84° 11' 43.1”E	Opencast
111	Colour Granite	Krishna Merchants Pvt Ltd	7, Thakurbari Road, Opp Rash Beharilake Mall, Kolkata - 700026	6442/R1-1/010 Dt:31.03.2010	4.23	06-04-2008	05-04-2028	…	…	06-04-2008	Non Working	Non-Captive	No	18° 36' 59.19501”N 84° 11' 49.09372”E	Opencast
112	Colour Granite	M.S.P.Granites	1-342, Rotary Nagar, Tekkali, Srikakulam Dist	18489/R1-1/2006 Dt: 22.06.2006	5.93	04-09-2004	03-09-2024	…	…	04-09-2004	Non Working	Non-Captive	No	18° 37' 18.50”N 84° 12' 45.30”E	Opencast
113	Colour Granite	Devinarayana Exports Pvt Ltd	NO.2, lINK sTREET, 2ND FLOOR, kOTHUR GARDENS, CHENNAI-600085	7009/D1-2/2023, dt. 22.06.2023 13598/R1-3/2004 Dt:15.05.2004	5	6/26/1998	6/25/2013	4/1/2023	3/31/2033	01-04-2023	Non Working	Non-Captive	No	18° 36' 39.41”N 84° 10' 22.78”E	Opencast
114	Colour Granite	Ellamman Granites	Rotary Nagar,Tekkali vilalge, and Mandal	21674/R1-3/2003 20 Oct 2004	1.214	19-11-2004	18-11-2024	…	…	19-11-2004	Non Working	Non-Captive	No	18° 39' 15.20”N 84° 13' 11.45”E	Opencast

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115	Colour Granite	M/s. Selly Granites	M/s. Selly Granites, Mg. Partner Sri G.Rajendran, S/o Late R. Govindaswamy. D.No.1-305/8, Venkateswara Colony, Tekkali Village and Mandal, Srikakulam District	44502/R1-1/2008 dt:23/07/2009	3.5	21-08-2009	19-01-2029	…	…	21-08-2009	Non Working	Non-Captive	No	18° 37' 20.19541”N 84° 11' 41.44152”E	Opencast
116	Colour Granite	Ganapathi Granites	S/o Narasimhulu, Near Vamsadhara Guest House, Tekkali, Srikakulam District.	5026/R1-3/2004 Dt:01.07.2004	1	10-11-2004	09-11-2024	…	…	10-11-2004	Non Working	Non-Captive	No	18° 36' 55.49172”N 84° 12' 18.67969”E	Opencast
117	Colour Granite	Ganapathi Granites	S/o Narasimhulu, Near Vamsadhara Guest House, Tekkali, Srikakulam District.	9680/R1-3/2004,Dt: 01.07.2004	1	19-08-2004	18-08-2024	…	…	19-08-2004	Non Working	Non-Captive	No	18° 36' 54.29930”N 84° 12' 18.83025”E	Opencast
118	Colour Granite	Kousalya Enterprises	Smt.Vajja Tulasamma, Near Ayyappa swamy temple Adivarampeta, balaga, srikakulam srikakulam dist	14300/R1-1/2006 dt:17.04.2006	5	13-07-2006	23-04-2024	…	…	13-07-2006	Non Working	Non-Captive	No	18° 36' 52.49716”N 84° 11' 29.41873”E	Opencast

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119	Colour Granite	Revathi Granites	Prop: Sri Koona Ravi Kumar, S/o Krishna Rao, DCCB Colony, beside career public school srikakulam.	32549/R1-1/2005 dt:06/02/2007	1	04-04-2007	03-04-2027	…	…	04-04-2007	Non Working	Non-Captive	No	18° 36' 45.95"N 84° 10' 24.14"E	Opencast
120	Colour Granite	Sri Gayathri Stone Cutting and Polishing Unit	1-142, Venkateswara colony ,Tekkali,Srikakulam District	37506/R1-1/2011 14/07/2016	2	03-09-2016	02-09-2036	…	…	03-09-2016	Non Working	Non-Captive	SEIAA/AP/SKM-254/2015, Dt.09.10.2015	18° 36' 59.55611"N 84° 12' 49.59060"E	Opencast
121	Colour Granite	Madhucon Granites Ltd	H.no:1-7-70,Madhucon Complex Jublipura, Khammam-507003.	12353/R1-1/2006 25 May 2006	8.12	25-11-2003	24-11-2023	…	…	25-11-2003	Non Working	Non-Captive	SEIAA/AP/SKM/MN/09/2016-210, Dt.31.10.2016	18° 37' 21.40487"N 84° 12' 50.08457"E	Opencast
122	Colour Granite	Madhucon Granites Pvt Ltd	D.No. 1-7-70, Madhucon complex Jublipura, Khammam-507003	9123/R1-1/2004 dated 30.4.2004	5.607	25-11-2003	24-11-2023	…	…	25-11-2003	Non Working	Non-Captive	No	18° 37' 27.3"N 84° 13' 42.6"E	Opencast
123	Colour Granite	Magam Inc	Reg.office B-254, 50th street, Ashok nagar, Chennai-600083	19278/R1-1/2008 dt:02/08/2008	3.063	15-06-2008	14-06-2028	…	…	15-06-2008	Non Working	Non-Captive	No	18° 34' 14.96862"N 84° 14' 16.44304"E	Opencast
124	Colour Granite	Margra Exports (P) Ltd	76, Cathedral road, Chennai-86, Tamilnadu state.	24903/R1-1/2009, Dt:31/07/2009	4	15-03-2003	14-03-2023	…	…	15-03-2003	Non Working	Non-Captive	No	18° 37' 10.90"N 84° 12' 39.90"E	Opencast

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125	Colour Granite	Margra Exports (P) Ltd	Address 1: S/o Ramaswamy No.76, cathedral Road Chennai-86, Tamilnadu Address 2: Plot No.40,, Visakha B Colony, Srikakulam - 532001	26355/R1-1/2009 Dt:30.07.2009	5.378	30-04-2003	29-04-2023	…	…	30-04-2003	Non Working	Non-Captive	No	18° 37' 10.50"N 84° 12' 56.23"E	Opencast
126	Colour Granite	Margra Exports Pvt Ltd	S/o Ramaswamy No.76, cathedral road, chennai	41896/R1-1/2002 Dt:11/10/2004	2	04-11-2004	03-11-2024	…	…	04-11-2004	Non Working	Non-Captive	No	18° 37' 05.56"N 84° 12' 45.65"E	Opencast
127	Colour Granite	P.Rama Devi	W/o Late Laxminarayana 38A, Nagalaxmi Nagar, Moulivakkam, Chennai - 600116 Tamilnadu	25960/R1-1/2011-1 Dt;08.08.2011	3	01-05-1999	30-04-2014	…	…	01-05-1999	Non Working	Non-Captive	No	18° 37' 54.40066"N 84° 13' 24.03358"E	Opencast
128	Colour Granite	Pokarna Ltd	H.No:105, Surya Towers, SP Road, Secunderabad - 500003	30464/R1-1/2008 dt: 03.02.2009	5	28-02-2009	31-01-2032	…	…	28-02-2009	Non Working	Non-Captive	No	18° 37' 34.55620"N 84° 13' 58.17808"E	Opencast
129	Colour Granite	Sakthi Mooga mbiga Granites	S/o Late Govindaswamy H.No:41-A, Pudhu colony, Cheran Nagar, Periyasimapur road, Erode-638004	28892/R1-1/2010 17/08/2010	3	06-09-2010	05-09-2030	…	…	06-09-2010	Non Working	Non-Captive	SEIAA/AP/SKM-61/2013/2743, Dt.30.07.2013	18° 39' 27.64388"N 84° 13' 21.08890"E	Opencast

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130	Colour Granite	Sentinal Granites	Redg. Office B-254. 50th Street Ashok Nagar, Chennai, Tamilnadu	5784/R1-3/2003 dt:10/04/2003	1.817	16-04-2003	15-04-2023	…	…	16-04-2003	Non Working	Non-Captive	No	18° 34' 21.86943"N 84° 14' 15.75893"E	Opencast
131	Colour Granite	M/s. Prabhath Granite Industries	M/s. Prabhath Granite Industries, represented by its Managing Partner Smt Busupalli Adilakshmi, W/o. Sri Rama Chandra Reddy, Jarjangi Village, Kotabommali Mandal, Srikakulam District	35579/R1-1/2007, Dt:17.03.2008 ,..	2.5	15-05-2008	14-05-2028	…	…	15-05-2008	Non Working	Non-Captive	SEIAA.AP/MIN/SKLM/VIO/8/2022/4290/224.41/222.33, Dt.08.09.2023	18° 37' 41.05229"N 84° 13' 16.96140"E	Opencast
132	Colour Granite	M/s. Sri Durga Granites	M/s. Sri Durga Granites, Prop: Sri V.Raji Reddy, S/o. Ram Reddy, Door No.1-7-737/B-5, Santhi Nagar, GVRR Residency, Hanumakonda, Warangal, Telangana State	38730/R1-1/2007 Dt.23.04.2018	0.71	19-06-2018	18-06-2038	…	…	19-06-2018	Non Working	Non-Captive	DEIAA/AP/SKM-01/2017, Dt.17.11.2017, Dt.19.06.2018	18° 37' 08.39774"N 84° 12' 11.61376"E	Opencast
133	Colour Granite	Sterling Stonex (P) Ltd	D.NO:2-14, Rotary nagar -2, Tekkali, Srikakulam District-532201	3275/Q/97 dt:03.10.1997, 7013/R1-1/2010 date:15.10.2011	1.5	11-12-2008	10-12-2028	…	…	11-12-2008	Non Working	Non-Captive	No	18° 37' 46.06731"N 84° 11' 04.52193"E	Opencast

S.NO	Name of the Mineral	Name of the Lessee	Address & Contact No. of the Lessee	Mining Lease Grant Order No. & Date	Area of mining lease (ha)	Period of Mining Lease (Initial)		Period of Mining Lease (1st & 2nd …renewal)		Date of commencement of Mining Operation	Status (Working/non-working/ Temp.working for dispatch etc.,)	Captive/Non-captive	Obtained environmental clearance (YES/No), if Yes Letter No. with date of grant of EC	Location of the Mining Lease (Latitude & Longitude)	Method of Mining (Opencast/Underground)
134	Colour Granite	Sterling Stonex Private Limited	D.No:2-14,Rotary Nagar, Tekkali-532201	38747/R1-3B/95, 19/10/1997	3	03-10-1997	02-10-2012	…	…	03-10-1997	Non Working	Non-Captive	No	18° 37' 50.10”N 84° 11' 3.50”E	Opencast
135	Colour Granite	G. VENKATA RATNAM	W/o Gunta Babu Rao, Syamsundarapuram village, Sitapuram post, Tekkali mandal srikakulam dist	35585/R1-1/2007 dt:13/08/2015	2.8	09-10-2015	08-10-2035	…	…	09-10-2015	Non Working	Non-Captive	SEIAA/AP/SKLM-230/2015-834, Dt.11.05.2015	18° 36' 32.29420”N 84° 08' 57.20942”E	Opencast
136	Colour Granite	M/s. Kamadhenu Granites	M/s. Kamadhenu Granites, represented by its Managing Partner Sri Potturi Venkata Rao, S/o. Subbarao, D.No.15-124, Martur Village and Mandal, Prakasam District – 523301	38852/R1-1/2008 dt: 13.11.2008	5	08-12-2008	07-12-2028	…	…	08-12-2008	Non Working	Non-Captive	No	18° 37' 43.60557”N 84° 13' 57.20833”E	Opencast
137	Colour Granite	Rainbow Granites	D.No.4-390,DK Vadivel wvnder Street Near railway Station, Dharapuri, Tamil Nadu-636701	35572/R1-1/2010 dt:21/09/2010	1.25	18-11-2010	19-08-2024	…	…	18-11-2010	Non Working	Non-Captive	SEIAA/AP/SKM-140/2013-5556, Dt.25.10.2013	18° 36' 58.38”N 84° 11' 22.45”E	Opencast

S.NO	Name of the Mineral	Name of the Lessee	Address & Contact No. of the Lessee	Mining Lease Grant Order No. & Date	Area of mining lease (ha)	Period of Mining Lease (Initial)		Period of Mining Lease (1st & 2nd …renewal)		Date of commencement of Mining Operation	Status (Working/non-working/ Temp.working for dispatch etc.,)	Captive/Non-captive	Obtained environmental clearance (YES/No), if Yes Letter No. with date of grant of EC	Location of the Mining Lease (Latitude & Longitude)	Method of Mining (Opencast/Underground)
138	Colour Granite	M/s. Sundar Durga Granites	M/s. Sundar Durga Granites, Mgp: Sri Varudu Vamsi Krishna, Aludu Village, Saravakota Mandal, Srikakulam District	Proc.No. 26471/D1-2/2006, dated.07.06.2021	2.4	17-03-2022	16-03-2042	…	…	17-03-2022	Non Working	Non-Captive	SEIAA/AP/SKM-226/2015-5046, Dt.27.11.2015	18° 36' 27.47550”N 84° 10' 19.40869”E	Opencast
139	Colour Granite	Lucky Granites	D.No:3-4-608,2nd floor, Narayanaguda, Hyderabad ,Secunderabad,SECUNDERABAD	13230/R1-1/2005, dt:06/12/2006	1	02-02-2007	01-02-2027	…	…	02-02-2007	Non Working	Non-Captive	No	18° 37' 26”N 84° 12' 17.74”E	Opencast
140	Colour Granite	Pokarna Ltd	H.No:105, Surya Towers, SP Road, Secunderabad - 500003.	30465/R1-1/2008 dt: 02.11.2008	2	21-10-2008	20-10-2028	…	…	21-10-2008	Non Working	Non-Captive	SEIAA/AP/SRK-27/2013, Dt.17.04.2013	18° 37' 34.73859”N 84° 14' 02.80938”E	Opencast
141	Colour Granite	G.Kumarvel	s/o K.Govindasawamy, D.No 4-227,Manivilundan Post, vadachennimalan,SAlem Dist, Tamilnadu	49905/R1-1/2009 dated 18.1.2010	6	18-03-2010	16-09-2029	…	…	18-03-2010	Non Working	Non-Captive	SEIAA/AP/SKM/MIN/09/2016/206, Dt.31.10.2016	18° 36' 58.55303”N 84° 10' 1.79512”E	Opencast
142	Colour Granite	M.Karthikeyan	Sri M.Karthikeyan, S/o. M.Muniraju, Door No.2-230, Rotary Nagar, Tekkali Village and Mandal,	Proc.No.7450/D1-2/2007, dated.04.03.2020	4.36	23-06-2020	22-06-2040	…	…	23-06-2020	Non Working	Non-Captive	SEIAA/AP/SKM/MIN/04/2019/947-7, Dt.23.06.2020	18° 37' 23.32”N 84° 13' 59.12”E	Opencast

S.NO	Name of the Mineral	Name of the Lessee	Address & Contact No. of the Lessee	Mining Lease Grant Order No. & Date	Area of mining lease (ha)	Period of Mining Lease (Initial)		Period of Mining Lease (1st & 2nd …renewal)		Date of commencement of Mining Operation	Status (Working/non-working/ Temp.working for dispatch etc.,)	Captive/Non-captive	Obtained environmental clearance (YES/No), if Yes Letter No. with date of grant of EC	Location of the Mining Lease (Latitude & Longitude)	Method of Mining (Opencast/Underground)
			Srikakulam District												
143	Colour Granite	Ellamman Granites	Rotary Nagar, Tekkali village and Mandal,Srikakulam ,Tekkali,TEKKALI	43252/R1-3/2002Dt:03/03/2003	2	10-03-2003	09-03-2023	…	…	10-03-2003	Non Working	Non-Captive	No	18° 39' 10.90”N 84° 13' 11.30”E	Opencast
144	Colour Granite	G.Kumaravel	S/o Govindaswamy, D.No:4-227,Saimiyarkinaru, Munivulandan,(Post), Attur taluk, Salem District.	32565/R1-1/2010 dt: 16.08.2011	7	13-09-2011	12-09-2031	…	…	13-09-2011	Non Working	Non-Captive	No	18° 37' 04.98”N 84° 10.00' 15.19”E	Opencast
145	Colour Granite	Madhucon Granites Ltd	D.No.1-7-70 Madhucon complex Jublipura Khammam-507003	14374/R1-3B/94 Dt:22.10.97	6	03-11-1997	02-11-2012	…	…	03-11-1997	Non Working	Non-Captive	No	18° 37' 34.988”N 84° 13' 50.183”E	Opencast
146	Colour Granite	Southern Rocks & Minerals Pvt Ltd	D.No:1-345, Venkateswara Colony, Tekkali, Srikakulam District	33095/R1-1/2005 Dt:17/10/2005	6.46	06-06-2003	05-06-2023	…	…	06-06-2003	Non Working	Non-Captive	No	18° 37' 43.03”N 84° 13' 50.02”E	Opencast
147	Colour Granite	Annan Granites	Do.20.530, an street,mittoor, chittor dist	17590/R1-3B/1997 02 Feb 2001	3.5	05-02-2001	04-02-2021	…	…	05-02-2001	Non Working	Non-Captive	SEIAA/AP/SRK-151/2013, Dt.25.10.2013	18° 36' 44.12212”N 84° 10' 22.46188”E	Opencast

S.NO	Name of the Mineral	Name of the Lessee	Address & Contact No. of the Lessee	Mining Lease Grant Order No. & Date	Area of mining lease (ha)	Period of Mining Lease (Initial)		Period of Mining Lease (1st & 2nd …renewal)		Date of commencement of Mining Operation	Status (Working/non-working/ Temp.working for dispatch etc.,)	Captive/Non-captive	Obtained environmental clearance (YES/No), if Yes Letter No. with date of grant of EC	Location of the Mining Lease (Latitude & Longitude)	Method of Mining (Opencast/Underground)
148	Colour Granite	M/s. Gold Earth Properties,	M/s. Gold Earth Properties, represented by its Managing Partner: Sri N.Sudhakar, No.2, 1st Floor, Link Street, 4th Main Road, Kottur Gardens, Chennai- 600 085, Tamilnadu State	21940/R1-1/2017, dated.15.11.2018	4.99	06-12-2018	05-12-2038	…	…	06-12-2018	Non Working	Non-Captive	DEIAA/AP/SKM-22/2018, Dt.08.07, Dt.08.07.2018	18° 37' 58.29"N 84° 12' 50.44"E	Opencast
149	Colour Granite	Sri P.Jagannadham	Sri P.Jagannadham, S/o. Appalaswamy, Philip Nagar, P.R.N.Valasa,Parvathipuram Town, Vizianagaram District, Andhra Pradesh	21941/R1-1/2017, dated.24.01.2019	4.48	12-02-2019	11-02-2039	…	…	12-02-2019	Non Working	Non-Captive	DEIAA/AP/SKM/2018, Dt.25.10.2018	18° 38' 14.02"N 84° 12' 35.95"E	Opencast
150	Colour Granite	Smt M.Saraswathi	Smt M.Saraswathi, W/o. Thavitinaidu, Rama Bhajan Street, Ullibhadra Village, Garugubilli Mandal,Vizianagaram District, Andhra Pradesh	21939/R1-1/2017, dated.24.01.2019	3.22	12-02-2019	11-02-2039	…	…	12-02-2019	Non Working	Non-Captive	DEIAA/AP/SKM/2018, Dt.25.10.2018	18° 38' 09.24"N 84° 12' 41.03"E	Opencast

S.NO	Name of the Mineral	Name of the Lessee	Address & Contact No. of the Lessee	Mining Lease Grant Order No. & Date	Area of mining lease (ha)	Period of Mining Lease (Initial)		Period of Mining Lease (1st & 2nd …renewal)		Date of commencement of Mining Operation	Status (Working/non-working/ Temp.working for dispatch etc.,)	Captive/Non-captive	Obtained environmental clearance (YES/No), if Yes Letter No. with date of grant of EC	Location of the Mining Lease (Latitude & Longitude)	Method of Mining (Opencast/Underground)
151	Colour Granite	Imperial Granites Pvt Ltd	H.No:34, Visakha B Colony, Srikakulam-532001.	27721/R1-3B/98 Dt:07.09.2000 ,21397/R1-1/2012 Dt:30.12.2014	2	22-09-2000	07-05-2013	…	…	22-09-2000	Non Working	Non-Captive	No	18° 36' 30.06"N 84° 10' 07.99"E	Opencast
152	Colour Granite	Imperial Granites Pvt Ltd	No.76, Cathedral Raod, Chennai-600086	24696/R1-3B/2000 dt:15.09.2000	1	22-09-2000	21-03-2014	…	…	22-09-2000	Non Working	Non-Captive	No	18° 36' 28.62332"N 84° 10' 02.35518"E	Opencast
153	Colour Granite	S Koteswara Reddy	Door No.12-13-691/23, Nagarjuna Nagar, Tarnaka, Hyderabad.	1900/R1-1/2010, Dt:16.01.2010	7	20-04-2010	15-10-2029	…	…	20-04-2010	Non Working	Non-Captive	No	18° 36' 33.43"N 84° 10' 5.13"E	Opencast
154	Colour Granite	M/s Ramya Granites	M/s Ramya Granites, GPA Holder: Sri. K. Ramamohana Rao, S/o K.Simhachalam Late, 2-227/228, Rotary Nagar, Tekkali Mandal – 532201, Srikakulam District	234043/D1-2/2016, dt.01.05.2023	4	27-06-2023	26-06-2043	…	…	27-06-2023	Working	Non-Captive	SEIAA/AP/SKLM/MIN/12/2020/2736/208.04&205.04, dt.27.06.2023	18° 37' 27.3936"N 84° 11' 08.358"E	Opencast
155	Colour Granite	M/s. PSY Granites	M/s. PSY Granites, Partner Sri Pratyush Singh Yadav, S/o. Pushpendra Singh Yadav, Flat No.401, Sanghi Residency, Wright Town,	2434/D1-2/2019, Dt.31.01.2023	3.796	23-03-2023	22-03-2043	…	…	23-03-2023	working	Non-Captive	SEIAA/AP/SKLM/MIN/4/2021/3154, Dt. 07.10.2022, Dt.23.03.2023	18° 37' 59.09113"N 84° 13' 30.36335"E	Opencast

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			Jabalapur District, Madhya Pradesh-482 002.												
156	Road Metal	Vedulla Harikrishna	S/o Latchanna Turakasasanam Village, Sompeta Mandal, ,Srikakulam District	4869/Q1T/2006 date30.06.2010	3	25-11-2010	24-11-2020	…	…	25-11-2010	Non Working	Non-Captive	No	18° 57' 26.78”N 84° 33' 15.44”E	Opencast
157	Road Metal	Sri Chirla Satish Reddy	Sri Chirla Satish Reddy, S/o. Rama Reddy, Kakarapalli Village, Govindapuram Panchayat, Santhabommali Mandal, Srikakulam District	195/Q5T/2018 , dated.09.10.2018	4.99	16-11-2018	15-11-2028	…	…	16-11-2018	Non Working	Non-Captive	No	18° 57' 41.82”N 84° 35' 45.15”E	Opencast
158	Road Metal	T.Subbi reddy	12-3-74/3,Srikakulam ,Palasa,KASIBUGGA	547/Q1T/2014 03/15/2014	3	22-03-2014	21-03-2029	…	…	22-03-2014	Non Working	Non-Captive	No	18° 58' 36.07503”N 84° 33' 55.09513”E	Opencast

S.NO	Name of the Mineral	Name of the Lessee	Address & Contact No. of the Lessee	Mining Lease Grant Order No. & Date	Area of mining lease (ha)	Period of Mining Lease (Initial)		Period of Mining Lease (1st & 2nd …renewal)		Date of commencement of Mining Operation	Status (Working/non-working/ Temp.working for dispatch etc.,)	Captive/Non-captive	Obtained environmental clearance (YES/No), if Yes Letter No. with date of grant of EC	Location of the Mining Lease (Latitude & Longitude)	Method of Mining (Opencast/Underground)
159	Road Metal , Building Stone and Gravel	M/s. Sterling Minerals	Rep.by its Partner Sri A.Sita Rama Reddy, D.No.31-1-23, J.P Road, Rajahmundry, East Godavari	1324/Q/SKLM/2019, Dt. 29.04.2020	3	**19-05-2020**	18-05-2030	…	…	**19-05-2020**	Working	Non-Captive	SEIAA/AP/SKLM/MIN/12/2019/1485, Dt.19.05.2020	18° 57' 30.72536"N 84° 33' 29.56077"E	Opencast
160	Road Metal , Building Stone and Gravel	Sri Byreddy Bhupal Reddy	Sri Byreddy Bhupal Reddy, h.No.1/41 A, Mahanandi Palli Village, Mamillapalli Post, Kalasapadu Mandal, YSR Kadapa District	324/Q/SKLM/2019, Dt. 23.09.2022	1.5	15-11-2022	14-11-2032	…	…	15-11-2022	Working	Non-Captive	SEIAA/AP/SKLM/MIN/03/2021/2959, Dt.15.11.2022	18° 57' 40.63431"N 84° 33' 29.06992"E	Opencast
161	Road Metal , Building Stone and Gravel	Sri Byreddy Bhupal Reddy	Sri Byreddy Bhupal Reddy, h.No.1/41 A, Mahanandi Palli Village, Mamillapalli Post, Kalasapadu Mandal, YSR Kadapa District	323/Q/SKLM/2019, Dt. 17.08.2022	1	15-11-2022	14-11-2032	…	…	15-11-2022	Working	Non-Captive	SEIAA/AP/SKLM/MIN/03/2021/2956, Dt.15.11.2022	18° 57' 34.54711"N 84°33' 21.32932"E	Opencast
162	Road Metal, Gravel	B.Madan Mohan	S/o Late Suryanarayana, Palasapuram Village, Sompeta Mandal Srikakulam District	1391/Q1T/2006 date 10.06.2008	1	01-09-2008	31-08-2023	…	…	01-09-2008	Non Working	Non-Captive	SEIAA/AP/SKLM/MIN/09/2020/2110, Dt.17.12.2020	18° 57' 34.43"N 84° 33' 33.48"E	Opencast

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163	Road Metal, Gravel	Vutla. Rampra sad	S/o Meena ketana Rao Veerayyagari street, Sompeta Mandal, ,Srikakulam district	2821/Q1T/2009 date 01.06.2009	3.925	03-12-2009	02-12-2019	…	…	03-12-2009	Non Working	Non-Captive	No	18° 57' 23.26252”N 84° 33' 27.10221”E	Opencast
164	Road Metal	M/s. P.S.K Infrastructure and Projects Pvt., Ltd.,	M/s. P.S.K Infrastructure and Projects Pvt., Ltd., represented by its Prop: Sri P.Sankar, S/o. P.Subhayya Late, B.P.Colony, Near MRO Office, Kanchili Vilalge and Mandal, Srikakulam District.	332/Q1T/2018, dated.13.12.2018	2.65	27-12-2018	26-12-2038	…	…	27-12-2018	Working	Non-Captive	DEIAA/AP/SKM/2018, Dt.25.10.2018	19° 2' 15.38”N 84° 37' 48.34”E	Opencast
165	Road Metal	Kotra Nirmala	W/o. Ananada Rao Haripuram Village and Post Mandasa Mandal, Srikakulam Dt.	3701/Q5T/2017, 25.01.2019	0.55	26-03-2019	25-03-2029	…	…	26-03-2019	working	Non-Captive	DEIAA/AP/SKM-19/2018	18° 50' 41.00”N 84°28' 19.76”E	Opencast
166	Road Metal	G.Ammi Reddy	S/o G. Raja Reddy 48-1-35, Srinagar, Visakhapatnam ,Visakhapatnam (U),Visakhapatnam	2836/QIT/2009 dt:19/08/2009, 2835/QIT/2009 dt 02/08/2014	2	19-03-2010	18-03-2020	…	…	19-03-2010	Non Working	Non-Captive	No	18° 49' 44.92”N 84°26' 02.27”E	Opencast

S.NO	Name of the Mineral	Name of the Lessee	Address & Contact No. of the Lessee	Mining Lease Grant Order No. & Date	Area of mining lease (ha)	Period of Mining Lease (Initial)		Period of Mining Lease (1st & 2nd …renewal)		Date of commencement of Mining Operation	Status (Working/non-working/ Temp.working for dispatch etc.,)	Captive/Non-captive	Obtained environmental clearance (YES/No), if Yes Letter No. with date of grant of EC	Location of the Mining Lease (Latitude & Longitude)	Method of Mining (Opencast/Underground)
167	Road Metal	K.Tirumala Rao	S/o Ramana Rao Mulipadu Village, Sondipudi Post Mandasa Mandal Srikakulam District	2623/Q1/2006 dt:03/07/2009	1.25	30-09-2009	29-09-2019	…	…	30-09-2009	Non Working	Non-Captive	No	18° 50' 58.33"N 84°24' 45.87"E	Opencast
168	Road Metal	Sri Vyshnavi Crushing and Granites	s/o Raghavalu, D.No:13-2-232, Rotary nagar, Tekkali, Srikakulam Dist	2836/QIT/2009,19/08/2009, 2836/QIT/2009,02/08/2014	2	17-12-2009	16-12-2019	…	…	17-12-2009	Non Working	Non-Captive	No	18° 49' 42.41"N 84°25' 57.48"E	Opencast
169	Road Metal	Kotra Ananda Rao	S/o Late Seetharam Haripuram Village and Post Mandasa Mandal, Srikakulam Dt.	2930/Q1T/2010 ,date: 20/06/2012	1	14-02-2013	13-02-2023	…	…	14-02-2013	Non Working	Non-Captive	No	18° 50' 12.07"N 84° 28' 06.78"E	Opencast
170	Road Metal	D.Markandeswara Rao	2-6-143, Mandasa Village and Mandal Srikakulam District	3635/Q4T/2015 dt:08/01/2016	0.86	03-02-2016	02-02-2026	…	…	03-02-2016	Non Working	Non-Captive	No	18° 50' 40.70124"N 84° 28' 24.51391"E	Opencast
171	Road Metal	M.Venkatesam	S/o Ramadevulu, Binnalamadanapuram village, Mandasa Mandal, Srikakulam District	1378/QIT/2013 dt:11/11/2014	1	13-01-2015	12-01-2025	…	…	13-01-2015	Non Working	Non-Captive	No	18° 50' 38.87"N 84° 28' 28.34"E	Opencast

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172	Road Metal	D. Nageswara Rao	S/o Appa Rao Killam Street, Mandasa Mandal Srikakulam Dist	3246/Q1/2006 dt:03.04.2007	1.42	07-11-2007	11-06-2017	…	…	07-11-2007	Non Working	Non-Captive	No	18° 50' 37.05824"N 84°28' 28.69121"E	Opencast
173	Road Metal	K Tirumala Rao	S/o Ramana Rao Mulipadu Village sondipudi Post Mandasa Mandal Srikakulam Dist.	539/Q5T/2017 DT: 18/02/2017	1	27-03-2017	26-03-2027	…	…	27-03-2017	Non Working	Non-Captive	No	18° 45' 16.28713"N 84°10'32.87852"E	Opencast
174	Road Metal, Gravel	D.V.D.V Kumar	No.34, Old No.925 H-Block, 17th Main Road, Anna Nagar West Chennai	735/Q5S/2017 dt:24.03.2017	1	21-08-2017	20-08-2027	…	…	21-08-2017	Non Working	Non-Captive	No	18° 43' 44.40"N 84°22'07.24"E	Opencast
175	Road Metal	Duvvada Sridhar	S/o Krishna Murthy Late 13th ward Near RTC complex, Palasa Village and Mandal Srikakulam District	709/QS/2010 date 28.12.2011	2	20-03-2012	19-03-2022	4/1/2023	3/31/2033	20-03-2012	Working	Non-Captive	SEIAA/AP/SKLM/MIN/03/2022/4105/185.01	18° 46' 19.76"N 84° 23' 8.85"E	Opencast
176	Road Metal	K Prudhviraj Reddy	S/o Srinivasa Reddy Tarlakota village, Palasa Mandal Srikakulam District	05/Q1/2007 dt: 12/07/2007	2.02	08-10-2007	31-03-2023	4/1/2023	3/31/2033	08-10-2007	Non Working	Non-Captive	SEIAA/AP/MIN/10/2020/2253/155.47	18° 47' 29.55"N 84° 23' 48.87"E	Opencast

S.NO	Name of the Mineral	Name of the Lessee	Address & Contact No. of the Lessee	Mining Lease Grant Order No. & Date	Area of mining lease (ha)	Period of Mining Lease (Initial)		Period of Mining Lease (1st & 2nd …renewal)		Date of commencement of Mining Operation	Status (Working/non-working/ Temp.working for dispatch etc.,)	Captive/Non-captive	Obtained environmental clearance (YES/No), if Yes Letter No. with date of grant of EC	Location of the Mining Lease (Latitude & Longitude)	Method of Mining (Opencast/Underground)
177	Road Metal	V Surreddy	s/o venkatareddi, D.No.8-225 ravulapalem village,East Godavari Dist. ,Palasa,PALASA	4180/Q1T/2009 Dt:18/01/2010 , 1st renewal grant proc.No.40/Q/SKLM/2019, dated.24.12.2020	2.023	26-02-2010	2/25/2020	2/26/2020	2/25/2030	26-02-2010	Non Working	Non-Captive	SEIAA/AP/SKLM/MIN/02/2020/1748	18° 46' 40.51"N 84° 23' 29.28"E	Opencast
178	Road Metal	Aditya Stone Crusher	S/o Late Satyanarayana K.T Road, Palasa Village and Mandal Srikakulam District	1155/QIT/2015 dt:23/04/2015	2.004	15-05-2015	04-10-2026	…	…	15-05-2015	Non Working	Non-Captive	No	18° 47' 15.49585"N 84° 23' 49.98242"E	Opencast
179	Road Metal	G Ammi Reddy	48-1-35,Sri Nagar Visahapatnam	4874/Q1/2006 dt:07/05/2009, 2607/Q5T/2016 dated:17.08.2016	6.9	05-07-2016	04-07-2026	…	…	05-07-2016	Non Working	Non-Captive	No	18° 47' 13.03663"N 84° 24' 02.78072"E	Opencast
180	Road Metal	Penta Bala Kameswara Rao	S/o Vishnu Murthy Main Bazar, Near Hari sankar theatre Palasa Village and Mandal Srikakulam District	4993/Q1/2006 dt: 18/05/2006	0.8	12-06-2006	11-06-2021	…	…	12-06-2006	Non Working	Non-Captive	No	18° 47' 06.93"N 84° 23' 55.49"E	Opencast
181	Road Metal	Sri Penta Bala Kameswara Rao	Sri Penta Bala Kameswara Rao, S/o. (Late) Vishnu Murthy, Door No.17-1-19, Main Road, Palasa Village	3205/Q5T/2017 dt.22.09.2018	1.5	03-11-2018	02-11-2028	…	…	03-11-2018	Non Working	Non-Captive	DEIAA/AP/SKM-18/2018	18° 47' 8.70"N 84° 24' 2.32"E	Opencast

S.NO	Name of the Mineral	Name of the Lessee	Address & Contact No. of the Lessee	Mining Lease Grant Order No. & Date	Area of mining lease (ha)	Period of Mining Lease (Initial)		Period of Mining Lease (1st & 2nd …renewal)		Date of commencement of Mining Operation	Status (Working/non-working/ Temp.working for dispatch etc.,)	Captive/Non-captive	Obtained environmental clearance (YES/No), if Yes Letter No. with date of grant of EC	Location of the Mining Lease (Latitude & Longitude)	Method of Mining (Opencast/Underground)
			and Mandal, Srikakulam District-532 221												
182	Road Metal , Building Stone and Gravel	Duvvada Srikanth	Sri Duvvada Srikanth, S/o. Late Krishna Murthy, Door No.13-3-13, Rotary Nagar,14th Ward, Palasa Kasibugga Village, Palasa Mandal, Srikakulam District	1375/Q1T/2019, dated.03.08.2020	3.56	**02-09-2020**	01-09-2030	…	…	**02-09-2020**	Non Working	Non-Captive	SEIAA/AP/SKLM/MIN/01/2020/1618/19	18° 46' 23.95230"N 84° 25' 42.82087"E	Opencast
183	Road Metal	V.S.P.Stone Crusher	NSR Street Anaparthy - 533342	1334/QIT/2015 Dt:01/05/2015	4.229	15-05-2015	04-04-2027	…	…	15-05-2015	Non Working	Non-Captive	SEIAA/AP/SKLM/MIN/09/2020/2116	18° 30' 32.13"N 84° 13' 11.14"E	Opencast
184	Road Metal , Building Stone and Gravel	Sri M.Narasinga Rao	Sri M.Narasinga Rao, S/o. Ramulu (Late), Vallevalasa Village, Kotabommali R.S, Santhabommali Mandal, Srikakulam District	Proc.No.70/Q/SKLM/2019, dated.18.08.2020	4.604	**10-11-2020**	09-11-2030	…	…	**10-11-2020**	Non Working	Non-Captive	SEIAA/AP/SKLM/MIN/12/2019/1559	18° 29' 38.71313"N 84° 11' 31.72324"E	Opencast

S.NO	Name of the Mineral	Name of the Lessee	Address & Contact No. of the Lessee	Mining Lease Grant Order No. & Date	Area of mining lease (ha)	Period of Mining Lease (Initial)		Period of Mining Lease (1st & 2nd …renewal)		Date of commencement of Mining Operation	Status (Working/non-working/ Temp.working for dispatch etc.,)	Captive/Non-captive	Obtained environmental clearance (YES/No), if Yes Letter No. with date of grant of EC	Location of the Mining Lease (Latitude & Longitude)	Method of Mining (Opencast/Underground)
185	Road Metal	M/s. K.M.Constructions,	Mg.Ptr: Sri Killi Mallanna, D.No.1-26, Peddaveedhi, Radhavallabhapuram Village, Tekkali Mandal, Srikakulam District-532 201	3206/Q5T/2017 dt.08.10.2018	0.894	24-10-2018	23-10-2038	…	…	24-10-2018	Working	Non-Captive	DEIAA/AP/SKM-20/2018	18° 37' 5.86"N 84° 8' 18.12"E	Opencast
186	Road Metal	M/s. Prasanna Vigneswara Bhavani Stone Crusher	M/s. Prasanna Vigneswara Bhavani Stone Crusher, Mg.Ptr. Sri G.Adavi Raju, Kantragadda Village, Tekkali Mandal, Srikakulam District A.P	1429/Q/2021, dated.29.04.2022	3	16-06-2022	17-06-2032	…	…	16-06-2022	Working	Non-Captive	SEIAA/AP/SKLM/MIN/12/2021/3850	18° 37' 30.87082"N 84° 15' 39.65465"E	Opencast
187	Road Metal	Gayathri matha Stone Crusher	W/o Mohan Rao Sri sai chandra nagar Opp: srinivasa theatre, Tekkali Village and Mandal Srikakulam District	1821/Q1T/2012 29.06.2012	2.659	05-07-2012	04-07-2022	…	…	05-07-2012	Non Working	Non-Captive	No	18° 36' 44.82805"N 84° 12' 05.65965"E	Opencast
188	Road Metal	D Ramesh Kumar	S/o Polinaidu Polavaram Village, Tekkali Mandal, Srikakulam Dist	752/Q1T/2009 DATE 28.02.2012	2	24-05-2012	23-05-2022	…	…	24-05-2012	Non Working	Non-Captive	No	18° 37' 29.13231"N 84° 15' 23.74124"E	Opencast

S.NO	Name of the Mineral	Name of the Lessee	Address & Contact No. of the Lessee	Mining Lease Grant Order No. & Date	Area of mining lease (ha)	Period of Mining Lease (Initial)		Period of Mining Lease (1st & 2nd …renewal)		Date of commencement of Mining Operation	Status (Working/non-working/ Temp.working for dispatch etc.,)	Captive/Non-captive	Obtained environmental clearance (YES/No), if Yes Letter No. with date of grant of EC	Location of the Mining Lease (Latitude & Longitude)	Method of Mining (Opencast/Underground)
189	Road Metal	Gunna Suryana rayana	S/o Latchanna Kantragada Village Tekkali Post and Village, Mandal Srikakkulam Dist	2764/QIT/2008 dt: 08.03.2010	1.5	15-05-2010	14-05-2020	…	…	15-05-2010	Non Working	Non-Captive	No	18° 37' 27.18"N 84° 15' 35.58"E	Opencast
190	Road Metal	Gunna Suryana rayana	S/o Latchanna Kantragada Village Tekkali Post and Village, Mandal Srikakulam District	2764/QIT/2008 08 Mar 2010	1	15-05-2010	14-05-2020	…	…	15-05-2010	Non Working	Non-Captive	No	18° 37' 25.84"N 84° 15' 27.28"E	Opencast
191	Road Metal	Gandi. Suryana rayana	S/o Veeraswamy Venkateswara colony, Tekkali Village and Mandal Srikakulam District	256/QIT/2008 Dt: 01 Feb 2010	1	29-04-2010	28-04-2020	…	…	29-04-2010	Non Working	Non-Captive	No	18° 37' 27.45"N 84° 15' 25.32"E	Opencast
192	Road Metal	Gandi. Suryana rayana	S/o Veeraswamy venkateswara colony Tekkali Village and Mandal Srikakulam District	256/QIT/2008 dt: 01/02/2010	1	29-04-2010	28-04-2020	…	…	29-04-2010	Non Working	Non-Captive	No	18° 37' 31.75"N 84° 15' 29.10"E	Opencast

S.NO	Name of the Mineral	Name of the Lessee	Address & Contact No. of the Lessee	Mining Lease Grant Order No. & Date	Area of mining lease (ha)	Period of Mining Lease (Initial)		Period of Mining Lease (1st & 2nd …renewal)		Date of commencement of Mining Operation	Status (Working/non-working/ Temp.working for dispatch etc.,)	Captive/Non-captive	Obtained environmental clearance (YES/No), if Yes Letter No. with date of grant of EC	Location of the Mining Lease (Latitude & Longitude)	Method of Mining (Opencast/Underground)
193	Road Metal	Sri Korla Vishnu,	S/o. Bose Chowdary, Door No.3-77, Kalinga Veedhi, Veerabhadrapuram (V) Venkatapuram Post, Palasa Mandal, Srikakulam District,	2694/Q1T/2018 dated.27.02.2019	7.646	24-04-2019	23-04-2029	…	…	24-04-2019	Working	Non-Captive	SEIAA/AP/SKMN/MIN/06/2018/646	18° 44' 4.51"N 84° 21' 34.01"E	Opencast
194	Road Metal	D.V.D.V Kumar	S/o Latge Kannayya, Old N.H-5 Road, Chinnabadam Village, Palasa Mandal Srikakulam Dist	1110/Q5S/2017 dt:31.03.2017	0.5	24-06-2017	23-06-2027	…	…	24-06-2017	Non Working	Non-Captive	No	18° 43' 49.69012"N 84° 22' 31.26353"E	Opencast

Data Source: District Mines and Geology Officer, Srikakulam District

TheDetailsofstatementshowingthe letter of intent (LoI) in the district is showing in Table-17:

Table 17: The list of the letter of intent (LoI) in the District

Sl. No.	Name of the Mineral	Name of the Office	Name of the Lessee	Address & Contact No. of Letter of Intent holder	Letter of Intent Grant order No. & Date	Area of mining lease to be allotted				Validity of LoI	Use (captive / Non-captive)	Location of the Mining Lease	
						Sy.No.	Village	Mandal	Extent			Latitude	Longitude
1	Colour Granite	Srikakulam	M/s. Arasavalli Granites	Mgpt: Sri N.V./Sikvarama Reddy, H.No.7-3-308, KVRs Tata Residency, Flat No.504, By pass Road, Near Rajpath Function Hall, Khammam 02, Cell No.9000099929	13037/R1-1/2018 dt.01.07.2019	1	Duppalapadu	Kotabommali	8.981	1 year	Non captive	18° 30'09.87623"N 18° 30'10.03084"N	84° 06'34.67931"E 84° 06'34.37969"E
3	Quartzite	Srikakulam	Smt. L.Anudradha	W/o. Sri L.Sreeramulu Naidu, Lolugu Vg, Ponduru Mandal, Srikakulam Dist., Cell No.94401 56672	978/D1-1/2018 dt,31.10.2020	33	Lolugu	Ponduru	20.000	1 year	Non captive	18° 19'29.40"N 18°19'22.67"N	84° 46'57.13"E 84° 46'30.24"E
4	Colour Granite	Srikakulam	Sri Chimaladinnei Sridhar	S/o. Ch.Janaki Ramaiah, S.S.Grandeur, Flat No.506, Plot No.5,6,7,8,9,10, Phase-5, KPHB Colony, Hyderabad - 72 Cell No.	1279/D1-2/2020 dt,03.11.2020	1	Bellukolu	Nandigama	14.540	1 year	Non captive	18° 41'14.64116'' 18° 39'27.18365"	84° 14'54.30187" 84° 18'06.58728"

6	Colour Granite	Srikakulam	M/s. Sunshine Enterprises	Partner: Sri Ch.Vigneswara Rao, D.No.1-41, Main Street, Pithatholi Vg, V.G.Puram Post, Mandasa M, Srikakulam Dist, Cell No.	2739/D1-1/2020 dt,24.02.2021	8/40	Regulapadu	Kotabommali	3.860	1 year	Non captive	18° 30'13.74551" 18° 36'07.03176"	84° 05'42.89022" 84° 14'16.93803"
7	Colour Granite	Srikakulam	Sri V.Viswesware Rao	D.No.60-3-28, 1F-102, Vaishnavi Elite, 5 No Bus Route, Sunnapu Battila Center, Mogalrajupuram, Vijayawada -10	20492/D1-1/2012 dt.27.09.2014	31	Anthakapalli	Hiramandalam	10.000	6 months	Non captive	18° 36'51.00"N 18° 36'50.72"N	84° 00'40.73" E 84° 00'38.87" E
8	Colour Granite	Srikakulam	M/s. Archana Granites	Mgpt: Sir S.Venkateswara Rso, D.No.5-91(1), Main Road, Chimakurthy Vg & Mandal, Prakasam Dist,.- 26	25423/D1-1/2007 dt.10.07.2015	145	Bonthu	Saravakota	8.800	6 motnhs	Non captive	18°39'43.84"N 18°39'53.00"N	84° 01'26.34" E 84° 01'29.60" E
9	Colour Granite	Srikakulam	Sri B.Anil	105, Dwaraka Apartments, Near Rajiv Gandhi Statue, Thakur Mansion Lane, Somajiguda, Hyderabad	2101/D1-1/2019 dt.03.05.2019	61(P)	Gummapadu	Saravakota	8.685	1 year	Non captive	18° 35'37.87293"N 18° 35'17.42803"N	84° 00'07.59174"E 84° 00'06.46624"E
10	Colour Granite	Srikakulam	M/s. Vanaja Granites	Prop: Sri B.Sarat Chandra, D.No.53-17-47/12, Anila Apartments, Krishna Cllege Road, Maddilapalem, Visakhapatnam Cell No.6300585067	581/D1-1/2019 dt.12.03.2019	61	Gummapadu	Saravakota	17.480	1 year	Non captive	18° 35'39.70127"N 18° 35'19.22925"N	84° 00'16.17015"E 84° 00'15.97810"E
11	Colour Granite	Srikakulam	M/s.Thribhuvani Granites & Exports	Prop: C.Vishnu Swaroop, 43A, Road No.71, Jubilee Hills, Hyderabad Cell No.9949652227	5269/D1-1/2011 dt.05.09.2017	13	Palavalasa	Bhamini	10.000	6 months	Non captive	18° 58'43.82"N 18° 58'39.22"N	83° 45'12.47" E 83°45'7.06"E

12	Colour Granite	Srikakulam	M/s. Siddhan Enterprises	Prop: Sri Varudu Raghavendra,D.No.5-46, Aludu Village, Saravakota Mandal, Srikakulam Dist., Cell No.9000727848	1020/D1-1/2018dt.18.05.2018	26/1P	Anguru	Saravakota	2.740	6 months	Non captive	18° 33'22.42"18°33'20.97'	84°3'12.62"84° 3'17.76"
13	Colour Granite	Srikakulam	M/s. Virgin Rock Pvt. Ltd.,	MD: Sri D.Rama Manohar Naidu, Plot No.32, 80 Feet Road, PSN Mill Junction, Srinivasa Nagar, Srikakulam Dist., Cell No.88971 77771	31636/D1-1/2017 dt.14.03.2018	578	Jarali	Saravakota	4.471	6 months	Non captive	18° 35'5.80"N 18° 35'0.14"N	84° 5'16.96"E 84° 5'23.06"E
14	Colour Granite	Srikakulam	Sri P.Ranga Raju	S/o. Sri Narasimha Raju, D.No.39-9-103/2-2, Murali Nagar, Visakhapatnam - 07	580/D1-1/2019 dt.12.03.2019	156	Kumarigunta	Saravakota	4.616	1 year	Non captive	18°33'00.19"N 18° 32'58.10"N	84° 04'37.29" E 84° 04'43.28" E
15	Colour Granite, Dimensional Stone useful for Cubes & Kerbs	Srikakulam	M/s. Onemyne	Partner: Sri A.Abhinay Reddy, D.No.31.1.23, J.P.Road, Rajamahendravaram, East Godavari Dist.,	4813/D1-1/2021 dt.17.12.2021	132/1A/P	Jagannadhavalasa	Vangara	8.000	1 year	Non captive	18° 33'57.15472"N 18°33'52.16141"N	84° 36'9.12973"E 84° 37'9.82664"E
20	Colour Granite Granite Waste as RM&BS	Srikakulam	M/s. SGS Mines Industries Pvt. Ltd.,	Director: Sri Gyanmurti Shah, S/o. Shyam Sunder Shah, 5/268, Sadar Bazar, Chibasa – 833 201, West Singhbhum, Jharkhand	10115/D1-1/2021 dt.06.01.2022	199	Jarali	Saravakota	8.427	1 year	Non captive	18° 34' 52.23016" 18° 34' 51.35475"	84° 06' 43.66900" 84° 06' 43.95228″
21	Colour Granite	Tekkali	Smt. Sangireddy Swathi	W/o. Siva Prasad, D.No.9-1-208/1, College Road, Krishnapuram, Amudalavalasa, Srikakulam 85.	2110/D1-2/2020 dt.07.10.2020	29	Kondatembu ru	Nandigama	4.900	1 year	non captive	18° 42'04.06455"N 18° 39'27.18365"N	84° 19'19.32854"E 84° 18'06.58728"E
22	Colour Granite	Tekkali	Smt. Sangireddy Swathi	W/o. Siva Prasad, D.No.9-1-208/1, College Road, Krishnapuram, Amudalavalasa,	2111/D1-2/2020 dt.07.10.2020	29	Kondatembu ru	Nandigama	2.549	1 year	non captive	18° 41'59.76015" 18° 39'27.18365"	84° 19'16.26542" 84° 18'06.587

				Srikakulam 85, Cell No.9963818111									28"
23	Colour Granite	Tekkali	Sri Nilkanth Mr Subramani Nayadu	Uma Nagar, B H Citi Center, Village Idar, Mandalam Idar, District Sabarkanth, Gujarat. Cell No.8849569078	1843/D1-2/2019 dt.21.01.2020	1	Bellukolu	Nandigama	3.990	1 year	non captive	18 42'44.53010"N 18 42'41.56743"N	84° 14'33.19005"E 84° 14'9.633974"E
24	Colour Granite	Tekkali	Sri Dipak Kumar Vasant Patel	GIDC, Sarve No.167/25, Kumbhariya Himmar Nagar, Ambaji, Banaskantha, Gujarat - 385 110 Cell No.9687375344	1842/D1-2/2019 dt.21.01.2020	1	Bellukolu	Nandigama	3.990	1 year	non captive	18° 42'41.73681"N 18° 42'41.56743 "N	84° 1'34.64977"E 84° 14'9.633974"E
25	Colour Granite	Tekkali	Sri Bharat Vasantlal Patel	S/o. Vasantlal Maganlal Patel, Plot No.1178, Sector-3, Gandhi Nagar, Ahmedabad , Gujarat Cell No.9687375344	1844/D1-2/2019 dt.21.01.2020	1	Bellukolu	Nandigama	3.990	1 year	non captive	18° 42'47.32316 18° 42'41.56743	84° 14'34.64977 84° 14'9.633974
26	Colour Granite	Tekkali	Sri Thammineni Venkata Sri Rama Chiranjeevi Nagh	D.No.16-2-99/1, Palakonda Road, Near Over Bridge, Amadalavalasa Vg & M Srikakulam - 532 185 Cell No.9989741066	2334/D1-2/2020 dt.18.08.2020	1	Bellukolu	Nandigama	4.440	1 year	non captive	18° 40'31.25864"N 18° 39'27.18365"N	81° 13'55.94847"E 84° 18'06.58728"E
27	Colour Granite	Tekkali	Sri Thammineni Venkata Sri Rama Chiranjeevi Nagh	D.No.16-2-99/1, Palakonda Road, Near Over Bridge, Amadalavalasa Vg & M Srikakulam - 532 185 Cell No.9989741066	2333/D1-2/2020 dt.20.08.2020	1	Bellukolu	Nandigama	4.829	1 year	non captive	18 40'38.36537"N 18 39'27.18365"N	84° 13'58.38241 "E 84° 18'06.58728"E
28	Colour Granite	Tekkali	Sri Galiveeti Vijayasagar Reddy	1/89, Raja Street, Veeraballi, Cuddapah - 516 258.	237/D1-2/2021 dt.02.06.2021	1	Addukonda	Tekkali	6.667	1 year	non captive	18° 37'10.68778"N 18° 36'07.03176"N	84° 12'39.46756"E 84° 14'16.93803"E
29	Colour Granite	Tekkali	Sri N.Srinivasa Rao	D.No.2-255. Rotari Nagar, Tekkali - 01, Cell No.9440257809	2988/D1-2/2019 dt.18.05.2021	1	Addukonda	Tekkali	1.687	1 year	non captive	18° 37'27.89389"N 18° 37'27.94927"N	84° 12'25.80153"E 84° 12'24.10047"E
3	Colour	Tekkali	M/s.	Partner: Sri N.Murali	38685/	373	Gok	Meliaputti	4.30	1 year	non	18°	84°

0	Granite		V.S.Stone Corporation	Krishna, D.No.1-65, Fathe Nagar, Hyderabad, Cell No.9440048505	D1-2/2004 dt.25.11.2020		arnapuram		9		captive	48'36.63786" 18° 36'07.03176"	21'04.57978" 84° 14'16.93803"
31	Colour Granite	Tekkali	M/s. Stone Plus	Prop: Sri Surya Devara Jogendra Dev, Plot NO.54, Ocean Drive, Sagar Nagar, Visakhapatnam Cell No.9000160055	13039/D1-2/2020 dt.16.09.2021	17/p, 21/p& 22/p	Ravivalasa	Tekkali	5.988	1 year	non captive	18° 34'40.905154" N 18° 34'40.97889"N	84° 14'6.251964"E 84° 14'8.177971"E
32	Colour Granite	Tekkali	M/s. Archana Granites	Mgp: Sri S.Venkateswara Rao, No.1, Vasavi Residency, Lawyerpet Extension, Ongole - 02Cell No.9490105669	45848/D1-2/2013dt.13.07.2015	71	Lingalavalasa	Tekkali	0.550	6 months	non captive	18 36'48.3"18 36'50.5"	84° 09'59.8"84° 10'07.8"
33	Colour Granite	Tekkali	M/s. Tej Granites	Prop: Sri Khaja Sha Sultana, D.No.7-10-4, B.Garden, Srikakulam Dist., Cell No.9849370466	22420/D1-2/2007 dt.17.01.2014	144	Narasingapalli	Tekkali	1.000	6 months	non captive	18° 39'36.5"N 18° 39'34.8"N	84° 13'05.6"E 84° 13'08.4"E
34	Colour Granite	Tekkali	M/s. SAS Stonex	Mgp: Sri B.Sridhar, D.No.58-14-95/1/4, Plot No.C-1, Sri Mallikarjuna Mansions, Marripalem Vuda Layout, Visakhapatnam - 8 Cell No.9951482228	32567/D1-2/2010 dt.07.05.2018	unsurveyed	Surjini Hill	Meliaputti	4.000	6 months	non captive	18° 47'08.30"N 18° 47'10.41"N	84° 13'42.45" E 84° 13'50.67" E
35	Colour Granite	Tekkali	M/s. SAS Stonex	Mgp: Sri B.Sridhar, D.No.58-14-95/1/4, Plot No.C-1, Sri Mallikarjuna Mansions, Marripalem Vuda Layout, Visakhapatnam - 8 Cell No.9951482228	26112/D1-2/2010 dt.07.05.2018	unsurveyed	Surjini Hill	Meliaputti	5.000	6 months	non captive	18° 47'14.39"N 18° 47'16.72"N	84° 13'38.56" E 84° 13'46.68" E
36	Colour Granite	Tekkali	M/s. NKG Exports	Prop: L.Konda BabuVaddait Post, Butchayyapeta Mandal, Visakhapatnam Cell No.9963413272	2/D1-2/2018 dt.26.06.2018	306	Meliaputti	Meliaputti	10.380	6 months	non captive	18° 46'49.42"N 18° 46'50.73"N	84° 10'53.14" N 84° 10'58.48" N
3	Colour	Tekkali	M/s. Stone	54, Ocean Drive,	11539/	115	Now	Nandigam	5.00	6	non	18°	84°

7	Granite		Plus	Sagar Nagar, Visakhapatnam -45 Cell No.9000150022	D1-2/2015 dt.10.06.2015		gam	a	0	months	captive	40'30.54067"N 18° 40'29.98195"N	16'28.86432"N 84 16'34.45709"N
38	Colour Granite	Tekkali	M/s. Stone Plus	54, Ocean Drive, Sagar Nagar, Visakhapatnam -45 Cell No.9000150022	41785/D1-2/2006 dt.10.06.2015	13	Dabbaguda	Meliaputti	10.000	6 montns	non captive	18° 44'51.17086"N 18° 36'07.03173"N	84° 11'53.81127"N 84° 14'16.93800"N
39	Colour Granite	Tekkali	M/s. Stone Plus	54, Ocean Drive, Sagar Nagar, Visakhapatnam -45 Cell No.9000150022	41784/D1-2/2006 dt.10.06.2015	13	Dabbaguda	Meliaputti	10.000	6 months	non captive	18° 45'02.93811"N 18° 36'07.03173"N	84° 11'50.09202"N 84° 14'16.93800"N
40	Colour Granite	Tekkali	M/s. Terra Mines & Metals	MD: Sri Suda Bala Koteswara Rao, D.No.7-383, Union Bank Bazar, Piduguralla Vg & M, Guntur - 522 413 Cell No.9849281477	4410/D1-2/2021 dt.13.07.2021	2	Sontinuru	Nandigam	4.903	1 year	non captive	18° 39'38.81717"N 18° 39'38.18426"N	84° 14'16.42435"E 84° 18'06.58718"E
41	Colour Granite	Tekkali	M/s. SAS Stonex	Mgp: Sri B.Sridhar, D.No.58-14-95/1/4, Plot No.C-1, Sri Mallikarjuna Mansions, Marripalem Vuda Layout, Visakhapatnam - 8 Cell No.9951482228	26091/D1-2/2010 dt.27.04.2018	unsurveyed	Surjini Hill	Meliaputti	3.000	6 months	non captive	18° 47'11.67"N 18° 47'12.10"N	84° 13'52.77" E 84° 13'55.69" E
42	Colour Granite	Tekkali	M/s. SGS Mines Industries Pvt. Ltd.,	Director: Sri Gyanmurti Shah, 5/268, Sadar Bazar Street, Chibasa - 833201, West Singhbhum, Jharkhand.	7620/D1-2/2021 dt.01.02.2022	84	Kaijola	Nandigam	11.287	1 year	non captive	18° 42'08.64"N 18° 42'05.71"N	84° 16'14.07" E 84° 16'22.06" E
43	Colour Granite	Tekkali	Sri V.Gopala Krishnan	No.573, 6th 'A'Cross, 8th Main H.A.L., 3rd Stage, Jeevan Bheema Nagar, Bangalore - 560075.	13044/D1-2/2017 dt.05.09.2017	29	Kondatembu ru	Nandigam	9.600	6 months	non captive	18° 42'19.00"N 18° 42'20.10"N	84° 18'43.70" E 84° 18'58.60" E
4	Colour	Tekkali	Sri Mamidi	D.No.0-23,	4919/D	333	Tarl	Palasa	1.76	1 year	non	18° 47'54.62"	84°

4	Granite		Narasimha Murty	Jagannadhapuram Vg, Rentikota Post, Palasa Mandal, Srikakulam - 21 Cell No.7075427777	1-2/2021 dt.06.01.2022		akota		0		captive	18° 47'52.11"	23'48.84" 84° 23'46.43"
45	Colour Granite	Tekkali	Sri P.Rama Krishna Reddy	Plot No.33, H.No.2-6-5/33, Happy Homes Colony, Hyderguda, Hyderabad - 48 Cell No.949203.6446	10/D1-2/2022 dt.05.02.2022	1	Addukonda	Tekkali	2.410	1 year	non captive	18°37-36.60744 18°37-36.21323	84°11-45.04862 84°11-49.17461
46	Colour Granite	Tekkali	Sri Mouneesh Kunapa Reddy	D.No.55-5-2, Addepalli colony, Rajahmundry - 03	13329/D1-2/2021 dt.02.02.2022	13	Dabbaguda	Meliaputti	6.000	1 year	non captive	18° 44'38.03"N 18° 44'30.57"N	84° 12'05.05" E 84° 12'17.85" E
47	Colour Granite	Tekkali	Sri Ch.Srinivas Kumar	D.No.11-3-25/5, Sandhya Mahal, Chinnabaratam Street, Srikakulam - 532 001 Cell No.9440513777	582/D1-2/2021, dt.10.06.2015	13	Dabbaguda	Meliaputti	10.000	6 momths	non captive	18° 44'22.8"N 18° 44'14.00"N	84° 12'28.6"E 84° 12'22.0"E

Data Source: District Mines and Geology Officer, Srikakulam District

2.4 Details of Royalty in last 3 years

The list of royalty collected in last 3 years in the districtisshowninTable-18.

Table 18 Details of Royalty in last 3 years

Royalty for 2022-23 (SRIKAKULAM OFFICE)

S. No.	Mineral	Royalty (in Rs. Lakhs)	Consideration Amt. (in Rs. Lakhs)	DMF (In Rs. Lakhs)	MERIT (in Rs. Lakhs)
1	Colour Granite (Others)	383.408	191.704	47.901	7.664
2	Colour Granite (Srikakulam Blue)	923.949	461.9745	115.459	18.474
3	Gravel	21.501	21.501	6.45	0.43
4	Quartzite	1.8	1.8	0.54	0.036
5	Road Metal	34.539	34.539	10.362	0.691
6	Building Stone	1.589	1.589	0.477	0.032
TOTAL		**1367**	**713**	**181**	**27**

Royalty for 2022-23 (TEKKALI OFFICE)

S. No.	Mineral	Royalty (in Rs. Lakhs)	Consideration Amt. (in Rs. Lakhs)	DMF (In Rs. Lakhs)	MERIT (in Rs. Lakhs)
1	Building Stone	4.275	4.275	1.283	0.086
2	Colour Granite (Others)	572.517	286.2585	71.561	11.45

S. No.	Mineral	Royalty (in Rs. Lakhs)	Consideration Amt. (in Rs. Lakhs)	DMF (In Rs. Lakhs)	MERIT (in Rs. Lakhs)
3	Colour Granite (Srikakulam Blue)	3643.643	1821.822	455.413	72.866
4	Gravel	0.72	0.72	0.216	0.014
5	Road Metal	22.815	22.815	6.845	0.456
TOTAL		**4244**	**2136**	**535**	**85**

Royalty for 2021-22 (SRIKAKULAM OFFICE)

S. No.	Mineral	Royalty (in Rs. Lakhs)	Consideration Amt. (in Rs. Lakhs)	DMF (In Rs. Lakhs)	MERIT (in Rs. Lakhs)
1	Colour Granite (Others)	336.021	84.00525	40.991	6.559
2	Colour Granite (Srikakulam Blue)	794.884	198.721	99.352	15.896
3	Gravel	40.77	20.385	12.231	0.815
4	Quartzite	10.404	5.202	3.121	0.208
5	Road Metal	92.322	46.161	27.713	1.847
TOTAL		**1274**	**354**	**183**	**25**

Royalty for 2021-22 (TEKKALI OFFICE)

S. No.	Mineral	Royalty (in Rs. Lakhs)	Consideration Amt. (in Rs. Lakhs)	DMF (In Rs. Lakhs)	MERIT (in Rs. Lakhs)
1	Building Stone	3.393	1.6965	1.018	0.068
2	Colour Granite (Others)	607.582	151.8955	75.948	12.152
3	Colour Granite (Srikakulam Blue)	3680.086	920.0215	457.631	73.221
4	Gravel	9.054	4.527	2.716	0.181
5	Road Metal	17.298	8.649	5.189	0.346
TOTAL		**4317**	**1087**	**543**	**86**

Royalty for 2020-21 (SRIKAKULAM OFFICE)

S. No.	Mineral	Royalty (in Rs. Lakhs)	DMF (In Rs. Lakhs)	MERIT (in Rs. Lakhs)
1	Colour Granite (Others)	358.058	44.757	7.161
2	Colour Granite (Srikakulam Blue)	700.287	87.536	14.006
3	Gravel	143.663	43.099	2.873
4	Quartzite	30.159	9.048	0.603
5	Road Metal	314.138	94.242	6.283
TOTAL		**1546**	**279**	**31**

Royalty for 2020-21 (TEKKALI OFFICE)

S. No.	Mineral	Royalty (in Rs. Lakhs)	DMF (In Rs. Lakhs)	MERIT (in Rs. Lakhs)
1	Building Stone	9.873	2.962	0.197
2	Colour Granite (Others)	265.961	33.245	5.319
3	Colour Granite (Srikakulam Blue)	3498.499	437.312	69.97
4	Gravel	92.274	27.682	1.845
5	Road Metal	32.486	9.746	0.65
6	Road Metal/Building Stone/Rough Stone	2.25	0.675	0.045
TOTAL		**3901**	**512**	**78**

Data Source: District Mines and Geology Officer, Srikakulam District

2.5 Details of Production in last 3 years

The details of production in last 3 years in the districtareshowninTable-19.

Table 19 Details of Production in last 3 years

Production for 2022-23 (SRIKAKULAM OFFICE)

S. No.	Mineral	Unit	Production (in MT)
1	Building Stone	Cubic Meter	1675
2	Colour Granite (Others)	Cubic Meter	15811.433
3	Colour Granite (Srikakulam Blue)	Cubic Meter	32379.002
4	Gravel	Cubic Meter	47540

S. No.	Mineral	Unit	Production (in MT)
5	Quartzite	MT	2000
6	Road Metal	Cubic Meter	37155

Production for 2022-23 (TEKKALI OFFICE)

S. No.	Mineral	Unit	Production (in MT)
1	Building Stone	Cubic Meter	1675
2	Colour Granite (Others)	Cubic Meter	15811.433
3	Colour Granite (Srikakulam Blue)	Cubic Meter	32379.002
4	Gravel	Cubic Meter	47540
5	Quartzite	MT	2000
6	Road Metal	Cubic Meter	37155

Production for 2021-22 (SRIKAKULAM OFFICE)

S. No.	Mineral	Unit	Production (in MT)
1	Colour Granite (Others)	Cubic Meter	13979.34
2	Colour Granite (Srikakulam Blue)	Cubic Meter	28167.41
3	Gravel	Cubic Meter	83174

S. No.	Mineral	Unit	Production (in MT)
4	Quartzite	MT	10346.5
5	Road Metal	Cubic Meter	99755
6	Road Metal	MT	60

Production for 2021-22 (TEKKALI OFFICE)

S. No.	Mineral	Unit	Production (in MT)
1	Building Stone	Cubic Meter	3734
2	Colour Granite (Others)	Cubic Meter	25123.65
3	Colour Granite (Srikakulam Blue)	Cubic Meter	124891.512
4	Gravel	Cubic Meter	20007
5	Road Metal	Cubic Meter	16762

Production for 2020-21 (SRIKAKULAM OFFICE)

S. No.	Mineral	Unit	Production (in MT)
1	Colour Granite (Others)	Cubic Meter	15155.078
2	Colour Granite (Srikakulam Blue)	Cubic Meter	25453.31
3	Gravel	Cubic Meter	294269

S. No.	Mineral	Unit	Production (in MT)
4	Quartzite	MT	33510
5	Road Metal	Cubic Meter	344468
6	Road Metal	MT	3800

Production for 2020-21 (TEKKALI OFFICE)

S. No.	Mineral	Unit	Production (in MT)
1	Building Stone	Cubic Meter	10396
2	Colour Granite (Others)	Cubic Meter	11037.921
3	Colour Granite (Srikakulam Blue)	Cubic Meter	119886.954
4	Gravel	Cubic Meter	204856
5	Road Metal	Cubic Meter	35134
6	Road Metal/Building Stone/Rough Stone	Cubic Meter	2500

Data Source: District Mines and Geology Officer, Srikakulam District

2.6 Impact on environment

The extraction and utilization of minor minerals have become integral to our modern way of life, fueling infrastructure development, construction, and various industries. However, the impact of these activities on the environment cannot be underestimated. Minor minerals, which include granite, road metal, gravel, clay, and more, play a significant role in shaping the natural

landscape and ecosystems. The various environmental consequences associated with the extraction and use of minor minerals are:

2.6.1. Habitat Destruction: The mining of minor minerals often entails the removal of topsoil and vegetation, leading to habitat destruction. This can disrupt ecosystems, displace wildlife, and threaten the survival of numerous species. Loss of biodiversity is a significant concern in regions with extensive mining operations.

2.6.2. Land Degradation: Mining activities can lead to land degradation, including soil erosion and compaction. This not only reduces the land's fertility but also affects its ability to support agriculture and vegetation growth. Moreover, land degradation can contribute to increased vulnerability to natural disasters like floods.

2.6.3. Water Pollution: Mining operations can contaminate nearby water bodies through the discharge of sediments, chemicals, and heavy metals. This pollution can have detrimental effects on aquatic life, disrupt local hydrology, and compromise the quality of water available for human consumption.

2.6.4. Air Quality: Dust emissions from mining sites can deteriorate air quality in surrounding areas. The fine particles and pollutants released during excavation and transportation of minor minerals can pose health risks to both workers and nearby communities.

2.6.5. Regulatory Challenges: Enforcing regulations and monitoring mining activities in remote or unregulated areas can be challenging, allowing illegal and unsustainable practices to persist.

The extraction and utilization of minor minerals are essential for economic development, but they come at a cost to the environment. Recognizing the environmental impacts of these activities is crucial for sustainable resource management.

2.7 Remedial Measures

The provisions of Rule 12 (1) and Rule 12 (5) and of Andhra Pradesh Minor Mineral Concession Rules, 1966 allows the State Government to issue the Letters of Intent with the stipulated conditions to submit

Approved Mining Plan (AMP), Environment Clearance (EC) and Consent for Establishment (CFE) for grant of lease.

Mine Plan stipulate the maximum permissible annual production of the mineal from the designated lease area and also includes estimated quantum of solid waste generation and its method of disposal, etc. Based on the Approved Mine Plan projections, Environment Management Plan shall be prepared and SEIAA makes the decision to grant the EC based on the EMP.

Leaseholders commit to all the remedial measures in the Mining Plan and the State Environment Impact Assessment Authority (SEIAA) ensures the remedial measures are being adhered to during the tenure of the Environmental Clearance.

Leaseholders in the district have adopted various remedial measures to mitigate the impact of mining on the environment. These measures aim to reduce the environmental footprint of mining operations and address the associated challenges. Some common practices include:

2.7.1. Environmental Impact Assessments (EIAs): Leaseholders conduct comprehensive EIAs to evaluate the potential environmental consequences of mining projects. They shall use this information to develop mitigation strategies.

2.7.2. Reclamation and Rehabilitation: Leaseholders work to restore mined areas by recontouring landscapes, replanting native vegetation, and stabilizing soils to promote ecosystem recovery.

2.7.3. Water Management: Proper management of water resources is crucial. Leaseholders use techniques like sedimentation ponds, water recycling, and water treatment facilities to minimize water pollution and ensure responsible water use.

The following preventive measures are being followed for minimizing adverse effects on water regime:

- Small Gully checks, gully check dams, silt settling tanks, silt traps, etc. shall be constructed.

- Along all discharge points leaving the mining lease, into the surrounding area, suitable number of filter walls of sufficient lengths shall be erected across the flow, at intervals, all along the length to prevent suspended solids entering the surrounding streams/ drains/ water courses, to confine the discharge water quality to the permissible limits.
- Regular monitoring may be carried out and further remedial steps as may be necessary may be taken.

2.7.4. Waste Management: Effective management of mining waste, such as tailings and slag, involves containment in secure facilities to prevent soil and water contamination. Advances in waste disposal technologies are also being explored.

Steps being followed for effective waste management:

- Implementation of practices to minimize waste generation at the source. This involves optimizing extraction techniques, reducing overburden removal, and improving resource utilization.
- Encouraging recycling and reuse of waste materials wherever possible within the mining operation.
- Selection of an appropriate disposal methods based on waste characteristics and environmental considerations. Common methods include landfilling, controlled dumping, and backfilling.
- Treatment of contaminated water and effluents using appropriate technologies before discharge.

2.7.5. Afforestation: Leaseholders carry out a year-wise afforestation plan for the initial years with detailed costing of each plant, its maintenance per piece, etc.

While these measures represent positive steps toward mitigating environmental impact, it's important to note that the effectiveness of these practices can vary widely depending on factors such as the location, scale, and specific mineral being mined. Continuous

improvement and adaptation are essential in the mining industry's ongoing efforts

2.8 Reclamation Measures

As per Rule 7A (ii) of Andhra Pradesh Minor Mineral Concession Rules, 1966, Mine Closure Plan shall be submitted by the leaseholder before 6 months of expiry of the lease in the proforma as prescribed by the Director. The Deputy Director concerned shall approve the mine closure plan and ensure compliance of conditions of the approved mine closure plan before expiry of the lease period.

Financial assurance of Rs.50,000/-(Rupees Fifty Thousand) for the quarry lease granted below five(5) hectares and Rs.10,000/- (Rupees Ten Thousand) per Hectare or part thereof for the quarry lease granted five (5) hectares and above, shall be submitted in the form of deposit. If the leaseholder does not reclamate the area as mentioned in the Mine Closure Plan, the deposit shall be forfeited, and the Department of Mines & Geology ensure the proper implementation of the Mine Closure Plan.

2.9 Risk Assessment & Disaster Management Plan

Leaseholders conduct comprehensive risk assessment, prepare a model disaster management plan and submit in the Mining Plan.

The leaseholders maintain and arrange following resources at the mine site:

a) Firefighting equipment

b) Ambulance services with location

c) List of volunteer organizations

d) List of Civil, Police and other authorities to be informed in case of an accident

e) Last of mobile crane operators (Government, Public Sector, and Private Sector).

f) List of mines, contacts, facility available nearby

g) List of first aiders and contacts.

h) List of Officers of DGMS to be informed in case of serious accidents Concerned DGMS officers concerned is displayed at the mine head.

The leaseholders shall monitorthe total execution of the disaster management plan. The resources of all departments including men and

material are being promptly made available. They are also conducting regular mock rehearsals with their staff to update the risk register and accordingly, disaster management plan

2.9.1. Mineral Regulatory:

The important functioning of District Mines and geology Officer, Srikakakulam are:-

1. Achievement of Targets of Mineral Revenue collections being fixed to this office annually

2. Receiving and processing of the Mineral Concession Applications duly conducting the Technical inspection, Survey and demarcation of the Mineral bearing applied areas

3. Execution and Regulation of the operations of the Mining / Quarry leases in accordance with the Acts and Rules

4. Issuing of dispatch permits duly collecting the Advance Royalty / Seig.fee from the lease holders on the minerals produced and intend to dispatch from their leased areas through online permit system

5. Controlling the illegal Mining / Quarrying and transportation by conducting the periodical inspections of the Mines and Quarries and also conducting the surprise vehicular checking and imposing the penalties

6. Finalisation of Demand, Collection and Balance statements of the leases on annual basis

2.10 Planation & Green Belt Development

Leaseholders are complying with the plantation and green belt development programmes as committed in their Mining Plans.

CHAPTER III: SAND

3.1 Sand Mineral Resources of the Srikakulam District

3.1.1 General Sand Mineral Details Srikakulam District

(Prepared as per Sustainable Sand Mining Management Guidelines 2016 & 2020) (Data Source: Assistant Director of Mines and Geology, Srikakulam District, Andhra Pradesh

In Srikakulam District, the Nagavali and Vamsadhara rivers cover a total distance of 299 kilometers on average. These rivers are the major contributors to sand deposits in the region. They are seasonal, mostly flowing during the rainy season. There are existing Gottabarage and Madduvalasa check dams/reservoirs across the aforementioned rivers. The details of sand production in the district are described in Table-20.

Table 20 Details of Production of Sand in Last three years in the district

Year	Production (In MTs)	Revenue Generated (in Rs)
2020-21	--	--
2021-22	936244	8,23,89,472
2022-23	727886	6,40,53,968

Data Source: District Mines and Geology Officer, Srikakulam District

3.1.2 River Basins in Srikakulam District

Srikakulam district is covered all minor rivers are directly joined to the Bay of Bengal. The Bahuda, Mahendratanya, Pundiminor Basin, Noupada Minor Drainages, Vamsadhara, Nagavali, Peddagedda and Kandivalasagedda are the minor basins covered in the district. These 08 minor-basins are further divided into 47 sub-basins subsequently divided into 563 cascades and the total number of tanks 8,234. The catchment area of each basin is delineated using the boundaries from master plan records and updated by super imposing on Survey of India toposheets (1:50K). The sub basins are suitably subdivided into cascades based on local drainage conditions. The Hydrological units of Srikakulam District is shown in Table-21, Drainage system with description of main rivers is shown in Table-22, Salientfeatures and altitudes origin of rivers is shown in Table-23and rivers lengths of Srikakulam District is shown in Table-24.

Table 21 Hydrological units of Srikakulam District

S. No	Major Basin	Minor Basin	Catchment Area (Sq.km)	No of. Sub Basins	No of. Cascades	No of. Tanks
1	Bahuda	Bahuda	257.57	4	34	384
2	Kandivalasageddda	Kandivalasageddda	79.92	2	8	189
3	Mahendratanya	Mahendratanya	462.05	8	66	579
4	Nagavali	Nagavali	679.51	4	57	1323
5	Noupada Minor Drainages	Noupada Minor Drainages	780.12	5	150	1704
6	Peddagedda	Peddagedda	377.31	7	30	795
7	Pundiminor Basin	Pundiminor Basin	370.58	10	62	590
8	Vamsadhara	Vamsadhara	1465.86	7	156	2670
Total			**4,473**	**47**	**563**	**8,234**

Data source: APSAC, Vijayawada

Table 22 Drainage System with Description of main rivers

S.No	Name of the River	Area Drained (Sq.Km)	% of Area Drained in the District
1	Vamsadhara	1465.86	32.77
2	Bahuda	257.57	5.76
3	Mahendratanya	462.05	10.33
4	Noupada Minor Drainages	780.12	17.44
5	Pundiminor Basin	370.58	8.28
6	Peddagedda	377.31	8.44

7	Kandivalasagedda	79.92	1.79
8	Nagavali	679.51	15.19

Data source: APSAC, Vijayawada

Table 23 Salient Features of Important Rivers in Srikakulam District

S. No	Name of the River	Place of Origin	Altitude at Origin (m)
1	Bahuda	Ramgiri hills in Gajapati districts of Odisha State	975
2	Mahendratanaya	Eastern Ghats, Mahendra RF, Gajapati district of Odisha State	1,501
3	Vamsadhara	Eastern Ghats,Kalahandi district of Odisha State	1,690
4	Champavathi	Eastern Ghats, Ananthagiri hills, Aruku Valley in Alluri Sitharama Raju dsitrict	1,291
5	Nagavali	Thuamul Rampur block, Kalahandi District of Odisha state	1,300
6	Gosthani	Eastern Ghats, Ananthagiri hills, Borra Caves of Alluri Sitharama Raju dsitrict	1,278
7	Pedda Gedda	Dibba Konda, Garividi mandal in Vizianagarm district	333
8	Kandivalasagedda	Dibba Konda, Garividi mandal in Vizianagarm district	333

Data source: APSAC, Vijayawada

Table 24 River Lengths in Srikakulam District

S.No	Name of the Major Basin	Name of the Minor Basin	Name of the River	River Length in Km
1	Bahuda	Bahuda	Bahuda River	23.13
2	Kandivalasagedda	Kandivalasagedda	Kandivalasa River	8.93
3	Mahendratanya	Mahendratanya	Mahendratanaya River	42.28
4			Sunnamudia Gedda	17.43
5	Nagavali	Nagavali	Nagavali River	7.40
6			Relli Gedda	43.99
7	Noupada Minor Drainages	Noupada Minor Drainages	Desa Gedda	30.60
8			Garibula Gedda	25.31
9			Sandemma Gedda	26.79
10	Peddagedda	Kandivalasagedda	Kandivalasa River	5.28
11		Peddagedda	Chitti Gedda	9.58
12			Kandivalasa River	32.34
13			Pedda Gedda	46.80

14	Pundiminorbasin	Pundiminor Basin	Bendi Gedda	31.96
15	Vamsadhara	Vamsadhara	Mahendratanaya River	22.43
16			Vamsadhara River	11.50
			Total	**385.74**

Data source: APSAC, Vijayawada

Data source: APSAC, Vijayawada

The Nagavali, Vamsadhara, Survarnamukhi, Vegavathi, Mahendratanaya Gomukhi, Champavathi, Bahuda and Kumbikota gedda are the important rivers of the district. The Vamsadhara river rises in the Eastern Ghats of Orissa State and enters Srikakulam District in Bhamini Mandal and finally falls into the Bay of Bengal near Calingapatnam. The Nagavali and Survarnamukhi rivers also originate in the Eastern Ghats while Nagavali in Vangara Mandal and the confluence joins the Bay of Bengal at Kallepalli near Srikakulam rising in Pachipenta hills the Vegavathi river flows from west to east, ultimately joining the river Suvarnamukhi, Gomukhi joins Suvarnamukhi at Sirlam village of Vizianagaram District, Mahendratanya, which is Atributory of Vamsadhara joins the later at Komanapalli village in Hiramandalam Mandal. Another river of the same eastern Ghats flows through Mandasa and Sompeta Mandalas and falls into Bay of Bengal at Baruva. The Bhuda river also rises in the eastern Ghats and enters Srikakulam District at Boddabada village of Ichapuram Mandal and flows through Ichapauram and Kaviti, Mandasa and enters Bay of Bengal at Donkuru.

Vamsadhara: River Vamsadhara or River Banshadhara is an important east flowing river between Rushikulya and Godavari, in Odisha and Andhra Pradesh states in India.The river originates in the border of Thuamul Rampur in the Kalahandi district and Kalyansinghpur in Rayagada district of Odisha and runs for about 254 kilometers, where it joins the Bay of Bengal at Kalingapatnam, Andhra Pradesh. The total catchment area of the river basin is about 10,830 square kilometers. The average water yield in the river basin at Gotta barrage is 115 billion cubic feet in a year.Tourist attractions of Mukhalingam and Kalingapatnam in Srikakulam district are located on the banks of this river.Mahendratanaya River is a major tributary river of Vamsadhara originating in Gajapati district of Odisha and it joins Vamsadhara in Andhra Pradesh upstream of Gotta barrage.[2] Regulapadu reservoir in Andhra Pradesh is under construction to store the Mahendratanaya river water for irrigation use.

Nagavali: The main tributaries of the River Nagavali are Jhanjavati, Barha, Baldiya, Satnala, Sitagurha, Srikona, Gumudugedda, Vottigedda,

Suvarnamukhi, Vonigedda, Relligedda and Vegavati. The Suvarnamukhi river takes its birth in the hills of Salur mandal and takes an eastern direction and finally join the Nagavali at Sangam village in Vangara mandal of Srikakulam District. Vegavathi originates in pachipenta hills of Pachipenta Mandal.Srikakulam town, the district headquarters in Andhra Pradesh: River Nagavali flows through Srikakulam town and meets the sea at Kallepalli and Bonthalakoduru villages, 5 kilometers far from Srikakulam town.

3.1.3 Process of Deposition of Sediments in the Rivers of the District

Sediment transport is a natural process, and many have argued that the point of rivers is to move sediment downstream. However, with land use changes, e.g., deforestation and construction; agricultural practices; and development activities, accelerated erosion rates is ubiquitous. Sediment in the water column reduces transparency and can be deposited downstream and exacerbate flooding. Three principal sources of sediment are the following:

Sediment transport is the movement of organic and inorganic particles by water. In general, the greater the flow, the more sediment that will be conveyed. Water flow can be strong enough to suspend particles in the water column as they move downstream, or simply push them along the bottom of a waterway. Transported sediment may include mineral matter, chemicals and pollutants, and organic material. Another name for sediment transport is sediment load. The total load includes all particles moving as bedload, suspended load, and wash load.

3.1.3.1. Bedload

As the name suggests, this element of sediment movement consists of loose, granular particles at the sediment-water interface (such as a stream bed or tidal flat). Air or water that moves across the bed will being to move grains if the flow velocity is great enough to overcome the force of gravity and any resistance at grain contacts. This is the **threshold velocity**(Figure-23).

The bedload contains two main components:

- the **traction load**, or traction carpet, and
- the **saltation loads**.

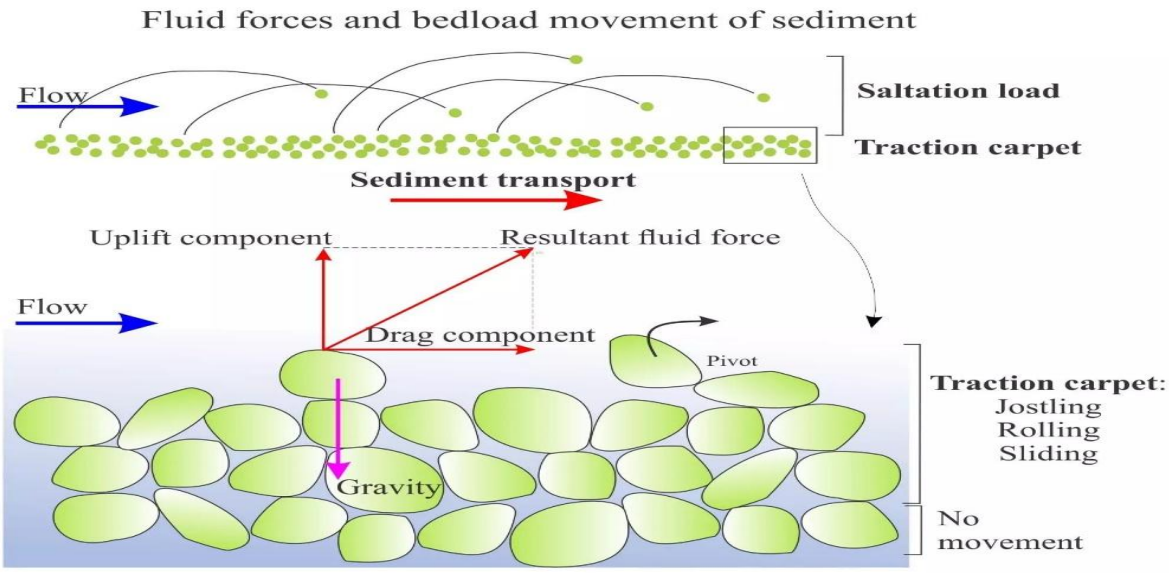

Figure-23: Bedload Movement of Sediment

The various components of force involved in initiation of grain movement are shown above. Here, fluid flowing over a sediment bed produces shear stresses that can be resolved into a component of drag (parallel to the bed) and a lift component normal to the bed. At the threshold velocity when the resultant fluid force on grains is greater than gravity, grains begin to roll, slide and jostle along the bed like a moving carpet – the **traction carpet**.

3.1.3.2. Suspended Load Most natural flows in rivers, shallow marine settings and air are turbulent. Even at low-flow velocities, the speed and trajectories of flow can vary considerably – witness the eddies and boils in seemingly tranquil streams. Very fine particulate sediment (particularly clays) can be kept in suspension for long periods by turbulence; the stresses generated by turbulent flow balance or overcome the gravitational force acting on the particles(Figure-24).

If turbulence decreases significantly, for example when a river empties into a lake, then most particles will gradually settle to the sediment bed. The rate at which a particle settles out of suspension is called the **settling velocity**, where the force of gravity (downwards) exceeds the combined effects of upward-directed **buoyancy forces** acting on a grain and the drag on a particle caused by **fluid (viscous) resistance**. Thus, the rate of settling depends on the size, shape and density of particles, and the viscosity of the fluid. In general, settling through air is much more rapid than through water.

Both bedload and suspension load are important processes in the generation of sedimentary structures. In particular, bedload transport of loose sand is the critical process for growth of bedforms and their internal cross-stratification (crossbedding). The description of **bedforms** (crossbeds) and the flow conditions (**flow regime**) under which they form have been described in other posts.

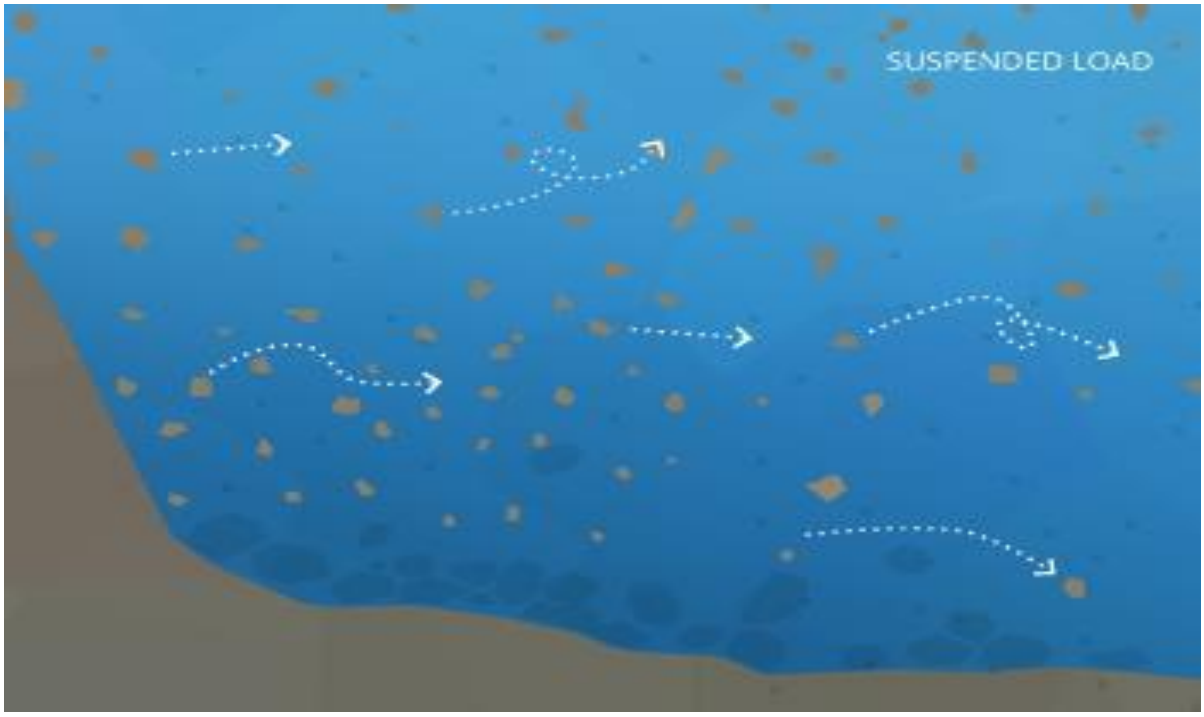

Figure-24: Sediment Load

3.1.3.3. Wash Load

The wash load is the portion of sediment that will remain suspended even when there is no water flow. The wash load is a subset of the suspended load. This load is comprised of the finest suspended sediment (typically less than 0.00195 mm in diameter). The wash load is differentiated from the suspended load because it will not settle to the bottom of a waterway during a low or no flow period. Instead, these particles remain in permanent suspension as they are small enough to bounce off water molecules and stay afloat. However, during flow periods, the wash load and suspended load are indistinguishable. Turbidity in lakes and slow-moving rivers is typically due the wash load 8. When the flow rate increases (increasing the suspended load and overall sediment transport), turbidity also increases. While turbidity cannot be used to estimate sediment transport, it can approximate suspended sediment concentrations at a specific location(Figure-25).

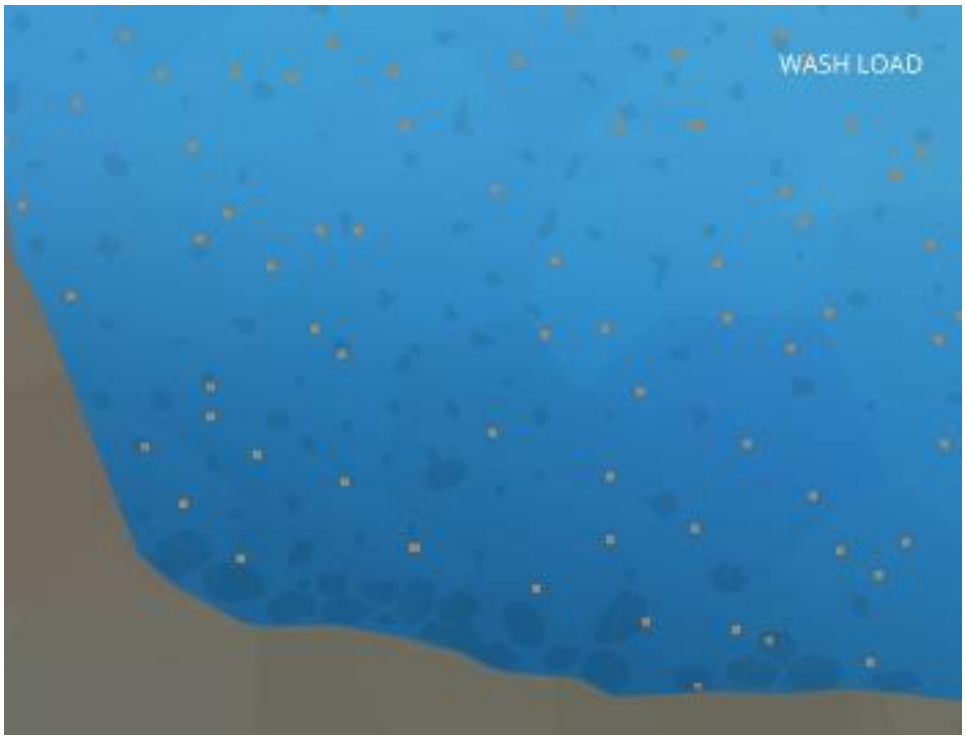

Figure-25: Wash Load

3.1.3.4. Settleable Solids

The suspended particles that fall to the bottom of a water body are called settleable solids. As they are found in riverbeds and streambeds, these settled solids are also known as bedded sediment. The size of settleable solids will vary by water system – in high flow areas, larger, gravel-sized sediment will settle out first. Finer particles, including silt and clay, can be carried all the way out to an estuary or delta(Figure-26).

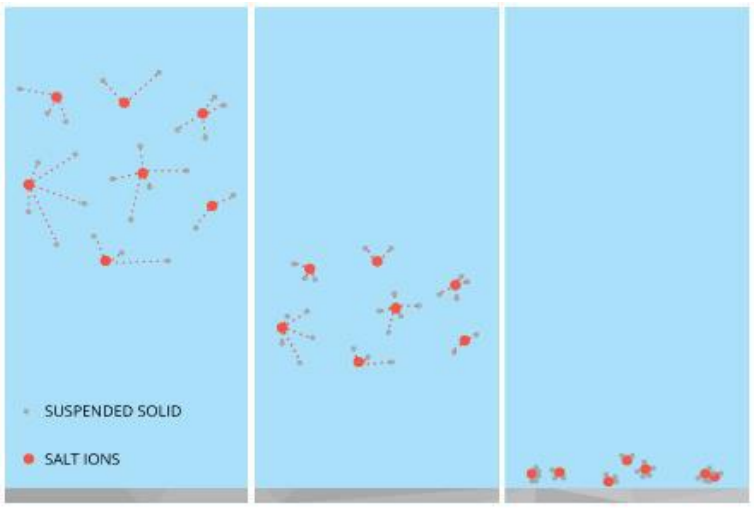

Figure-26: Settleable Solids

3.1.3.5. Sediment Deposition

Sediment is necessary to the development of aquatic ecosystems through nutrient replenishment and the creation of benthic habitat and spawning areas. These benefits occur due to sediment deposition – when suspended particles settle down to the bottom of a body of water. This settling often occurs when water flow slows down or stops and heavy particles can no longer be supported by the bed turbulence. Sediment deposition can be found anywhere in a water system, from high mountain streams, to rivers, lakes, deltas and floodplains. However, it should be noted that while sediment is important for aquatic habitat growth, it can cause environmental issues if the deposition rates are too high, or too low. Sediment transportation and Deposition depends upon various factors like Slope of the Area, Annual Rainfall, Lithology, flow intensity of River, Geomorphology, Soil, Geology and Land use.

In sediment transport a distinction is generally made between fine and coarse sediment, because the transport mechanisms differ. Coarse sediment (grain size >63 μm) tends to be characterised by particles that remain separate and are chemically inert; fine sediments (<63 μm) on the other hand tend to come together as flocculated populations (flocs) and have the tendency to attract organic material and contaminants to their surface. A great deal has been researched and written about the break up and flocculation of these primary particles under turbulence and subsequent settling (e.g., Uncles et al., 2010). These differences imply important variations in the rate of transport and settling characteristics for the same flow conditions for different sediments. The nature of the physical environment also has an important bearing on this, in that fine sediment tend to be found in sheltered environments (shallow, enclosed estuarine systems), while beaches on open coasts are characterised by coarser materials. This reflects the energy of the water in which the particles become suspended and their subsequent fate(Figure-27).

Rates of transport of material are generally expressed in terms of a flux, as kg/s for example, where this figure is generally obtained by considering the product of the flow rate (in m^3/s) and the concentration of material in suspension (kg/m^3). This does not necessarily imply a requirement for the material to be suspended; it is equally possible to express a bed load using the same units, for example, but it does imply that to obtain an estimate of the sediment flux it is necessary to know both the concentration and the flow rate over a given cross section. Both these quantities can be measured and there are a variety of techniques

available to do this, using insitu collection or sampling, in situ optical or acoustic methods, or remote sensing from aircraft or satellites (Uncles and Mitchell, 2017)

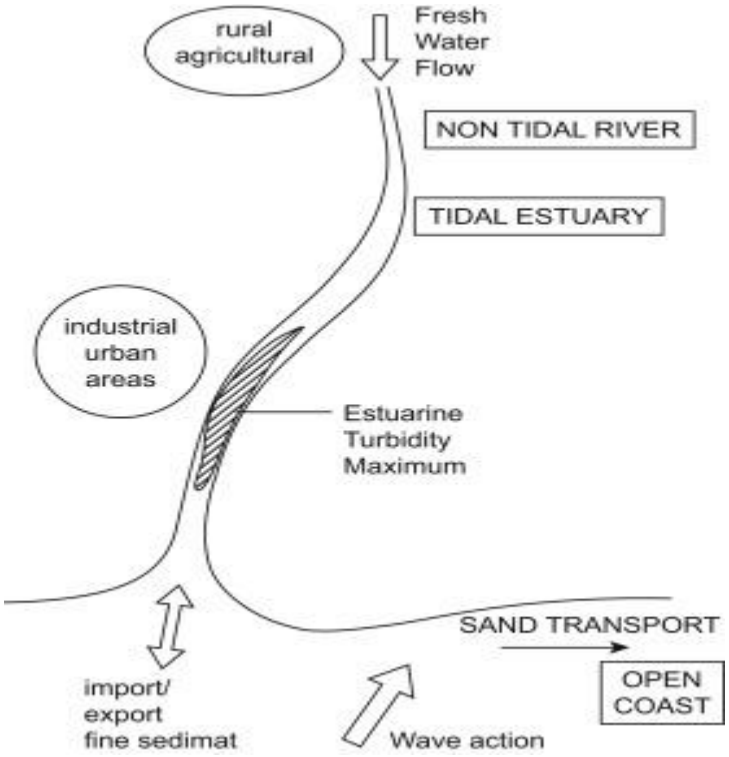

Figure-27: Sediment Deposition Process

Process of Deposition of Sediments in the Rivers of the District Sand is deposited because of the following reasons: (a) Floods: The surface or strip of relatively smooth land adjacent to a river channel constructed (or in the process of being constructed) by the present river in its existing regimen and covered with water when the river overflows its banks at times of high water. It is built of alluvium carried by the river during floods and deposited in the sluggish water beyond the influence of the swiftest current (b) Valley fill: The unconsolidated sediment deposited by any agent so as to fill or partly fill a valley.

3.1.4 Replenishment Study

A replenishment study for riverbed sand is required in order to nullify the adverseimpacts arising due to excessive sand extraction. Mining within ornear the riverbed has adirect impact on the stream's physicalcharacteristics, such as channel geometry, bedelevation, substratum composition and stability, in-stream roughness of the bed, flowvelocity, discharge capacity, sediment transport capacity etc.For

sustainable river sand mining, it is necessary that the mine pits formed as a resultof sand excavation are refilled with sand by the natural process of replenishment in areasonable period so that the area is again available for mining. The rate of grosserosion is dependent upon many physical factors like climatic conditions, the nature of thesoil, the slope of the area, topography and land use. Theeffect of any of these variables may vary greatly from one geographic location to another, andthe relative importance of controlling factors often varies within a givenland resource area(Dendy, 1976).

There is no denial of the fact that bed load changes from hour to hour, day to day, andyear to year; estimating annual bed load rates is a dynamic process involving carefulexamination. Therefore, proper care has been taken before applying the empirical model tocalculate the sediment yield from the watershed.

The estimation of sand replenishment is based on empirical and analytical approaches.There are many sediment transport equations as well as models which are suitable for use inthe prediction of the replenishment rate of rivers/watersheds. The sedimentation modelsinclude SWAT, HEC-HMS etc. These models are developed based on the fundamentalhydrological and sedimentological processes. They may provide detailed temporal and spatialsimulation but usually require extensive data input. Hourly/daily input values ofmeteorological and radiation variables are required for continuous simulations. Some of theempirical equations for estimating sediment transport are as follows.

Annual Replenishment Rate for sand for Major Sand Resource Area is determined using emperial mathematical expression Dendy Bolton Equation and reproduced below:

- Einstein (1950)
- Laursen (1958)
- Bagnold (1966)
- Engelund-Hansen equation (1967)
- Yang equations (1973)
- Dendy- Bolton equation (1976)
- Modified Universal Soil Loss Equation (MUSLE) developed by Williams and Berndt (1977)
- Van Rijn (1984)
- Zanke (1987)

To estimate the transport capacity or the sediment load being conveyedby a waterstream, one of the many transport equations that are available in

the literature is frequentlyused. Einstein (1950) introduced statistical methods to represent the turbulent behaviour ofthe flow. Bagnold (1966) introduced an energy concept and related the sediment transportrate to work done by the fluid. Engelund and Hansen (1967) presented a simpleand reliableformula for the total load transport in rivers. The Yang equation makes use of the total bedhydraulic radius, and studies show that it is good for estimating the sediment transport in thechannel for the condition of dunes on the bed. MUSLE includes only one type of sediment yield (sheet and rill Erosion). Van Rijn (1984) solved the equations ofmotions of anindividual bed-load particle and computed the saltation characteristics and the particlevelocity as a function of the flow conditions and the particle diameter for plane bedconditions. The equations of Zanke and Van Rijn seem to be only moderately satisfactory inestimating the sediment transport in the channel for the condition of dunes on the bed.However, it appears that no single equation could provide reliable estimates of a total load ofsediment transport for all ofthe bed forms that could occur sequentially or randomly inalluvial channels or natural water courses. The comparison of the equations for estimatingsediment rate is given below –

Sl.No.	Sediment Transport Equation	Remarks
1	Einstein (1950)	Bed load function was determined for many but not all types of stream channels
2	Laursen (1958)	Laursen equation outperforms other transport equations in the silt range
3	Bagnold (1966)	Bagnold related the sediment transport rate to work done by the fluid
4	Engelund-Hansen equation (1967)	The original Engelund-Hansen relation (OEH) is based on a single characteristic grain size, which limits its applicability in sand-bed rivers with a wide GSD
5	Yang equations (1973)	It makes use of a total bed hydraulic radius

Sl.No.	Sediment Transport Equation	Remarks
6	Dendy- Bolton equation (1976)	It uses both drainage area and means annual runoff for estimation of sediment yield. It calculates all types of sediment yield like sheet and rill erosion, gully erosion, channel bed and bank erosion and mass movement
7	Modified Universal Soil Loss Equation (MUSLE) developed by Williams and Berndt (1977)	MUSLE includes only one type of sediment yield (sheet and rill Erosion)
8	Van Rijn (1984)	Calculated equations of motions of an individual bed-load particle for plane bed conditions
9	Zanke (1987)	Zanke was found to be moderately satisfactory for the condition of the dunes on the bed.

Data Source: Distrit Mines and Geology Officer, Srikakulam District

In this study, the rate of gross silt production in the watershed and the ability of thestream system to transport the eroded material in a river have been carried out by the Dendy-Bolton equation. Dendy-Bolton formula is often used to calculate the sedimentation yield asit uses both drainage area and mean annual runoff as key parameters to give a yield value.Also, Dendy-Bolton equation calculates all types of sediment yield like sheet and rillerosion, gully erosion, channel bed and bank erosion and mass movement.

Annual Replenishment Rate for sand for Major Sand Resource Area isdetermined using emperial mathematical expression Dendy Bolton Equationand reproduced below:

ForAverageAnnualRun-offlessthan2”

$S=1280xQ^{0.46}[1.43–0.26log(A)]$Formula.....(A)

ForAverageAnnualRun-offmovethan2”

$S=1965x(e^{-0.055xQ})[1.43–0.26log(A)]$Formula.....(B)

Q=MeanAnnualRun-offinmm

A=NetdrainageAreainSq.km

S=Sedimentyield(tons/Sq.km/yr)

ThesedimentationyieldforNagavali and VamsadharaRiverinSrikakulamDistrictisarrivedbasedontheaboveDendyBolt onEquationorFormula(A).ThessedimentationyieldintheDistrictisshown in Table -25

Table 25 Sedimentation yield for the rivers in Srikakulam District

Name of the River	Area Drained (sq. km)	Mean Annual Run-off (in mm)	Rate of Annual Deposition in the River (tons / sq. km /year)	Annual Deposition (tonne)
Nagavali	369.51	13.72	239.9	1,08,597
Vamsadhara	1465.58	8.61	194.77	2,85,454

Data Source: Distrit Mines and Geology Officer, Srikakulam District

In this report, the sediment yield was calculated using the standard records of Department of Water Resources. To ensure systematic and scientific studies, Department of Mines & Geology is in the process of selection of NABET Accredited agency for conducting detailed & regular replenishment studies for potential sand bearing areas.

***Note**: The sedimentation yield was calculated manually by APSAC and the value is **1,19,536Tones/ year**. The details are provided as an Annexure at page number 187-188.

***Note**: The sedimentation yield was calculated manually by APSAC and the value is **3,14,108Tones/ year**. The details are provided as an Annexure at page number 189-190.

3.1.5 Details of Sand Mining Leases:

The river Vamsadhara and Nagavaliare the main source of sand in the district through following mandals

Name of the river	List of Mandals
Vamsadara	Kotturu, Hiramandalam, Sarubujjili, Jalumuru, L.N Peta, Narasannapeta Polaki and Gara
Nagavali	Burja, Amadalavalasa, Srikakulam and Etcherla

Data Source: District Mines and Geology Officer, Srikakulam District

Proposed potential Sand Mining Leasesin Srikakulam district is shown in Table-26.

Table 26 The detail of Potential Sand Mining Leases

Reach Name	Quantity (in MTs)	Remarks	Geo-Coordinates
Purushothapuram -2	69300	Proposed	18°28’44.31”N 83°56’32.91”E 18°28’52.12”N 83°56’25.27”E 18°28’47.26”N 83°56’36.82”E 18°28’54.79”N 83°56’29.02”E
Venkatapuram	73350	Proposed	18°26’11.62”N 83°56’32.36”E 18°26’10.72”N 83°56’37.99”E 18°26’02.82”N 83°56’30.49”E 18°26’01.87”N 83°56’36.69”E
Mudhadapeta	73500	Proposed	18°23’26.94”N 83°51’04.99”E 18°23’19.81”N 83°51’08.08”E 18°23’23.33”N 83°51’14.76”E 18°23’28.85”N 83°51’13.90”E
Hyathi Nagar	48954	Proposed	18°17’16.00”N 83°53’18.00”E 18°17’19.64”N 83°53’15.65”E 18°17’24.00”N 83°53’16.00”E 18°17’25.00”N 83°53’21.00”E
Nivagam	74553	Proposed	18°47’19.54”N 83°56’58.03”E 18°47’22.76”N 83°57’03.24”E 18°47’20.51”N 83°57’09.91”E 18°47’13.94”N 83°57’08.43”E
Dusi	48000	Proposed	18°21’13.84”N 83°52’10.12”E 18°21’14.40”N 83°52’13.49”E

			18°21’04.75”N 83°52’15.54”E 18°21’04.56”N 83°52’11.58”E
Batteru	65499	Proposed	18°24’20.13”N 83°57’32.89”E 18°24’21.09”N 83°57’41.81”E 18°24’14.97”N 83°57’42.37”E 18°24’15.28”N 83°57’33.79”E
Buravilli	8400	Proposed	18° 20' 59.48'', 84° 00' 40.57'' 18° 21' 00.90'', 84° 00' 41.91'' 18° 20' 57.64', 84° 00' 41.61'' 18° 20' 58.58'', 84° 00' 44.34''
Purushothapuram -1	72300	Existing/ Not-Working	18°28’30.61”N 83°56’44.97”E 18°28’33.14”N 83°56’49.32”E 18°28’22.80”N 83°56’51.80”E 18°28’25.99”N 83°56’56.39”E
Lukalam	67950	Existing/ Not-Working	18°25’20.23”N 83°56’38.07”E 18°25’21.31”N 83°56’42.99”E 18°25’12.06”N 83°56’49.66”E 18°25’10.96”N 83°56’45.66”E
Amballavalasa	43650	Existing/ Not-Working	18°20’57.13”N 84°01’07.00”E 18°20’53.77”N 84°01’00.59”E 18°20’51.83”N 84°01’01.73”E 18°20’52.52”N 84°01’04.72”E 18°20’53.21”N 84°01’07.71”E 18°20’54.21”N 84°01’10.99”E 18°20’55.12”N 84°01’13.18”E
Gopalapenta	70500	Existing/ Not-Working	18°20’58.27”N 84°01’49.24”E 18°20’53.74”N 84°01’48.95”E 18°20’54.71”N 84°01’35.38”E 18°20’58.74”N 84°01’39.34”E
Dompaka	63000	Existing/ Not-Working	18°31’53.51”N 83°58’14.95”E 18°31’51.92”N 83°58’18.36”E 18°31’39.27”N 83°58’14.38”E 18°31’40.91”N 83°58’11.46”E

Data Source: District Mines and GeologyOfficer,Srikakulam District, Andhra Pradesh

Probable Sand bearing areas in Srikakulam district is shown in Table-27. Name of the sand bearing index are given from North to South direction. The Probable Sand bearing areas were identified through field survey with the help of hand held GPS (Global Positional System) and the help of existing literature. The map of the probable sand bearing areas are shown in Figure-32

Table 27: Probable Sand bearing areas in the Srikakulam District

S.No	Name of the River	Sand Bearing Area	Central Coordinates		Area in Ha.
			Latitude	Longitude	
1	Nagavali River	A	18° 33' 56.886" N	83° 46' 20.724" E	5.6
2	Nagavali River	B	18° 33' 7.894" N	83° 46' 50.080" E	2.89
3	Nagavali River	C	18° 28' 59.711" N	83° 48' 38.846" E	13.75
4	Nagavali River	D	18° 19' 34.206" N	83° 53' 28.133" E	5.29
5	Nagavali River	E	18° 16' 20.133" N	83° 53' 54.863" E	7.88
6	Nagavali River	F	18° 12' 52.860" N	83° 55' 57.964" E	3.8
7	Vamsadhara River	G	18° 48' 33.370" N	83° 53' 41.142" E	3.92
8	Vamsadhara River	H	18° 47' 2.380" N	83° 55' 47.078" E	3.69
9	Vamsadhara River	I	18° 39' 0.145" N	83° 57' 5.954" E	18.21
10	Vamsadhara River	J	18° 32' 47.287" N	83° 58' 37.764" E	2.64
11	Vamsadhara River	K	18° 27' 2.302" N	83° 57' 17.625" E	15.85
12	Vamsadhara River	L	18° 20' 57.715" N	84° 5' 39.259" E	10.35

Data Source: District Mines and GeologyOfficer,Srikakulam District, Andhra Pradesh

3.1.6 Details of De-Siltation Location: (Lakes/Ponds/Dams etc.)

The detail of potential of de-siltation locations in Srikakulam Distict are shown in Table-28.

Table 28 List of Potential De-Siltation Location: (Lakes/Ponds/Dams etc.) (Existing and proposed)

De-siltation Point	Quantity (in MTs)	Remarks
Narayanapuram	300000	Existing/Not-Working

Data Source: District Mines and Geology Officer, Srikakulam District, Andhra Pradesh

3.1.7 Details of Patta Lands in the District:

The detailed list of Patta Lands in the Srikakulam distict is shown in Table-29.

Table 29 Details of Patta Lands.

Owner	Sy. No.	Area (Ha)	District	Tehsil	Village	Total Reserve (MT)	Total Mineral to be mined (MT)	Existing/ Proposed
Nil								

Data Source: District Mines and GeologyOfficer,Srikakulam District, Andhra Pradesh

3.1.8 Details of M-Sand Plants in the District:

The details list of Manufacturing Sand in Srikakulam district shaon in Table-30.

Table 30 Shown Details of Details of M-Sand Plants

Plant Name	Owner	District	Tehsil	Village	Geo-location	Quantity Tonnes/Annum
NIL There are no existing M - Sand units under this Srikakulam office jurisdiction						

Data Source: District Mines and GeologyOfficer, Srikakulam District, Andhra Pradesh

3.1.9 Details of Cluster of Sand Mining Leases

The area of Cluster of Mining Leases in Srikakulam jurisdiction is shown in Table-31.

Table 31 Details Cluster of Mining Leases in Srikakulam District

Sl.No	Name of the Cluster	Location (Latitude and Logitude)	Extent (in Ha)	Total No. of Mining Leases in the Cluster	No.of Leases working	Extent of the working leases (in Ha)
NIL						

Data Source: District Mines and Geology Officer, Srikakulam District, Andhra Pradesh

3.1.10 Details of Contiguous Clusters

The area of Contiguous Cluster of Sand Reaches in Srikakulam jurisdiction is shown in Table-32.

Table 32 Details of Contiguous Cluster of Sand Reaches in Srikakulam District

Sl.No	Name of the Cluster	Location (Latitude and Logitude)	Extent (in Ha)	Total No. of Mining Leases in the Cluster	No.of Leases working	Extent of the working leases (in Ha)
NIL						

Data Source: District Mines and Geology Officer, Srikakulam District, Andhra Pradesh

3.1.11 Sand Reaches Details in Srikakulam District

There are six major rivers draining the district, namely Vamsadhara, Nagavali, Bahuda, Mahendratanya, Peddagedda, and Kandivalasa, along with the smaller rivers Bendi Gedda and Desa Gedda. Among these, the rivers Vamsadhara, Nagavali, and Suvarnamukhi are perennial. The Vamsadhara River is the main river flowing in the south direction, while the Nagavali River originates in the Eastern Ghats near Lakhbahal. The Bahuda River originates from the Ramgiri hills of Gajapati District. The Department of Mines and Geology has already identified sand reach points in Srikakulam district. Furthermore, many sand reach points have been identified near the Vamsadhara River locations. Details of the sand reach point locations are provided by the District Mining Office. The locations of the sand reach points are depicted in Figure-28, Figure-29, Figure-30, and Figure-31.

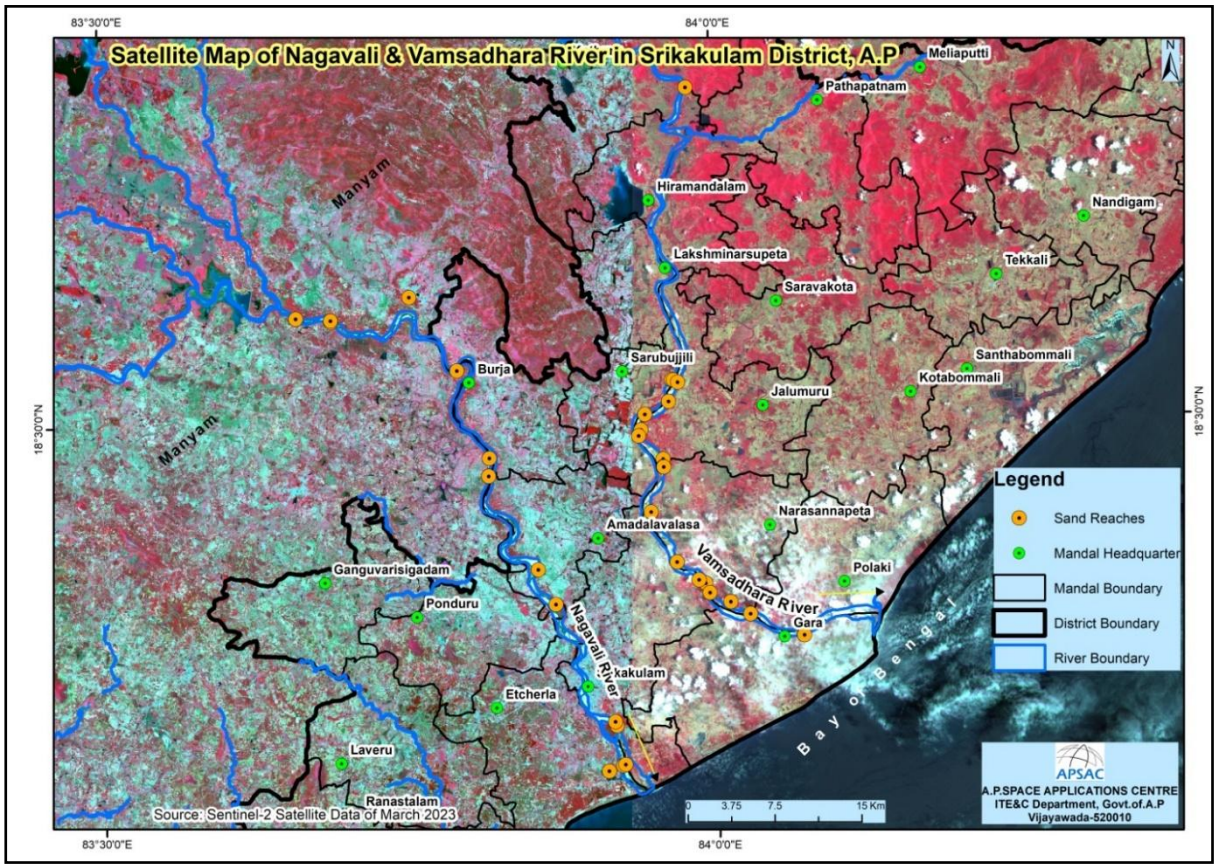

Figure-28: Satellite View of Vamsadhara and Nagavali River map in Srikakulam District.

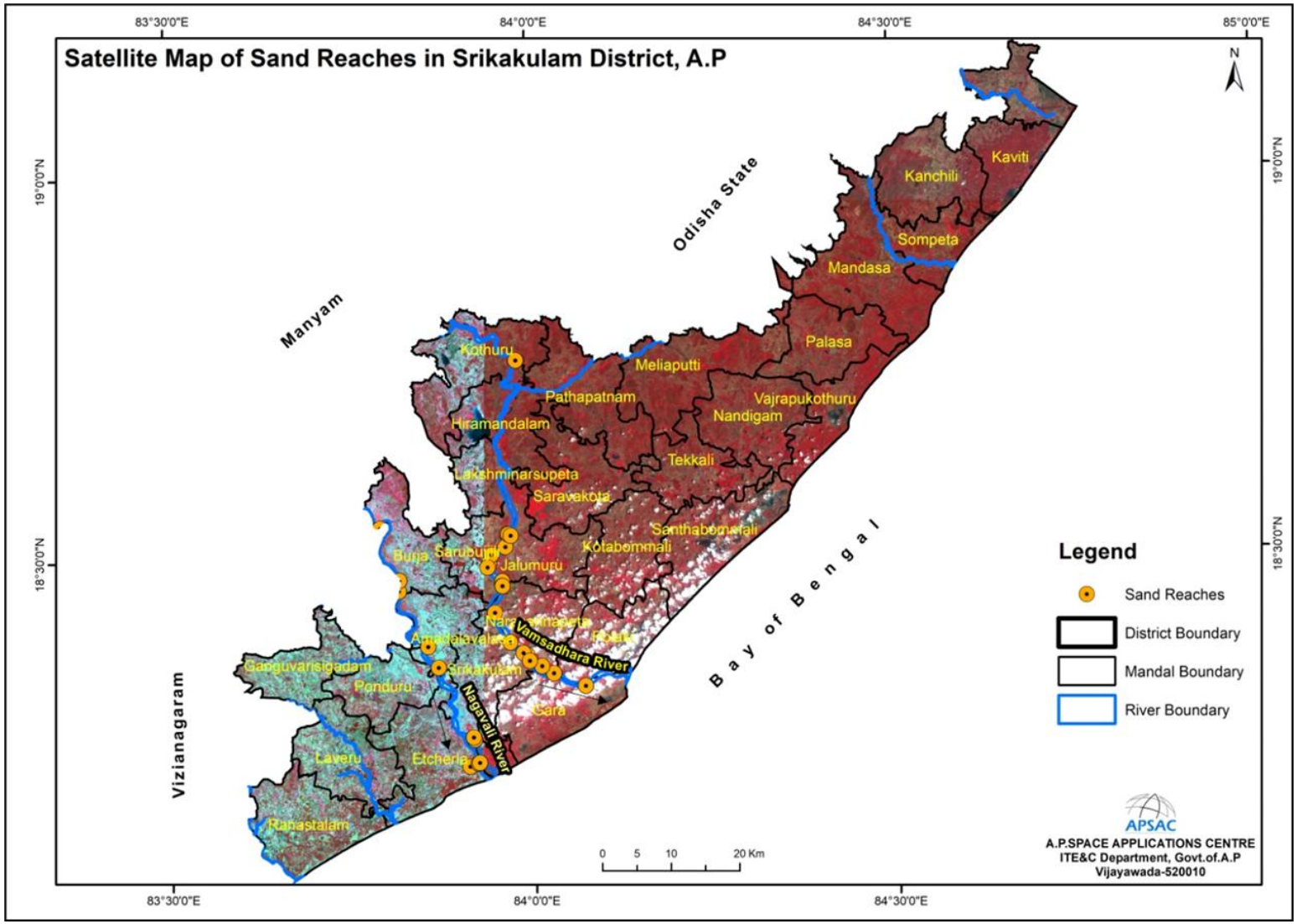

Figure-29: Satellite Map of Sand reaches in Srikakulam District

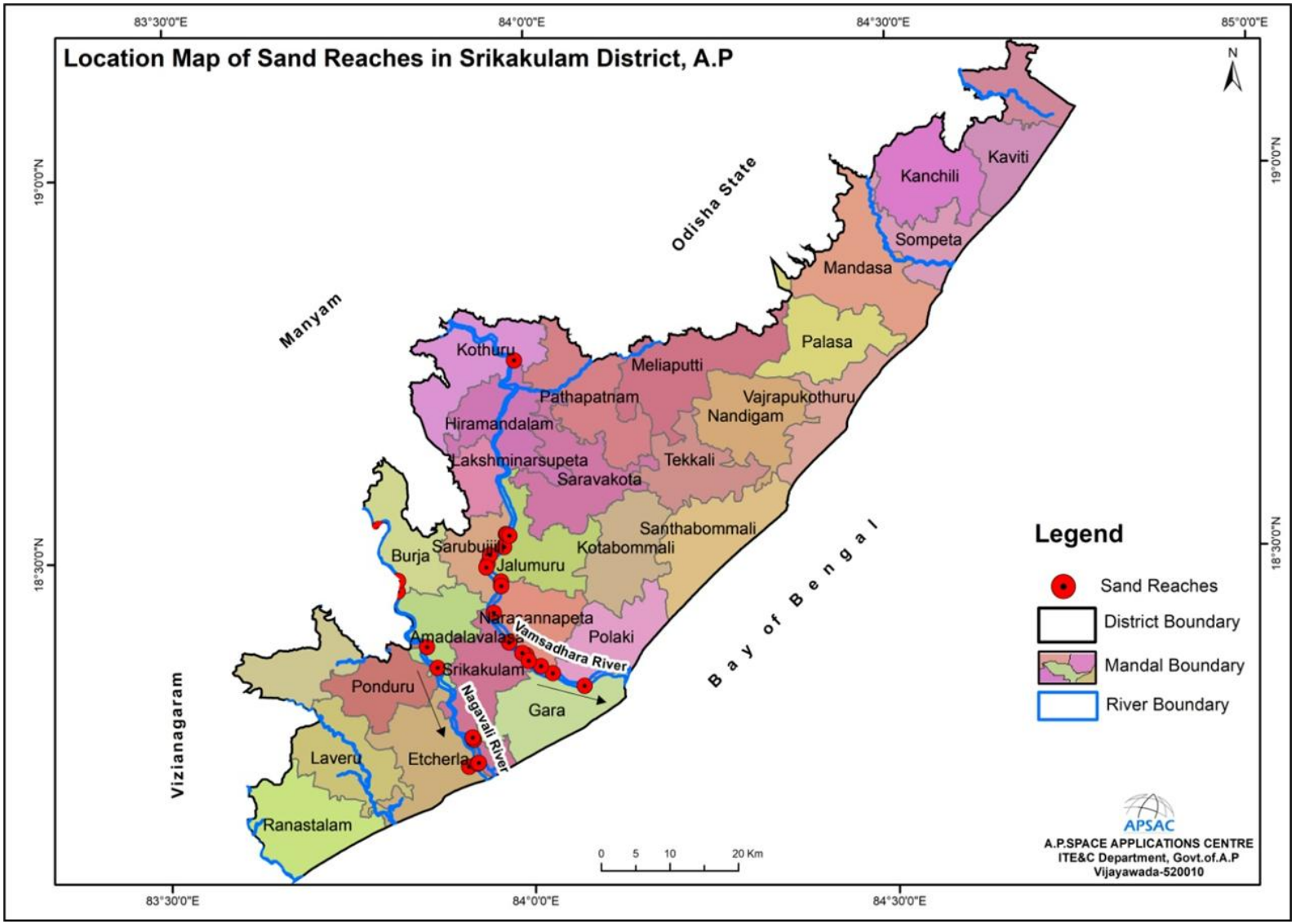

Figure-30: Mandal wise Sand Reaches map in Srikakulam District

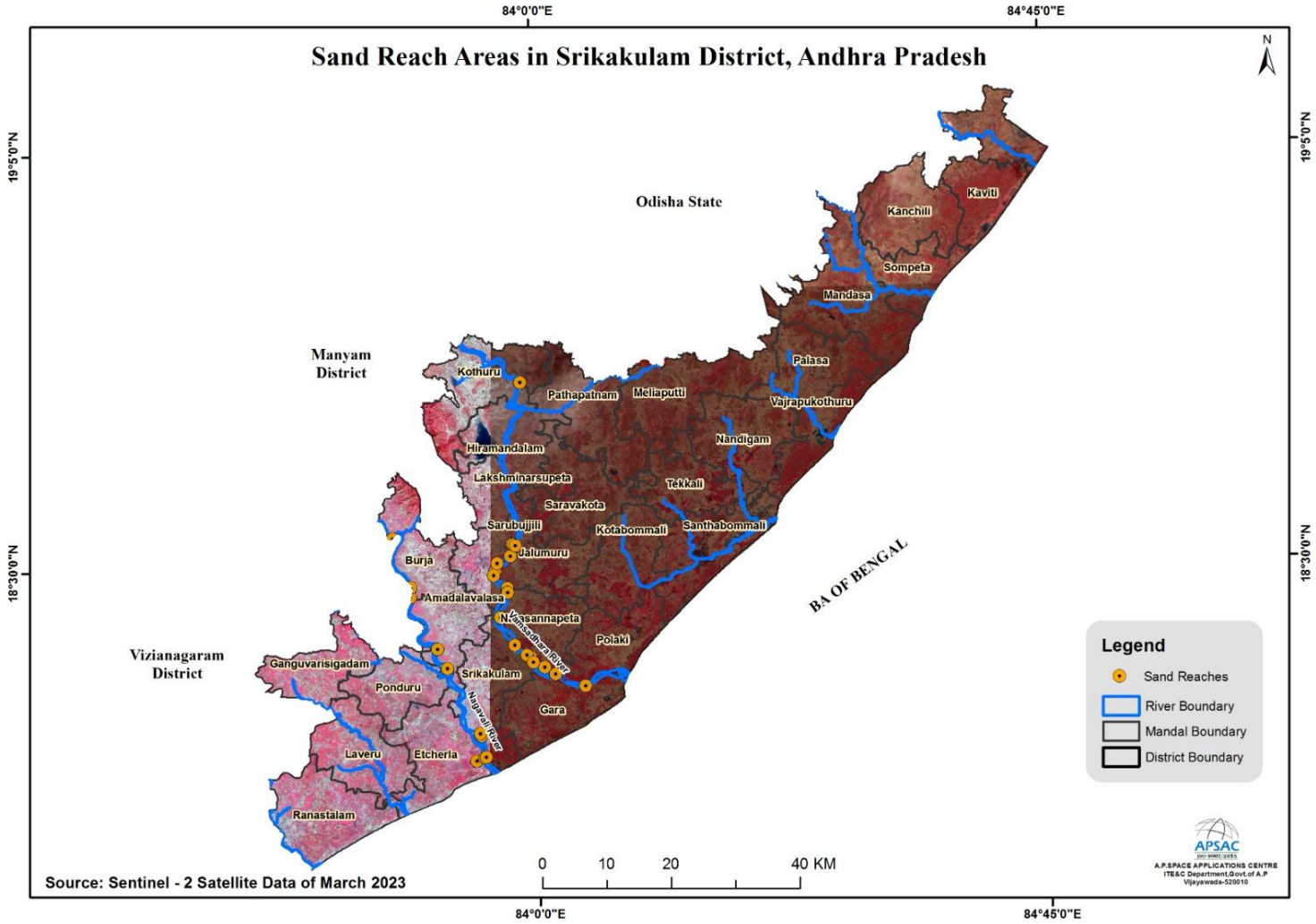

Figure-31: Satellite Map of Sand reaches in Srikakulam District

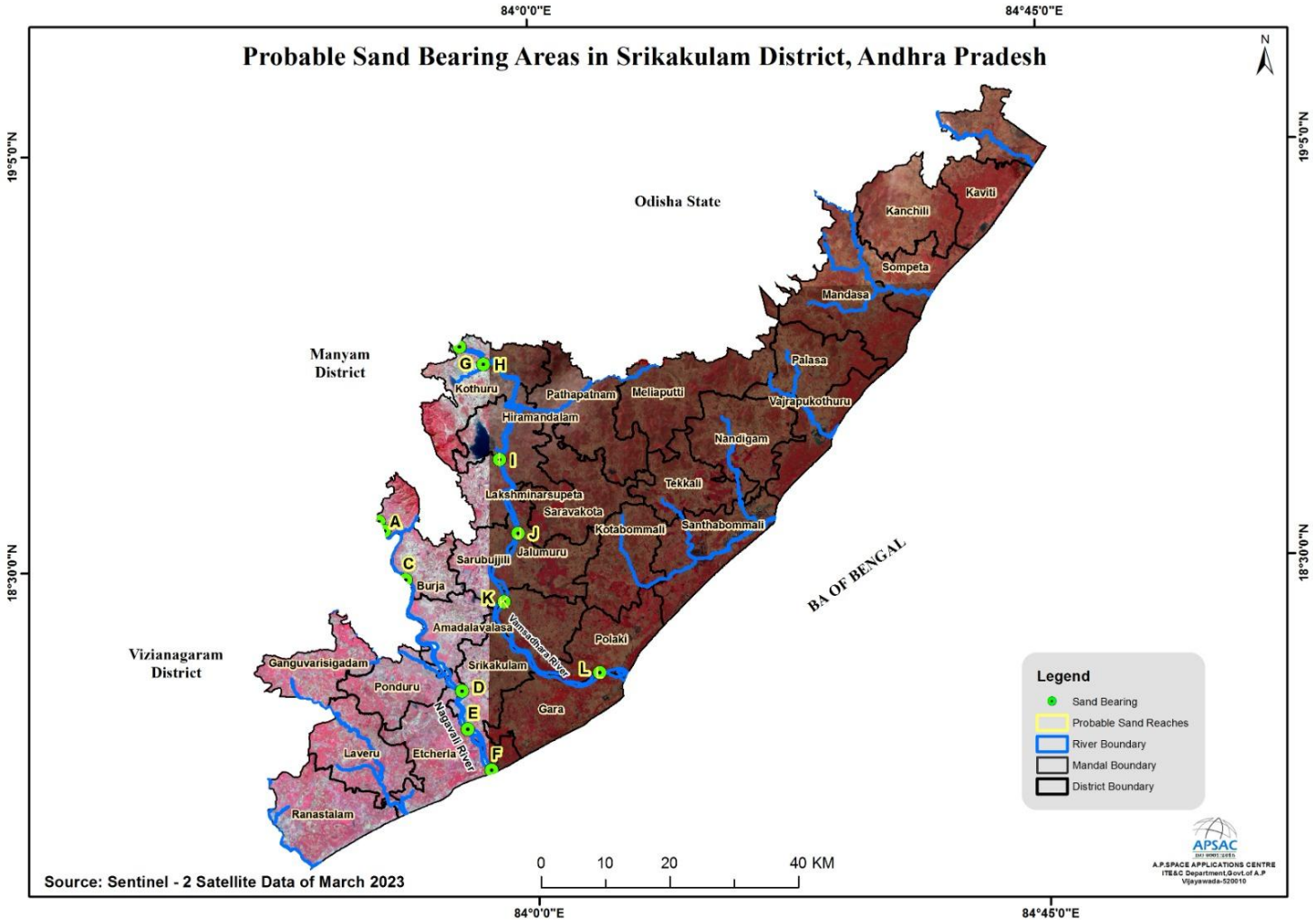

Figure-32: Probable Sand bearing areas in the Srikakulam District

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ANNEXURE - I

As the average annual run-off is less than 2" in the Srikakulam District, the sedimentation yield in the Nagavali River in Srikakulam District is manually arrived by APSAC based on the Dendy Bolton Equation or Formula and is given below.

$$S = 1280 \times Q^{0.46}[1.43 - 0.26 \log (A)]$$

Q = Mean Annual Run-off in mm
A = Net drainage Area in Sq. km
S = Sediment yield (tons/Sq. km/yr)

Sedimentation yield in the Nagavali River, Srikakulam District

Name of the River	Area Drained (sq. km)	Mean Annual Run-off (in mm)
Nagavali	369.51	13.72

Data Source: District Mines and Geology Officer, Srikakulam District, Andhra Pradesh and APSAC, Vijayawada

The given drained area value converted from Sq.Km to Sq.mile and the mean annual run-off converted from mm to inches for the calculations.

$$S = 1280 \times Q^{0.46}[1.43 - 0.26 \log (A)]$$ **Tones/sq.mile/year**

Drainage Area (A) = 369.51 sq. Km (1 Sq.km = 0.386 Sq.mile)
= 369.51 x 0.386
A = 142.631 Sq.mile ----------(1)

Mean Annual Run-off (Q) = 13.72 mm (1 mm = 0.0393 inches)
= 13.72 x 0.0393
Q = 0.539196 inches ----------(2)

$$S = 1280 \times Q^{0.46}[1.43 - 0.26 \log (A)]$$ **Tones/sq.mile/year**

$S = 1280 \times (0.539196^{0.46}) [1.43 - 0.26 \log (142.631)]$

Log 14 of 2 = 0.1524
0.6 = 18
As per base, the value = 2.0000
--------(+)
Log 142.631= 2.1542 ----------(3)

$= 1280 \times (0.539196^{0.46}) [1.43 - 0.26 \times 2.1542]$

$= 1280 \times (0.539196^{0.46}) [1.43 - 0.560096]$

= 1280 x ($0.539196^{0.46}$) [0.869904]

= 1280 x 0.752668 x 0. 44907

= 838.0791

S = 838.0791 **Tones/sq.mile/year** ----------(4)

For total district Sedimentation Yield =

Per Sq.mile Sedimentation Yield (4) x Total Drainage Area (1)

838.0791 x 142.631 = 1,19,536

As the Sedimentation yield calculated manually,

The sedimentation in the total River in the Srikakulam District = **1,19,536Tones/ year**

ANNEXURE-II

As the average annual run-off is less than 2" in the Srikakulam District, the sedimentation yield in Vamsadhra River in Srikakulam District is manually arrived by APSAC based on the Dendy Bolton Equation or Formula and is given below.

$$S = 1280 \times Q^{0.46}[1.43 - 0.26 \log (A)]$$

Q = Mean Annual Run-off in mm
A = Net drainage Area in Sq. km
S = Sediment yield (tons/Sq. km/yr)

Sedimentation yield for the Vamsadhara River in Srikakulam District

Name of the River	Area Drained (sq. km)	Mean Annual Run-off (in mm)
Vamsadhara	1465.58	8.61

Data Source: District Mines and Geology Officer, Srikakulam District, Andhra Pradesh and APSAC, Vijayawada

The given drained area value converted from Sq.Km to Sq.mile and the mean annual run-off converted from mm to inches for the calculations.

$$S = 1280 \times Q^{0.46}[1.43 - 0.26 \log (A)]$$ **Tones/sq.mile/year**

Drainage Area (A) = 1465.58 sq. Km (1 Sq.km = 0.386 Sq.mile)
= 1465.58 x 0.386
A = 565.490 Sq.mile ----------(1)

Mean Annual Run-off (Q) = 8.61 mm (1 mm = 0.0393 inches)
= 8.61 x 0.0393
Q = 0.338373 inches ----------(2)

$$S = 1280 \times Q^{0.46}[1.43 - 0.26 \log (A)]$$ **Tones/sq.mile/year**

$S = 1280 \times (0.338373^{0.46}) [1.43 - 0.26 \log (565.490)]$

Log 56 of 5 = 0.7520
0.4 = 4
As per base, the value = 2.0000
_____(+)
Log 565.490=2.7524 ----------(3)

$= 1280 \times (0.338373^{0.46}) [1.43 - 0.26 \times 2.7524]$

$= 1280 \times (0.338373^{0.46}) [1.43 - 0.71563]$

$= 1280 \times (0.338373^{0.46}) [0.71437]$

= 1280 x 0.60746 x 0.67514

= 555.462

S = 555.462 **Tones/sq.mile/year** ----------(4)

For total district Sedimentation Yield =

Per Sq.mile Sedimentation Yield (4) x Total Drainage Area (1)

555.462 x 565.490 = 3,14,108

As the Sedimentation yield calculated manually,

The sedimentation in the total River in the Srikakulam District = **3,14,108 Tones/ year**