

**EXECUTIVE SUMMARY FOR
PROPOSED ROUGH STONE & GRAVEL QUARRY
CATEGORY – B1 (CLUSTER)**

ToR Lr.No.SEIAA-TN/F.No.9621/SEAC/ToR-1337 Dated: 10.02.2023

PROPOSED QUARRY LEASE DETAILS	
SURVEY NOS	211/2B, 211/3B, 211/4, 211/5, 211/6, 211/7, 211/8 & 211/9
VILLAGE	VADA ALAPIRANDAN
TALUK	CHEYYAR
DISTRICT	TIRUVANNAMALAI
EXTENT	1.55.0 HA
PROPOSED PRODUCTION QUANTITY FOR FIVE YEARS	81,635 m ³ OF ROUGH STONE 8,709 m ³ OF WEATHERED ROCK 9,160 m ³ OF GRAVEL
LAND	PATTA LAND

(Sector No. 1(a) (Sector no.1 as per NABET)
Category of the Project: B1 Cluster Mining, Total Cluster Area – 10.72 Ha

APPLICANT

**TVL.JCK MINES,
THIRU.J.K.SRINIVASAN (PARTNER),
S/O.KANNAN,
NO.782, MARIAMMAN KOVIL STREET,
JAMBODAI VILLAGE, AZHIVIDAITHANGI POST,
VEMBAKKAM TALUK, TIRUVANNAMALAI DISTRICT - 604402**

ORGANIZATION

**M/S. GLOBAL MINING SOLUTIONS
(NABET ACCREDITED & ISO 9001 CERTIFIED CONSULTANT)
PLOT NO. 6, SF NO. 13/2, A2, VS CITY, RC CHETTYPATTY,
KOTTAMETTUPATTY, OMALUR, SALEM, TAMIL NADU – 636 455
NABET ACCREDITATION NO – NABET/EIA/2326/IA 0110**

June -2023



EXECUTIVE SUMMARY

1.0 Introduction

Environmental Impact Assessment (EIA) as a tool used to identify the environmental, social and economic impacts of a project prior to decision-making. It aims to predict environmental impacts at an early stage in project planning and design, find ways and means to reduce adverse impacts, shape projects to suit the local environment and present the predictions and options to decision-makers.

Tvl.JCK Mines has obtained Precise Area communication letter from the Deputy Director, Department of Geology and mining, Tiruvannamalai District, to quarry out 81,635m³ of Rough Stone, 8,709m³ of Weathered rock and 9,160m³ of Gravel over an extent of 1.55.0Ha located at S.F. Nos. 211/2B, 211/3B, 211/4, 211/5, 211/6, 211/7, 211/8 and 211/9 located in Vada Alapirandan Village, Cheyyar Taluk, Tiruvannamalai District, Tamil Nadu.

As per EIA notification, 2006 and its subsequent amendments the proposed "**Rough Stone & Gravel Quarry of Tvl.JCK Mines**" cluster is falls under Schedule 1(a) Mining of Minerals. It is further classified under Category B1 due to the overall extent of cluster area is 10.62 Ha which is >5 Ha. The ToR for preparation of EIA/EMP was approved vide letter No. SEIAA-TN/F.No.9621/SEAC/ToR-1337/2023 dated 10.02.2023. This report has been prepared in line with the approved TOR for production of maximum excavation of 81,635 Cu.m of Rough Stone, 8,709 Cu.m of Weathered Rock and 9,160 Cu.m of Gravel for a period of five years.

1.1 Details of Project Proponent

Name of the Proponent	: Tvl.JCK Mines, Thiru.J.K.Srinivasan (Partner)
Status of the Proponent	: Partnership Firm
Address	Tvl.JCK Mines, Thiru.J.K.Srinivasan (Partner) S/o.Kannan, No.782, Mariamman Kovil Street, Jambodai Village,

Azhividaithangi Post,
Vembakkam Taluk,
Tiruvannamalai District – 604 402
Cell No.:9786228697

1.2 Size and Location of the Project

S. No.	Feature	Description
1	Co-ordinates of the project	Latitude: 12°38'30.31"N to 12°38'37.08"N Longitude 79°35'54.79"E to 79°35'58.45"E
2	Type of land	Private Patta land
3	Extent of lease area	1.55.0 Ha
4	Type of lease	Fresh lease
5	Toposheet No.	57-P/10
6	Geological Resource	3,09,820 m ³ of Rough Stone, 15,491 m ³ of Weathered rock and 15,491 m ³ of Gravel
7	Mineable Resource	81,635 m ³ of Rough Stone, 8,709 m ³ of Weathered rock and 9,160 m ³ of Gravel
8	Proposed production quantity for five years	81,635 m ³ of Rough Stone, 8,709 m ³ of Weathered rock and 9,160 m ³ of Gravel
9	Proposed depth of mining	22m BGL

1.3 Statutory Details:

This is a fresh Rough Stone & Gravel Quarry project. There is no litigation/court cases pending against this project.

(a) Precise Area Communication:

The Project Proponent has obtained Precise Area Communication from the Deputy Director, Department of Geology and Mining, Tiruvannamalai, vide Rc. No. 159/Kanimam/2022 dated 21.09.2022. The letter copy enclosed as Annexure – 1.

(b) Mining Plan Approval Letter:

The project proponent has prepared mining plan under rule L9(l),41 &42 of Tamil Nadu Minor Mineral Concession Rules, 1959 and the same has been approved by the

Deputy Director, Dept. of Geology & Mining, Tiruvannamalai vide Rc.No.159/Kanimam/2022 dated 03.10.2022. The approval letter along with approved plan is enclosed as Annexure - 2.

(c) 500m radius quarry features:

The project proponent has obtained an official letter from Deputy Director, Dept. of Geology & Mining, Tiruvannamalai vide Rc.No.159/Kanimam/2022 dated 03.10.2022. The letter copy enclosed as Annexure - 3.

(d) VAO certification regarding 300 meter features of the project area.

There are no historical places, schools, cemeteries, HT and LT lines, temples, bird sanctuaries, and wildlife sanctuaries within 300 metres of the proposed project area. In this regard, the project proponent has received an official letter from the Village Administrative Officer, Vada Alapirandan village, dated 21.10.2022. The letter copy enclosed as Annexure - 4.

(e) Project Proponent undertaking affidavit:

The project proponent has issued an affidavit under MoEF & CC O.M. No. 3-50/2017-IA.III(Pt.) dated 30.05.2018 to comply with the direction of the Hon'ble SC made on 2.08.2017 in W.P. (C) 114 of 2014 in matter of Common Cause vs Union of India & Ors. The Affidavit copy is enclosed as Annexure - 5.

(f) Blasting Agreement:

The Project Proponent have agreement with T.M.K. Explosives to carry out the blasting operation for the proposed quarry. The Blasting Agreement is enclosed as Annexure - 6.

(g) Land document of the proposed lease area:

It is patta land jointly registered in the name of partners of JCK Mines (Thiru.Srinivasan, Thiru.Boopalan, Thiru.Gopalan, Thiru.Vettrivelan and Thiru.Sudhakaran vide Patta no.765. The copy of the documents are enclosed as Annexure -7.

2.0 Project Description

The type of the project is opencast semi-mechanized mining method to excavate Rough Stone & Gravel within the proposed Mine Lease area with drilling, blasting, loading and transportation.

2.1 Location details

This project site is located S.F. Nos. 211/2B, 211/3B, 211/4, 211/5, 211/6, 211/7, 211/8 and 211/9 over an area of 1.55.0 Ha in Vada Alapirandan Village, Cheyyar Taluk, Tiruvannamalai District, Tamil Nadu. The nearest highway is Kanchipuram – Vandavasi road (SH 116) at a distance of 4.5km, SE. The nearest railway station is Kanchipuram Railway Station which is located at a distance of 25km, NE from the project site. The nearest airport is Chennai (Meenambakkam) Airport which is located at a distance of 90km, NE

2.2 Geological resources

Geological Resources is estimated at 3,09,280m³ of Rough Stone, 15,491m³ of Weathered Rock and 15,491m³ of Gravel and Mineable Reserves is estimated at 81,635m³ of Rough Stone, 8,709m³ of Weathered Rock and 9,160m³ of Gravel and after leaving necessary safety distance from the lease boundary as indicated in the Precise area letter and relevant mining laws in force.

Section	Length in (m)	Width in (m)	Depth in (m)	Volume in m ³	Gravel formation in m ³	Weathered Rock in m ³	Geological Resources of Rough stone in m ³
XY-AB	112	102	1	11424	11424		
	112	102	1	11424		11424	
	112	102	20	228480			228480
Total					11424	11424	228480
XY-CD	83	49	1	4067	4067		
	83	49	1	4067		4067	
	83	49	20	81340			81340
Total					4067	4067	81340
Grand Total					15491	15491	309820

2.3 Mineable resources

The mineable reserves calculated by deducting 7.5m and 10m safety distance and bench loss.

Section	Bench	Length in (m)	Width in (m)	Depth in (m)	Volume in m ³	Gravel formation in m ³	Weathered Rock in m ³	Mineable Reserves of Rough stone in m ³
XY-AB	I	104	65	1	6760	6760		
	II	103	63	1	6489		6489	
	III	100	57	5	28500			28500
	IV	93	44	5	20460			20460
	V	86	31	5	13330			13330
	VI	73	18	5	6570			6570
Total						6760	6489	68860
XY-CD	I	75	32	1	2400	2400		
	II	74	30	1	2220		2220	
	III	71	25	5	8875			8875
	IV	65	12	5	3900			3900
Total						2400	2220	12775
Grand Total						9160	8709	81635

2.4 Yearwise production resources

The project proponent has proposed to carry out 81,635m³ of Rough Stone 8,709m³ of Weathered rock and 9,160m³ of Gravel at the rate of 100% recovery upto a depth of 22m below ground level for the period of five years.

Year	Section	Bench	Length in (m)	Width in (m)	Depth in (m)	Volume in m ³	Gravel in m ³	Weathered Rock in m ³	Mineable reserve of Rough stone in m ³
I	XY-AB	I	61	65	1	3965	3965		
		II	60	63	1	3780		3780	
		III	57	57	5	16245			16245
	Total						3965	3780	16245
II	XY-AB	I	43	65	1	2795	2795		
		II	43	63	1	2709		2709	
		III	43	57	5	12255			12255

	XY-CD	I	31	32	1	992	992		
		II	31	30	1	930		930	
		III	31	25	5	3875			3875
	Total						3787	3639	16130
III	XY-CD	I	44	32	1	1408	1408		
		II	43	30	1	1290		1290	
		III	40	25	5	5000			5000
		IV	65	12	5	3900			3900
	XY-AB	IV	34	44	5	7480			7480
Total						1408	1290	16380	
IV	XY-AB	IV	59	44	5	12980			12980
		V	23	31	5	3565			3565
	Total								16545
V	XY-AB	V	63	31	5	9765			9765
		VI	73	18	5	6570			6570
	Total								16335
Grand Total						9160	8709	81635	

2.5 Land use of the project area

The proposed Mine Lease area is dry barren Patta land and the Land use pattern of the project site is given below.

S. No.	Land Use	Present Area (Hect)	Area in use during the quarrying period (Hect)
1	Quarrying Pit	Nil	0.83.0
2	Infrastructure	Nil	0.01.0
3	Roads	Nil	0.01.0
4	Green Belt	Nil	0.15.0
5	Unutilized	1.55.0	0.55.0
	Total	1.55.0	1.55.0

The ultimate pit dimension at the end of conceptual period is given below.

Pit No.	Length (max) (m)	Width (Avg) (m)	Depth (max) (m)
I	179	46	22

2.6 Method of mining

Opencast Semi-mechanized mining with a bench height of 5m and bench width of 5m and 80° Slope is proposed. The quarry operation involves shallow jack hammer drilling, slurry blasting, excavation, loading and transportation of Rough Stone to the needy customers. Occasionally hydraulic excavators are attached with rock breakers for fragmentation to avoid secondary blasting.

2.7 Greenbelt Development

Green belt development plan is proposed for the 5 year period.

S.No.	Year	Species	No. of trees	Spacing	Survival
1	I	Pongamia pinnata,	200	3m x 3m	80%
2	II	Syzigium cumini, Albizia lebbeck,	200		
3	III	Thespesia populnea,	200		
4	IV	Bauhinia racemose,	200		
5	V	Cassia siamea, Azadirachta indica	200		
Total			1000		

3.0 Description of the Environment

The project area is located in Vada Alapirandan village, Cheyyar Taluk, Tiruvannamalai District over an extent of 1.55.0Ha. The project area is considered as Core zone and the area in the surrounding 10km radius is considered as Buffer Zone. The meteorological data collected in the study area from March to May 2023 which includes Temperature, Wind speed, Wind direction and Relative humidity. The predominant wind blow from West. Temperature range was from 20°C (minimum in night) to 45°C (maximum in day).

3.1 Ambient Air monitoring Data

Ambient air quality monitoring has been carried out in 5 locations. One in the core zone and remaining four locations are in the buffer zone areas. The concentrations of the monitoring value well within the prescribed government norms. For all the components in the table, the unit are in $\mu\text{g}/\text{m}^3$

S. No.	Parameters	A1 Near Mine lease area	A2 Athi village	A3 Kil nethapakka m village	A4 Vada Alapiranda	A5 Anappathu r village	NAA Q limit s
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								n Pudur village				
		Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	
1	PM10	42.4	54.5	45.1	56.4	43.1	57.2	45.4	60.2	47.2	61.3	100
2	PM2.5	19.3	29.3	20.4	29.3	18.7	29.1	20.6	30.2	22.2	34.3	60
3	SO ₂	3.4	5.8	3.7	6.4	4.0	6.4	3.8	8.4	4.2	7.6	80
4	NO _x	5.4	7.9	5.8	7.6	6.2	9.2	6.7	11.4	6.8	10.4	80
5	CO	BDL (DL - 1144)										2

3.2 Water Environment

Water samples (bore wells) were collected from 5 different locations and the results are given below.

Table 3.4 Results of Water sampling Analysis in 5 locations

S. No	Parameter	WS1	WS2	WS3	WS4	WS5	Limits	
		Near Mine lease area	Athi	Kilnethakkam	Vada Alapirandan	Anappathur	Acceptable Limits	Permissible Limits
1	Odour	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
2	Turbidity	<1	<1	<1	<1.0	<1	1	5
3	pH at 25 °C	7.28	7.81	6.89	7.34	7.29	6.5- 8.5	No Relaxation
4	Electrical Conductivity	1018	389.4	710.5	1656	985.7	-	-
5	TSS	612	236	430	995	596	500	2000
6	Total hardness as CaCO ₃	431	171	235	349	408	200	600
7	Calcium as Ca	83.1	43.1	56.8	64.3	74.5	75	200
8	Magnesium as Mg	53.6	15.1	22.3	45.2	53.2	30.0	100
9	Calcium as CaCO ₃	208	108	142	161.0	186	-	-
10	Magnesium as CaCO ₃	223	62.7	93.0	188	221	-	-

11	Total alkalinity as CaCO ₃	319	147	160	326	254	200	600
12	Chloride as Cl ⁻	82.2	34.2	134	342	117	250	1000
13	Free Residual chlorine as Cl ⁻	BDL(D.L-0.2)	BDL(D.L-0.2)	BDL (D.L - 0.2)	BDL(D.L-0.2)	BDL(D.L-0.2)	0.2	1
14	Sulphates as SO ₄ ²⁻	124	13.6	72.6	208	114	200	400
15	Iron as Fe	0.09	0.08	0.05	0.15	0.12	0.3	No Relaxation
16	Nitrate as NO ₃	3.26	BDL(D.L-1.0)	3.5	2.08	2.93	45	No Relaxation
17	Fluoride as F	0.36	0.13	0.21	0.39	0.24	1	1.5
19	Manganese as Mn	BDL(D.L-0.05)	BDL(D.L-0.05)	BDL (D.L - 0.05)	BDL(D.L-0.05)	BDL(D.L-0.05)	0.1	0.3

3.3 Noise Monitoring

Noise Monitoring were done at 5 different locations and the results are given below.

S. No	Location	Day equivalent	Night equivalent	Day and Night equivalent	Day equivalent limits by CPCB	Night equivalent limits by CPCB
1	NM1 - Mine lease area	45	37.7	43.6	55	45
2	NM2 - Athi	47.3	38.1	45.8		
3	NM3 - Kilnethapakkam	46.2	39.0	44.8		
4	NM4 - Vada Alapirandan	45.2	37.5	43.8		
5	NM5 - Anappathur	48.7	38.7	47.2		

3.4 Soil Sampling

Soil samples have been collected from the mine lease area and 2 other locations from Athi village and Kilnethapakkam village and the results are given below.

S. No.	Parameter	SS1 Mine lease area	SS2 Athi	SS3 Kil Nethapakkam
1	pH	7.95	7.25	7.67
2	Electrical Conductivity	184.9	156.7	110.2
3	Dry Content	97.6	96.5	98.3
4	Water Content	2.4	3.5	1.7

5	Organic Mater	0.15	0.22	0.32
6	Sulphur	BDL(D.L.0.02)	BDL(D.L.0.02)	BDL(D.L.0.02)
7	Phosphorus	4.5	3.2	2.7
8	Texture	sandy loam	clay	silt loam
9	Sand	55.64	32.57	36.58
10	Clay	28.95	26.44	52.47
11	Loam	15.41	40.99	10.95
12	Total Nitrogen	53	68	102
13	Sodium	476	540	386
14	Potassium	720	910	562
15	Water Holding Capacity	3.3	3.7	3.5
16	Porosity	16.4	18.6	16.9

4.0 Anticipated Environmental Impacts and Mitigation Measures

In order to maintain the existing environmental scenario of the proposed mine lease area it is mandatorily required to assess the present ecology and environment of the proposed mine lease area and buffer area of the project before starting mining operations.

4.1 Land Environment

This is a proposed Rough Stone and Gravel Quarry of Tvl.JCK Mines, Thiru.J.K.Srinivasan (Partner) at S.F. Nos. 211/2B, 211/3B, 211/4, 211/5, 211/6, 211/7, 211/8 and 211/9 over an extent of 1.55.0 Ha in Vada Alapirandan Village, Cheyyar Taluk, Tiruvannamalai District, Tamil Nadu. The method of mining is Opencast Semi mechanized with a bench width and height of 5m. It is proposed to excavate to 81,635 m³ of Rough Stone, 8709 m³ of Weathered rock and 9160 m³ of gravel upto a depth of 22m BGL for the period of five years.

Anticipated Impacts and Mitigation Measures

The major impact due to this project on land environment is the change in land use. Since this quarry is a small one and the production is less, mining activity will be carried out only up to 22m BGL. Other than quarrying of minerals, no other change will be done since there is no dumping. To prevent soil erosion during monsoon season, garland drain will be constructed with silt traps. At the mine closure stage, 0.83.0 Ha of lease area will be left as rain water harvesting pond. 0.15.0 Ha will be developed with green belt. For this, plants like Pongamia pinnata, Syzigium cumini,

Albizia lebbeck, Thespesia populnea, Bauhinia racemose, Cassia siamea, Azadirachta indica are selected. A total of 1000 trees are planned to be planted. Spacing will be 3m x 3m.

4.2 Solid Waste Management

The waste generation in the form of Solid waste (Municipal Waste) is very negligible. A detailed solid waste management system for the project area is given below and the same will be executed by proper awareness and sign boards. The sign boards will be in two language i.e., Vernacular language (Tamil) and common language (English). The plastic waste generation is very negligible and it will be collected from the source level in specific dustbin and disposed through the municipal bins.

4.3 Water Environment

Impacts on Surface Water Resources

There is no seasonal or perennial Odai within the M.L area. The drainage pattern of the region is plane to sub-dendritic. Surface run-off water of the M.L. area is drained through proposed drainage and collected in the bottom of the quarry and collected water will be used for same quarry operation as such for plantation & dust suppression.

The nearest river is Cheyyar River flows from northwestern to northeastern at a distance of 120m from the proposed ML area. There are other water bodies near to the proposed as such a Tandarai canal located western side at distance of 19 m. Water table is found at a depth of 48m in summer and 45m in rainy seasons.

Since these water bodies are located outside the lease area and there is no discharge of effluent or any untreated water from the mines will be made into these water bodies, there is no major impact. The project proponent will restrict the mining operation only within the lease and no other work will be carried out near the canal or any area outside the mining lease.

Impacts due to water use in Mines

In the proposed mines water will be mainly used for domestic purpose, dust suppression & plantation. Total water requirement for the project is 5.0 KLD which

will be sourced from outside agencies. Negligible sewage of 0.8 KLD will be generated, for which a septic tank with soak pit will be set up.

Impacts on Ground Water

The mining activity is not likely to intersect ground water as the ground water table occurs at 48 BGL in summer season and in Rainy season at 45 BGL. The mining will go up to the maximum depth of 22m BGL. So there will be no chance of intersecting the ground water table by the mining activity. So the impact of mining on the ground water is not envisaged.

Mitigation Measures

Entire lease area will be provided with proper garland drains. Check wears will be provided to prevent solids from wash off. Construction of garland drains around freshly excavated so that flow of water with loose material is prevented. The mine water will be passed through the natural slopes and valleys and gets accumulated in the settling tank (Bottom pit).

4.4 Air Environment

Impacts due to mining operation

Mining activities in the proposed lease area not only pollutes the air in the core zone but also the nearby areas. The major air pollutants due to mining operations are fugitive emissions like PM₁₀, PM_{2.5}. Other than these pollutants, gaseous emissions of sulfur dioxide (SO₂) and oxides of nitrogen (NO_x) due to excavation/loading equipment and vehicles plying on haul roads are the cause of air pollution in the project area.

Furthermore loading, unloading and transportation of rough stone and gravel as well as wind erosion of the exposed area and movement of light vehicles will cause pollution within a 500-meter radius of the project area due to quarrying activities. This has a cumulative impact on the ambient air environment around the project area.

Mitigation measures for various impacts

S. No.	Impact	Mitigation measures
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1	Dust emission due to drilling	<ul style="list-style-type: none"> • Using Wet drilling methods • Allowing drilling only with PPE
2	Dust emission due to Blasting	<ul style="list-style-type: none"> • Carrying out blasting only during specified times • Avoiding blasting during unfavourable weather conditions • Using explosives of good quality
3	Transportation	<ul style="list-style-type: none"> • Using mist sprayers • Regular wetting of transport roads • Covering the materials carried in tippers with tarpaulin • Proper maintenance of vehicles used for transportation • Conducting regular emission tests for vehicles used for transport • Development of greenbelt is proposed in the safety zone of 10m and 7.5m barriers in the lease area.

4.5 Noise Environment

The main noise generating source during mining operation and related activities are drilling, excavation, loading and transportation. Intermittent noise is generated due to operation of diesel generator.

Impacts

Noise generation in mining is due to operation like drilling, blasting and transportation of minerals within and outside the lease area. As per DGMS (Directorate General of Mines Safety) limits, the acceptable noise level is 85 dB(A) for an exposure period of 8 hours. Exposure to loud noise can also cause high blood pressure, heart disease, sleep disturbances, and stress. Noise pollution also impacts the health and well-being of wildlife. Noise exceeding prescribed limits may cause impairment like abnormal loudness perception, tinnitus which causes a persistent high-pitched ringing in the ears, paracusis or distorted hearing.

Mitigation Measures

As the distance between the source and receptor increases, the noise level decreases. Hence, there will be a natural attenuation. The proponent has planned to develop green belt in the periphery of the lease area which diminishes sound volume by

dampening them. All the equipment/machinery/tippers involved will be properly maintained to control noise generation. Conducting regular health checkups for employees involved. Employees will be made to work on shifts to reduce their exposure time. Providing earplugs to all employees. Providing green walls/nets wherever possible.

4.6 Socio Economic Impact

The lease area is a private Patta land jointly registered in the name of partners of JCK Mines (Thiru.Srinivasan, Thiru.Boopalan, Thiru.Gopalan, Thiru.Vettrivelan and Thiru.Sudhakaran. No rehabilitation is needed. Hence, there is no negative impact. The proponent has planned to spend INR 5,00,000 for CER activities.

4.7 Occupational Health

Impacts

The occupational risk due to proposed mining may be due to drilling, blasting, excavation and transportation. A total of 22 workers will be engaged in the mining activity. Mining activity may cause various health problems to the mines workers as follows:

- Dust generated during excavation, drilling, stone cutting, sizing and transportation may cause health problems like Silicosis, Asthma, Tuberculosis and other respiratory lungs disorders.
- Heavy weight lifting by the workers may cause injuries to arms, legs and back.
- Noise generated during the mining activity may cause Noise Induced Hearing Loss (NIHL).

Mitigation Measures

- The mines worker will be provided with dust mask to minimize the inhalation of the dust.
- Water sprinkling twice in a day is in practice on the haul roads, near excavation and roads to reduce the fugitive dust emission.
- Wet drilling and drilling with dust extractor will be practiced.
- Ear muffs will be supplied to the workers working in the noise prone area

- The mining site will be supplied with first aid facilities and the entire mines worker will have access to that.
- The mines workers will be well trained about the safety practices in the mining activities.
- As per Mines Rules, 1955, medical examination of employees at the initial stage and periodically, shall be done by a team of qualified medical officers provided by the project proponent.
- Regular medical checkup camps shall also be arranged for detection of occupational diseases and minor disease in the nearby rural population.
- Free checkup and medicine for treatment for their acute and chronic illness shall be provided by the lessee. Conducting periodical Medical Examination as per DGMS.
- Making all first aid kits available in mines office
- Keeping fire extinguisher in place
- Educating the employees about how to handle unexpected happenings
- Posting information containing emergency contact numbers in mines office
- By adopting all these measures, the safety of the employees working in the quarry will be ensured.

5.0 Analysis of Alternatives (Technology & Sites)

The mining technology is semi mechanized Opencast in single -shift operation without any change in technology. The operation will be carried out as per DGMS norms. No alternate technology will be used.

6.0 Environmental Monitoring Programme

Monitoring is done to measure the efficiency of control measures implemented. Regular monitoring of various environmental parameters like air, water, noise and soil environments is needed to assess the status of environment during the project operation.

A schedule is framed with timeline to monitor various parameters during the operation of the project. The schedule is framed based on MoEF & CC and Tamil Nadu State Pollution Control Board. In case the SEIAA/TNPCB/MoEF & CC or other statutory bodies demand monitoring of any additional parameter/factor, the same will also be

done.

The proposed quarry is a small quarry. Hence the Mines-in-charge will be responsible for environmental related activities. After obtaining EC, the conditions mentioned in EC will be strictly followed. The Mines-in-charge will be responsible for implementing the conditions. EC compliance report will also be submitted periodically.

7.0 Additional Studies

7.1 Risk Assessment & Management

Risk assessment is a method in which possible threats/hazards which may arise during mining operations are identified so that adequate machinery/equipment are made available in precaution.

7.2 Rehabilitation and Resettlement (R&R) Plan

No land is acquired from people dwelling in the area. The lease area is an uninhabited land. No R & R plan is proposed.

7.3 Hydrogeological Study

Tandarai canal is located at 19m in the Western side of the lease area. Cheyyar River is located at 120m in the Northwestern part of the lease area. Due to the presence of these water bodies nearby, a detailed hydrogeological study has been done. As suggested in the precise Area Communication letter, safety distances of 10m is left on North, East side and a safety distance of 50m left for Northwestern side, 7.5m safety distance is left for adjacent Patta lands.

7.4 Slope Stability Study

The proposed quarry is a very small quarry and the production is also less. Opencast Semi-mechanized mining with a bench height of 5m and bench width of 5m and 80° Slope is proposed. The depth of mining is proposed as 22m BGL, which is the ultimate pit limit. Also, there is no overburden since the entire mined out material will be utilized.

7.5 Disaster Management Plan

Precautionary measures are well explained to all staff by the mines in-charge. PPE

necessary for all staff are available in the quarry. No person is allowed to enter inside without PPE. Avoiding quarrying during unfavorable environmental conditions. Carrying out safe blasting by following DGMS norms. Safety equipment like fire extinguisher, first aid kit, etc are present in the mine. Proper maintenance of machinery used for mining. In case of any emergency, the contact numbers of mines in-charge, mines manager, Management contact are available in the mines office.

7.6 Mine Closure Plan

The quarrying operation is proposed up to a depth of 22m BGL, which will be achieved in 5 years. The ultimate pit dimension will be 179m x 46m x 22m. After completion of quarrying operation, the mined out pit will be left as rain water harvesting pond. The quarry will be properly fenced with barbed wire.

8.0 Project Benefits

The project area is located on barren private Patta land, thereby causing no impact on the loss of agriculture or forest land. The project will create employment opportunities in the area. There will be no adverse effect of mining on the socioeconomic status of the people; rather, mining activities will improve their standard of living. The mining activity creates employment opportunities for the local people, and this definitely raises their economic status. Apart from the overall beneficial impact of the project on the local people of the region, it is felt necessary to augment facilities in the fields of education, health, and social awareness, including concern for the environment and ecosystem.

The mining activity at proposed Rough Stone & Gravel of Tvl.JCK Mines, Thiru.J.K.Srinivasan (Partner) cluster will create direct employment opportunity for 22 local people. The PP has proposed CER amount of Rs.5,00,000 for project surrounding schools development.

9.0 Environmental Management Plan

The Environmental Management Plan is developed to ensure that a project is implemented in an environmentally sustainable manner, where all contractors and subcontractors, including consultants, understand the potential environmental risks arising from the project and take appropriate actions to minimize those risks. EMP

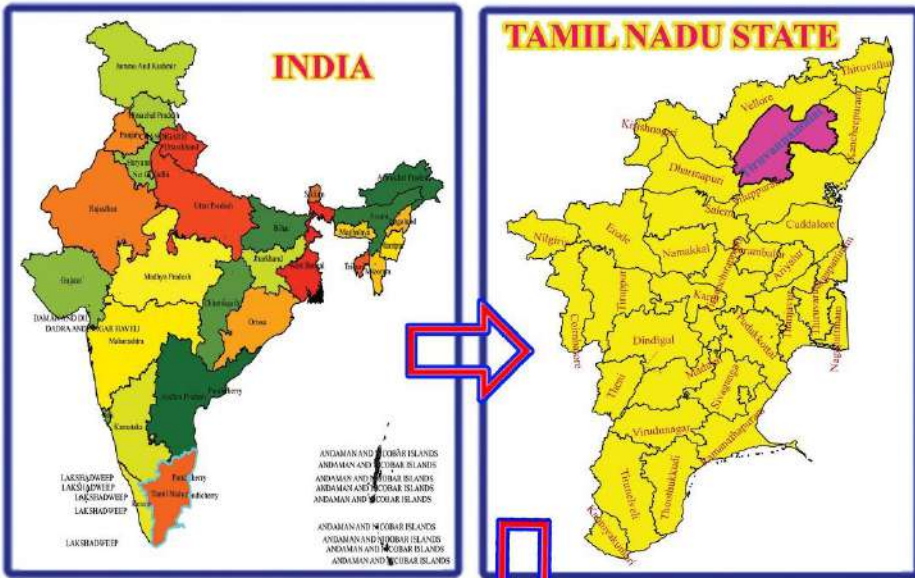
also ensures that the project implementation is carried out in accordance with the planned design and by taking appropriate mitigation measures to reduce adverse environmental impacts during the project's life cycle.

The effective implementation of EMP is not only reduce pollution load and comply the regulatory requirement but also increase productivity and improve marketability of product. The capital and recurring cost of EMP for the cluster of mines has been given in below table.

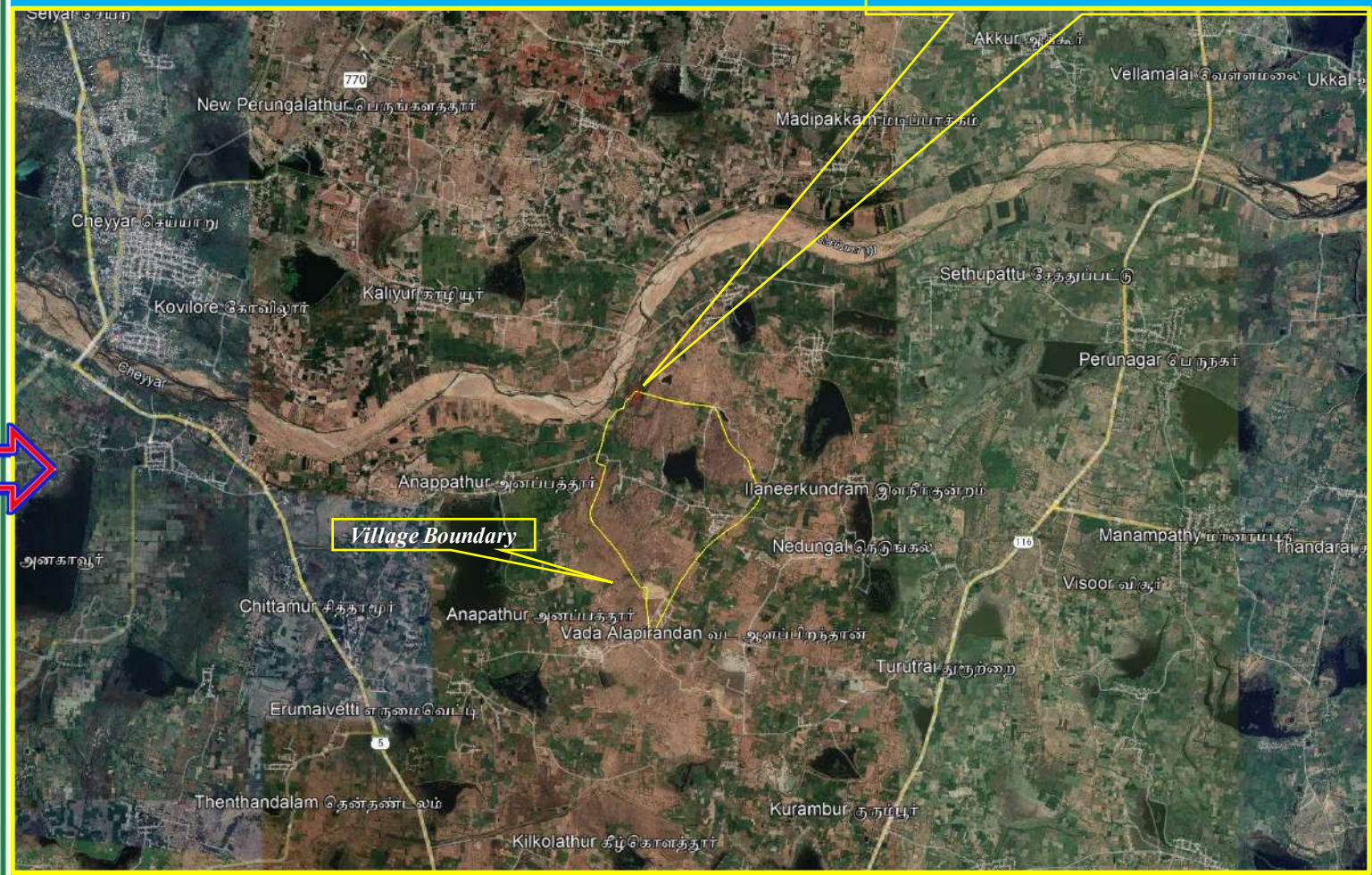
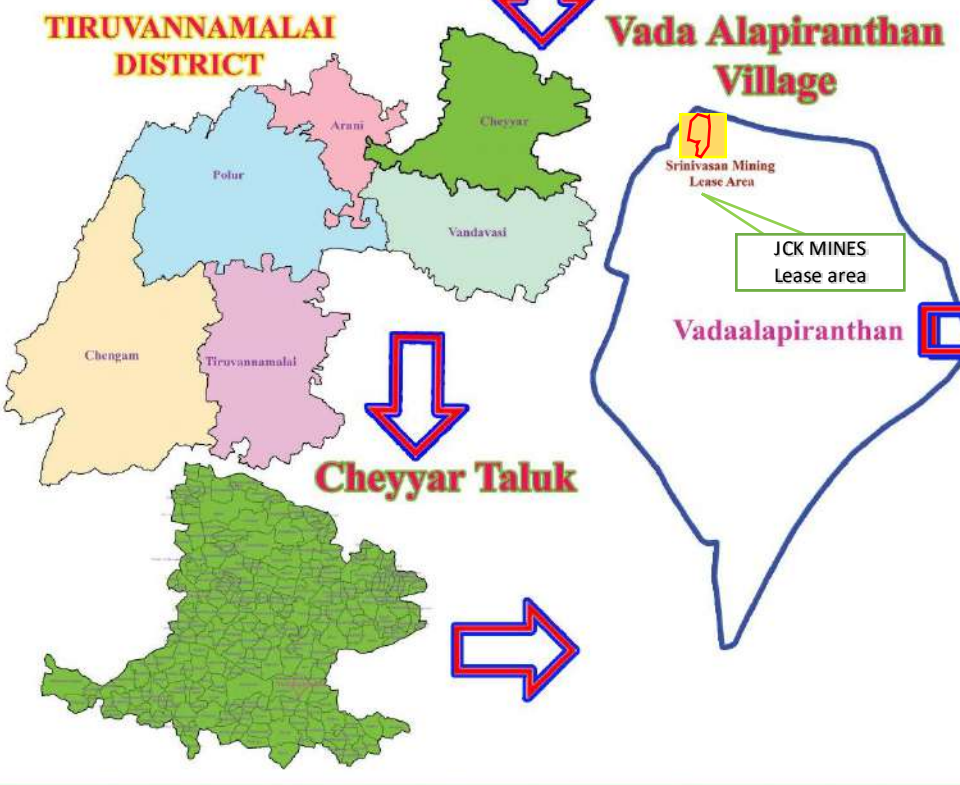
S.No.	Budget planned for	Amount (INR)
1	Air sampling	40,000
2	Water sampling	40,000
3	Noise monitoring	20,000
4	Ground vibration test	20,000
5	Drinking water facility	1,00,000
6	Sanitary arrangement	50,000
7	Safety kits	50,000
8	Water sprinkling	1,00,000
9	Afforestation	60,000
Total		4,80,000

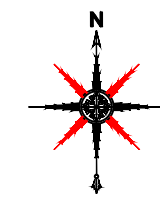
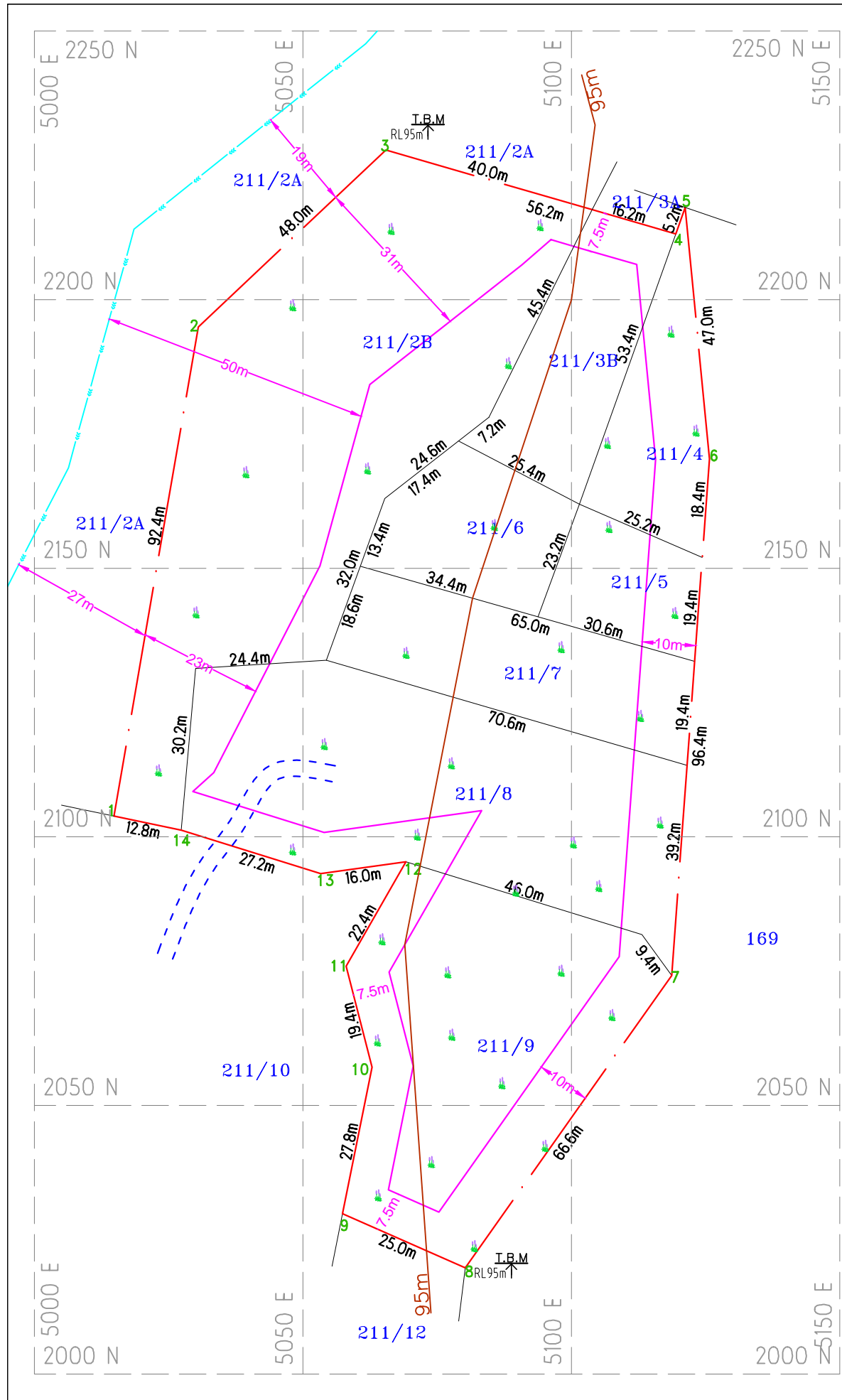
10.0 Conclusion

It can be concluded from overall assessment of the impacts, in terms of positive and negative effects on various environmental components, that the mining activities will not have any adverse effect on the surrounding environment.



LOCATION OF THE PROJECT AREA





BOUNDARY CO-ORDINATE		
LABEL	LATITUDE	LONGITUDE
1	12° 38' 33.03" N	79° 35' 54.79" E
2	12° 38' 36.00" N	79° 35' 55.29" E
3	12° 38' 37.08" N	79° 35' 56.45" E
4	12° 38' 36.58" N	79° 35' 58.24" E
5	12° 38' 36.74" N	79° 35' 58.30" E
6	12° 38' 35.22" N	79° 35' 58.45" E
7	12° 38' 32.09" N	79° 35' 58.24" E
8	12° 38' 30.31" N	79° 35' 56.97" E
9	12° 38' 30.63" N	79° 35' 56.21" E
10	12° 38' 31.52" N	79° 35' 56.39" E
11	12° 38' 32.13" N	79° 35' 56.23" E
12	12° 38' 32.77" N	79° 35' 56.59" E
13	12° 38' 32.69" N	79° 35' 56.07" E
14	12° 38' 32.95" N	79° 35' 55.21" E
WGS 84 DATUM		

PLATE NO-II
 DATE OF SURVEY : 23.09.2022

APPLICANT:
 TVL JCK MINES,
 THIRU.J.K.SRINIVASAN (PARTNER),
 S/o.KANNAN,
 No.782 MARIAMMAN KOVIL STREET,
 JAMBODAI VILLAGE,
 AZHVIDAITHANGI POST,
 VEMBAKKAM TALUK,
 TIRUVANNAMALAI DISTRICT.

QUARRY LEASE APPLIED AREA:
 S.F.NOs : 211/2B, 211/3B, 211/4, 211/5, 211/6,
 : 211/7, 211/8 & 211/9,
 EXTENT : 1.55.0Ha,
 VILLAGE : VADA ALAPIRANDAN,
 TALUK : CHEYYAR,
 DISTRICT : TIRUVANNAMALAI.

INDEX	
Q.L.APPLIED BOUNDARY	
7.5m,10m&50m SAFETY DISTANCE	
TEMPORARY BENCH MARK	
APPROACH ROAD	
CONTOUR	
SCRUB	
CANAL	

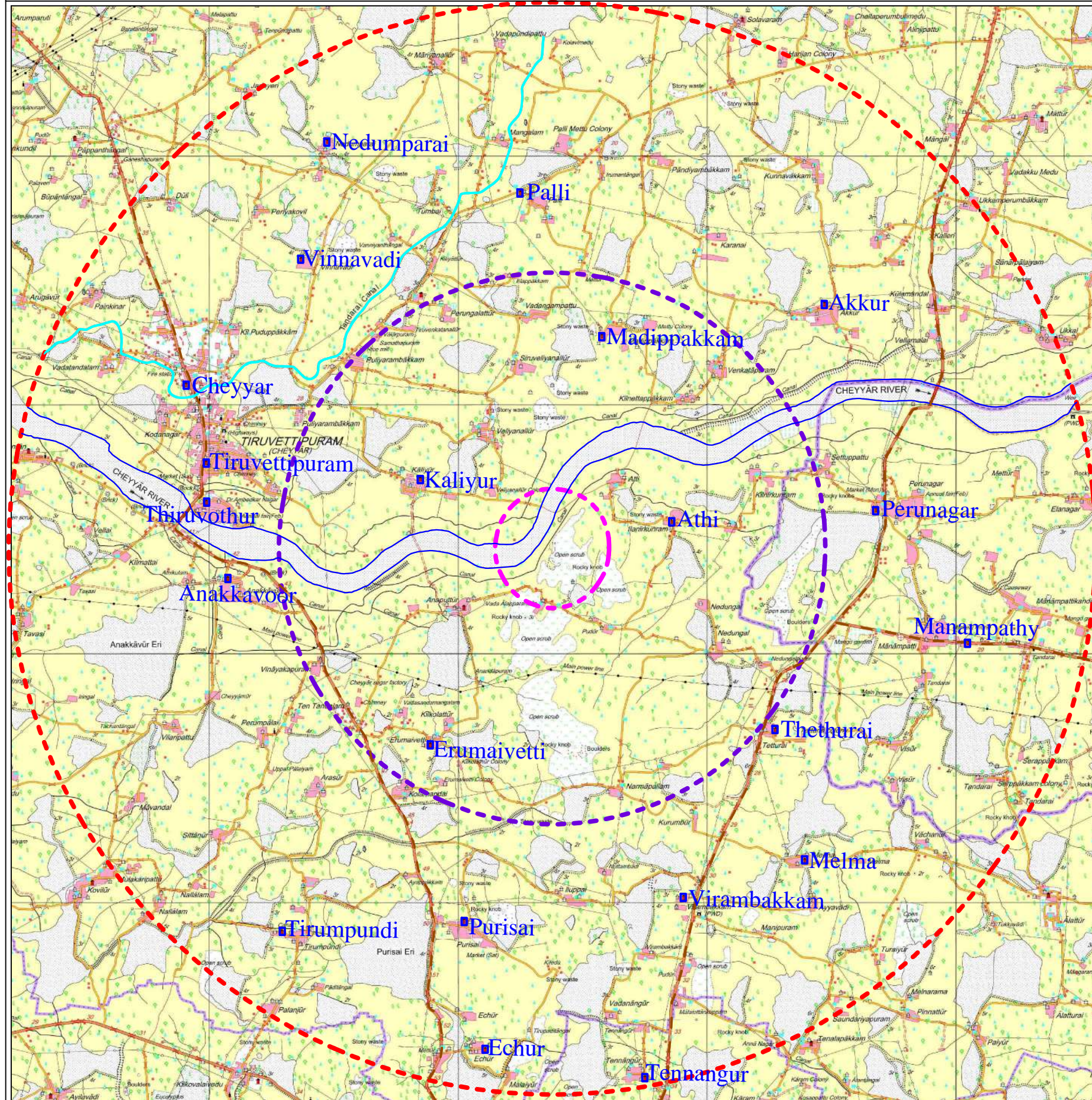
QUARRY LEASE & SURFACE PLAN
 SCALE 1 : 1000

PREPARED BY :
 THIS IS TO CERTIFY THAT THE INFORMATION
 IN THIS PLATE IS TRUE AND CORRECT TO
 THE BEST OF MY KNOWLEDGE BASED UPON
 THE LEASE MAP AUTHENTICATED BY STATE
 GOVERNMENT

C.NATARAJAN, M.Sc.,M.Phil.,
 QUALIFIED PERSON

PROPOSED ROUGH STONE AND GRAVEL QUARRY OF T.V.JCK MINES, THIRU.J.K.SRINIVASAN (PARTNER)
 OVER AN EXTENT 1.55.0HA LOCATED AT S.F.NOS.211/2B, 211/3B, 211/4, 211/5, 211/6, 211/7, 211/8 & 211/9 OF
 VADA ALAPIRANDAN VILLAGE, CHEYYARTALUK, TIRUVANNAMALAI DISTRICT, TAMIL NADU STATE

INDEX
 TOPO SHEET NO: 57 P/10



CONVENTIONAL SYMBOLS

Express highway: with toll; with bridge; with distance stone	
Roads, metalled: according to importance	
Roads, double carriageway: according to importance	
Unmetalled road. Cart-track. Pack-track with pass. Foot-path	
Streams: with track in bed; undefined. Canal	
Dams: masonry or rock-filled; earthwork. Weir	
River: dry with water channel; with island & rocks. Tidal river	
Submerged rocks. Shoal. Swamp. Reeds	
Wells: lined; unlined. Tube-well. Spring. Tanks: perennial; dry	
Embankments: road or rail; tank. Broken ground	
Railways, broad gauge: double; single with station; under constr.	
Railways, other gauges: double; single with distance stone; do.	
Mineral line or tramway. Kiln. Cutting with tunnel	
Contours with sub-features: Rocky slopes. Cliffs	
Sand features: (1) flat, (2) sand-hills(permanent), (3) dunes(shifting)	
Towns or Villages: inhabited; deserted. Fort	
Huts: permanent; temporary. Tower. Antiquities	
Temple. Chhatra. Church. Mosque. Idgah. Tomb. Graves	
Lighthouse. Lightship. Buoys: lighted; unlighted. Anchorage	
Mine. Vine on trellis. Grass. Scrub	
Palms: palmyra; other. Plantain. Conifer. Bamboo. Other trees	
Areas: cultivated; wooded. Surveyed tree	
Boundary, international	
state: demarcated; undemarcated	
district; subdivision; tahsil or taluk; forest	
Boundary pillars: surveyed; unlocated	
Heights, triangulated: station; point; approximate	
Bench-mark: geodetic; tertiary; canal	
Post office. Telegraph office. Overhead tank	
Rest house or inspection bungalow. Circuit house. Police station	
Camping ground. Forest: reserved; protected	
Spaced names: administrative; locality or tribal	
Hospital. Dispensary. Veterinary: Hospital / Dispensary	
Aerodrome. Helipad. Tourist site	
Power line: with pylons surveyed; with poles unsurveyed	

Q.L.APPLIED AREA



10km RADIUS



5.0km RADIUS



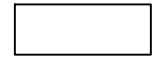
1.0km RADIUS



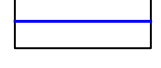
STATE HIGHWAY



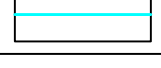
HABITATION



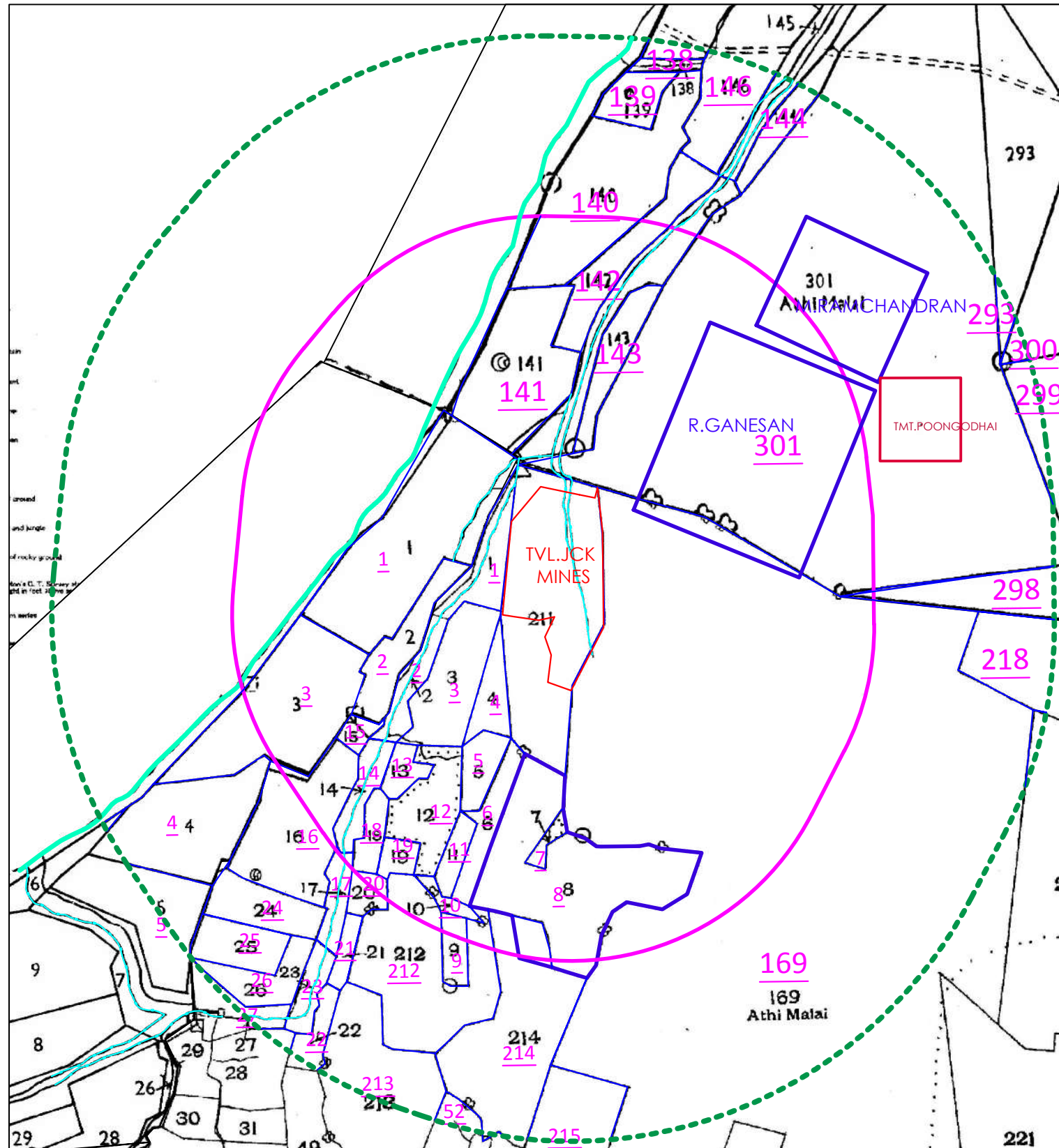
CHEYYAR RIVER



TANDARAI CANAL



PROPOSED ROUGH STONE AND GRAVEL QUARRY OF TVLJCK MINES, THIRU.J.K.SRINIVASAN (PARTNER) OVER AN EXTENT 1.55.OHA LOCATED AT S.F.NOS.211/2B, 211/3B, 211/4, 211/5, 211/6, 211/7, 211/8 & 211/9 OF VADA ALAPIRANDAN VILLAGE, CHEYYARTALUK, TIRUVANNAMALAI DISTRICT, TAMIL NADU STATE



APPLICANT:

TVLJCK MINES,
THIRU.J.K.SRINIVASAN (PARTNER),
S/o.KANNAN,
No.782 MARIAMMAN KOVIL STREET,
JAMBODAI VILLAGE,
AZHIVIDAITHANGI POST,
VEMBAKKAM TALUK, TIRUVANNAMALAI DISTRICT.

QUARRY LEASE APPLIED AREA:

S.F.NOs : 211/2B, 211/3B, 211/4, 211/5, 211/6,
: 211/7, 211/8 & 211/9,
EXTENT : 1.55.Oha,
VILLAGE : VADA ALAPIRANDAN,
TALUK : CHEYYAR,
DISTRICT : TIRUVANNAMALAI.

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TOPO SHEET NO : 57 P/10

LATITUDE : 12°38'20.50"N to 12°38'28.14"N

LONGITUDE : 79°35'53.58"E to 79°36'01.61"E

300m Radius :



500m Radius :



Q.L.Applied Area :



TOPO SHEET NO : 57 P/10

LATITUDE : 12°38'30.31"N to 12°38'37.08"N

LONGITUDE : 79°35'54.79"E to 79°35'58.45"E

ABANDONED QUARRIES

1.TMT.POONGODHAI



PRESENT PROPOSED QUARRIES

1.3.TVLJCK MINES



FUTURE PROPOSED QUARRIES

1.R.GANESAN



2.M.RAMCHANDRAN



3.THIRU.K.SUDHAKARAN



INDEX

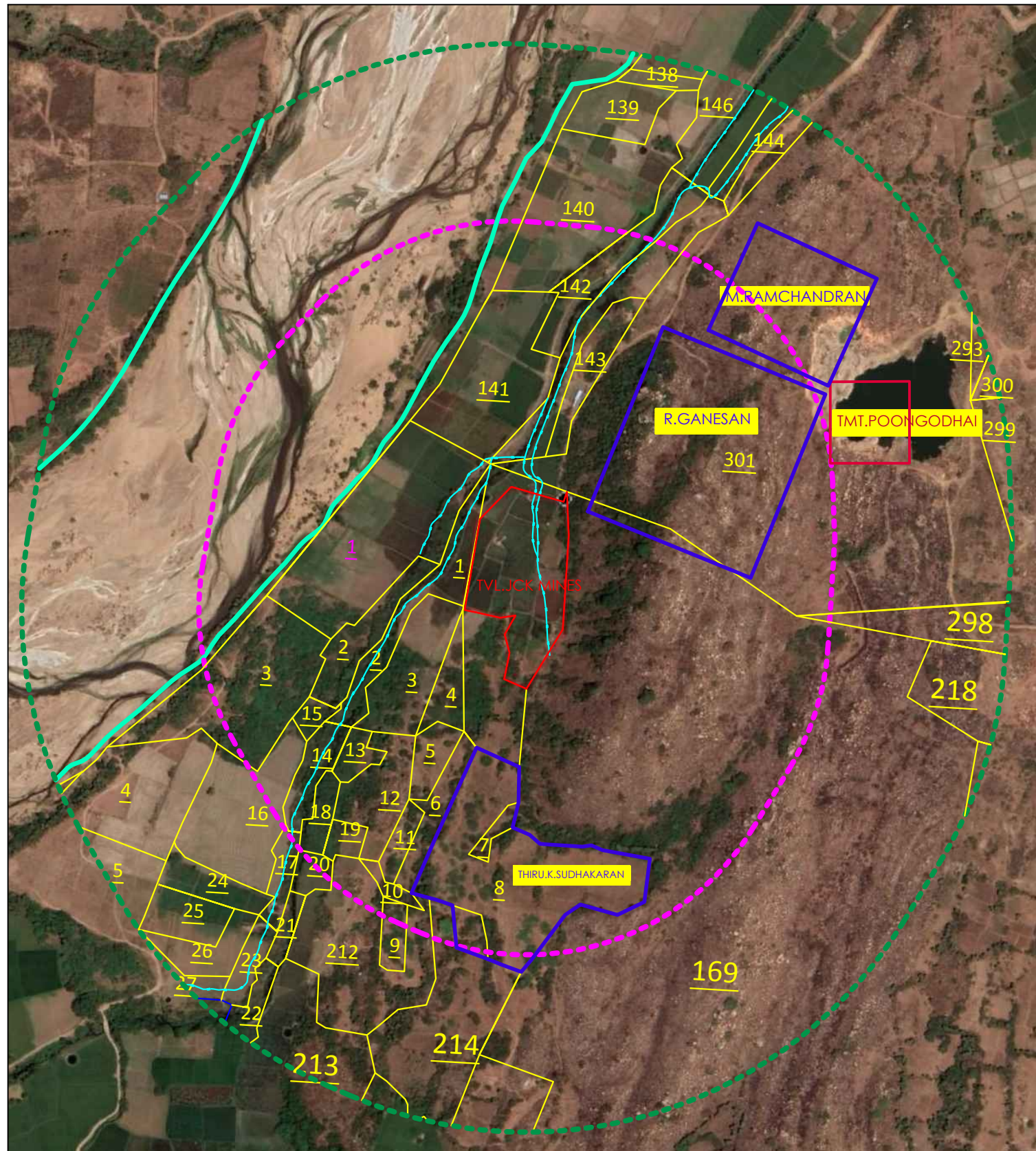
ODAI



CHEYYAR RIVER



PROPOSED ROUGH STONE AND GRAVEL QUARRY OF TVLJCK MINES, THIRU.J.K.SRINIVASAN (PARTNER) OVER AN EXTENT 1.55.OHA LOCATED AT S.F.NOS.211/2B, 211/3B, 211/4, 211/5, 211/6, 211/7, 211/8 & 211/9 OF VADA ALAPIRANDAN VILLAGE, CHEYYARTALUK, TIRUVANNAMALAI DISTRICT, TAMIL NADU STATE



APPLICANT:

TVLJCK MINES,
THIRU.J.K.SRINIVASAN (PARTNER),
S/o.KANNAN,
No.782 MARIAMMAN KOVIL STREET,
JAMBODAI VILLAGE,
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QUARRY LEASE APPLIED AREA:

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: 211/7, 211/8 & 211/9,
EXTENT : 1.55.Oha,
VILLAGE : VADA ALAPIRANDAN,
TALUK : CHEYYAR,
DISTRICT : TIRUVANNAMALAI.

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- Q.L.Applied Area :

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FUTURE PROPOSED QUARRIES

1.R.GANESAN

2.M.RAMCHANDRAN

3.THIRU.K.SUDHAKARAN

INDEX

ODAI

CHEYYAR RIVER

From

Thiru.A.Perumal, M.sc., M.phil.,
Deputy Director,
Geology and Mining,
Tiruvannamalai District.

To

Tvl.JCK Mines,
Rep. by its partner of
Thiru.J.K.Srinivasan,
No.782, Mariamman Kovil Street,
Jambodai Village, Azhivedaithangi Post,
Vembakkam Taluk,
Tiruvannamalai District.

Rc.No.159/Kanimam/2022, dated:03.10.2022

Sub: Quarries and Minerals - Minor Mineral Rough Stone and Gravel - Tiruvannamalai District Cheyyar Taluk - Vadalapiranthan village - Patta SF.Nos. 211/2B, & etc., over an extent 1.55.0 hecets., - Application preferred by **Tvl.JCK Mines Rep. by its partner Thiru.J.K.Srinivasan** - Details of quarries located in 500m radius- requested - Regarding.

Ref: Tvl.JCK Mines rep. by its parther Thiru.J.K.Srinivasan, Vembakkam Taluk Dated:03.10.2022.

In the reference cited, applicant **Tvl.JCK Mines represented by its partner Thiru.J.K.Srinivasan**, the applicant of proposed Rough Stone quarry lease in SF.Nos. 211/2B (0.48.30) 211/3B (0.09.20), 211/4 (0.08.5) 211/5 (0.05.5) 211/6 (0.08.0) 211/7 (0.13.0) 211/8 (0.32.5) & 211/9 (0.30.0) over an extent 1.55.0 hecets., of Vadalapiranthan village, Cheyyar Taluk, Tiruvannamalai District has requested to furnish the details of quarries located within 500 meters radius from his proposed quarry.

In this regard, the followings are furnished.

i). Existing quarries

Sl. No.	Name of the Owner (Tvl.)	Village & S.F. Nos.	Extent in Hect.	Lease Period	Remarks
--Nil--					

ii). Abandoned quarries

Sl. No	Name of the Owner (Tvl)	Village & S.F. Nos.	Extent in Hect.	Lease Period	Remarks
1	Tmt.Poongodhai, W/o.Sundaramoorthy No.96, Road Street, Manamadhi, Unthiramalur Taluk, Kancheepuram District	Athi 301 (Part)	1.00.0	21.08.2008 to 20.08.2018	Quarry Expired

iii). Present Proposed quarries

Sl. No	Name of the Owner (Tvl)	Village & S.F. Nos.	Extent in Hect.
1	Tvl.JCK Mines, Rep. by its partner of Thiru.J.K.Srinivasan, No.782, Mariamman Kovil Street, Jambodai Village, Azhivedaithangi Post, Vembakkam Taluk, Tiruvannamalai District.	Vadalapiranthan & 211/2B, 211/3B, 211/4, 211/5, 211/6, 211/7, 211/8 & 211/9	1.55.0

iv). Future Proposed quarries

Sl. No	Name of the Owner (Tvl)	Village & S.F. Nos.	Extent in Hect.
1	Thiru.R.Ganesan, Director of SRC Project Pvt. Ltd., No.47, Brunthavan, Porlands, Salem.	Athi 301 (Part-2)	4.50.0
2	Thiru.M.Ramchandran, S/o. Mogili Nadu, No.15B, Medutheru, Old Perukozhathuvor, Tambaram, Chennai.	Athi 301 (Part-3)	2.00.0
3	Thiru.K.Sudhakaran, S/o. Kannan, No.782, Mariyamman Koil Street, Jambodai village, Vembakkam Taluk, Tiruvannamalai District.	Vadaalapiranthan 7, 8/1, 8/2, 8/3, 8/4, 8/5 & 214/5	2.57.0

[Handwritten Signature]
Deputy Director,
Geology and Mining,
Tiruvannamalai.

[Handwritten Signature]
13/10/22