

DRAFT ENVIRONMENTAL IMPACT ASSESSMENT REPORT

For

Rough Stone and Gravel Quarry- 1.24.0 Ha

At

**S.F.No : 477/1, 477/2, 477/6, 478/2(P), 478/3(P) &
478/4(P)**

**A.P. Nadanoor Village,
Alangulam Taluk,
Tenkasi (Tirunelveli) District, Tamilnadu**

**Project Proponent
M/s. Svart Sten Associates LLP,
Asum Tower, Ezhumangad,
Arangottukara Post,
Palakkad District, Kerala – 679 533**

**Project termed under schedule 1(a)
Category B₁ (Cluster Mining)
Baseline Period : March, April & May 2023**

***Environmental Consultant & Laboratory Details:*
Ecotech Labs Private Limited**



**No.48, 2nd Main road,
Ram Nagar South Extension,
Pallikaranai, Chennai-600 100**

**July
2023**

Date:

From
M/s. Svart Sten Associates LLP,
Asum Tower, Ezhumangad,
Arangottukara Post,
Palakkad District, Kerala – 679 533

To
The District Environmental Engineer
Tamilnadu Pollution Control Board,
30/2, SIDCO Industrial Estate,
Pettai, Tirunelveli – 627 010.

Sir/Madam,

Sub: Public Hearing for M/s. Svart Sten Associates LLP Rough Stone and Gravel Quarry over a total extent of 1.24.0 Ha at S.F.No. 477/1, 477/2, 477/6, 478/2(P), 478/3(P) & 478/4 (P) of A.P.Nadanoor Village, Alangulam Taluk, Tenkasi (Tirunelveli) District – Request to conduct Public Hearing – Reg.

Ref: ToR issued by SEIAA vide Letter No. SEIAA-TN/F. No. 9546/ToR-1361/2023
Dated: 10.02.2023

With Reference to the above subject, I propose to establish M/s. Svart Sten Associates LLP Rough Stone Quarry over a total extent of 1.24.0 Ha at S.F.No. 477/1, 477/2, 477/6, 478/2(P), 478/3(P) & 478/4 (P) of A.P.Nadanoor Village, Alangulam Taluk, Tenkasi (Tirunelveli) District, Tamil Nadu.

In this regard, we had obtained the Terms of Reference (ToR) from State Environmental Impact Assessment Authority (SEIAA), Tamil Nadu for conducting EIA studies vide letter cited in reference. Further, we have prepared the draft EIA report complying with all the conditions imposed in the TOR issued.

I herewith submitting hard & soft copies of Draft EIA Report, Executive Summaries (English & Tamil) along with necessary enclosures towards conducting public hearing for M/s. Svart Sten Associates LLP Rough Stone and Gravel Quarry over a total extent of 1.24.0 Ha at S.F.No. 477/1, 477/2, 477/6, 478/2(P), 478/3(P) & 478/4 (P) of A.P.Nadanoor Village, Alangulam Taluk, Tenkasi (Tirunelveli) District, Tamil Nadu.

We have also enclosed a Demand Draft for Rs. _____ /- vide DD No _____ dated _____ as initial Public Hearing fee and agree to pay the difference amount in the publication cost.

We kindly request the TNPCB to make the necessary arrangements for conducting the Public hearing for the Rough stone and Earth Quarry.

Thanking you,
Yours Sincerely,

Authorized Signatory

M/s. Svart Sten Associates LLP,
Asum Tower, Ezhumangad,
Arangottukara Post, Palakkad District,
Kerala – 679 533

UNDERTAKING

I, M/s. Svart Sten Associates LLP, undertaking that the Draft Environmental Impact Assessment (EIA) Report for Rough Stone and Gravel Quarry over an extent of 1.24.0 Ha at S.F.No. 477/1, 477/2, 477/6, 478/2(P), 478/3(P) & 478/4(P) of A.P.Nadanoor Village, Alangulam Taluk, Tenkasi (Tirunelveli) District, Tamilnadu State under project category B1 and Schedule S.No.1(a)

TOR issued by the State Expert Appraisal Committee, TN vide Letter No. SEIAA-TN/F. No. 9546/ToR-1361/2023 Dated: 10.02.2023.

I, hereby assure that all the information and data provided in the EIA report is accurate, true and correct and owns responsibility for the same.

Place: Kerala

Yours faithfully

Date:

M/s. Svart Sten Associates LLP

Plot No.48A, 2nd Main Road,
Ram Nagar, South Extension,
Pallikarantal, Chennai - 600 100.
GST NO. 33AADCE6103A22H
PAN NO: AADCE6103A



Eco Tech Labs Pvt Ltd

Cell No: 98400 87542
Email : info@ecotechlabs.in
Website : www.ecotechlabs.in
CIN : U74900TN2014PTC094895

UNDERTAKING

I, Dr. A. Dhamodharan, Managing Director confirms that this Draft EIA Report of Rough Stone and Gravel Quarry over an extent of 1.24.0 Ha at S.F.No. 477/1, 477/2, 477/6, 478/2(P), 478/3(P) & 478/4(P) of A.P. Nadanoor Village, Alangulam Taluk, Tenkasi (Tirunelveli) District, Tamilnadu State has been prepared at M/s. Ecotech Labs Pvt. Ltd., Chennai.

I also confirm that I shall be fully accountable for any misleading information mentioned in this Report.

Signature:

Name: Dr. A. Dhamodharan

Designation: Managing Director

Name of the EIA Consultant Organization: M/s. Ecotech Labs Pvt Ltd., Chennai.

NABET Certificate No: NABET/EIA/2124/SA 0147

Date:

Place: Chennai

Declaration by Experts contributing to the EIA of Rough Stone and Gravel Quarry- 1.24.0 Ha by M/s. Svart Sten Associates LLP at S.F.No. 477/1, 477/2, 477/6, 478/2(P), 478/3(P) & 478/4(P), A.P. Nadanoor Village, Alangulam Taluk, Tenkasi (Tirunelveli) District, Tamil Nadu State

I, hereby, certify that I was a part of the EIA team in the following capacity that developed the above EIA.

EIA Coordinator: Dr. A. Dhamodharan








Dr. A. DHAMODHARAN
(NABET APPROVED EIA COORDINATOR)
NABET/EIA/2124/SA 0147
Environmental Consultant
Eco Tech Labs Pvt. Ltd
Plot No.48A, 2nd Main Road, Ram Nagar South Extn.
Pallikaranai, Chennai - 600 100.





Signature:

Period of involvement: 01.03.2022 to Till now

Contact information: M/s. Ecotech Labs Pvt Ltd.,
No. 48, 2nd Main road, Ram Nagar South Extension,
Pallikaranai – 600100.

S. No.	Functional areas	Name of the experts	Involvement (period and task)	Signature and date
1	AP	Mrs. K. Vijayalakshmi	1. Selection of Baseline Monitoring stations based on the wind direction 2. Interpretation of Baseline data by comparing it with standards prescribed by CPCB against the type of area 3. Identification of sources of air pollution and suggesting mitigation measures to minimize impact <i>Period: March 2022 – Till now</i>	

2	WP	Dr. A. Dhamodhara n	<p>1. Selection of baseline Monitoring Locations for Ground water analysis and also identifying nearest surface water to be studied.</p> <p>2. Interpretation of baseline data collected</p> <p>3. Identification of impacts based on the baseline study conducted and also to the ground water and nearby surface water due to the proposed project</p> <p>4. Preparation of suitable and appropriate mitigation plan.</p> <p>Period: March 2022 – Till now</p>	
3	SHW	Dr. A. Dhamodhara n	<p>1. Identification of nature of solid waste generated</p> <p>2. Categorization of the generated waste and estimating the quantity of waste to be generated based on the per capita basis. Identification of impacts of SHW on Environment</p> <p>3. Suggesting suitable mitigation measures by recommending appropriate disposal method for each category of waste generated</p> <p>4. Top soil and refuse management</p> <p>Period: March 2022 – Till now</p>	
4	SE	Mr. S. Pandian	<p>1. Primary data collection through the census questionnaire</p> <p>2. Obtaining Secondary data from authenticated sources and incorporating the same in EIA report.</p> <p>3. Impact assessment & proposing suitable mitigation plan</p> <p>4. CSR budget allocation by discussing with the local body and allotting the same for need based activity.</p> <p>Period: March 2022 – Till now</p> <p>*Involves Public Hearing</p>	
5	EB	Dr. A. Dhamodhara n	<p>1. Primary data collection through field survey and sheet observation for ecology and biodiversity</p> <p>2. Secondary Collection through various authenticated sources</p> <p>3. Prediction of anticipated impacts and suggesting appropriate mitigation measures.</p>	

			<i>Period: March 2022 – Till now</i>	
6	HG	Dr. T. P. Natesan	<p>1. Study of existing surface drainage arrangements in the core and buffer zone, impact due to mining on these drainage courses and suggestion of mitigative measures</p> <p>2. Determination of groundwater use pattern, development of rainwater harvesting program. Storm water management through garland drainage system.</p> <p><i>Period: March 2022 – Till now</i></p>	
7	GEO	Dr. T. P. Natesan	<p>1. Field survey for assessing regional and local geology, aquifer distribution, Determination of groundwater use pattern, development of rainwater harvesting program.</p> <p><i>Period: March 2022 – Till now</i></p>	
8	SC	Dr. A. Dhamodharan	<p>1. Interpretation of baseline report</p> <p>2. Identification of possible impacts on soil, prediction of soil conservation and suggesting suitable mitigation measures.</p> <p><i>Period: March 2022 – Till now</i></p>	
9	AQ	Mrs. K. Vijayalakshmi	<p>1. Collection of Meteorological data for the baseline study period</p> <p>2. Plotting wind rose plot and thereby selecting the monitoring locations based on the wind pattern</p> <p>3. Estimation of sources of air emissions and air quality modeling is done</p> <p>4. Interpretation of the results obtained</p> <p>5. Identification of the impacts and suggesting suitable mitigation measures.</p> <p><i>Period: March 2022 – Till now</i></p>	

10	NV	Mrs. K. Vijayalakshmi	<ol style="list-style-type: none"> 1. Selection of monitoring locations 2. Interpretation of baseline data 3. Prediction of impacts due to noise pollution and suggestion of appropriate mitigation measures <p>Period: May 2022 – Till now</p>	-Kiel
11	LU	Dr. T. P. Natesan	<ol style="list-style-type: none"> 1. Collection of Remote sensing satellite data to study the land use pattern. 2. Primary field survey and limited field verification for land categorization in the study area 3. Preparation of Land use map using Satellite data for 10km radius around the project site. <p>Period: March 2022 – Till now</p>	0.0517
12	RH	Mrs. K. Vijayalakshmi	<ol style="list-style-type: none"> 1. Identification of the risk 2. Interpreting consequence contours 3. Suggesting risk mitigation measures <p>Period: March 2022 – Till now</p>	-Kiel

Declaration by the Head of the accredited consultant organization/ authorized person

I, Dr. A. Dhamodharan, hereby, confirm that the above-mentioned experts prepared the EIA report of mining project at Survey Numbers. 477/1, 477/2, 477/6, 478/2 (P), 478/3(P) & 478/4 (P) of A.P.Nadanoor Village, Alangulam Taluk, Tenkasi (Tirunelveli) District. I also confirm that the consultant organization shall be fully accountable for any misleading information mentioned in this statement.

Signature:



Name: Dr. A. Dhamodharan

Designation: Managing Director

Name of the EIA consultant organization: M/s. Eco Tech Labs Private Limited

NABET Certificate No. & Issue Date: NABET/EIA/2124/SA 0147

Project	Rough stone and Gravel Quarry- 1.24.0 Ha	<i>Draft EIA Report</i>
Project Proponent	M/s. Svart Sten Associates LLP	
Project Location	A.P. Nadanoor Village, Alangulam Taluk, Tenkasi District (bifurcated from Tirunelveli District)	

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<i>Project Location</i>	<i>A.P. Nadanoor Village, Alangulam Taluk, Tenkasi District (bifurcated from Tirunelveli District)</i>	

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ABBREVIATION

LU –Land use

AP – Air Pollution monitoring, prevention and control

AQ- Meteorology, Air quality modeling and prediction

WP – Water pollution monitoring, prevention and control

EB- Ecology and Biodiversity

NV- Noise & Vibration

SE- Socio-economics

HG- Hydrology, ground water and water conservation

GEO –Geology

RH – Risk assessment and hazards management

SHW –Solid and Hazardous waste management

SC- Soil conservation

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<i>Project Location</i>	<i>A.P. Nadanoor Village, Alangulam Taluk, Tenkasi District (bifurcated from Tirunelveli District)</i>	

EXECUTIVE SUMMARY

1. Project Background:

The Proposed project total extent area is 1.24.0 Ha, It is a Patta land in 477/1, 477/2, 477/6, 478/2 (P), 478/3 (P) and 478/4 (P) in A.P. Nadanoor Village, Alangulam Taluk, Tenkasi (Tirunelveli) District. The category of project is B1, It is a Rough stone and Gravel quarry in A.P.Nadanoor village. The area is situated on plain topography covered by Gravel and Rough Stone formation which does not sustain any type of vegetation.

The quarry operation is proposed to carry out with open cast mechanized mining with 5.0 meter bench for Top soil & Gravel followed by 5.0 meter vertical bench with a bench width not less than the bench height. The quarry operation involves shallow jack hammer drilling, slurry blasting, Loading and transportation of Rough stone and Gravel to the needy nearby crusher units / road formation works.

The quarry operation is proposed up to depth of 42 m from the below ground level. Geological Resources is estimated at 4,80,000 Cum of Rough stone and 24,000 Cum of Gravel. Mineable Reserves is estimated as 2,16,130 Cum of Rough stone and 22770 Cu.m of Gravel after leaving necessary safety distance from the lease boundary as indicated in the precise area letter and relevant mining laws in force. Production Schedule is production of 2,16,130 Cum of Rough Stone and 22770 Cum of Gravel for the period of Five years. Mining Plan was approved by The Assistant Director, Geology & Mining, Tenkasi vide letter Rc.No.M2/36809/2020 dated 11.04.2022. Precise area communication letter received from Assistant Director, Department of Geology and Mining; Tenkasi vide letter Rc.No.M2/36809/2020 dated 24.01.2022

The project area does not fall in Hill Area Conservation Authority region. There is no interstate boundary, CRZ zone, Western Ghats, notified Bird sanctuaries, wild life sanctuaries as per Wild life protection Act 1972, within the radius of 15Km. Nellai Wildlife Sanctuary was situated at a distance of 15.50 kms, NW from the project site boundary.

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2. Nature & Size of the Project

The Rough Stone and Gravel Quarry over an extent of 1.24.0 Hectares land is located at A.P. Nadanoor Village, Alangulam Taluk, Tenkasi (Tirunelveli) District.

Mineral intends to quarry	: Rough stone and Gravel Quarry
District	: Tenkasi (Tirunelveli)
Taluk	: Alangulam
Village	: A.P. Nadanoor
S. F. Nos.	: 477/1, 477/2, 477/6, 478/2 (P), 478/3 (P) and 478/4 (P)
Extent	: 1.42.0 Hectares

Table 1: Brief Description of the Project

S. No	Particulars	Details
1	Latitude	8° 48' 11.8373" N to 8° 48' 9.7487" N
2	Longitude	77° 26' 5.2133" E to 77° 25' 59.9788" E
3	Site Elevation above MSL	97 m MSL
4	Topography	Plain Terrain
5	Land use of the site	Patta Land
6	Extent of lease area	1.24.0 Ha
7	Nearest highway	<ul style="list-style-type: none"> • SH-41A - Tirunelveli to Pottalpuhur Road is about 2.26 Kms on S of the area • SH-40 – Tirunelveli – Shengottai Road is about 5.75 Kms on SW of the area • NH-74 - Kollam to Tenkasi Road is about 22.22 Kms on NW
8	Nearest railway station	Kizha Kadayam Railway Station – 6 km, NW Tenkasi Junction- 22.50 km, NW
9	Nearest airport	Tuticorin Domestic Airport – 65.70 km, E Madurai International Airport – 135.20 km, NE
10	Nearest town / city	Town - Alangulam – 8.84 Km -NE

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		City - Tenkasi -20.70 km, NW District - Tenkasi – 20.70 km, NW
11	Rivers / Canal / Dam	<ul style="list-style-type: none"> ❖ Thamirabharani River – 12.14 Kms – S ❖ Kadana Nathi Dam – 13.5 Kms – W ❖ Ramanathi Dam – 13.51 Kms – NW
12	Lake	<ul style="list-style-type: none"> • AP Nadanoor Pond – 0.52 Kms – SW • Sadayandiyoor Lake – 2.45 Kms – SE • Therkumadathur Pond – 4.71 Kms – NW • Adaichani Periyakulam – 5.07 Kms – S • Koviloothu North Pond – 5.78 Kms - N • Pappakudi Periyakulam – 8.47 Kms – SE • Keezha Kadayam Pond – 9 Kms – NW • Nagal Kulam – 10.50 Kms – N • Keezhpaavoor Kulam – 12.77 Kms – N • Thalar Kulam – 12.50 Kms – E • Korung Kulam – 11.71 Kms – SE
13	Hills / valleys	Nil in 15 km radius
14	Archaeologically places	Nil in 15 km radius
15	National parks / Wildlife Sanctuaries	<ul style="list-style-type: none"> ❖ Nellai Wildlife Sanctuary – 15.50 kms, NW
16	Reserved / Protected Forests	<ul style="list-style-type: none"> • Papanasam R.F – 13 Kms – SW • Courtallam Slopes R.F – 13.50 Kms – NW
17	Seismicity	Proposed Lease area come under Seismic zone-II(low risk area)
18	Defense Installations	Nil in 15 Km radius

3. Need for the Project

- ❖ The mining activities as proposed are the backbone of all construction and infrastructure projects as the raw material for construction is available only from such mining. The Rough stone and Gravel extracted will be transported to be Stone crusher of district Tenkasi.

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- ❖ The raw Rough stone as well as the crushed material of stone is in high demand in real estate, construction projects as well as in building construction projects.
- ❖ Rough stone is quarried for producing crusher aggregates to the nearby building contractors, road contractors and nearby villagers.
- ❖ After quarrying the entire reserves mined out, the area will be used as water reservoir to have an artificial recharge to the nearby wells.
- ❖ No damage to the land is caused, no reclamation or back filling is required.

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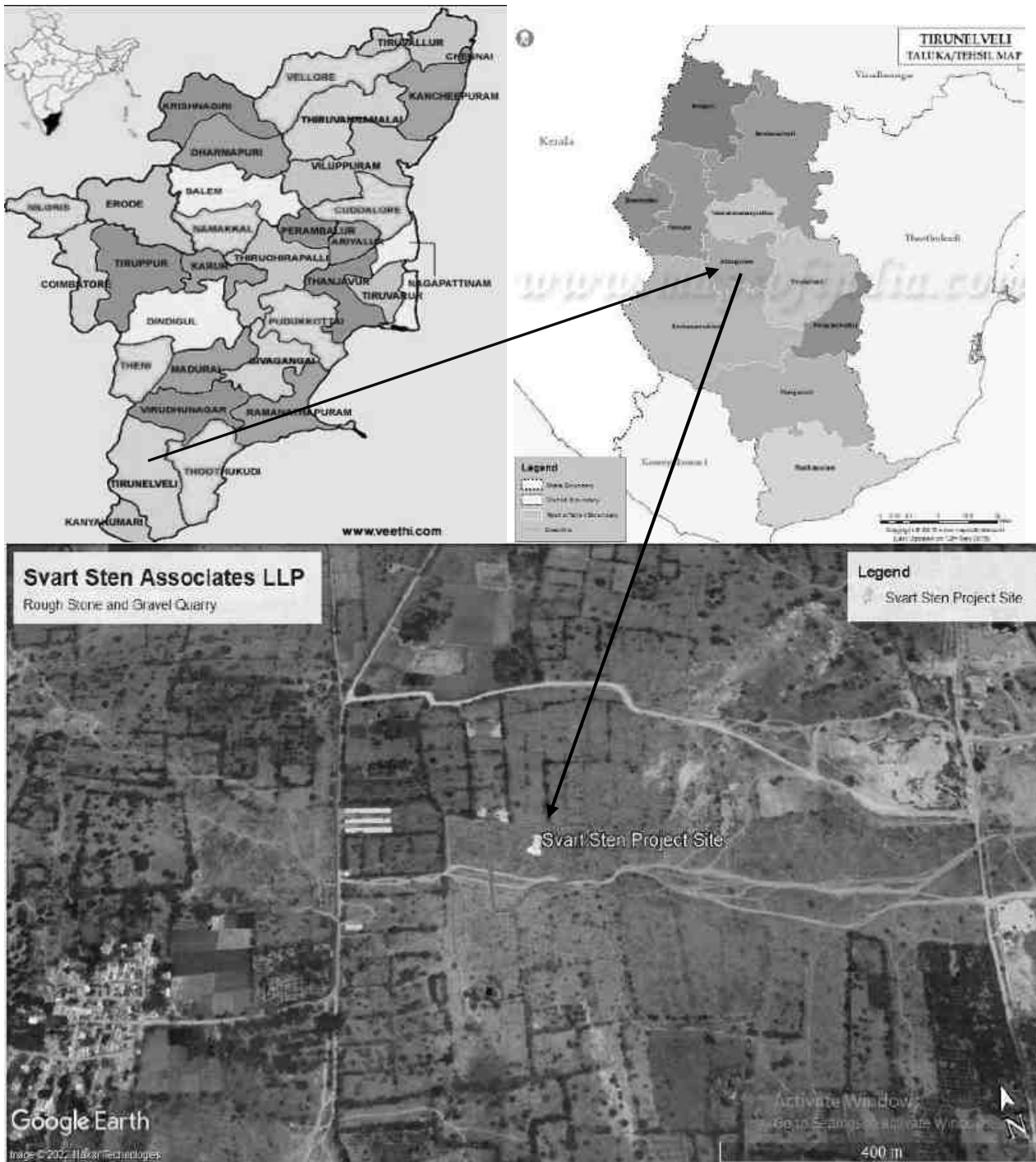


Figure 1: Location Map of the Project Site

Project	Rough stone and Gravel Quarry- 1.24.0 Ha	<i>Draft EIA Report</i>
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Figure 2: Google Image of the Project Site

4. Charnockite

Charnockite is extensively quarried as rough stone which is used as aggregates for construction of building, laying of roads and for preparation of value added products like hollow blocks, M-sand etc. Charnockite is exposed as discontinuous body in NW-SE to WNW-ESE direction from Tenkasi in the west to Gangaikondan in the east and from Tiruvenkadanathapuram in the north to Vijayapathi in the south.

An isolated Charnockite hills is exposed for a length of 5 km and 1 to 1.5 km width in Valliyur-Nanguneri-Radhapuram area and in the eastern slope of Western Ghats hills of Tirunelveli district. The nature of occurrence of charnockite is ubiquitous, often in two modes. One type of occurrence is in the form of profuse enclaves as lensoid bodies etc; within granitoid gneiss and leptynite and other as massive crystalline variety as seen in large isolated hills (Western Ghats massifs). Basic nature of the charnockite has been preserved only at few places where in it contains occasionally noritic/pyroxene granulite patches and calc granulite pockets. Retrogression of mafics – pyroxenes to hornblende and biotite aggregates and granitisation with intercalations of

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quartzofeldspathic veinations are the common features that characterise these enclaves. This retrograde hornblende biotite gneiss is also extensively quarried in Piranchery, Gangaikondan, and north of Manur and Rasta areas for road metals and earth fillings.

5. Geological Resources

The Geological Reserves is estimated as 4,80,000 m³ of Rough Stone and 24,000 m³ of Gravel upto a depth of 42 m (2.0 m Gravel and 40 m Rough Stone). Availability of Resources is given below.

Table 2. Geological resources

Section	Bench	L (m)	W (m)	D (m)	Volume In m ³	Geological Reserves in m ³ @ 100 %	Gravel in m ³
XY-AB	I	78	99	2			15444
	II	78	99	5	38610	38610	
	III	78	99	5	38610	38610	
	IV	78	99	5	38610	38610	
	V	78	99	5	38610	38610	
	VI	78	99	5	38610	38610	
	VII	78	99	5	38610	38610	
	VIII	78	99	5	38610	38610	
	IX	78	99	5	38610	38610	
TOTAL					308880	308880	15444
XY-CD	I	62	69	2			8556
	II	62	69	5	21390	21390	
	III	62	69	5	21390	21390	
	IV	62	69	5	21390	21390	
	V	62	69	5	21390	21390	
	VI	62	69	5	21390	21390	
	VII	62	69	5	21390	21390	
	VIII	62	69	5	21390	21390	

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	IX	62	69	5	21390	21390	
TOTAL					171120	171120	8556
GRAND TOTAL					480000	480000	24000

Table 3. Mineable Resources

The Available mineable reserve is computed as 216130 m³ of Rough stone and 22770 m³ of Gravel upto a depth of 42m below ground level only.

Section	Bench	L (m)	W (m)	D (m)	Volume in m ³	Rough Stone in m ³	Gravel in m ³
XY-AB	I	99	100	2	--	--	19800
	II	97	96	5	46560	46560	--
	III	92	86	5	39560	39560	--
	IV	87	76	5	33060	33060	--
	V	82	66	5	27060	27060	--
	VI	77	56	5	21560	21560	--
	VII	72	46	5	16560	16560	--
	VIII	62	36	5	11160	11160	--
	IX	52	26	5	6760	6760	--
TOTAL					202280	202280	19800
XY-CD	I	27	55	2	--	--	2970
	II	25	51	5	6375	6375	--
	III	20	41	5	4100	4100	--
	IV	15	31	5	2325	2325	--

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	V	10	21	5	1050	1050	--
TOTAL					14125	14125	2970
GRAND TOTAL					216130	216130	22770

Table 4. Year wise Production Plan

The proposed rate of production of Rough Stone is about 2,16,130 m³ of Rough Stone and 22,770 m³ of Gravel upto a depth of 42.0 m (Max) (2.0 m Gravel and 40 m Rough Stone) for the lease period of five years only.

YEAR	Section	Bench	L (m)	W (m)	D (m)	Volume in m ³	Reserve in m ³ @ 95%	Gravel in m ³
I-YEAR	XY-AB	I	99	100	2			19800
		II	97	96	5	46560	46560	
	XY-CD	I	27	55	2			2970
		II	25	51	5	6375	6375	
	TOTAL						52935	52935
II-YEAR	XY-AB	III	92	86	5	39560	39560	
	XY-CD	III	20	41	5	4100	4100	
	TOTAL						43660	43660
III-YEAR	XY-AB	IV	87	76	5	33060	33060	
	XY-CD	IV	15	31	5	2325	2325	
	TOTAL						35385	35385
IV-YEAR	XY-AB	V	82	66	5	27060	27060	
	XY-CD	V	10	21	5	1050	1050	
	TOTAL						28110	28110
V-YEAR	XY-AB	VI	77	56	5	21560	21560	
		VII	72	46	5	16560	16560	
		VIII	62	36	5	11160	11160	
		IX	52	26	5	6760	6760	
	TOTAL						56040	56040
GRAND TOTAL						216130	216130	22770

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6. Mining

Opencast mining

Open cast Semi-Mechanized Mining with one 5.0 meter bench for Rough Stone and Gravel followed by 5.0 meter vertical bench with a bench width not less than the bench height.

The Quarry operation involves shallow jack hammer drilling, blasting, loading and transportation.

Process Description

- The reserves and resource are arrived based upon the Geological investigation
- Removal of Gravel by Excavators and directly Loaded into Tippers.
- Removal of Rough Stone by Excavators by Drilling and Blasting.
- Shallow Drilling With Jackhammer of 30-32 mm Dia.
- Minimum Blasting With Class 3 Explosives.
- Loading of Rough Stone By Excavators Into Tippers.

7. Water Requirement

Total water requirement for the mining project is 2.0 KLD. Domestic water will be sourced from nearby Murugandiyur Village and other water will be source from nearby road tankers supply.

Table 5. Water Balance

Purpose	Quantity	Source
Drinking Water	1.0 KLD	Packaged Drinking water vendors available in Murugandiyur village which is about 0.50 Km W of the area
Green belt	0.5KLD	Other domestic activities through road tankers supply
Dust suppression	0.5KLD	From road tankers supply
Total	2.0 KLD	

8. Manpower

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Total manpower required for the project is approximately 16 persons. Workers will be from nearby villages.

Table 6. Man Power

1.	Skilled	Operator, Mechanic, Blaster/Mat	2 No. 1 No. 1 No.
2.	Semi – skilled	Driver	2 Nos
3.	Unskilled	Musdoor / Labors Cleaners & Office Boy	4 Nos 2 No 1 No
4.	Management & Supervisor Staff	Mines Foreman	2 No
Total			15 Nos.

No child less than 18 years will be entertained during quarrying operations.

9. Solid Waste Management

Table 7 Solid Waste Management

S. No	Type	Quantity	Disposal Method
1	Organic	2.7 kg/day	Municipal bin including food waste
2	Inorganic	4.05 kg/day	TNPCB authorized recyclers

As per CPCB guidelines: MSW per capita/day =0.45 kg/day

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Table 8. 500m Radius Cluster Mine

1) Existing other quarries:

S. No.	Name of the Owner	Village & Taluk	S.F.Nos.	Extent in Hect.	Lease Period
1	Thiru.N.Mohamed Mahaboob, S/o. Nagoor Pitchai, No. 8/143, Main Road, Pottalpuhur Village Kaspaa, Ambasamudram Taluk, Tenkasi	A.P Nadanoor & Alangulam	434/1C, 434/4E, 434/4F, 434/4G, 434/4H, 434/4I, 434/4J, 470/1, 471/2, 471/3, 472/1B & 472/1C	3.74.5	Proceedings No. M1/44736/2016, dt. 20.03.2018 for a period of 5 years from 16.04.2018 to 15.04.2023
Total extent of abandoned quarries				3.74.5	

2) Details of abandoned /Old Quarries

S. No.	Name of the Owner	Village & Taluk	S.F.Nos.	Extent in Hect.	Lease Period
--Nil--					
Total extent of abandoned quarries				0	

3) Details of Present Proposed quarries

S. No.	Name of the Owner	Village & Taluk	S.F.Nos.	Extent in Hect.	Lease Period
1.	Thiru M Mohammed Ismail, S/o. Mohammed Mahaboob,	A.P Nadanoor & Alangulam	467/2, 467/3, 468/1, 477/3, 477/4 & 477/5	4.38.0	Proposed Quarry

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	8/143, Main Road, Pottalpudur, Tenkasi District				
2.	M/s. Svart Sten Associates LLP, Asum Tower, Ezhumangad, Arangottukkara Post, Palakkad District, Kerala – 679 533	A.P Nadanoor & Alangulam	477/1, 477/2, 477/6, 478/2(P), 478/3(P) & 478/4(P)	1.24.0	Proposed quarry
Total Extent of Proposed Quarries				5.62	

10. Land Requirement

The total extent area of the project is 1.24.0 Ha, Patta Land in A.P. Nadanoor Village of Alangulam Taluk, Tenkasi (Tirunelveli) District.

Table 9 Land Use Breakup

Sl. No.	Land Use	Area in use during the quarrying period (Hect)
1.	Quarrying pit	0.91.0
2.	Infrastructure	0.01.0
3.	Road	0.01.0
4.	Green belt	0.18.0
5.	Unutilized area	0.13.0
	Total	1.24.0

11. Human Settlement

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There are no habitations within 300m radius. There are villages located in this area within 15 km radius of the quarry.

Table 10 Habitation

S.No	Name of the Village	Approximate distance & Direction from lease applied area	Approximate population
1.	Theertharappapuram	0.65 km – NE	1875
2.	Murugandiyur	0.50 km – W	1456
3.	Chellapillayarkulam	0.80 km – S	1374
4.	Kalitheerthaanpatti	3 km - SE	1565

12. Power Requirement

The proposed Rough stone quarrying does not require any power supply for the quarrying operation.

16 Litre diesel per hour for excavator for mining and loading for Rough stone needed and **10 Litre** diesel per hour for excavator for mining and loading for Gravel.

13. Scope of the Baseline Study

This chapter contains information on existing environmental scenario on the following parameters.

1. Micro – Meteorology
2. Water Environment
3. Air Environment
4. Noise Environment
5. Soil / Land Environment
6. Biological Environment
7. Socio-economic Environment

13.1 Micro – Meteorology

Meteorology plays a vital role in affecting the dispersion of pollutants, once discharged into the atmosphere. Since meteorological factors show wide fluctuations with time, meaningful interpretation can be drawn only from long-term reliable data.

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- i) Average Minimum Temperature : 31° C
- ii) Average Maximum Temperature. : 34°C
- iii) Average Annual Rainfall of the area : 792 mm

13.2 Air Environment

Ambient air monitoring was carried out on monthly basis in the surrounding areas of the Mine Lease area to assess the ambient air quality at the source. To know the ambient air quality at a larger distance i.e. in the study area of 5 km. radius, air quality survey has been conducted at 5 locations. Major air pollutants like Particulate Matter (PM10), Sulphur Dioxide (SO₂), Nitrogen Dioxide (NO₂) were monitored and the results are summarized below.

The baseline levels of PM₁₀ (36-62 µg/m³), PM_{2.5} (14-32 µg/m³), SO₂ (5-20 µg/m³), NO₂ (9-39 µg/m³), all the parameters are well within the standards prescribed by National Ambient Air Quality during the study period from March 2023 to May 2023.

13.3 Noise Environment

The maximum Day noise and Night noise were found to be 61 dB(A) and 50 dB(A) respectively in Merit Polytechnic College . The minimum Day Noise and Night noise were 43 dB(A) and 38 dB(A) respectively which was observed in Sri Seevalperi Sudalai Mada Swamy Kovil, Pottalpudhur. The observed values are all well within the Standards prescribed by CPCB.

13.4 Water Environment

- The average pH ranges from 7.26 – 8.08.
- TDS value varied from 121 mg/l to 1030 mg/l
- Hardness varied from 90.9 to 1384 mg/l
- Chloride varied from 21.5 to 1384 mg/l

13.5 Land Environment

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The analysis results shows that the majority of soil in the project and surrounding area is slightly alkaline in nature and pH value ranges from 6.32 to 7.41 with organic matter 0.7 to 5.43 %. The concentration of Nitrogen, Phosphorus & Potassium has been found to be in good amount in the soil samples.

13.6 Biological Environment

The proposed Mining lease area is mostly dry barren ground with small shrubs and bushes. No specific endangered flora & fauna exist within the mining lease area.

14. Rehabilitation/ Resettlement

The overall land of the mine is a Patta land. There are no displacement of the population within the project area and adjacent nearby area. Social development of nearby villages will be considered in this project.

The mine area does not cover any habitation. Hence the mining activity does not involve any displacement of human settlement.

15. Greenbelt Development

1. The development of greenbelt in the peripheral buffer zone of the mine area.
2. Green belt has been recommended as one of the major component of Environmental Management Plan, which will improve ecology, environment and quality of the surrounding area.
3. Local trees like Neem, Vilvam, Panai, etc will be planted along the lease boundary and avenues as well as over Non-active dumps at a rate of 140 trees per annum with interval 5m.
4. The rate of survival expected to be 80% in this area

Table.11 Plantation/ Afforestation Program

Name of species proposed	Survival	No of species
Neem, Vilvam, Vaagai, Eachai, Naval, Mantharai, Magizha Maram, Vila Maram, Poo Marudhu, Panai, Marudha maram,	80%	700

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Thandri, Sengondrai, Poovarasu, Thethankottai Maram, Pungam		
Total		700

16. Anticipated Environmental Impacts

16.1 Air Environment and Mitigation Measures

1. Water sprinkling will be done on the roads & unpaved roads.
2. Proper mitigation measures like water sprinkling will be adopted to control dust emissions.
3. Plantation will be carried out on approach roads, solid waste site & nearby mine premises.
4. To control the emissions regular preventive maintenance of equipments will be carried out.

16.2 Noise Environment and Mitigation Measures

1. Periodical monitoring of ambient noise will be done as per CPCB guidelines.
2. No other equipment except the transportation vehicles and excavator for loading will be allowed.
3. Noise generated by these equipments shall be intermittent and does not cause much adverse impact

17. Responsibilities for Environmental Management Cell (EMC)

The responsibilities of the EMC include the following:

- i. Environmental Monitoring of the surrounding area
- ii. Developing the green belt/Plantation
- iii. Ensuring minimal use of water
- iv. Proper implementation of pollution control measures

18. Environmental Monitoring Program

<i>Project</i>	<i>Rough stone and Gravel Quarry- 1.24.0 Ha</i>	<i>Draft EIA Report</i>
<i>Project Proponent</i>	<i>M/s. Svart Sten Associates LLP</i>	
<i>Project Location</i>	<i>A.P. Nadanoor Village, Alangulam Taluk, Tenkasi District (bifurcated from Tirunelveli District)</i>	

A monitoring schedule with respect to Ambient Air Quality, Water & Wastewater Quality, Noise Quality as per Tamil Nadu State Pollution Control Board (TNPCCB), shall be maintained.

19. Project Cost

The total project cost is **Rs 45,70,000/-** for deployment of machinery and creation of infrastructural facilities like approach road, mine office / Workers Shed, First Aid Room etc., including electrifications and water supply

Table .12 Project Cost details

S. No.	Description	Cost (Rs.)
1	Fixed Asset Cost	15,70,000/-
2	Operational Cost	30,00,000 /-
	Total	45,70,000/-

EMP Cost - Rs. 81,80,759 (Rs. 81 Lakhs)

20. Corporate Environmental Responsibility

The Corporate Environment Responsibility (CER) fund will be provided to the below activity.

Table 13 CER Cost

S.No.	CER Activity	CER value (Rs)

<i>Project</i>	<i>Rough stone and Gravel Quarry- 1.24.0 Ha</i>	<i>Draft EIA Report</i>
<i>Project Proponent</i>	<i>M/s. Svart Sten Associates LLP</i>	
<i>Project Location</i>	<i>A.P. Nadanoor Village, Alangulam Taluk, Tenkasi District (bifurcated from Tirunelveli District)</i>	

1.	<p>Roselin (Government Aided) Primary School, A.P. Nadanoor Village, Alangulam Taluk, Tenkasi District – 1.11 km, SW</p> <p>Providing facilities are:</p> <ul style="list-style-type: none"> ➤ Computer – 2 No's. ➤ Steel bench and table ➤ Chairs ➤ R.O Water Facility ➤ Planting trees in and around the periphery of the school campus – 50 No's. ➤ Environmental Science books in Tamil Language for Library ➤ Smart Classroom facility ➤ Hygienic Toilet Facility and maintenance upto lease period. 	5,00,000
Total		5,00,000

21. Benefits of the Project

- There is positive impact on socio-economics of people living in the villages. Mining operations in the subject area has positive impact by providing direct and indirect jobs opportunities
- The project is environmentally compatible, financially viable and would be in the interest of construction industry thereby indirectly benefiting the masses.
- Quarrying in this area is not going to have any negative impact on the social or cultural life of the villagers in the near vicinity.

<i>Project</i>	<i>Rough stone and Gravel Quarry- 1.24.0 Ha</i>	<i>Draft EIA Report</i>
<i>Project Proponent</i>	<i>M/s. Svart Sten Associates LLP</i>	
<i>Project Location</i>	<i>A.P. Nadanoor Village, Alangulam Taluk, Tenkasi District (bifurcated from Tirunelveli District)</i>	

1 Introduction

1.1 PREAMBLE

Environment Impact Assessment (EIA) is a process used to identify the environmental, social & economic impacts of a project prior to decision making. It aims to predict environmental impacts at an early stage of project planning and design, find ways and means to reduce adverse impacts, shape projects to suit the local environment and present the prediction options to the proponent. By using EIA, both environmental & economic benefits can be achieved. By considering environmental effects - prediction & mitigation, early benefits in project planning, protection of the environment, optimum utilization of resources, thus saving overall time & cost of the project.

1.2 GENERAL INFORMATION ON MINING OF MINERALS

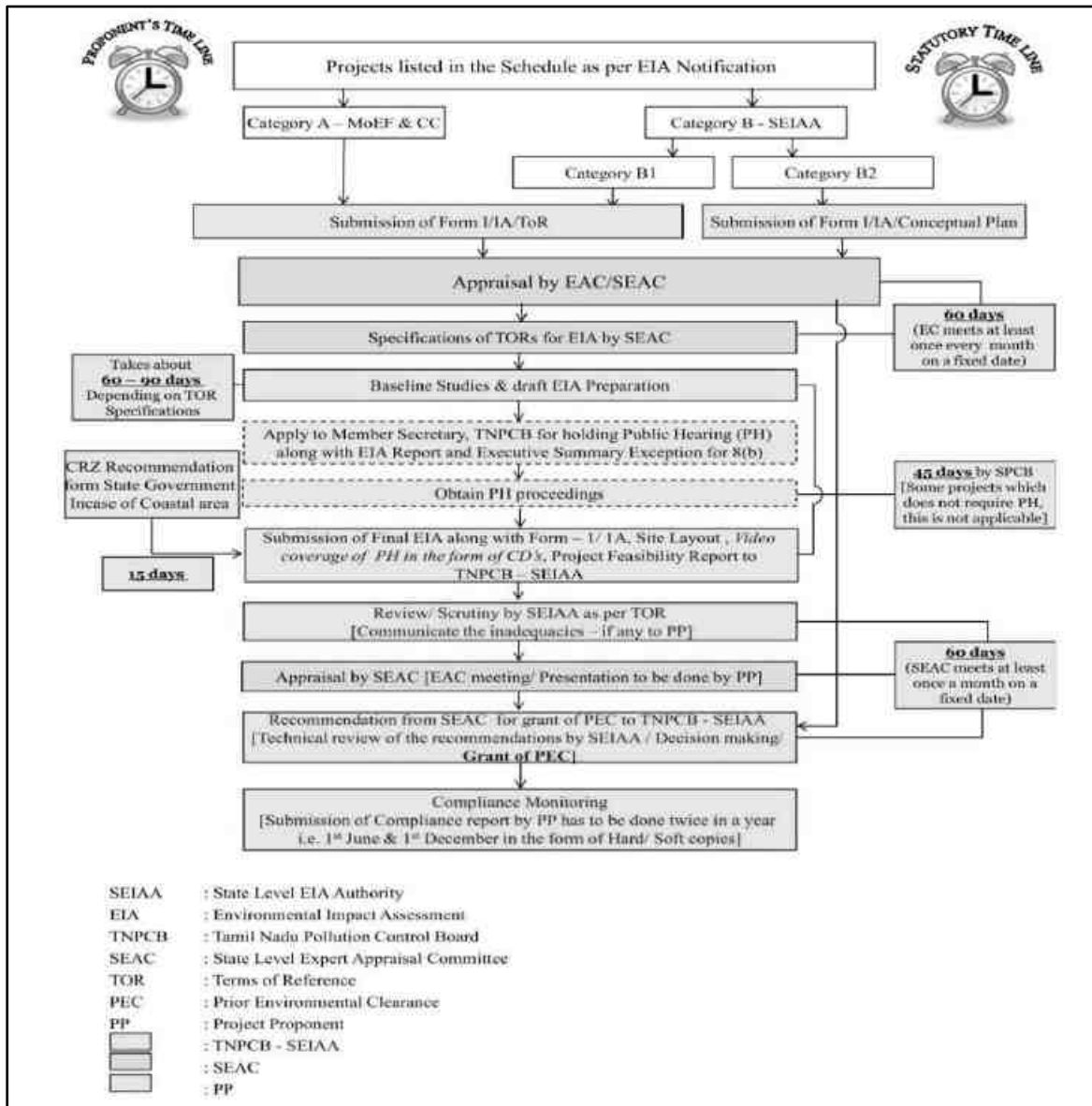
Mining activities based on rough stone (mostly charnockite) are majorly concentrated in Alangulam, Radhapuram, Nanguneri, Manur and Sankarankovil Taluks in the district under operation for production of construction materials and earth fill as gravel. Rough stone (mostly charnockite and Hblbt gneiss) are majorly concentrated in Alangulam, Radhapuram, Nanguneri, Manur and Sankarankovil Taluks in the district.

1.3 ENVIRONMENTAL CLEARANCE

As per EIA Notification, 2006 and its subsequent amendments (O.M vide No.F.No.L-11011/175/2018-IA-II(M) Govt of India MOEF&CC on December 12th 2018) project comes under category B1 cluster & schedule 1(a) under item 1

The proposed project is categorized under Category “B1” 1(a) (Cluster) - {Mining of Minerals} as the 500m radius area is more than 5 Ha including the mine lease area. Hence, the project will be considered at SEAC, Tamil Nadu.

Project	Rough stone and Gravel Quarry- 1.24.0 Ha	Draft EIA Report
Project Proponent	M/s. Svart Sten Associates LLP	
Project Location	A.P. Nadanoor Village, Alangulam Taluk, Tenkasi District (bifurcated from Tirunelveli District)	



1.4 TERMS OF REFERENCE (TOR)

The Terms of Reference have been issued by SEAC TN vide Letter No. SEIAA-TN/F. No. 9546/ToR-1361/2023 Dated: 10.02.2023. 44 additional ToR points were recommended by SEAC TN in addition to the Standard ToR Points. The replies for the same were addressed in this report.

<i>Project</i>	<i>Rough stone and Gravel Quarry- 1.24.0 Ha</i>	<i>Draft EIA Report</i>
<i>Project Proponent</i>	<i>M/s. Svart Sten Associates LLP</i>	
<i>Project Location</i>	<i>A.P. Nadanoor Village, Alangulam Taluk, Tenkasi District (bifurcated from Tirunelveli District)</i>	

1.5 POST ENVIRONMENTAL CLEARANCE MONITORING

1.5.1 Methodology adopted

Post project monitoring will be carried out as per conditions stipulated in environmental clearance letter issued by SEIAA, consent issued by SPCB as well as according to CPCB guidelines. The lease area is considered as core zone and the area lying within 10 km radius from the lease boundary is considered as buffer zone, where some impacts may be observed on physical and biological environment. In the buffer zone slight impact may be observed and that too is occasional.

Table 1-1: Post Environmental Clearance Monitoring

S. No.	Description	Frequency of Monitoring
1.	Ambient Air Quality Monitoring	Quarterly/ Half Yearly
2.	Water level & Quality Monitoring	Quarterly/ Half Yearly
3.	Noise Level Monitoring	Quarterly/ Half Yearly
4.	Soil Quality Monitoring	Yearly
5.	Medical Check-up	Yearly

1.6 GENERIC STRUCTURE OF THE EIA DOCUMENT

Chapter 1: Introduction. This chapter contains the general information on the mining of minerals, major sources of environmental impacts in respect of mining projects and details of environmental clearance process.

Chapter 2: Project Description. In this chapter the proponent should also furnish detailed description of the proposed project, such as the type of the project, need for the project, project location, layout, project activities during construction and operational phases, capacity of the project, project operation i.e., land availability, utilities (power and water supply) and infrastructure facilities such as roads, railways, housing and other requirements. If the project site is near a sensitive area it is to be mentioned clearly why an alternative site could not be considered. The project implementation schedule, estimated cost of development as well as operation etc should be also included.

Chapter 3: Analysis of Alternatives (Technology and Site). This chapter gives details of various alternatives both in respect of location of site and technologies to be deployed, in case the initial scoping exercise considers such a need.

<i>Project</i>	<i>Rough stone and Gravel Quarry- 1.24.0 Ha</i>	<i>Draft EIA Report</i>
<i>Project Proponent</i>	<i>M/s. Svart Sten Associates LLP</i>	
<i>Project Location</i>	<i>A.P. Nadanoor Village, Alangulam Taluk, Tenkasi District (bifurcated from Tirunelveli District)</i>	

Chapter 4: Description of Environment. This chapter should cover baseline data in the project area and study area.

Chapter 5: Impact Analysis and mitigation measures. This chapter describes the anticipated impacts on the environment and mitigation measures. The method of assessment of impacts including studies carried out, modelling techniques adopted to assess the impacts where pertinent should be elaborated in this chapter. It should give the details of the impacts on the baseline parameters, both during the construction and operational phases and suggests the mitigation measures to be implemented by the proponent.

Chapter 6: Environmental Monitoring Program. This chapter should cover the planned environmental monitoring program. It should also include the technical aspects of monitoring the effectiveness of mitigation measures.

Chapter 7: Additional Studies. This chapter should cover the details of the additional studies required in addition to those specified in the ToR and which are necessary to cater to more specific issues applicable to the particular project.

Chapter 8: Project Benefits. This chapter should cover the benefits accruing to the locality, neighborhood, region and nation as a whole. It should bring out details of benefits by way of improvements in the physical infrastructure, social infrastructure, employment potential and other tangible benefits.

Chapter 9: Environmental Cost Benefit Analysis. This chapter should cover on Environmental Cost Benefit Analysis of the project.

Chapter 10: Environmental Management Plan. This chapter should comprehensively present the Environmental Management Plan (EMP), which includes the administrative and technical setup, summary matrix of EMP, the cost involved to implement the EMP, both during the construction and operational phase and provisions made towards the same in the cost estimates of project construction and operation. This chapter should also describe the proposed post-monitoring scheme as well as inter-organizational arrangements for effective implementation of the mitigation measures.

Chapter 11: Summary and Conclusions. This chapter gives the summary of the full EIA report condensed to ten A-4 size pages at the maximum. It should provide the overall justification for implementation of the project and should explain how the adverse effects have been mitigated.

<i>Project</i>	<i>Rough stone and Gravel Quarry- 1.24.0 Ha</i>	<i>Draft EIA Report</i>
<i>Project Proponent</i>	<i>M/s. Svart Sten Associates LLP</i>	
<i>Project Location</i>	<i>A.P. Nadanoor Village, Alangulam Taluk, Tenkasi District (bifurcated from Tirunelveli District)</i>	

Chapter 12: Disclosure of Consultants. This chapter should include the names of the consultants engaged with their brief resume and nature of consultancy rendered.

1.7 DETAILS OF PROJECT PROPONENT

Project Proponent : M/s. Svart Sten Associates LLP
Status of the Proponent : Partnership Firm
Proponent's Name & Address : M/s. Svart Sten Associates LLP,
Asum Tower, Ezhumangad,
Arangottukkara Post,
Palakkad District,
Kerala – 679 533

1.8 BRIEF DESCRIPTION OF THE PROJECT

1.8.1 *Project Nature, Size & Location*

As per EIA Notification, 2006 and its subsequent amendments (O.M vide No.F.No.L-11011/175/2018-IA-II(M) Government of India MoEF & CC on December 12th 2018) project comes under category B1 cluster & schedule 1(a) under item 1.

Proposed proposal pertains to Rough stone and Gravel mining project by open cast mechanized method on allotted mine lease area at A.P. Nadanoor Village, Alangulam Taluk of Tenkasi (Tirunelveli) District, Tamil Nadu. It is a plain terrain. The total allotted mine lease for the proposed project is 1.24.0 Ha with their maximum production capacity i.e. 2,16,405 m³ of Rough stone and 22,770 m³ of Gravel for the period of Five years only.

Project	Rough stone and Gravel Quarry- 1.24.0 Ha	Draft EIA Report
Project Proponent	M/s. Svart Sten Associates LLP	
Project Location	A.P. Nadanoor Village, Alangulam Taluk, Tenkasi District (bifurcated from Tirunelveli District)	

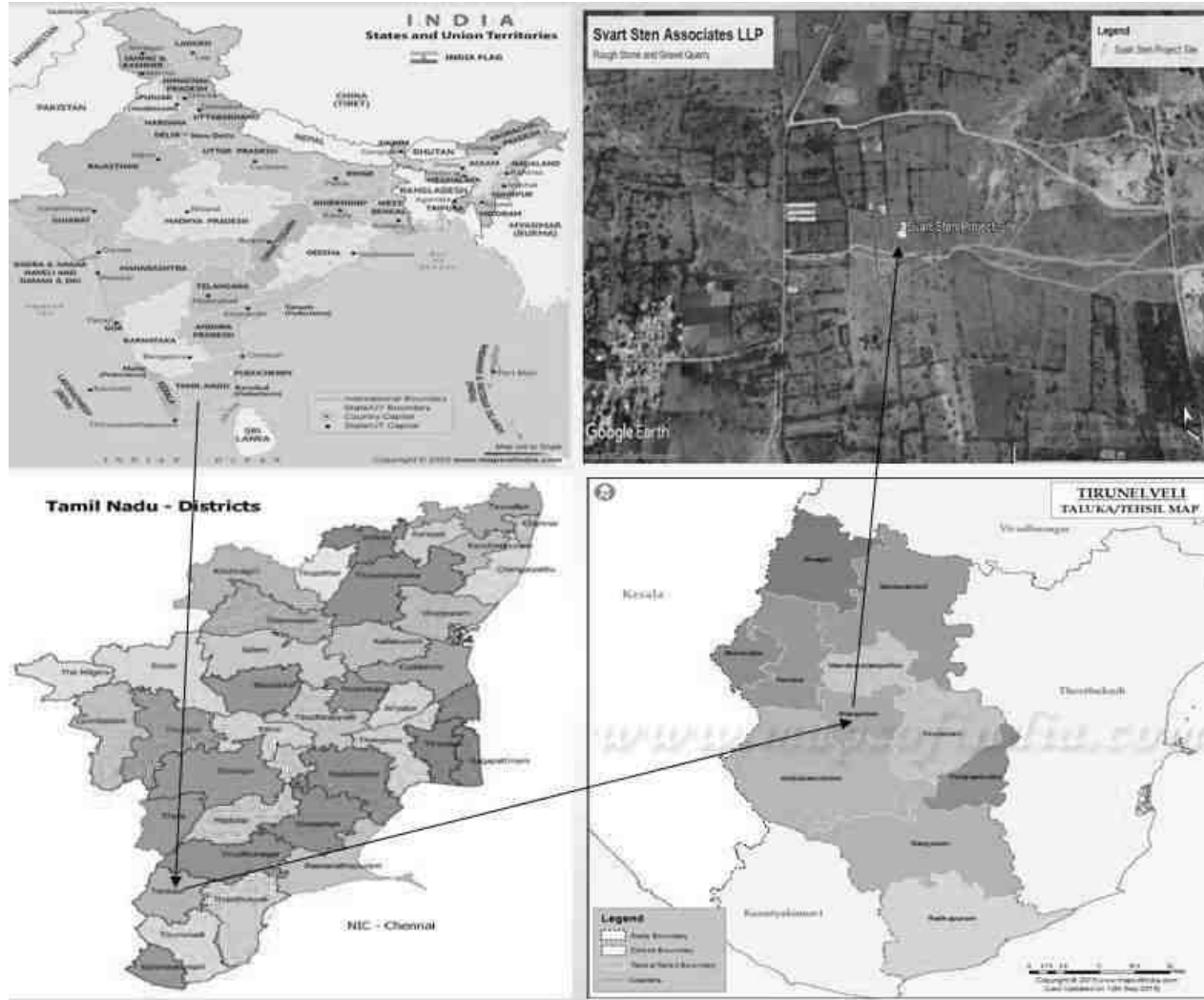


Figure 1.1: Location Map of the Project site

<i>Project</i>	<i>Rough stone and Gravel Quarry- 1.24.0 Ha</i>	<i>Draft EIA Report</i>
<i>Project Proponent</i>	<i>M/s. Svart Sten Associates LLP</i>	
<i>Project Location</i>	<i>A.P. Nadanoor Village, Alangulam Taluk, Tenkasi District (bifurcated from Tirunelveli District)</i>	

2 Project Description

This chapter furnishes detailed description of the proposed project, such as the type of the project, need for the project, project location, layout, project activities during mining, capacity of the project, project operation i.e., land availability, utilities (power and water supply) and infrastructure facilities such as roads, railways, housing and other requirements. The project implementation schedule estimated cost for carrying out entire mining activity is included.

2.1 GENERAL

Proposed proposal pertains to Rough stone and Gravel mining project by open cast mechanized method on allotted mine lease area at A.P. Nadanoor Village, Alangulam Taluk of Tenkasi (Tirunelveli) District, Tamil Nadu. It is a Plain terrain. We have obtained fresh mining plan from 2022 to 2027 from Department of Geology and Mining, Tenkasi District for 1.24.0 Ha land area in 477/1, 477/2, 477/6, 478/2 (P), 478/3 (P) and 478/4 (P) for a proposed mining depth of 42 m below ground level and five years production of 216405 m³ of Rough stone.

Type of the project:

As per EIA Notification, 2006 and its subsequent amendments (O.M vide No.F.No.L-11011/175/2018-IA-II(M) Government of India MoEF & CC on December 12th 2018) project comes under category B1 cluster & schedule 1(a) under item 1. The project required to be appraised at state level by State Environment Impact Assessment Authority, Tamil Nadu. Environment Clearance study will involve preparation of draft EIA report on the basis of baseline & impact assessment study is carried out. Also, before appraisal, under 7(III) of EIA notification 2006, the project involves the Public Consultation and the same will be conducted under SPCB (TN) in Tenkasi District. The proceedings of the same will be incorporated in the Final EIA Report.

The mines within 500m radius from the project site is listed below.

Project	Rough stone and Gravel Quarry- 1.24.0 Ha	<i>Draft EIA Report</i>
Project Proponent	M/s. Svart Sten Associates LLP	
Project Location	A.P. Nadanoor Village, Alangulam Taluk, Tenkasi District (bifurcated from Tirunelveli District)	

Table 2-1: Quarry within 500m Radius

1) Existing other quarries:

1) Existing other quarries:

S. No.	Name of the Owner	Village & Taluk	S.F.Nos.	Extent in Hect.	Lease Period
1	Thiru.N.Mohamed Mahaboob, S/o. Nagoor Pitchai, No. 8/143, Main Road, Pottalpuhur Village Kaspas, Ambasamudram Taluk, Tenkasi	A.P Nadanoor & Alangulam	434/1C, 434/4E, 434/4F, 434/4G, 434/4H, 434/4I, 434/4J, 470/1, 471/2, 471/3, 472/1B & 472/1C	3.74.5	Proceedings No. M1/44736/2016, dt. 20.03.2018 for a period of 5 years from 16.04.2018 to 15.04.2023
Total extent of abandoned quarries				3.74.5	

2) Details of abandoned /Old Quarries

S. No.	Name of the Owner	Village & Taluk	S.F.Nos.	Extent in Hect.	Lease Period
--Nil--					
Total extent of abandoned quarries				0	

3) Details of Present Proposed quarries

S. No.	Name of the Owner	Village & Taluk	S.F.Nos.	Extent in Hect.	Lease Period
1.	Thiru M Mohammed Ismail, S/o. Mohammed Mahaboob,	A.P Nadanoor & Alangulam	467/2, 467/3, 468/1, 477/3, 477/4 & 477/5	4.38.0	Proposed Quarry

<i>Project</i>	<i>Rough stone and Gravel Quarry- 1.24.0 Ha</i>	<i>Draft EIA Report</i>
<i>Project Proponent</i>	<i>M/s. Svart Sten Associates LLP</i>	
<i>Project Location</i>	<i>A.P. Nadanoor Village, Alangulam Taluk, Tenkasi District (bifurcated from Tirunelveli District)</i>	

	8/143, Main Road, Pottalpudur, Tenkasi District				
2.	M/s. Svart Sten Associates LLP, Asum Tower, Ezhumangad, Arangottukkara Post, Palakkad District, Kerala – 679 533	A.P Nadanoor & Alangulam	477/1, 477/2, 477/6, 478/2(P), 478/3(P) & 478/4(P)	1.24.0	Proposed quarry
Total extent of Proposed Quarries				5.62.0	

2.1.1 *Need for the project:*

The said project plays a significant role in the domestic as well as infrastructural market. To achieve a huge infrastructure being envisaged by Government of India, particularly in road and housing sector, there is a need for basic building materials, the rough stone form the primary building material.

Rough stone is one of the most valuable natural building materials. Aggregates are mostly used for building roads and footpaths. Aggregates – stone used for its strong physical properties – crushed and sorted into various sizes for use in concrete, coated with bitumen to make asphalt or used 'dry' as bulk fill in construction.

Mostly used in roads, concrete and building products. Aggregates represent about 98% of quarry output, most of which is used in road construction, maintenance and repair. Much of this goes to the production of asphalt; the remainder is used 'dry' without the addition of other materials to provide a sturdy base for roads.

2.2 BRIEF DESCRIPTION OF THE PROJECT

Project	Rough stone and Gravel Quarry- 1.24.0 Ha	<i>Draft EIA Report</i>
Project Proponent	M/s. Svart Sten Associates LLP	
Project Location	A.P. Nadanoor Village, Alangulam Taluk, Tenkasi District (bifurcated from Tirunelveli District)	

Table 2-2 Salient Features of the Project

S. No.	Description	Details
1	Project Name	M/s. Svart Sten Associates Rough Stone and Gravel Quarry
2	Proponent	M/s. Svart Sten Associates
3	Mining Lease Area Extent	1.24.0 Ha
4	Location	477/1, 477/2, 477/6, 478/2 (P), 478/3 (P) and 478/4 (P)
5	Latitude	8° 48' 11.8373" N to 8° 48' 9.7487" N
6	Longitude	77° 26' 5.2133" E to 77° 25' 59.9788" E
7	Topography	Plain terrain
8	Site Elevation above MSL	97 m from MSL
9	Topo sheet No.	58 H/5 of Survey of India
10	Minerals of Mine	Rough Stone and Gravel Quarry
11	Proposed production of Mine	216405 m ³ of Rough stone and 22770 m ³ of Gravel
12	Ultimate depth of Mining	42 m below ground level
13	Method of Mining	Open cast mechanized mining
14	Water demand	2.0 KLD
15	Source of water	Water will be supplied through tankers supply
16	Man power	15 Nos.
17	Mining Plan Approval	Mining Plan was approved by The Assistant Director, Geology & Mining, Tenkasi vide letter Rc.No.M2/36809/2020 dated 11.04.2022.
18	Precise area communication letter	Precise area communication letter received from Assistant Director, Department of Geology and Mining; Tenkasi vide letter Rc.No.M2/36809/2020 dated 24.01.2022

<i>Project</i>	<i>Rough stone and Gravel Quarry- 1.24.0 Ha</i>	<i>Draft EIA Report</i>
<i>Project Proponent</i>	<i>M/s. Svart Sten Associates LLP</i>	
<i>Project Location</i>	<i>A.P. Nadanoor Village, Alangulam Taluk, Tenkasi District (bifurcated from Tirunelveli District)</i>	

19	Production details	Geological reserves: 480000 m ³ of Rough stone and 24000 m ³ of Gravel Proposed year wise reserves: 216130 m ³ of Rough stone and 22770 m ³ of Gravel
20	Boundary Fencing	7.5 m barrier all along the boundary for adjacent patta lands and 10 m safety distance for Govt. Lands. Fencing will be provided.
21	Disposal of overburden	The over burden in the form of Gravel is used for filling and levelling of low lying areas of road projects and other infrastructure development work in and around the district.
22	Ground water	Ground water table in this area is below 53 mts below ground level. The quarrying is up to a maximum depth of 42m below the ground level. Hence the quarry operation will not be affected by the ground water.
23	Habitations within 300m radius of the Project Site	There is no Habitation within 300m radius of the project site.
24	Drinking water	Water will be supplied through tankers from Murugandiyur village which is 0.50 Km W of the area

Project	Rough stone and Gravel Quarry- 1.24.0 Ha	<i>Draft EIA Report</i>
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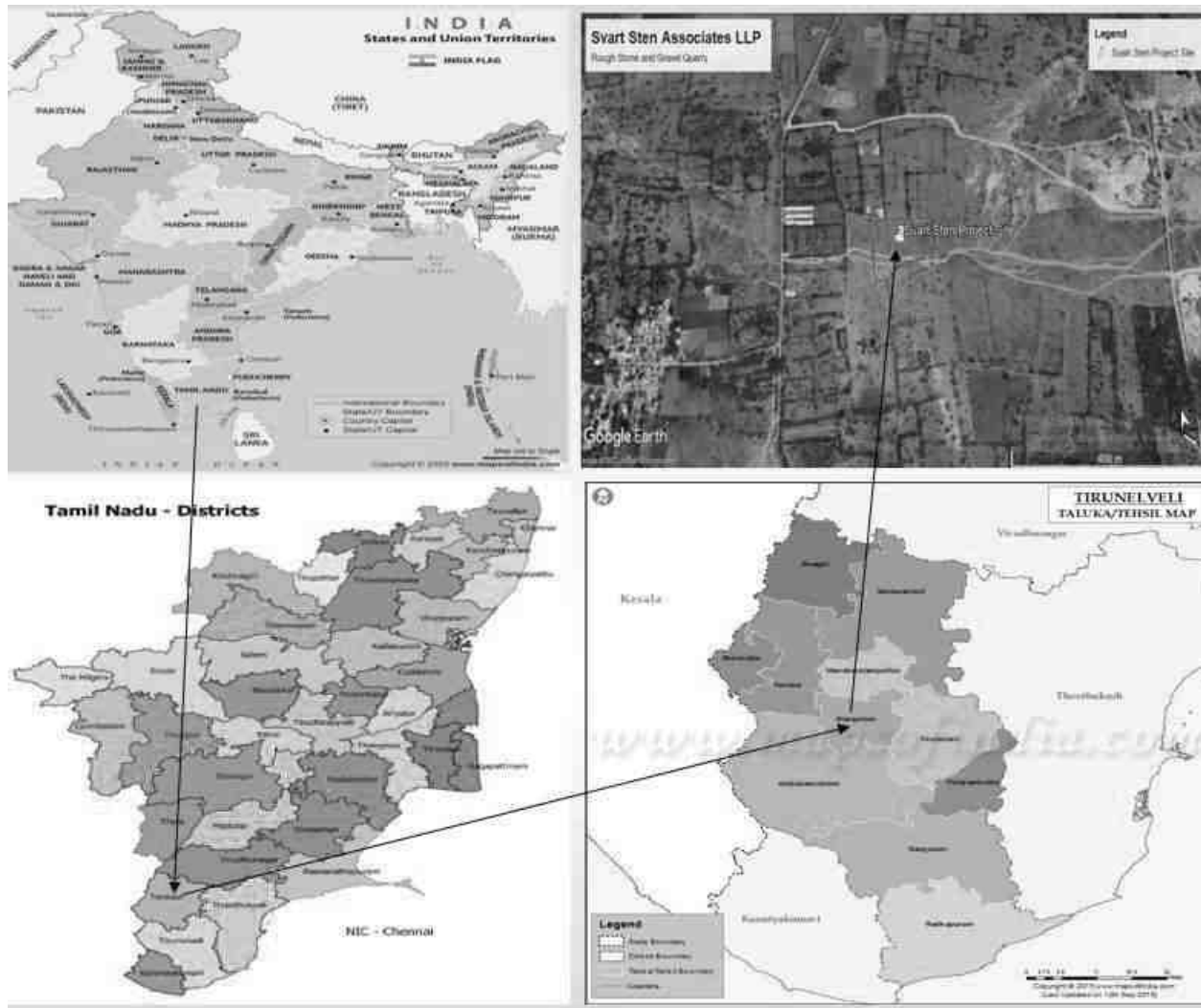


Figure 2.1: Location Map of the Project Site

Project	Rough stone and Gravel Quarry- 1.24.0 Ha	<i>Draft EIA Report</i>
Project Proponent	M/s. Svart Sten Associates LLP	
Project Location	A.P. Nadanoor Village, Alangulam Taluk, Tenkasi District (bifurcated from Tirunelveli District)	



Figure 2.2: Google Earth Image and Coordinates of the Project Site

2.2.1 *Site Connectivity:*

The site is connected to the roadways as follows.

SH 41A – Tirunelveli to Pottalpuhur Road is about 2.26 kms on S of the area

Project	Rough stone and Gravel Quarry- 1.24.0 Ha	<i>Draft EIA Report</i>
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Project Location	A.P. Nadanoor Village, Alangulam Taluk, Tenkasi District (bifurcated from Tirunelveli District)	



Figure 2.3: Site Connectivity

2.3 LOCATION DETAILS:

Table 2-3: Location Details

S. No	Particulars	Details
1.	Latitude	8° 48' 11.8373" N to 8° 48' 9.7487" N
2.	Longitude	77° 26' 5.2133" E to 77° 25' 59.9788" E
3.	Site Elevation above MSL	97 m MSL
4.	Topography	Plain Terrain
5.	Land use of the site	Patta land
6.	Extent of lease area	1.24.0 Ha

Project	Rough stone and Gravel Quarry- 1.24.0 Ha	<i>Draft EIA Report</i>
Project Proponent	M/s. Svart Sten Associates LLP	
Project Location	A.P. Nadanoor Village, Alangulam Taluk, Tenkasi District (bifurcated from Tirunelveli District)	

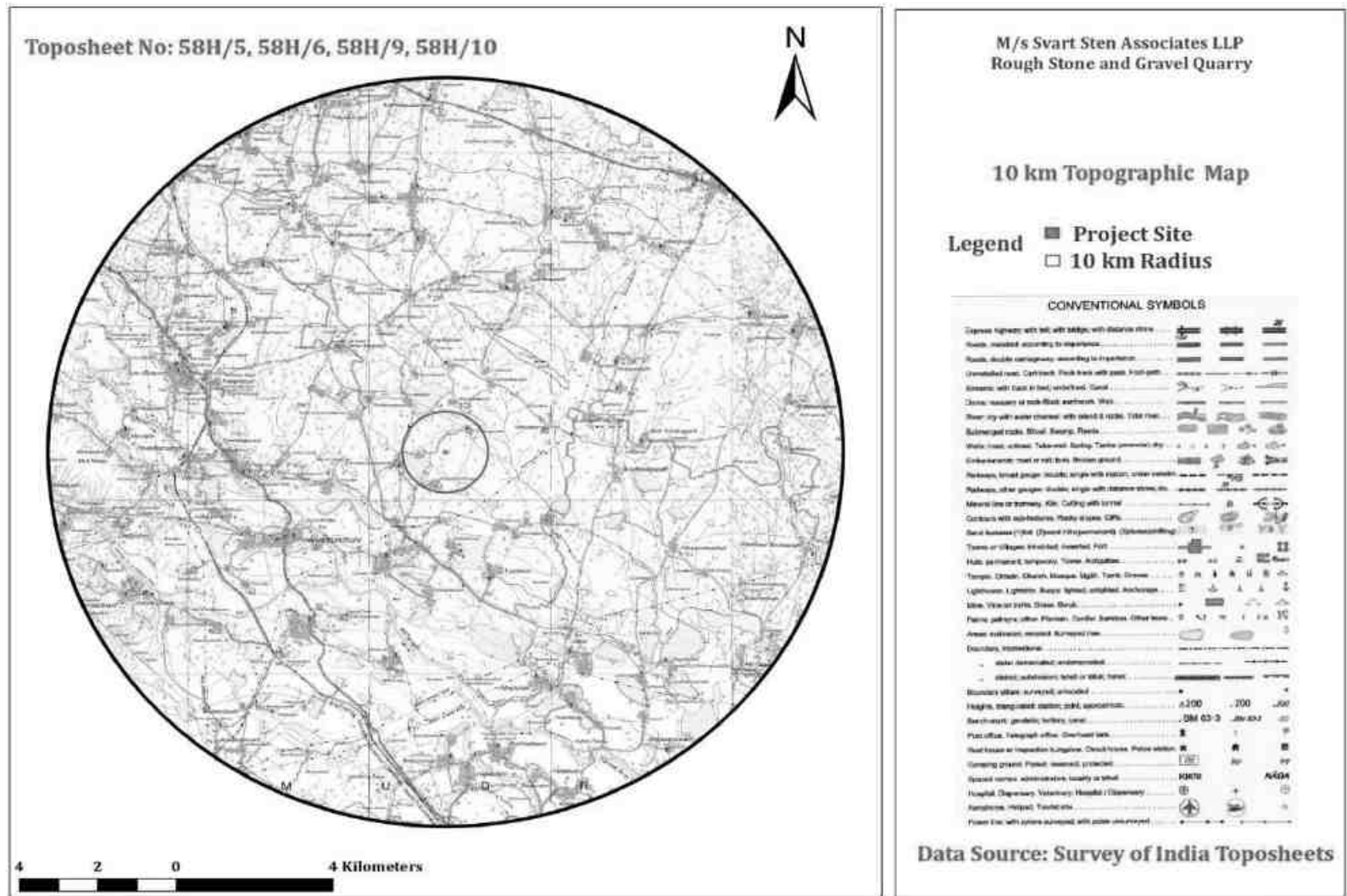


Figure 2.4: Topo Map of Project Site

Project	Rough stone and Gravel Quarry- 1.24.0 Ha	<i>Draft EIA Report</i>
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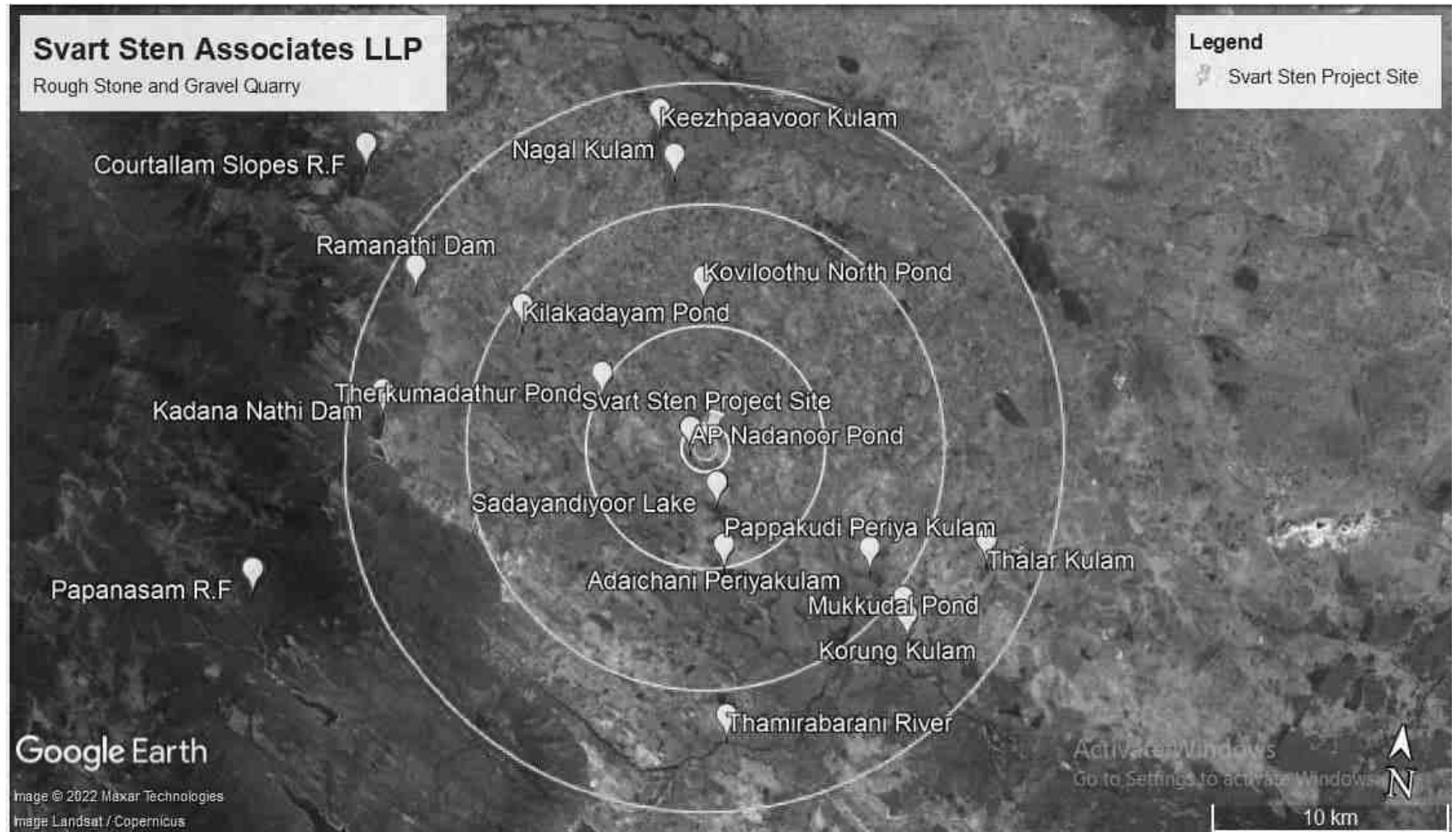


Figure 2.5: Environmental Sensitivity within 15km radius

Project	Rough stone and Gravel Quarry- 1.24.0 Ha	<i>Draft EIA Report</i>
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Project Location	A.P. Nadanoor Village, Alangulam Taluk, Tenkasi District (bifurcated from Tirunelveli District)	

2.3.1 Land Use Breakup of the Mine Lease Area

The Mine Lease area is Plain terrain. The land use pattern of the mine lease area as follows.

Table 2-4: Land use pattern

Sl. No.	Land Use	Area in use during the quarrying period (Hect)
1.	Quarrying pit	0.91.0
2.	Infrastructure	0.01.0
3.	Roads	0.01.0
4.	Green belt	0.18.0
5.	Unutilized area	0.13.0
	Total	1.24.0

2.3.2 Human Settlement

There are no habitations within the radius of 300m. The nearby habitations are as follows

Table 2-5: Habitation

S.No	Name of the Village	Approximate distance & Direction from lease applied area	Approximate population
1.	Theertharappapuram	0.65 km - NE	1875
2.	Murugandiyur	0.50 km - W	1456
3.	Chellapillayarkulam	0.80 km – S	1374
4.	Kalitheerthaanpatti	3 km-SE	1565

<i>Project</i>	<i>Rough stone and Gravel Quarry- 1.24.0 Ha</i>	<i>Draft EIA Report</i>
<i>Project Proponent</i>	<i>M/s. Svart Sten Associates LLP</i>	
<i>Project Location</i>	<i>A.P. Nadanoor Village, Alangulam Taluk, Tenkasi District (bifurcated from Tirunelveli District)</i>	

2.4 LEASEHOLD AREA

The Rough Stone Quarry mine of 1.24.0 Ha is a patta land. The lease area falls in S.F No: 477/1, 477/2, 477/6, 478/2 (P), 478/3 (P) and 478/4 (P) of A.P. Nadanoor Village, Alangulam Taluk, Tenkasi (Tirunelveli) District. There is no reserve forest or protected forest land within the lease area. There is neither human settlement within 300m radius from the lease area.

2.5 GEOLOGY

Southern Granulite Terrain (SGT) of Tamil Nadu lying south of Palaghat-Cauvery shear zone has been divided into two major tectonic blocks by the Madurai block and Nagercoil-Trivandrum Block in the south. It is separated by WNW-ESE trending Achankovil-Tambaraparani Lineament. Tirunelveli and Thothukudi are significantly the only districts in the state to witness the geology and structure of both the blocks. Tirunelveli district represents a well-developed lithopackage of meta-sedimentary sequence inter banded with charnockite Group of rocks. The rock types exposed are of quartzite, calc-granulite, garnet-biotite-sillimanite gneiss, garnet quartzo-feldspathic gneiss and garnetbiotite-cordierite gneiss belonging to Khondalite Group of rock. Charnockite and pyroxene granulite are the Charnockite Group. Hornblende-biotite gneiss belongs to Migmatitic Complex. Besides, basic intrusive (pyroxenite) and acid intrusive (granite) are noticed. The younger intrusive are represented by pegmatite and quartz veins. Evidence of development of incipient / patchy charnockite along the shear plane is noticed in the district along the Western Ghat high hills.

Project	Rough stone and Gravel Quarry- 1.24.0 Ha	<i>Draft EIA Report</i>
Project Proponent	M/s. Svart Sten Associates LLP	
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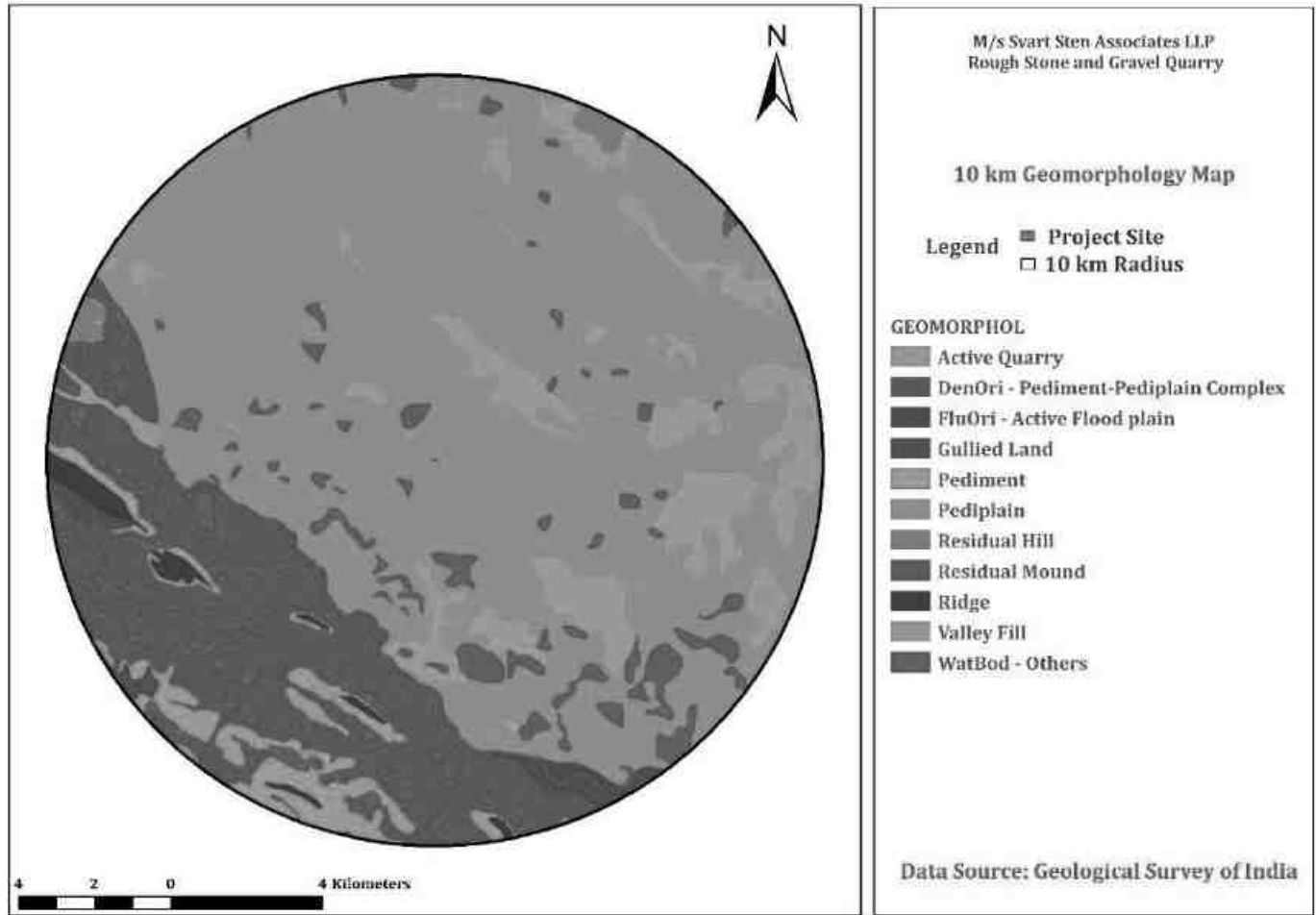


Figure 2.6: Geomorphology

Project	Rough stone and Gravel Quarry- 1.24.0 Ha	<i>Draft EIA Report</i>
Project Proponent	M/s. Svart Sten Associates LLP	
Project Location	A.P. Nadanoor Village, Alangulam Taluk, Tenkasi District (bifurcated from Tirunelveli District)	

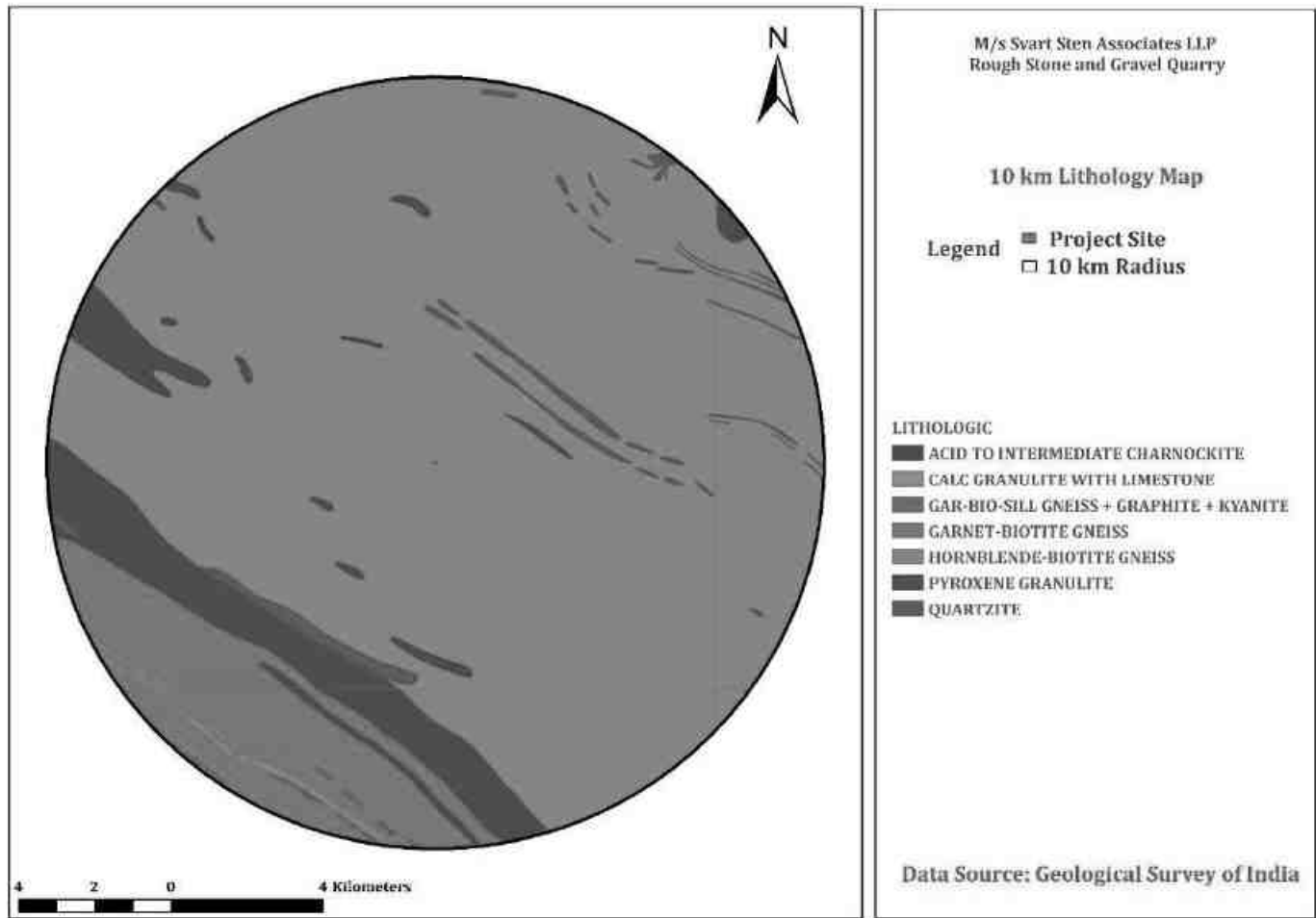


Figure 2.7 Lithology

2.6 QUALITY OF RESERVES:

The mining lease area is of 1.24.0 Ha, with production capacity of 216130 m³ of Rough Stone and 22770 m³ of Gravel. Due to significant role in the domestic as well as infrastructural market, making the mining of Stone and gravel along with associated minor minerals is economically viable.

Table 2-6: Details of Mining

S. No	Particulars	Details
1	Method of Mining	Open Cast mechanized

Project	Rough stone and Gravel Quarry- 1.24.0 Ha	<i>Draft EIA Report</i>
Project Proponent	M/s. Svart Sten Associates LLP	
Project Location	A.P. Nadanoor Village, Alangulam Taluk, Tenkasi District (bifurcated from Tirunelveli District)	

2	Geological Reserves	480000 m ³ of Rough stone and 24000 m ³ of Gravel
3	Recoverable Reserves	216130 m ³ of Rough stone and 22770 m ³ of Gravel
4	Proposed Production	216130 m ³ of Rough stone and 22770 m ³ of Gravel
5	Elevation Range of the Mine Site	97 m MSL

2.6.1 Geological Reserves

The Geological Reserves is estimated as 4,80,000 m³ of Rough Stone and 24,000 m³ of Gravel upto a depth of 42 m (2.0 m Gravel and 40 m Rough Stone). Availability of Resources is given below.

Table 2-7: Geological Reserves

Section	Bench	L (m)	W (m)	D (m)	Volume In m ³	Geological Reserves in m ³ @ 100 %	Gravel in m ³
XY-AB	I	78	99	2			15444
	II	78	99	5	38610	38610	
	III	78	99	5	38610	38610	
	IV	78	99	5	38610	38610	
	V	78	99	5	38610	38610	
	VI	78	99	5	38610	38610	
	VII	78	99	5	38610	38610	
	VIII	78	99	5	38610	38610	
	IX	78	99	5	38610	38610	
TOTAL					308880	308880	15444
XY-CD	I	62	69	2			8556
	II	62	69	5	21390	21390	
	III	62	69	5	21390	21390	
	IV	62	69	5	21390	21390	

Project	Rough stone and Gravel Quarry- 1.24.0 Ha	<i>Draft EIA Report</i>
Project Proponent	M/s. Svart Sten Associates LLP	
Project Location	A.P. Nadanoor Village, Alangulam Taluk, Tenkasi District (bifurcated from Tirunelveli District)	

	V	62	69	5	21390	21390	
	VI	62	69	5	21390	21390	
	VII	62	69	5	21390	21390	
	VIII	62	69	5	21390	21390	
	IX	62	69	5	21390	21390	
TOTAL					171120	171120	8556
GRAND TOTAL					480000	480000	24000

2.6.2 Mineable Reserves

Table 2-8: Mineable Reserves

Section	Bench	L (m)	W (m)	D (m)	Volume in m ³	Rough Stone in m ³	Gravel in m ³
XY-AB	I	99	100	2	--	--	19800
	II	97	96	5	46560	46560	--
	III	92	86	5	39560	39560	--
	IV	87	76	5	33060	33060	--
	V	82	66	5	27060	27060	--
	VI	77	56	5	21560	21560	--
	VII	72	46	5	16560	16560	--
	VIII	62	36	5	11160	11160	--
	IX	52	26	5	6760	6760	--
TOTAL					202280	202280	19800
XY-CD	I	27	55	2	--	--	2970
	II	25	51	5	6375	6375	--
	III	20	41	5	4100	4100	--

<i>Project</i>	<i>Rough stone and Gravel Quarry- 1.24.0 Ha</i>	<i>Draft EIA Report</i>
<i>Project Proponent</i>	<i>M/s. Svart Sten Associates LLP</i>	
<i>Project Location</i>	<i>A.P. Nadanoor Village, Alangulam Taluk, Tenkasi District (bifurcated from Tirunelveli District)</i>	

	IV	15	31	5	2325	2325	--
	V	10	21	5	1050	1050	--
TOTAL					13850	13850	2970
GRAND TOTAL					216130	216130	22770

The available mineable reserves is computed as 2,16,130 m³ of Rough Stone and 22,770 m³ of Gravel formation at the rate of 100% recovery upto a depth of 42.0 m (Max) (2.0 m Gravel and 40 m Rough Stone)

2.6.3 Year wise Production Plan

The proposed rate of production of Rough Stone is about 2,16,130 m³ of Rough Stone and 22,770 m³ of Gravel upto a depth of 42.0 m (Max) (2.0 m Gravel and 40 m Rough Stone) for the lease period of five years only.

Table 2-9: Year wise Production Plan

YEAR	Section	Bench	L (m)	W (m)	D (m)	Volume in m ³	Reserve in m ³ @ 95%	Gravel in m ³
I-YEAR	XY-AB	I	99	100	2			19800
		II	97	96	5	46560	46560	
	XY-CD	I	27	55	2			2970
		II	25	51	5	6375	6375	
	TOTAL						52935	52935
II-YEAR	XY-AB	III	92	86	5	39560	39560	
	XY-CD	III	20	41	5	4100	4100	
	TOTAL						43660	43660
III-YEAR	XY-AB	IV	87	76	5	33060	33060	
	XY-CD	IV	15	31	5	2325	2325	
	TOTAL						35385	35385
IV-YEAR	XY-AB	V	82	66	5	27060	27060	
	XY-CD	V	10	21	5	1050	1050	
	TOTAL						28110	28110
V-YEAR	XY-AB	VI	77	56	5	21560	21560	
		VII	72	46	5	16560	16560	
		VIII	62	36	5	11160	11160	

<i>Project</i>	<i>Rough stone and Gravel Quarry- 1.24.0 Ha</i>	<i>Draft EIA Report</i>
<i>Project Proponent</i>	<i>M/s. Svart Sten Associates LLP</i>	
<i>Project Location</i>	<i>A.P. Nadanoor Village, Alangulam Taluk, Tenkasi District (bifurcated from Tirunelveli District)</i>	

	IX	52	26	5	6760	6760	
	TOTAL				56040	56040	
GRAND TOTAL					216130	216130	22770

Project	Rough stone Quarry- 0.55.0 Ha by Thiru. Joseph John Samuel	<i>Draft EIA Report</i>
Project Proponent	Thiru. Joseph John Samuel	
Project Location	Tharuvai Village, Palayamkottai Taluk, Tirunelveli District	

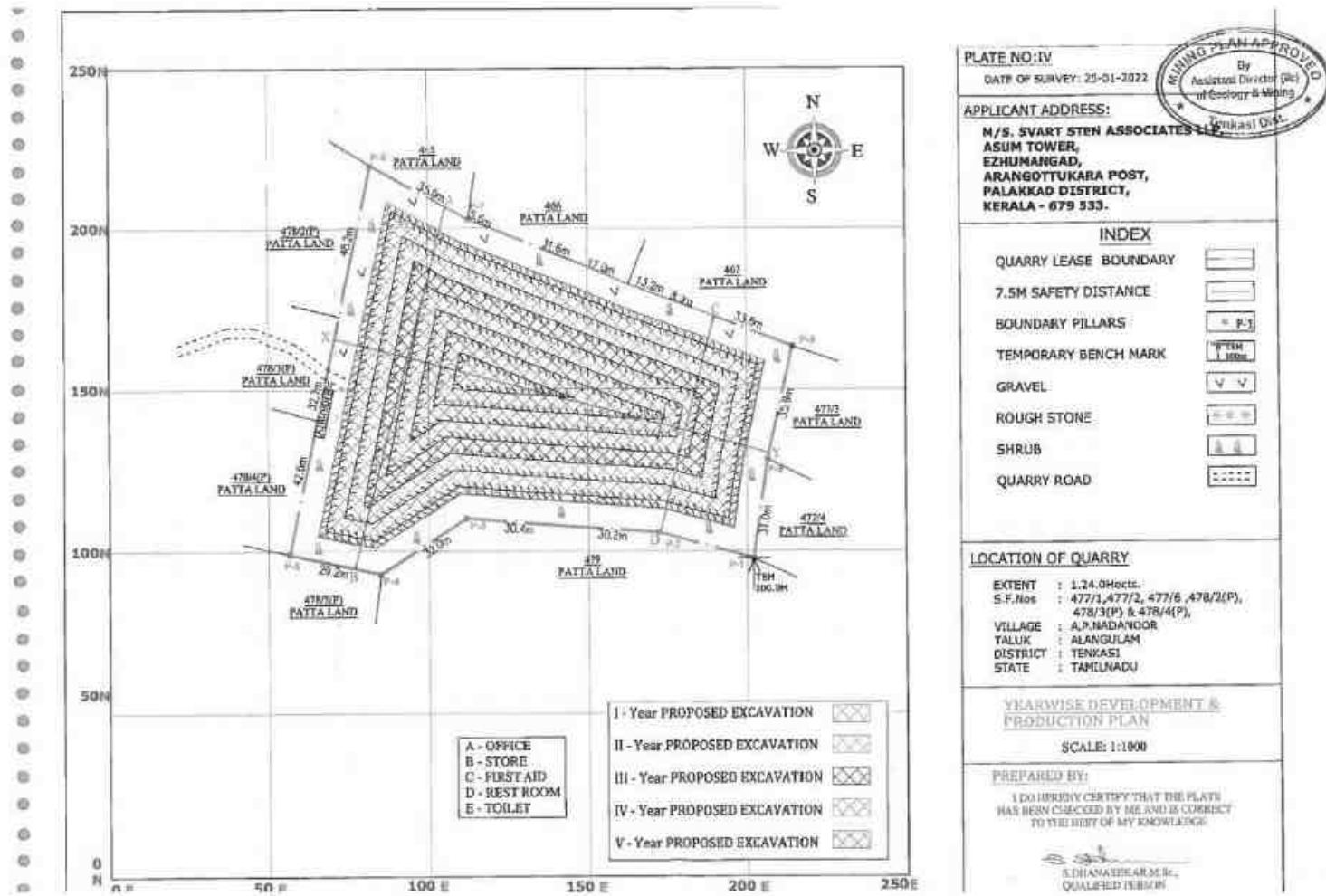


Figure 2.8 Year wise Production Plan

<i>Project</i>	<i>Rough stone Quarry- 1.24.0 Ha</i>	<i>Draft EIA Report</i>
<i>Project Proponent</i>	<i>M/s. Svart Sten Associates</i>	
<i>Project Location</i>	<i>A.P. Nadanoor Village, Alangulam taluk, Tenkasi (Bifurcated from Tirunelvel District)</i>	

2.7 TYPE OF MINING

The proposed project is an open cast mechanized mining with one with 5.0 meter vertical bench with a bench width of 5.0 meter. However, as far as the quarrying of Rough Stone is concerned, observance of the provisions of regulations 106(2) (b) as above is seldom possible due to various inherent petro genetic factors coupled with mining difficulties. Hence, it is proposed to obtain relaxation to the provisions of the above regulation from the Director of Mines Safety for which necessary provision is available with the Regulation 106(2) (b) of MMR-1961, under Mines Act- 1952.

2.7.1 *Method of Working:*

The Rough stone is proposed to quarry at 5m bench height & 5m width with conventional Open cast mechanized method. The quarrying operation will be carried out in conjunction with conventional method of mining using Jack hammer drilling and blasting for shattering effect and loosen the Rough stone.

2.7.2 *Overburden*

The over burden in the form of Gravel is used for filling and levelling of low lying areas of road projects and other infrastructure development work in and around the district.

2.7.3 *Machineries to be used*

Type of machineries proposed for quarrying operation for the entire project is listed below.

Table 2-10: List of Machineries used

For Mining operation	Excavator of 1.2 Cu.m bucket capacity Jack Hammer (25.5 mm dia) Tractor mounted compressor
Loading Equipment	Excavator of 1.2 Cu.m bucket capacity
Transportation	Tipper 2 No. of 10 M.T's capacity

<i>Project</i>	<i>Rough stone Quarry- 1.24.0 Ha</i>	<i>Draft EIA Report</i>
<i>Project Proponent</i>	<i>M/s. Svart Sten Associates</i>	
<i>Project Location</i>	<i>A.P. Nadanoor Village, Alangulam taluk, Tenkasi (Bifurcated from Tirunelvel District)</i>	

2.7.4 *Blasting:*

2.7.4.1 **Blasting Pattern:**

The quarrying operation will be carried out in conjunction with conventional method of mining using Jack hammer drilling and blasting for shattering effect and loosen the Rough stone.

2.7.4.2 **Drilling & Blasting:**

Drilling and Blasting Parameters are as follows

Table 2-11: Drilling and Blasting Parameters

Parameters	Details
Depth of each hole	1 m to 1.5m
Diameter of hole	32-36 mm
Spacing between holes	0.6 m
Pattern of hole	Zigzag
Inclination of holes	70° from horizontal
Use of delay detonators	25 milli seconds delays
Detonating fuse	“Detonating” Cord

2.7.4.3 **Types of Explosives to be used:**

Slurry Class 3 explosives, type of nitro compound are proposed to be used for shattering and heaving effect for removal and winning of Rough Stone. No deep hole drilling or primary blasting is proposed. Detonators of Class 3 and Safety fuse of Class 6 are used.

2.7.4.4 **Measures to minimize ground vibration due to blasting:**

The quarry is situated more than 1 km from the nearby villages. Controlled blasting measures will be adopted for minimizing the ground vibration and fly of rocks. Shallow depths jackhammer drilling & blasting is proposed to be carried out with minimum use of explosive mainly to give shattering effect in rough stone for easy excavation and to control fly of rock.

<i>Project</i>	<i>Rough stone Quarry- 1.24.0 Ha</i>	<i>Draft EIA Report</i>
<i>Project Proponent</i>	<i>M/s. Svart Sten Associates</i>	
<i>Project Location</i>	<i>A.P. Nadanoor Village, Alangulam taluk, Tenkasi (Bifurcated from Tirunelvel District)</i>	

Table 2-12: Blasting Details

Parameters	Details
Diameter of holes	32-36mm
Spacing between holes	0.6 m
Depth	1 to 1.5 m
Charge/Hole	0.6kg
Pattern of hole	Zig Zag
Inclination of Hole	70° from the horizontal
Blasting time	4.30 P.M to 5.30 P.M

2.7.4.5 Storage & Safety measures taken during blasting:

The project proponent “M/s. Svart Sten Associates LLP” will engage an authorized explosive agency to carry out the small amount of blasting and it will be supervised by Permit Mines Manager. The copy of the explosive certificate is attached as *Annexure*.

2.8 MAN POWER REQUIREMENTS

The manpower requirement to meet out the production Schedule and the machinery strength envisaged in the mining plan and to comply with the statutory provisions of the Mines Safety Regulations is as follows.

Table 2-13: Man Power Requirements

1.	Skilled	Operator, Mechnic, Blaster/Mat	2 No. 1 No. 1 No.
2.	Semi – skilled	Driver	2 Nos
3.	Unskilled	Musdoor / Labors	4 Nos 2 No

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Project Proponent	M/s. Svart Sten Associates	
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		Cleaners & Office Boy	1 No
4.	Management & Supervisor Staff	Mines Foreman	2 No
Total			15 Nos.

No child less than 18 years will be entertained during quarrying operations.

2.8.1 Water Requirement

Total water requirement for the mining project is 2.0 KLD. Domestic water will be sourced from nearby Ponnakkudi village and other water will be source from nearby road tankers supply.

Table 2-14: Water Requirment

Purpose	Quantity	Sources
Drinking Water	1.0 KLD	Packaged Drinking water vendors available in Murugandiyur village which is about 0.50 km W of the area
Green belt	0.5KLD	Other domestic activities through road tankers supply
Dust suppression	0.5KLD	From road tankers supply
Total	2.0 KLD	

2.9 PROJECT IMPLEMENTATION SCHEDULE

The implementation schedule of the proposed Mine Lease of M/s. Svart Sten Associates LLP (1.24.0 ha) is as follows.

Table 2-15: Mining Schedule

MINING SCHEDULE					
Activity	Jan -24	Jan-25	Jan-26	Jan-27	Jan-28
Site Clearance					
Excavation – Rough stone/Overburden					

Project	Rough stone Quarry- 1.24.0 Ha	<i>Draft EIA Report</i>
Project Proponent	M/s. Svart Sten Associates	
Project Location	A.P. Nadanoor Village, Alangulam taluk, Tenkasi (Bifurcated from Tirunelvel District)	

I Year Production – Cum – 53935 Rough Stone and 22770 of Gravel					
II Year Production – Cum – 43660 Rough Stone					
III Year Production – Cum – 35385 Rough Stone					
IV Year Production - Cum – 28110 Rough Stone					
V Year Production – Cum – 56040 Rough Stone					

2.10 SOLID WASTE MANAGEMENT

Table 2-15: Solid Waste Management

S. No	Type	Quantity	Disposal Method
1	Organic	2.7 kg/day	Municipal bin including food waste
2	Inorganic	3.8 kg/day	TNPCB authorized recyclers

As per CPCB guidelines: MSW per capita/day =0.45 kg/day

2.11 MINE DRAINAGE

The quarry operation is proposed up to a depth of 42m below ground level. The water table is below 53 m from the ground level which is observed from the nearby bore wells and bore wells of this area. Hence the ground water will not be affected in any manner due to the quarrying operation during the entire lease period.

2.12 POWER REQUIREMENT

This Rough stone quarry project does not require huge water and electricity for the project.

<i>Project</i>	<i>Rough stone Quarry- 1.24.0 Ha</i>	<i>Draft EIA Report</i>
<i>Project Proponent</i>	<i>M/s. Svart Sten Associates</i>	
<i>Project Location</i>	<i>A.P. Nadanoor Village, Alangulam taluk, Tenkasi (Bifurcated from Tirunelvel District)</i>	

16 Litre diesel per hour for excavator for mining and loading for Rough Stone needed and 10 Litre diesel per hour for excavation of Gravel needed.

2.13 PROJECT COST

1	<u>A. Fixed Asset Cost:</u> 1. Land Cost 2. Labour shed 3. Sanitary Facility 4. Fencing Cost Total=	: : Rs.12,50,000 : Rs.1,50,000 : Rs. 70,000 : Rs.1,00,000 : Rs. 15,70,000/-
2	<u>B. Operational Cost:</u> 1.Machineries	: Rs.43,00,000/-
	Total Project Cost(A+B)	: Rs. 45,70,000/-

I. EMP Cost :

Categories	Mitigation Measure	Provision for Implementation	Capital Cost	Recurring Cost
			(Rs)	
Air Environment	Compaction, gradation and drainage on both sides for Haulage Road	Rental Dozer & drainage construction on haul road @ Rs. 10,000/- per hectare; and yearly maintenance @ Rs. 10,000/- per hectare	12400	12400
	Fixed Water Sprinkling Arrangements + Water sprinkling by own water tankers	Fixed Sprinkler Installation and New Water Tanker Cost for Capital; and Water	800000	50000

<i>Project</i>	<i>Rough stone Quarry- 1.24.0 Ha</i>	<i>Draft EIA Report</i>
<i>Project Proponent</i>	<i>M/s. Svart Sten Associates</i>	
<i>Project Location</i>	<i>A.P. Nadanoor Village, Alangulam taluk, Tenkasi (Bifurcated from Tirunelvel District)</i>	

		Sprinkling (thrice a day) Cost for recurring		
	Air Quality will be regularly monitored as per norms within ML area & Ambient Area	Yearly Compliance as per CPCB norms	0	50000
	Muffle blasting – To control fly rocks during blasting	Blasting face will be covered with sand bags / steel mesh / old tyres / used conveyor belts	0	5000
	Wet drilling procedure / latest eco-friendly drill machine with separate dust extractor unit	Dust extractor @ Rs. 25,000/- per unit deployed as capital & @ Rs. 2500 per unit recurring cost for maintenance	125000	12500
	No overloading of trucks/tippers/tractors	Manual Monitoring through Security guard	0	5000

	Stone carrying trucks will be covered by tarpaulin	Monitoring if trucks will be covered by tarpaulin	0	10000
Air Environment	Enforcing speed limits of 20 km/hr within ML area	Installation of Speed Governors @ Rs. 5000/- per Tipper/Dumper deployed	10000	0
	Regular monitoring of exhaust fumes as per RTO norms		0	5000
	Regular sweeping and maintenance of approach roads for at least about 200 m from ML Area	Provision for 2 labours @ Rs.10,000/labour (Contractual) per Hectare	0	10000

<i>Project</i>	<i>Rough stone Quarry- 1.24.0 Ha</i>	<i>Draft EIA Report</i>
<i>Project Proponent</i>	<i>M/s. Svart Sten Associates</i>	
<i>Project Location</i>	<i>A.P. Nadanoor Village, Alangulam taluk, Tenkasi (Bifurcated from Tirunelvel District)</i>	

	Installing wheel wash system near gate of quarry	Installation + Maintenance + Supervision	50000	20000
Noise Environment	Source of noise will be during operation of transportation vehicles, HEMM for this proper maintenance will be done at regular intervals.	Provision made in Operating Cost	0	0
	Oiling & greasing of Transport vehicles and HEMM at regular interval will be done	Provision made in Operating Cost	0	0

	Adequate silencers will be provided in all the diesel engines of vehicles.	Provision made in Operating Cost	0	0
Noise Environment	It will be ensured that all transportation vehicles carry a fitness certificate.	Provision made in Operating Cost	0	0
	Safety tools and implements that are required will be kept adequately near blasting site at the time of charging.	Provision made in OHS part	0	0
	Line Drilling all along the boundary to reduce the PPV from blasting activity and implementing controlled blasting.	Provision made in Operating Cost	0	0
	Proper warning system before blasting will be adopted and clearance of the area before blasting will be ensured.	Blowing Whistle by Mining Mate / Blaster / Competent Person	0	0

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<i>Project Location</i>	<i>A.P. Nadanoor Village, Alangulam taluk, Tenkasi (Bifurcated from Tirunelvel District)</i>	

	Provision for Portable blaster shed	Installation of Portable blasting shelter	50000	2000
	NONEL Blasting will be practiced to control Ground vibration and fly rocks	Rs. 30/- per 6 Tonnes of Blasted Material	0	100000

Water Environment	Water Environment	Provision for garland drain @ Rs. 10,000/- per Hectare with maintenance of Rs. 5,000/- per annum	12400	5000
Waste Management	Waste management (Spent Oil, Grease etc.,)	Provision for domestic waste collection and disposal through authorized agency	25000	20000
		Installation of dust bins	5000	2000
	Bio toilets will be made available outside mine lease on the land of owner itself	Provision made in Operating Cost	0	0
Implementation of EC, Mining Plan & DGMS Condition	Size 6' X 5' with blue background and white letters as mentioned in MoM Appendix II by the SEAC TN	Fixed Display Board at the Quarry Entrance as permanent structure mentioning Environmental Conditions	10000	1000
	Workers will be provided with Personal Protective Equipment's	Provision of PPE @ Rs. 4000/- per employee with recurring based on wear and tear (say, @ Rs. 1000/- per employee)	60000	15000

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Implementation of EC, Mining Plan & DGMS Condition	Health checkup for workers will be provisioned	IME & PME Health check up @ Rs. 1000/- per employee	0	15000
	First aid facility will be provided	Provision of 2 Kits per Hectare @ Rs. 2000/-	0	2000
	Mine will have safety precaution measures, signages, boards.	Provision for signages and boards made	10000	2000
	Barbed Wire Fencing to quarry area will be provisioned.	Per Hectare fencing Cost @ Rs. 2,00,000/- with Maintenance of Rs 10,000/- per annum	248000	12400

Implementation of EC, Mining Plan & DGMS Condition	No parking will be provided on the transport routes. Separate provision on the south side of the hill will be made for vehicles /HEMMs. Flaggers will be deployed for traffic management	Parking area with shelter and flags @ Rs. 50,000/- per hectare project and Rs. 10,000/- as maintenance cost	62000	12400
	Installation of CCTV cameras in the mines and mine entrance	Camera 4 Nos, DVR, Monitor with internet facility	30000	5000
	Implementation as per Mining Plan and ensure safe quarry working	Mines Manager (1st Class / 2nd Class / Mine Foreman) under regulation 34 / 34 (6) of MMR, 1961 and Mining Mate under regulation 116 of MMR,1961 @ 40,000/- for Manager & @ 25,000/- for Foreman / Mate	0	780000

<i>Project</i>	<i>Rough stone Quarry- 1.24.0 Ha</i>	<i>Draft EIA Report</i>
<i>Project Proponent</i>	<i>M/s. Svart Sten Associates</i>	
<i>Project Location</i>	<i>A.P. Nadanoor Village, Alangulam taluk, Tenkasi (Bifurcated from Tirunelvel District)</i>	

Greenbelt development	Green belt development - 500 trees per one hectare (200 Inside Lease Area & 300 Outside Lease Area)	Site clearance, preparation of land, digging of pits / trenches, soil amendments, transplantation of saplings @ 200 per plant (capital) for plantation inside the lease area and @ 30 per plant maintenance (recurring)	60000	9000
		Avenue Plantation @ 300 per plant (capital) for plantation outside the lease area and @ 30 per plant maintenance (recurring)	120000	12000
Total			1689800	1174700
Total Cost			2864500	

Year	Cost (@ 5% per year inflation adjustment)
1 st Year	2864500
2 nd Year	1233435
3 rd Year	1295107
4 th Year	1359862
5 th Year	1427855
Total	81,80,759

Total EMP Cost – Rs. 81,80,759 (Rs. 81 Lakhs)

<i>Project</i>	<i>Rough stone Quarry- 1.24.0 Ha</i>	<i>Draft EIA Report</i>
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<i>Project Location</i>	<i>A.P. Nadanoor Village, Alangulam taluk, Tenkasi (Bifurcated from Tirunelvel District)</i>	

2.14 GREENBELT

1. The development of greenbelt in the peripheral buffer zone of the mine area.
2. Green belt has been recommended as one of the major components of Environmental Management plan, which will improve ecology, environment and quality of the surrounding area.
3. Local trees like, Neem, Vilvam Vaagai, Naval etc will be planted along the lease boundary and avenues as well as over non-active dumps at a rate of 140 trees per annum with interval 5m.
4. The rate of survival expected to be 80% in this area

Table. 2-17 Plantation/ Afforestation Program

Name of species proposed	Survival	No of species
Neem, Vilvam Vaagai, Eachai, Naval, Mantharai, Magizha Maram, Vila maram, Poo Marudhu, Panai Maram, Marudha Maram, Thandri, Sengondrai, Poovarasu, Therthag kottai , Pungam	80%	700
Total		700

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<i>Project Location</i>	<i>A.P.Nadanoor Village, Alangulam Taluk, Tenkasi District (bifurcated from Tirunelveli District)</i>	

3 Description of the Environment

3.1 GENERAL:

The method of mining for extracting rough stone and gravel quarry is required to be selected in such a manner to ensure sustainable development. Mining activities invariably affect the existing environmental status of the site. It has both adverse and beneficial effects. In order to maintain the environmental commensuration with the mining operation, it is essential to undertake studies on the existing environmental scenario and assess the impact on different environmental components. This would help in formulating suitable management plans and sustainable resource extraction.

To understand the existing environmental scenario, Baseline data helps in identification, prediction and evaluation of impacts in Environmental Impact assessment. Through field study, baseline data are collected considering various factors of the project. This includes-

- Physical- the area, the soil properties, the geological characteristics, the topography, etc
- Chemical- water, air, noise and soil pollution levels, etc.
- Biological- the biodiversity of the area, types of flora and fauna, species richness, species distribution, types of ecosystems, presence or absence of endangered species and/or sensitive ecosystems etc.
- Socioeconomic- demography, social structure, economic conditions, developmental capabilities, displacement of locals, etc.

3.1.1 *Study Area:*

The study area for the mining projects is as follows:

- Mine lease area as the “core zone”
- A study area of 10 km radius from the project boundary is designated as buffer Zone and for the study of Socio-economic status, 10 km radius from the boundary limits of the mine lease area has been selected.

We have obtained Terms of Reference from SEIAA vide Letter No. SEIAA-TN/ F. No. 9546/ ToR-1361/2023 Dated: 10.02.2023. The baseline monitoring is carried out in March 2023 to May 2023 and

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Project Location	A.P.Nadanoor Village, Alangulam Taluk, Tenkasi District (bifurcated from Tirunelveli District)	

the analysis is briefed in the EIA report. The proponent has engaged M/s. Ecotech labs Pvt. Ltd for carrying out the existing baseline study.

3.1.2 Instruments Used

The following instruments were used at the site for baseline data collection.

1. Respirable Dust Sampler with attachment for gaseous Pollutants, Envirotech APM 460, APM411.
2. Fine Particulate Matter (FPM) Sampler, APM 550
4. Sound Level Meter Model SL-4010
5. 2000 series watchdog automatic weathering monitoring station

3.1.3 Baseline Data Collection Period:

The baseline data is collected in accordance with the CPCB Guidelines. The Baseline study is carried out from March to May 2023.

3.1.4 Frequency of Monitoring

Table 3-1: Frequency of Sampling and Analysis

Attributes	Sampling	Frequency
Air environment – Meteorological (wind speed, wind direction, rainfall, humidity, temperature)	Project site	1 hourly continuous
Air environment – Pollutants PM 10 PM 2.5 SO ₂ NO _x Lead in PM	5 locations	24 hourly twice a week 4 hourly. Twice a week, One non-monsoon season 8 hourly, twice a week 24 hourly, twice a week
Noise	5 locations	24 hourly Once in 5 locations

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Project Proponent	M/s. Svart Sten Associates	
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Water (Ground water) pH, Temperature, Turbidity, Magnesium Hardness, Total Alkalinity, Chloride, Sulphate, Fluoride, Nitrate, Sodium, Potassium, Salinity, Total nitrogen, Total Coliforms, Fecal Coliforms	5 locations	Once in 5 locations
Water (surface water) pH, Temperature, Turbidity, Magnesium Hardness, Total Alkalinity, Chloride, Sulphate, Fluoride, Nitrate, Sodium, Potassium, Salinity, Total nitrogen, Total Coliforms, Fecal Coliforms	Sample from nearby lakes/river	One-time Sampling
Soil (Organic matter, Texture, pH, Electrical Conductivity, Permeability, Water holding capacity, Porosity)	5 locations	Once in 5 locations
Ecology and biodiversity Study	Study area covering 10 km radius	One-time Sampling
Socio- Economic study (Population, Literacy Level, employment, Infrastructure like school, hospitals & commercial establishments)	Villages around 10 km radius	One-time Sampling

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<i>Project Location</i>	<i>A.P.Nadanoor Village, Alangulam Taluk, Tenkasi District (bifurcated from Tirunelveli District)</i>	

3.1.5 Secondary data Collection

Apart from the primary data, Secondary data is also used for the collection; collation; synthesis and interpretation

- Flora & Faunal Study
- Land use study
- Demography and socio-economic analysis
- Meteorological data, from Indian Meteorological Department (IMD)

3.1.6 Study area details

Table 3-2 Study area details

S. No	Description	Details	Source
1.	Project Location	S.F.No. 477/1, 477/2, 477/6, 478/2 (P), 478/3 (P) and 478/4 (P), A.P. Nadanoor Village, Alangulam Taluk, Tenkasi (Tirunelveli) District, Tamil Nadu State	Field Study
2.	Latitude & Longitude	Latitude : 8° 48' 11.8373" N to 8° 48' 9.7487" N Longitude : 77° 26' 5.2133" E to 77° 25' 59.9788" E	Topo Sheet
3.	Topo Sheet No.	58 H/5	Survey of India Toposheet
4.	Mine Lease Area	1.24.0 Ha	--
Demography in the study area (as per Census 2011)			
5.	Total Population	5297	Census Survey of India
6.	Total Number of Households	1459	
7.	Maximum Temperature (°C)	34	IMD
8.	Minimum Temperature (°C)	31	

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9.	Ecological Sensitive Areas - Wetlands, watercourses or other waterbodies, coastal zone, biospheres, mountains, forests	<ul style="list-style-type: none"> ❖ AP Nadanoor Pond – 0.52 Kms – SW ❖ Sadayandiyoor Lake – 2.45 Kms – SE ❖ Therkumadathur Pond – 4.71 Kms – NW ❖ Adaichani Periyakulam – 5.07 Kms – S ❖ Koviloothu North Pond – 5.78 Kms – N ❖ Pappakudi Periyakulam – 8.47 Kms – SE ❖ Keezha Kadayam Pond – 9 Kms – NW ❖ Nagal Kulam – 10.50 Kms – N ❖ Keezhpaavor Kulam – 12.77 Kms – N ❖ Thalar Kulam – 12.50 Kms – E ❖ Korung Kulam – 11.71 Kms – SE ❖ Thamirabharani River – 12.14 Kms – S ❖ Kadana Nathi Dam – 13.5 Kms – W ❖ Ramanathi Dam – 13.51 Kms – NW 	Google Earth/Field Study															
10.	Densely Populated area	Tenkasi - 20.70 Km -NW																
11.	Areas occupied by sensitive man-made land uses (hospitals, schools, places of worship, community facilities)	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">S. No.</th> <th style="text-align: center;">Places</th> <th style="text-align: center;">Dist. From Project Site</th> </tr> </thead> <tbody> <tr> <td colspan="3" style="text-align: center;">Schools & Colleges</td> </tr> <tr> <td style="text-align: center;">1</td> <td>Kavoor Govt. High School, Therkumadathur</td> <td style="text-align: center;">3.40 kms, NW</td> </tr> <tr> <td style="text-align: center;">2</td> <td>Thirumurugan High School, Valliammalpuram</td> <td style="text-align: center;">3.65 kms, NW</td> </tr> <tr> <td style="text-align: center;">3</td> <td>STACG Hi-Tech School (CBSE), Panayankurichi Vilaku</td> <td style="text-align: center;">4 kms, SE</td> </tr> </tbody> </table>	S. No.	Places	Dist. From Project Site	Schools & Colleges			1	Kavoor Govt. High School, Therkumadathur	3.40 kms, NW	2	Thirumurugan High School, Valliammalpuram	3.65 kms, NW	3	STACG Hi-Tech School (CBSE), Panayankurichi Vilaku	4 kms, SE	Google Earth/Field Study
S. No.	Places	Dist. From Project Site																
Schools & Colleges																		
1	Kavoor Govt. High School, Therkumadathur	3.40 kms, NW																
2	Thirumurugan High School, Valliammalpuram	3.65 kms, NW																
3	STACG Hi-Tech School (CBSE), Panayankurichi Vilaku	4 kms, SE																

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			4	AR Group of Institutions, Kadayam	4.35 km, NW				
			5	Merit Group of Institutions, AP Nadanoor	4.50 kms, SE				
			6	Sri Parama Kalyani College, Sivasailam	5.26 kms, SW				
			Hospitals						
			1	Govt. Primary Health Centre, Pappankulam	3.21 kms, S				
			2	Govt. Primary Health Centre, Kizha Kadayam	7.50 kms, NW				
			3	Govt. Primary Health Centre, Alangulam	9.39 kms, NE				
			4	Govt. Hospital, Tenkasi	23.36 kms, NW				

3.1.7 Site Connectivity:

The site is connected to SH 41A – Tirunelveli to Pottalpuhur Road is about 2.26 kms on S of the area

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Figure 3.1: Site Connectivity

3.2 LAND USE ANALYSIS

3.2.1 *Land Use Classification*

Land Use / Land Cover - Land Use refers to man's activity and the various uses, which are carried on land. Land Cover refers to natural vegetation, water bodies, rock/soil, artificial cover and others, resulting due to land transformation. The present Land Use/Land Classification map is developed with following objectives. The main objective of the study is to classify the different land use within 10 km from the project boundary.

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3.2.2 Methodology

Information of land use and land cover is important for many planning and management activities concerning the surface of the earth (Agarwal and Garg, 2000). Land use refers to man's activities on land, which are directly related to land (Anderson et al., 1976). The land use and the land cover determine the infiltration capacity. Barren surfaces are poor retainers of water as compared to grasslands and forests, which not only hold water for longer periods on the surface, but at the same time allow it to percolate down.

The terms 'land use' and 'land cover' (LULC) are often used to describe maps that provide information about the types of features found on the earth's surface (land cover) and the human activity that is associated with them (land use). Satellite remote sensing is being used for determining different types of land use classes as it provides a means of assessing a large area with limited time and resources. However, satellite images do not record land cover details directly and they are measured based on the solar energy reflected from each area on the land. The amount of multi spectral energy in multi wavelengths depends on the type of material at the earth's surface and the objective is to associate particular land cover with each of these reflected energies, which is achieved using either visual or digital interpretation. In the present study the task is to study in detail the land use and land cover in and around the project site. The study envisages different LULC around the proposed project area and the procedure adopted is as below.

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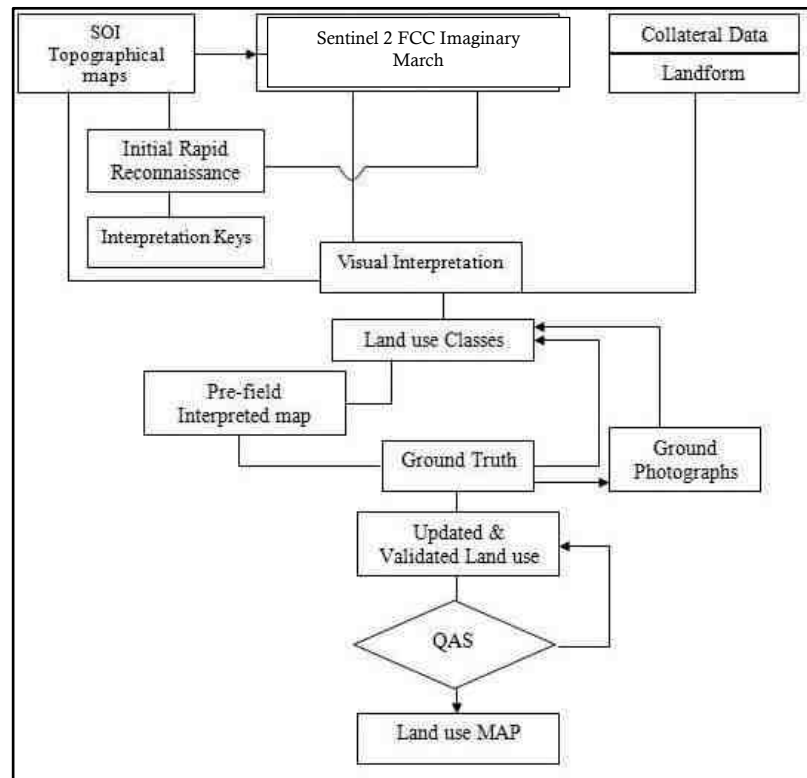


Figure 3.2 Flow Chart showing Methodology of Land use mapping

3.2.3 Satellite Data

Sentinal 2 multispectral satellite data of 2020 was utilized for the present study. Details of satellite data is given below. The rectification of imagery was carried out on to bring the digital data on the earth coordinate system by means of ground control point (GCP) assignments/SOI topo sheets.

3.2.4 Scale of mapping

Considering the user defined scale of mapping, 1:50000 Sentinal 2 data was used for Land use / Land cover mapping of 10 km radius for proposed site. The description of the land use categories for 10 km radius and the statistics are given for 10 km radius.

3.2.5 Interpretation Technique

Standard on screen visual interpretation procedure was followed. The various Land use / Land cover classes interpreted along with the SOI topographical maps during the initial rapid reconnaissance of the

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study area. The physiognomic expressions conceived by image elements of color, tone, texture, size, shape, pattern, shadow, location and associated features are used to interpret the FCC imagery. Image interpretation keys were developed for each of the LU/LC classes in terms of image elements.

June 2016 FCC imagery (Digital data) of the study area was interpreted for the relevant land use classes. On screen visual interpretation coupled with supervised image classification techniques are used to prepare the land use classification.

1. Digitization of the study area (10 km radius from the proposed site) from the topo maps
2. In the present study the sentinal satellite image and SOI topo sheets of 58J/10, 58J/11, 58J/14, 58J/15 have been procured and interpreted using the ERDAS imaging and ARC-GIS software adopting the necessary interpretation techniques.
3. Satellite data interpretation and vectorization of the resulting units
4. Adopting the available guidelines from manual of LULC mapping using Satellite imagery (NRSA, 1989)
5. Field checking and ground truth validation
6. Composition of final LULC map

The LULC Classification has been done at three levels where level -I being the broad classification about the land covers that is Built-up land, agriculture land, waste land, wet lands, and water bodies. These are followed by level –II where built-up land is divided into towns/cities as well villages. The Agriculture land is divided into different classes such as cropland, Fallow, Plantation, while wastelands are broadly divided into, Land with scrub and without Scrub and Mining and Industrial wasteland. The wetlands are classified into inland wetlands, coastal wetlands and islands. The water bodies are classified further into River/stream, Canal, Tanks and bay. In the present study level II classification has been undertaken. The SOI Topo map is presented in Annexure and Satellite imagery of 10 km radius from the project site is presented Annexure

3.2.6 Field Verification

Field verification involved collection, verification and record of the different surface features that create specific spectral signatures / image expressions on FCC. In the study area, doubtful areas identified in course of interpretation of imagery is systematically listed and transferred on to the corresponding SOI topographical maps for ground verification. In addition to these, traverse routes were

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planned with reference to SOI topographical maps to verify interpreted LU/LC classes in such a manner that all the different classes are covered by at least 5 sampling areas, evenly distributed in the area. Ground truth details involving LU/LC classes and other ancillary information about crop growth stage, exposed soils, landform, nature and type of land degradation are recorded and the different land use classes are taken the Land use map is presented in Annexure

3.2.7 Description of the Land Use / land cover classes

3.2.7.1 Water

Areas where water was predominantly present throughout the year; may not cover areas with sporadic or ephemeral water; contains little to no sparse vegetation, no rock outcrop nor built up features like docks; examples: rivers, ponds, lakes, oceans, flooded salt plains.

3.2.7.2 Trees

Any significant clustering of tall (~15-m or higher) dense vegetation, typically with a closed or dense canopy; examples: wooded vegetation, clusters of dense tall vegetation within savannas, plantations, swamp or mangroves (dense/tall vegetation with ephemeral water or canopy too thick to detect water underneath).

3.2.7.3 Grass

Open areas covered in homogenous grasses with little to no taller vegetation; wild cereals and grasses with no obvious human plotting (i.e., not a plotted field); examples: natural meadows and fields with sparse to no tree cover, open savanna with few to no trees, parks/golf courses/lawns, pastures.

3.2.7.4 Flooded vegetation

Mix of small clusters of plants or single plants dispersed on a landscape that shows exposed soil or rock; scrub-filled clearings within dense forests that are clearly not taller than trees; examples: moderate to

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sparse cover of bushes, shrubs and tufts of grass, savannas with very sparse grasses, trees or other plants.

3.2.7.5 Crops

Human planted/plotted cereals, grasses, and crops not at tree height; examples: corn, wheat, soy, fallow plots of structured land.

3.2.7.6 Scrub/Shrub

Mix of small clusters of plants or single plants dispersed on a landscape that shows exposed soil or rock; scrub-filled clearings within dense forests that are clearly not taller than trees; examples: moderate to sparse cover of bushes, shrubs and tufts of grass, savannas with very sparse grasses, trees or other plants

3.2.7.7 Built Area

Human made structures; major road and rail networks; large homogenous impervious surfaces including parking structures, office buildings and residential housing; examples: houses, dense villages / towns / cities, paved roads, asphalt.

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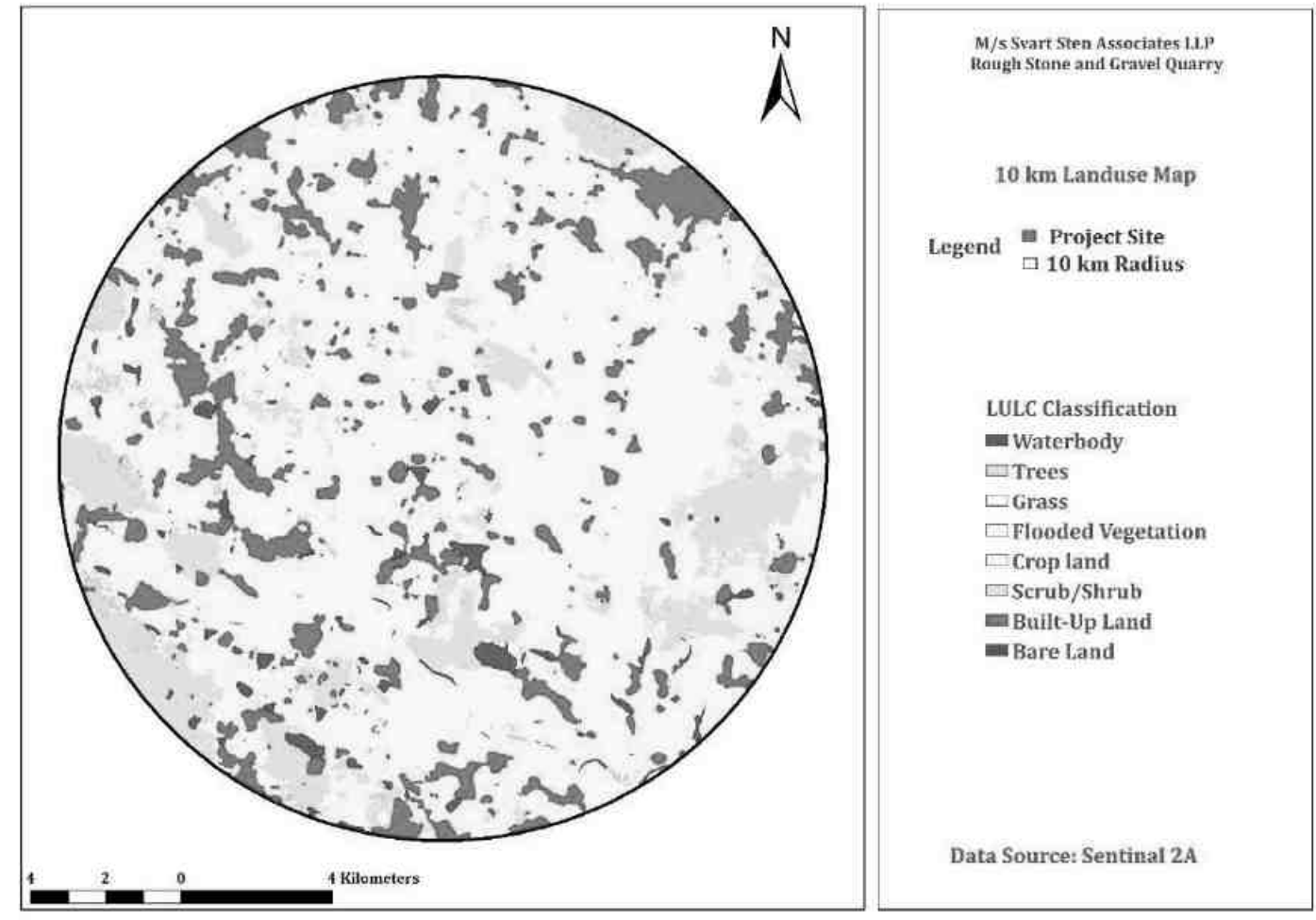


Figure 3.3 Land use classes around 10 km radius from the project site

3.2.7.8 Different Land use classes around 10 km radius from the project site

Table 3-3 Land use pattern

Sl.No	Categories	Area in Sq.m
1	Water Body	6.41
2	Trees	4.28
3	Grass	0.21
4	Flooded vegetation	0.13
5	Crops	232.5
6	Scrub/Shrub	36.39

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7	Built-up Area	36.91
8	Barren Land	0.04

3.3 WATER ENVIRONMENT

3.3.1 *Contour & Drainage*

The project site is 97 m MSL.

3.3.2 *Geomorphology*

Tenkasi (Tirunelveli) district is bordered by Western Ghats (Ridge and valley complex) in the West. A major part of the district constitutes a plain terrain with a gentle slope toward East and Southeast, except for the hilly terrain in the west. The general elevation of the area varies from less than 10 to 1408 m amsl (Tulukkarparai hill range). The prominent geomorphic units identified in the district through interpretation of Satellite imagery are Structural Hill, Bazada Zone, Valley Fill, Flood Plain, Pediment, Shallow buried pediment, Deep buried pediment and Coastal Plain.

Soils

Soils in the area have been classified into i) Deep Red soil ii). Red Sandy Soil. iii) Block Cotton Soil. iv) Saline Coastal Alluvium, and v) River Alluvium. Major parts of the area are covered by Deep Red soil and are found in Sivakasi, Tenkasi, Senkottai and Sankarankoil blocks and it is suitable for cultivating coconut and palmyrah trees. Red sandy soil also in reddish yellow in colour and are found in Nanguneri, Ambasamudram, and Radhapuram blocks and it is suitable for cultivating groundnut, millets and pulses etc., The Block Cotton Soil is found in Tirunelveli, Palayankottai and Sankarankoil blocks, and it is suitable for cultivating Paddy, Ragi, and Cholan etc., The Saline Coastal Alluvium are dark grey to deep brown in colour and spread over the Nanguneri and Radhapuram blocks. The River alluvial soils occur along the river courses of Tamrabarani and Chittar river covering in the blocks Tirunelveli and Palayankottai and it is suitable for cultivating Groundnut, Chillies and Cumbu.

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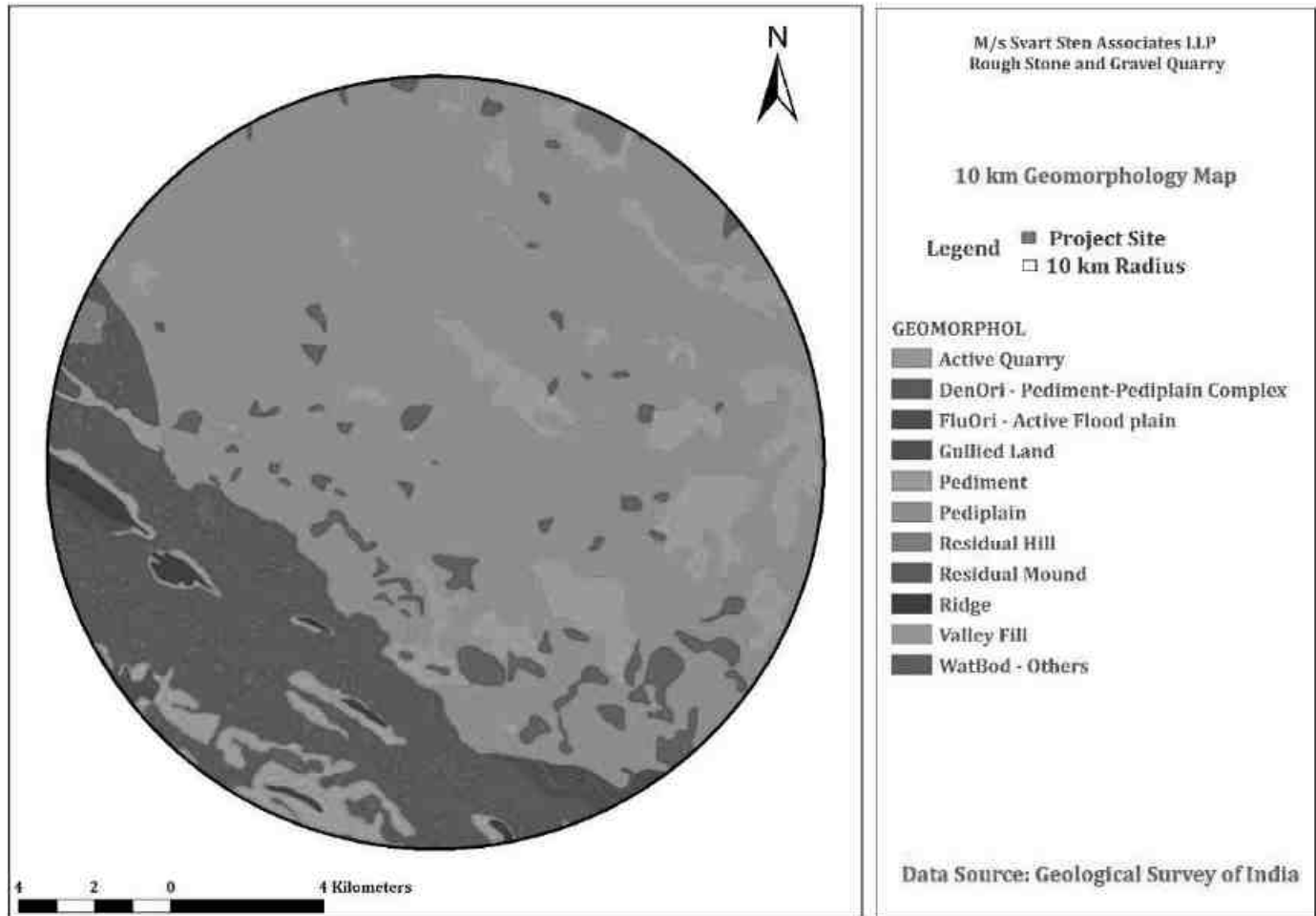


Figure 3.4 Geomorphology within 10km from the project site

3.3.3 Geology:

Southern Granulite Terrain (SGT) of Tamil Nadu lying south of Palaghat-Cauvery shear zone has been divided into two major tectonic blocks by the Madurai block and Nagercoil-Trivandrum Block in the south. It is separated by WNW-ESE trending Achankovil-Tambaraparani Lineament. Tirunelveli and Thothukudi are significantly the only districts in the state to witness the geology and structure of both the blocks. Tirunelveli district represents a well-developed lithopackage of meta-sedimentary sequence

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inter banded with charnockite Group of rocks. The rock types exposed are of quartzite, calc-granulite, garnet-biotite-sillimanite gneiss, garnet quartzo-feldspathic gneiss and garnetbiotite-cordierite gneiss belonging to Khondalite Group of rock. Charnockite and pyroxene granulite are the Charnockite Group. Hornblende-biotite gneiss belongs to Migmatitic Complex. Besides, basic intrusive (pyroxenite) and acid intrusive (granite) are noticed. The younger intrusive are represented by pegmatite and quartz veins. Evidence of development of incipient / patchy charnockite along the shear plane is noticed in the district along the Western Ghat high hills.

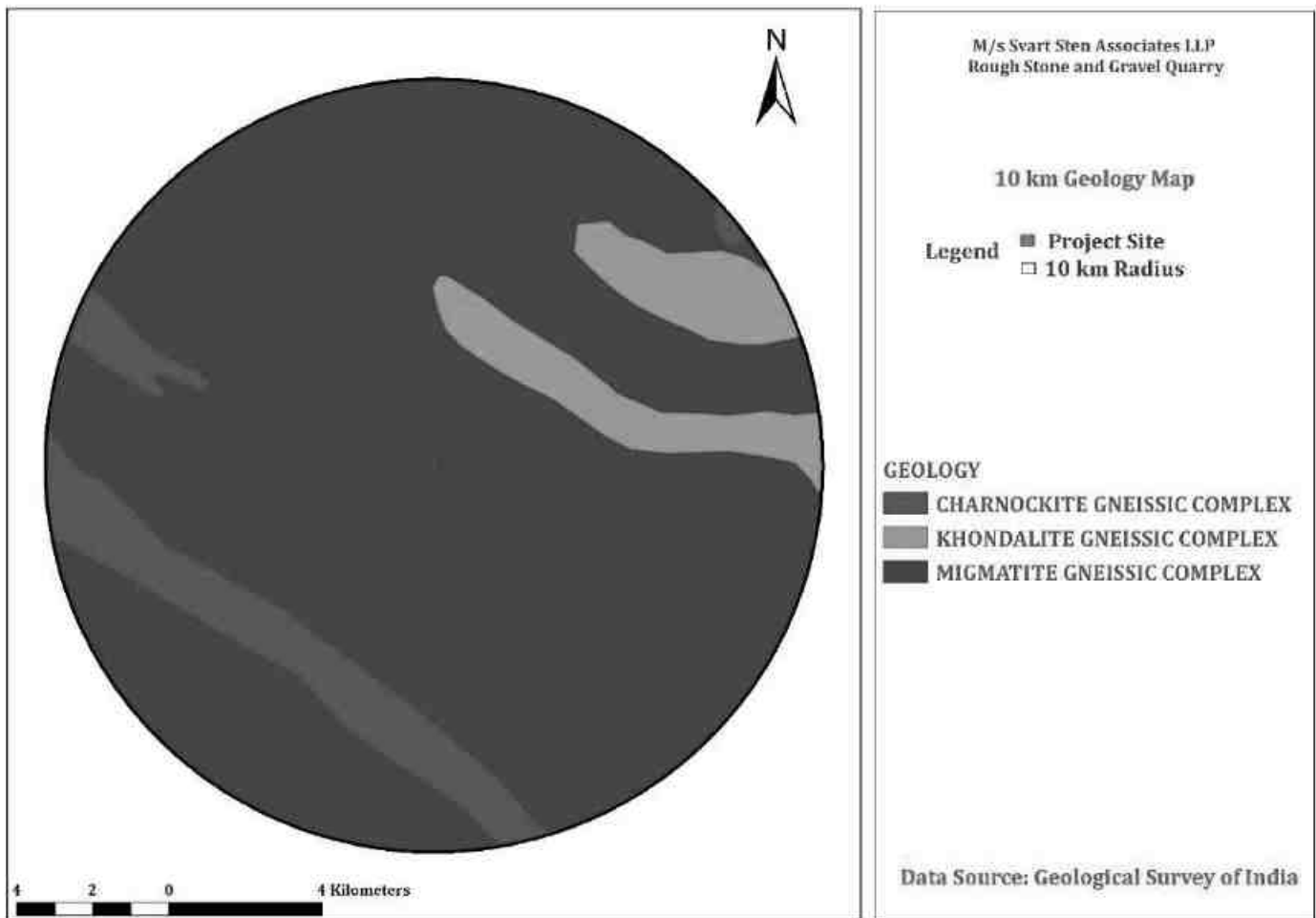


Figure 3.5 Geology within 10km from the project site

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3.3.4 Hydrogeology

The district is underlain by both porous and fissured formations. The important aquifer systems in the district are constituted by i) Weathered and fractured hard rock formations of Archaean age. ii) Porous sedimentary formations ranging in age from Tertiary and Recent. The porous formations are found as small patch in the southeastern part of the district and include sandstones, Limestones, Laterite and Clays from Tertiary to Quaternary. Isolated occurrence of calcareous sandstone and fossiliferous limestone are seen in coastal area on the southeastern side. The fossiliferous limestone is found south west of Kudankulam covering an area of 3 sq.km. Laterites are exposed as patches along Radhapuram-Edakkadu, Vijayanarayanam-Kumarapuram, Ittamoli, Nanguneri and Uramozi area. Beach sand occurs as a patch along the coast with a width varying from 50-250m in Idindakarai-Ovari Belt. The river alluvium is found along the river courses and the thickness of alluvium is restricted to 5-6m. The exploration in sedimentary tract has revealed that the depth to basement occurs at a depth of 120m bgl and granular zones are encountered between the depths of 20 to 92 m bgl. The yield of bore wells varies from 1-4.5 lps. The aquifer at the shallow depth is under unconfined condition and aquifer at depth is under semi-confined to confined condition. The shallow aquifer is developed through dug wells and deeper aquifer through tube wells. The dug well can sustain a pumping of 4 to 6 hours while the tube wells can sustain a pumping of 6-8 hours. The water-bearing properties of crystalline formations, which lack primary porosity, depend on the extent of development of secondary intergranular porosity. These aquifers are highly heterogeneous in nature due to variation in lithology, texture and structural features even within short distances. Ground water generally occurs under phreatic conditions in the weathered mantle and under semi-confined conditions in the fissured and fractured zones at deeper levels. The thickness of weathered zone in the district is in the ranges up to 30m bgl.

The yield of large diameter wells in the district, tapping the weathered mantle of crystalline rocks ranges from 50 to 250 lpm and are able to sustain pumping for 3 to 5 hours per day. The Specific capacity of large diameter wells tested in crystalline rocks ranges from 25 to 300 lpm / m. of drawdown. The yield characteristics of wells vary considerably depending on the topographic set-up, lithology and nature of weathering. The groundwater exploration in the district down to a depth of 200m bgl has revealed that in the western part of the district potential fractures are encountered beyond 100m bgl while in the rest of the area, potential fractures are restricted to 100m bgl. The yield of the wells varies from 1 to 3.6 lps.

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In general, the wells drilled by various State agencies mainly for domestic purposes have yield in the range of 63 to 270 lpm. The depth to water level in the district varied between 1.19 to 13.35 m bgl during premonsoon depth to water level (May 2006) and varied between 0.18 to 7.97 m bgl during post monsoon depth to water level (Jan 2007). The seasonal fluctuation shows a fall in water level, which ranges from -0.12 to -2.14 m bgl, and rise in water level, which ranges from 0.33 to 11.24 m bgl. The piezometric head varied between 1.72 to 13.65 m bgl (May 2006) during pre monsoon and 0.47 to 13.25 m bgl during post monsoon.

Aquifer Parameters:

Formation	Yield of wells (lps)	Transmissivity (m² /day)	Hydraulic Conductivity (m/day)	Specific Yield (%)	Storativity
Porous Formation	1.0-4.5	50-250	20-65	3-6	1.98X10 ⁻⁴
Weathered Rock	<1-4.0	25-150	<1-15	1.5	-
Fractured Rock	1.0-3.6	25-250	<1-25	-	1.87X10 ⁻⁵ to 4.8X10 ⁻³

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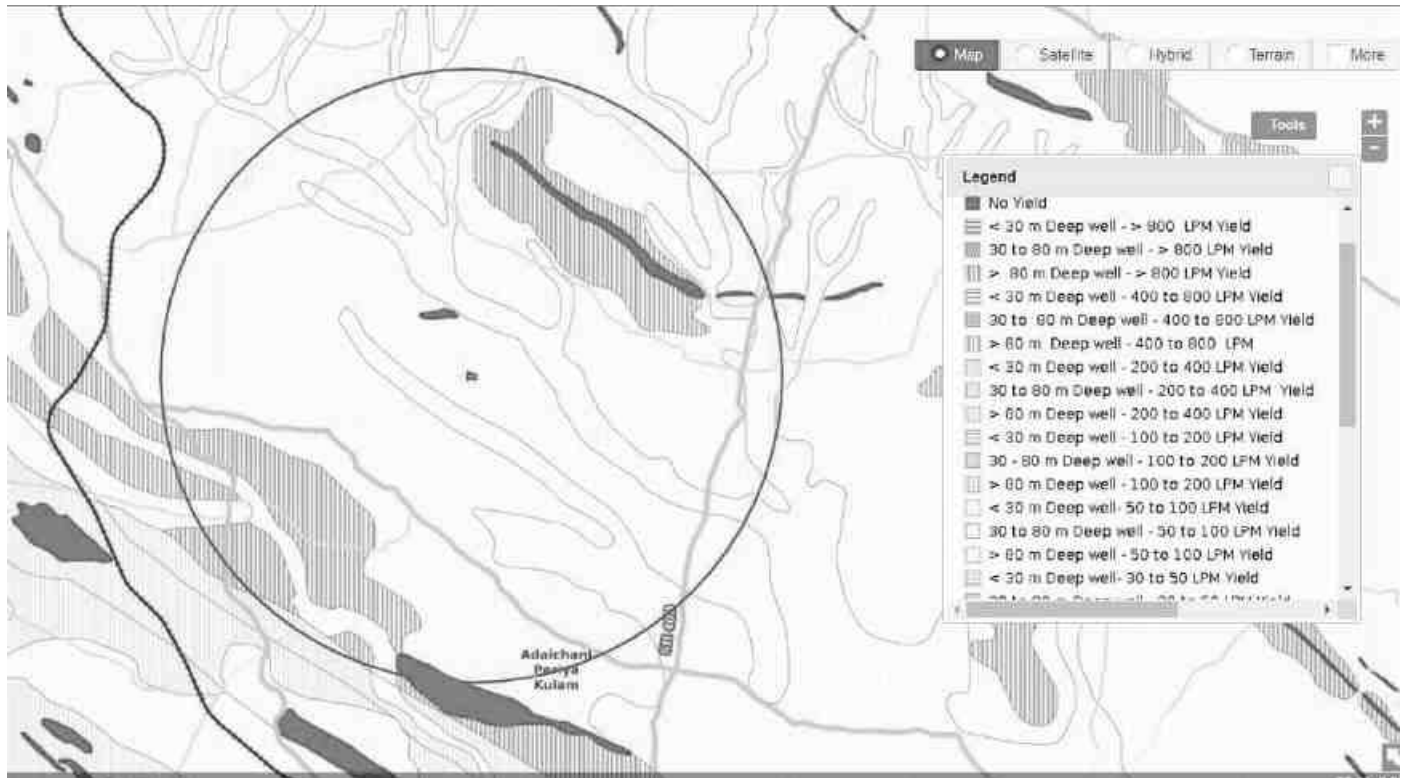


Figure 3.6 Ground water prospects within 5 km radius of the project site

3.3.5 Ground water quality monitoring

Ground water quality monitoring is done in the following locations and analysis will be done for physical, chemical & Biological parameters.

Table 3-4 Ground water Quality Analysis

Environmental Parameters: Ground water Quality Analysis	
Monitoring Period	March to May 2023
Design Criteria	Based on the Environmental settings in the study area
Monitoring Locations	Project Site -GW 1 Sri Seevalaperi Sudalai Mada Swamy Kovil, Pottalpuhur – GW 2 Sarguna Vidyalaya Hr. Sec. School, Koviloothu – GW 3 Amman Kovil, Elanthaikulam – GW 4

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	Merit Polytechnic College – GW 5
Methodology	Water Samples were collected in 5 Litre fresh cans as per IS 3025 Part I and transported to the laboratory in Iceboxes
Frequency of Monitoring	Once in a season

3.3.5.1 Sampling Procedure

Quality of ground water was compared with IS: 10500: 1991 (Reaffirmed 1993 With Amendment NO -3 July 2010) for drinking purposes. Water samples were collected as Grab sample from five sampling locations in a 5-liter plastic jerry can and 250 ml sterilized clean glass/pet bottle for complete physico-chemical and bacteriological tests respectively. The samples were analyzed as per standard procedure / method given in IS: 3025 (Revised Part) and standard method for examination of water and wastewater Ed. 21st, published jointly by APHA.

Table 3-5: Standard Procedure

S. No	Parameters	Test Method
1	pH (at 25°C)	IS:3025(P -11)1983 RA: 2012
2	Electrical Conductivity	IS:3025(P -14) 2013
3	Colour	IS:3025 (P -4)1983 RA: 2012
4	Turbidity	IS:3025(P -10)1984 RA: 2012
5	Total Dissolved Solids	APHA 22 nd Edn.2012-2540-C
6	Total Suspended Solids	IS:3025(P-17)-1984 RA:2012
7	Total Hardness as CaCO ₃	APHA 22 nd Edn.2012-2340-C
8	Calcium as Ca	APHA 22 nd Edn.2012.3500 Ca-B
9	Magnesium as Mg	APHA 22 nd Edn.2012-3500 Mg-B
10	Chloride as Cl	IS:3025(P -32)-1988 RA: 2014
11	Sulphate as SO ₄	APHA 22 nd Edn.2012-4500 SO ₄ -E
12	Total Alkalinity as CaCO ₃	APHA 22 nd Edn.2012-2320-B
13	Iron as Fe	IS:3025(P -53):2003 RA: 2014
14	Silica as SiO ₂	IS:3025(P -35)1988 RA: 2014
15	Fluoride as F	APHA 22 nd Edn.2012-4500-F-D
16	Nitrate as NO ₃	IS:3025(P -34):1988 RA: 2014
17	Sodium as Na	IS:3025(P -45):1993 RA: 2014
18	Potassium as K	IS:3025(P -45):1993 RA: 2014
19	Coliform	IS:1622:1981:RA:2014

Project	Rough stone and Gravel Quarry- 1.24.0 Ha	<i>Draft EIA Report</i>
Project Proponent	M/s. Svart Sten Associates	
Project Location	A.P.Nadanoor Village, Alangulam Taluk, Tenkasi District (bifurcated from Tirunelveli District)	

20	E.coli	IS:1622:1981:RA:2014
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Table 3-6 Ground water sampling results

S. No	Parameters	Units	Project Site – GW 1	Sri Seevalaperi Sudalai Mada Swamy Kovil, Pottalpudhur – GW 2	Sarguna Vidyalaya Hr. Sec. School, Koviloothu – GW 3	Amman Kovil, Elanthaikulam – GW 4	Merit Polytechnic College – GW 5
1	pH (at 25°C)	-	7.26	7.71	7.8	8.08	7.42
2	Electrical Conductivity	µS/cm	502	5280	193	1544	431
3	Colour	Hazen Unit	3	5	3	2	2
4	Turbidity	NTU	BQL(LOQ:1)	BQL(LOQ:1)	BQL(LOQ:1)	BQL(LOQ:1)	BQL(LOQ:1)
5	Total Dissolved Solids	mg/L	342	3385	121	1030	277
6	Total Suspended Solids	mg/L	BQL(LOQ:2)	BQL(LOQ:2)	BQL(LOQ:2)	BQL(LOQ:2)	BQL(LOQ:2)
7	Total Hardness as CaCO ₃	mg/L	214	1384	90.9	589	166
8	Calcium Hardness as Ca	mg/L	133	596	54.5	367	103
9	Magnesium Hardness as Mg	mg/L	80.8	788	36.4	222	62.6
10	Calcium as Ca	mg/L	53.4	238	21.8	147	41.2
11	Magnesium as Mg	mg/L	19.6	191	8.84	53.8	15.2
12	Chloride as Cl	mg/L	21.5	1384	17.6	238	21.5
13	Sulphate as SO ₄	mg/L	8.8	203	6.91	109	17
14	Total Alkalinity as CaCO ₃	mg/L	192	244	60.6	290	169

Project	Rough stone and Gravel Quarry- 1.24.0 Ha	<i>Draft EIA Report</i>
Project Proponent	M/s. Svart Sten Associates	
Project Location	A.P.Nadanoor Village, Alangulam Taluk, Tenkasi District (bifurcated from Tirunelveli District)	

			BQL(LOQ: 0.1)	BQL(LOQ:0 .1)	BQL(LOQ :0.1)	BQL(LOQ:0 .1)	BQL(LOQ: 0.1)
15	Iron as Fe	mg/L					
16	Silica as SiO ₂	mg/L	95.8	25.9	2.56	58.5	47.1
17	Fluoride as F	mg/L	0.721	0.846	0.147	0.706	0.804
18	Nitrate as NO ₃	mg/L	11.9	8.22	10.1	36.9	14.1
19	Potassium as K	mg/L	2.48	87.9	1.04	12.9	1.44
20	Sodium as Na	mg/L	13.7	1115	16.4	202	18.52

3.3.6 Interpretation of results:

3.3.6.1 Physical parameters of water:

The basic physical parameters of water include

Colour:

Value observed in Project Site (True/Apparent Color): 3 Hazen unit.

Acceptable and permissible limits: 5 Hazen units and 15 Hazen units respectively. The value in the project site is as same as the acceptable limits prescribed by IS 10500: 2012 (referred as “Standards” from herein).

pH:

Value observed in the Project Site: 7.26

Acceptable and permissible limits: 6.5-8.5. The pH value is the measure of acid – base equilibrium. The value of pH in the project site clearly indicates that water is slightly neutral in nature.

Turbidity:

Value observed in the Project Site: <1

Acceptable and permissible limits: 1 NTU & 5 NTU respectively. The value of turbidity generally indicates the presence of phytoplanktons and other sediments. The value in the project site indicates the water is slightly turbid.

Total Dissolved Solids:

<i>Project</i>	<i>Rough stone and Gravel Quarry- 1.24.0 Ha</i>	<i>Draft EIA Report</i>
<i>Project Proponent</i>	<i>M/s. Svart Sten Associates</i>	
<i>Project Location</i>	<i>A.P.Nadanoor Village, Alangulam Taluk, Tenkasi District (bifurcated from Tirunelveli District)</i>	

Value observed in the Project Site: 342 mg/L.

Acceptable and permissible limits: 500 mg/L and 2000 mg/L respectively.

The TDS is the presence of the inorganic salts and small amounts of organic matter present in the water. This is mainly due to the result of surface runoff as the cations and anions in the top soil is carried away by the water. The value in the project site indicates the water is less turbid.

3.3.6.2 Chemical parameters of water:

The chemical parameters of the drinking water include,

Calcium:

Value observed in the Project Site: 53.4 mg/L.

Acceptable and permissible limits: 75mg/L and 200 mg/L respectively.

Calcium is the essential macronutrient. The value of the calcium is within the prescribed permissible standards. The higher level of calcium may cause hardening in domestic equipment and will also reduce the detergent efficiency. Higher levels of calcium will lead to constipation, gas, and bloating. Apart from that, extra calcium may also increase the risk of kidney stones. If the calcium deposit in blood is high, it may lead to hypercalcemia.

Magnesium:

Value observed in the Project Site: 19.6 mg/L.

Acceptable and permissible limits: 30 mg/L and 100 mg/L respectively.

The value of Magnesium in the project site is higher than acceptable limit and less than the permissible limit. The increase in the level of magnesium will cause diarrhea and vomiting in children.

Chloride

Value observed in the project site: 21.5 mg/L.

Acceptable and permissible limits: 250 mg/L and 1000 mg/L respectively.

The chloride level in the project site is within the acceptable and permissible limit. If the level of chloride is more, it may cause galvanic and pitting corrosion, increases level of metals. It imparts bitter taste to the water.

<i>Project</i>	<i>Rough stone and Gravel Quarry- 1.24.0 Ha</i>	<i>Draft EIA Report</i>
<i>Project Proponent</i>	<i>M/s. Svart Sten Associates</i>	
<i>Project Location</i>	<i>A.P.Nadanoor Village, Alangulam Taluk, Tenkasi District (bifurcated from Tirunelveli District)</i>	

Total Alkalinity as CaCO₃:

Value observed in the project site: 192 mg/L.

Acceptable and permissible limits: 200 mg/L and 600 mg/L respectively.

Total Alkalinity is the measure of the concentration of all alkaline substances dissolved in the water which includes carbonates, bicarbonates and hydroxides. The value of the total alkalinity is slightly greater in the project site, which will impart soda taste to the water.

Hardness:

Value observed in the Project Site: 214 mg/L.

Acceptable and permissible limits: 200 mg/L and 600 mg/L respectively.

The value of Hardness in the project site is higher than acceptable limit but within the permissible limit. The increase in the level of hardness may cause corrosion and scaling problems, increased soap consumption and it also contributes to the salty taste of water.

3.3.7 Surface Water Analysis

Surface water samples were taken from **Thuppakudi Periyakulam**. The results are summarized below.

Table 3-7 Surface Water Sample Results

S. No	Parameters	Units	Thuppakudi Periyakulam
1	pH (at 25°C)	-	8.09
2	Electrical Conductivity	µS/cm	435
3	Colour	Hazen Unit	35
4	Turbidity	NTU	6.5
5	Total Dissolved Solids	mg/L	245
6	Total Suspended Solids	mg/L	10.2
7	Total Hardness as CaCO ₃	mg/L	155
8	Calcium Hardness as CaCO ₃	mg/L	74.7
9	Magnesium Hardness as CaCO ₃	mg/L	80.8
10	Calcium as Ca	mg/L	29.9
11	Magnesium as Mg	mg/L	19.6

<i>Project</i>	<i>Rough stone and Gravel Quarry- 1.24.0 Ha</i>	<i>Draft EIA Report</i>
<i>Project Proponent</i>	<i>M/s. Svart Sten Associates</i>	
<i>Project Location</i>	<i>A.P.Nadanoor Village, Alangulam Taluk, Tenkasi District (bifurcated from Tirunelveli District)</i>	

10	Chloride as Cl	mg/L	40.1
11	Sulphate as SO ₄	mg/L	5.48
12	Total Alkalinity as CaCO ₃	mg/L	143
13	Iron as Fe	mg/L	0.14
14	Silica as SiO ₂	mg/L	10.2
15	Fluoride as F	mg/L	0.78
16	Nitrate as NO ₃	mg/L	18.5
17	Potassium as K	mg/L	5.22
18	Sodium as Na	mg/L	29.84
19	Total Kjeldahl Nitrogen as N	mg/L	10.1
20	BOD	mg/L	19.2
21	COD	mg/L	76.9
22	DO	mg/L	5.54

Inference: The surface water quality is compared with the CPCB Water Quality Criteria against A, B, C, D & E class of water. From the test result, it is found that the both the water does not fit Class A (Drinking Water Source without conventional treatment but after disinfection). But they can be used for outdoor bathing as it meets the requirements shown for class B water.

3.3.7.1 Climatology & Meteorology:

Climate and meteorology of a place can play an important role in the implementation of any developmental project. Meteorology is also the key to understand local air quality as there is an essential relationship between meteorology and atmospheric dispersion involving wind in the broadest sense of the term.

The year may broadly be divided into four seasons:

Winter season	:	December to February
Pre-monsoon season	:	March to May
Monsoon season	:	June to September
Post-monsoon season	:	October to November

i) Climate

<i>Project</i>	<i>Rough stone and Gravel Quarry- 1.24.0 Ha</i>	<i>Draft EIA Report</i>
<i>Project Proponent</i>	<i>M/s. Svart Sten Associates</i>	
<i>Project Location</i>	<i>A.P.Nadanoor Village, Alangulam Taluk, Tenkasi District (bifurcated from Tirunelveli District)</i>	

Eastern part of the district experiences hot climate and Western part has a contrasting pleasant cold climate. The district is hot and dry in summer i.e., from March to June. From July to November is rainy season and between December to February winter prevails with very cold and misty.

ii) Temperature

The maximum temperature is around 34°C and minimum temperature is 31°C.

iii) Rainfall

Tirunelveli receives rainfall from both the northeast and the southwest monsoons. Monsoon season is from the months of July to November. During this time, temperature is mild and pleasant. Heavy rainfall is expected in short intervals during this period. December to February are winter months.

This district gets maximum rainfall in November (274.7mm).

TIRUNELVELI DISTRICT -NORMAL AND ACTUAL RAINFALL

Unit in mm.

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	R/F	R/F	R/F	R/F	R/F	R/F	R/F	R/F	R/F	R/F	R/F	R/F
2016	3	0.0	1.7	3.1	77.6	6.9	60.0	24.0	25.7	72.5	42.9	57.9
2017	23.2	6.2	38.1	14.2	92.4	10.0	24.1	122.5	137.0	125.7	67.6	139.0
2018	0.1	28.4	26.3	62.7	149.0	8.0	52.5	58.5	108.4	182.7	75.2	7.5
2019	8.1	3.5	6.8	0.5	6.0	29.3	12.8	89.7	178.7	203.5	111.9	62.8
2020	7.7	0.0	0.0	32.6	80.4	24.0	78.8	47.9	79.4	127.6	284.0	97.9

Source: District survey report

Meteorological Data

The meteorological data – Temperature, rainfall, Wind Speed, Wind direction are recorded through AWS by setting it up in the site.

<i>Project</i>	<i>Rough stone and Gravel Quarry- 1.24.0 Ha</i>	<i>Draft EIA Report</i>
<i>Project Proponent</i>	<i>M/s. Svart Sten Associates</i>	
<i>Project Location</i>	<i>A.P.Nadanoor Village, Alangulam Taluk, Tenkasi District (bifurcated from Tirunelveli District)</i>	

vi) Wind Rose Diagram

The wind rose denotes a class of diagrams designed to display the distribution of wind direction at a given location over a period of time. Wind roses are also useful as they project a large quantity of data in a simple graphical plot.

The wind speed & wind direction data are taken and wind rose is plotted for March 2023 to May 2023.

Project	Rough stone and Gravel Quarry- 1.24.0 Ha	<i>Draft EIA Report</i>
Project Proponent	M/s. Svart Sten Associates	
Project Location	A.P.Nadanoor Village, Alangulam Taluk, Tenkasi District (bifurcated from Tirunelveli District)	



Windrose Plot for [VOMD] Madurai
 Obs Between: 01 Jan 2023 12:30 AM - 30 Mar 2023 11:30 PM Asia/Kolkata

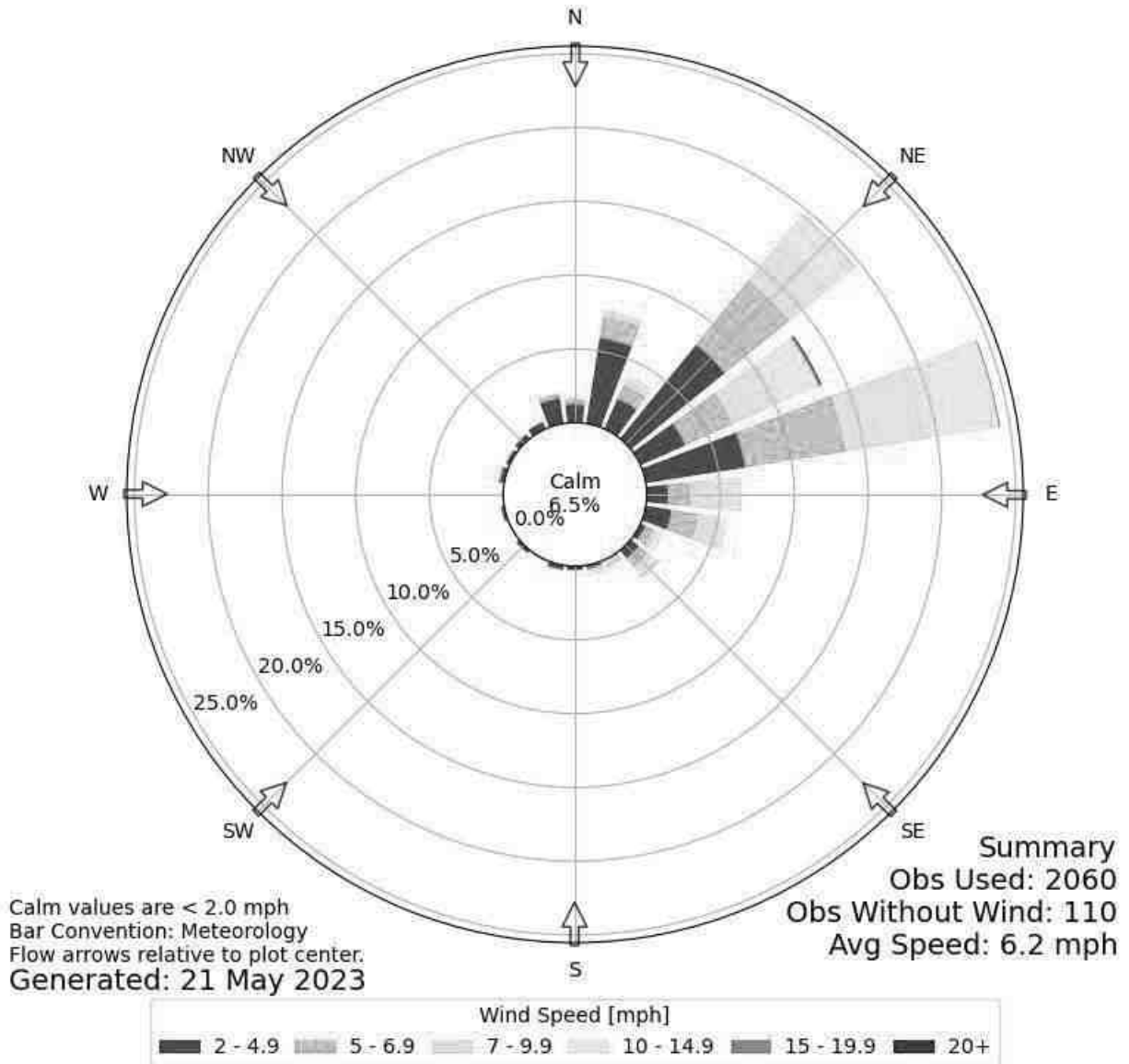


Figure 3.7 Wind rose

3.3.8 Selection of Sampling Locations:

Four Monitoring locations along with the project site is selected based on Wind Direction & Wind Speed. All the monitoring locations are chosen in the downwind direction.

<i>Project</i>	<i>Rough stone and Gravel Quarry- 1.24.0 Ha</i>	<i>Draft EIA Report</i>
<i>Project Proponent</i>	<i>M/s. Svart Sten Associates</i>	
<i>Project Location</i>	<i>A.P.Nadanoor Village, Alangulam Taluk, Tenkasi District (bifurcated from Tirunelveli District)</i>	

3.4 AMBIENT AIR QUALITY

Table 3-8: Selection of Sampling Location

Environmental Parameters: <i>Ambient Air</i>			
Monitoring Period	March to May 2023		
Design Criteria	The monitoring stations are selected based on factors like topography/terrain, prevailing meteorological conditions like predominant wind direction (March to May 2023), etc, play a vital role in the selection of air sampling stations. Based on these criteria, 5 air sampling station were selected in the area as shown below.		
Monitoring Locations	Location & Code	Distance (km)	Direction
	Project Site	--	--
	Sri Seevalaperi Sudalai Mada Swamy Kovil, Pottalpudhur	4.24 kms	W - Downwind
	Sarguna Vidyalaya Hr. Sec. School, Koviloothu	5.48 kms	N - Crosswind
	Amman Kovil, Elanthaikulam	8.42 kms	E - Upwind
	Merit Polytechnic College	4.71 kms	S - Crosswind
Methodology	Respirable Particulate Matter (PM10) - Gravimetric (IS 5182: Part 23:2006) Particulate Matter PM2.5 - Gravimetric (Fine particulate matter) Sulphur Dioxide - Calorimetric (West & Gaeke Method) (IS 5182: Part 02: 2001) Nitrogen Dioxide - Calorimetric (Modified Jacob & Hocheiser Method) (IS 5182: Part 06:2006)		
Frequency of Monitoring	2 days in a week, 4 weeks in a month for 3 months in a season.		

3.4.1 *Ambient Air Quality: Results & Discussion*

The test results of the ambient air quality monitored in project site and other four locations is summarized below.

<i>Project</i>	<i>Rough stone and Gravel Quarry- 1.24.0 Ha</i>	<i>Draft EIA Report</i>
<i>Project Proponent</i>	<i>M/s. Svart Sten Associates LLP</i>	
<i>Project Location</i>	<i>A.P. Nadanoor Village, Alangulam Taluk, Tenkasi (Tirunelveli) District</i>	

Table 3-9 Ambient Air Quality

Code	Location	PM 10 ($\mu\text{g}/\text{m}^3$)				PM 2.5 ($\mu\text{g}/\text{m}^3$)				SO2 ($\mu\text{g}/\text{m}^3$)				NOx ($\mu\text{g}/\text{m}^3$)			
		Min	Max	Avg	98 percentile	Min	Max	Avg	98 percentile	Min	Max	Avg	98 percentile	Min	Max	Avg	98 percentile
AAQ 1	Project Site	42	54	48.8	53.54	17	25	21.6	25	5	13	8.2	12.08	12	25	16.8	23.62
AAQ 2	Sri Seevalperi Sudalai Mada Swamy Kovil, Pottalpuhur	36	50	42.5	48.62	14	21	17.8	21	5	8	6.8	8	9	18	13.8	18
AAQ 3	Sarguna Vidyalaya Hr. Sec. School, Koviloothu	52	60	55.5	59.08	20	30	24.7	29.08	10	19	13.4	18.54	19	32	23.3	31.08
AAQ 4	Amman Kovil, Elanthaikulam	46	56	52.2	56	20	27	23.6	26.54	7	14	10.4	13.54	12	25	18.1	24.54
AAQ 5	Merit Polytechnic College	53	62	57.5	61.08	25	32	27.7	31.08	13	20	15.5	20	22	39	28.5	38.54
NAAQ Standards - Residential Area		100 ($\mu\text{g}/\text{m}^3$)				60($\mu\text{g}/\text{m}^3$)				80 ($\mu\text{g}/\text{m}^3$)				80 ($\mu\text{g}/\text{m}^3$)			

Project	Rough stone and Gravel Quarry-1.24.0 Ha	<i>Draft EIA Report</i>
Project Proponent	M/s. Svart Sten Associates	
Project Location	A.P. Nadanoor Village, Alangulam Taluk, Tenkasi (Tirunelveli) District	

3.4.2 Interpretation of ambient air quality:

To assess the impact, AAQ were monitored in project site and four locations.

Observation:

The Maximum value of PM10 ($62\mu\text{g}/\text{m}^3$), PM 2.5 ($32\mu\text{g}/\text{m}^3$), SOx ($20\mu\text{g}/\text{m}^3$), NOx ($39\mu\text{g}/\text{m}^3$) is observed in different places.

Inference:

The monitoring results for PM10, PM2.5, Sox, NOx was found to be high in Joe Suresh Engineering college which is due to the movement of vehicles .

The observed values are all well within the Standards prescribed by NAAQ.

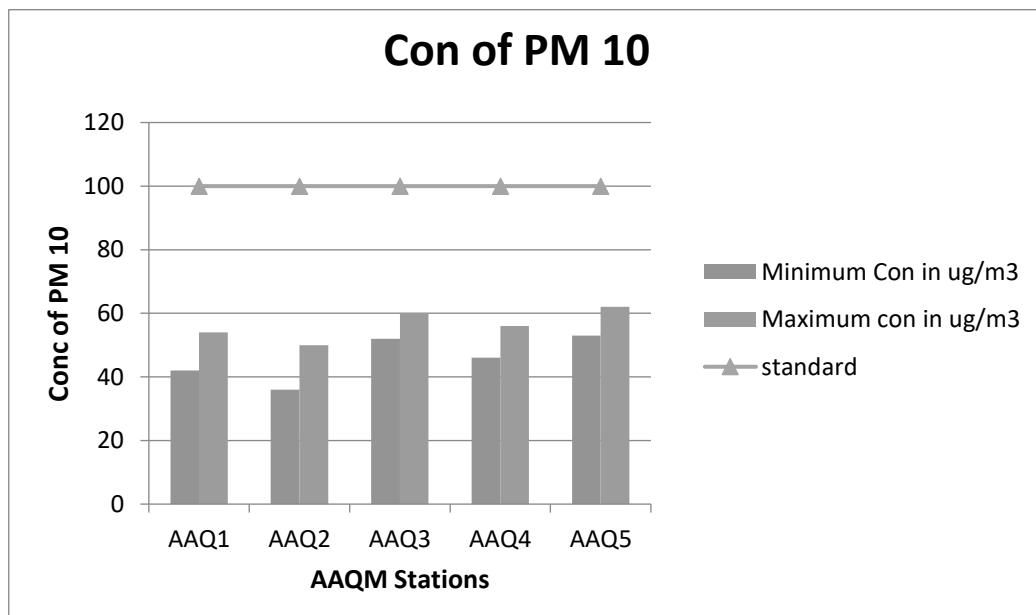


Figure 3.8 Concentration of PM10 ($\mu\text{g}/\text{m}^3$) in Study Area

Project	Rough stone and Gravel Quarry-1.24.0 Ha	<i>Draft EIA Report</i>
Project Proponent	M/s. Svart Sten Associates	
Project Location	A.P. Nadanoor Village, Alangulam Taluk, Tenkasi (Tirunelveli) District	

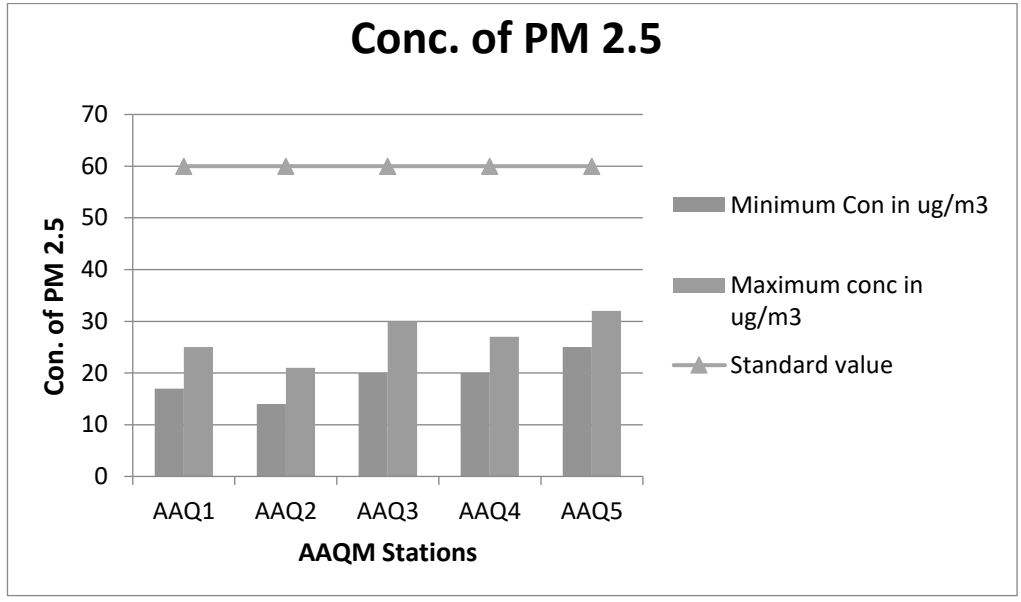


Figure 3.9 Concentration of PM_{2.5} (µg/m³) in Study Area

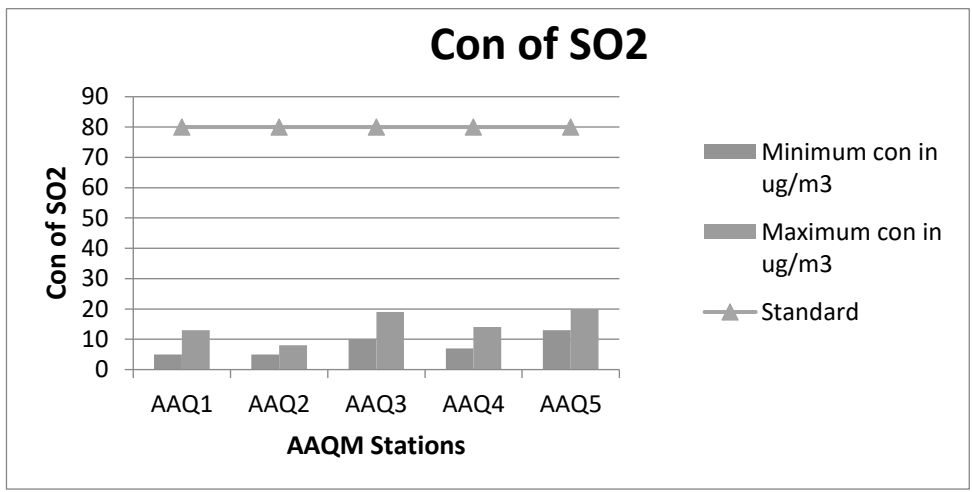


Figure 3.10 Concentration of SO_x (µg/m³) in Study Area

Project	Rough stone and Gravel Quarry-1.24.0 Ha	<i>Draft EIA Report</i>
Project Proponent	M/s. Svart Sten Associates	
Project Location	A.P. Nadanoor Village, Alangulam Taluk, Tenkasi (Tirunelveli) District	

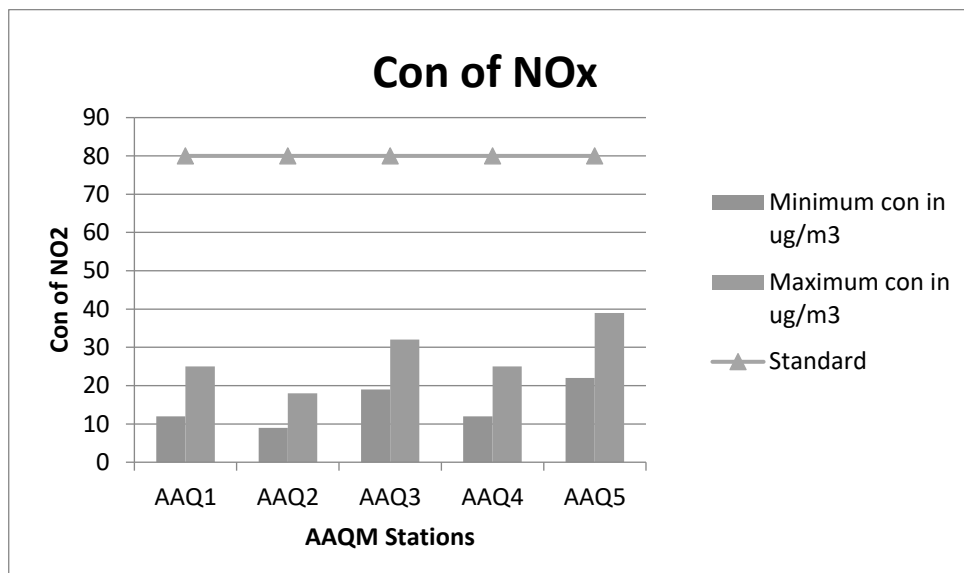


Figure 3.11 Concentration of NOx ($\mu\text{g}/\text{m}^3$) in Study Area

3.5 NOISE ENVIRONMENT:

Table 3-10 Noise Analysis

Environmental Parameters: <i>Noise Analysis</i>	
Monitoring Period	March to May 2023
Design Criteria	Based on the Sensitivity of the area
Monitoring Locations	Project Site – N1 Sri Seevalaperi Sudalai Mada Swamy Kovil, Pottalpudhur – N2 Sarguna Vidyalaya Hr. Sec. School, Koviloothu – N3 Amman Kovil, Elanthaikulam – N4 Merit Polytechnic College – N5
Methodology	Noise level measurements were taken at the selected locations using noise level meter both during day and night time. Noise level measurements were taken continuously for 24 hours at hourly intervals
Frequency of Monitoring	Noise samples were collected from 5 locations - Once in a season

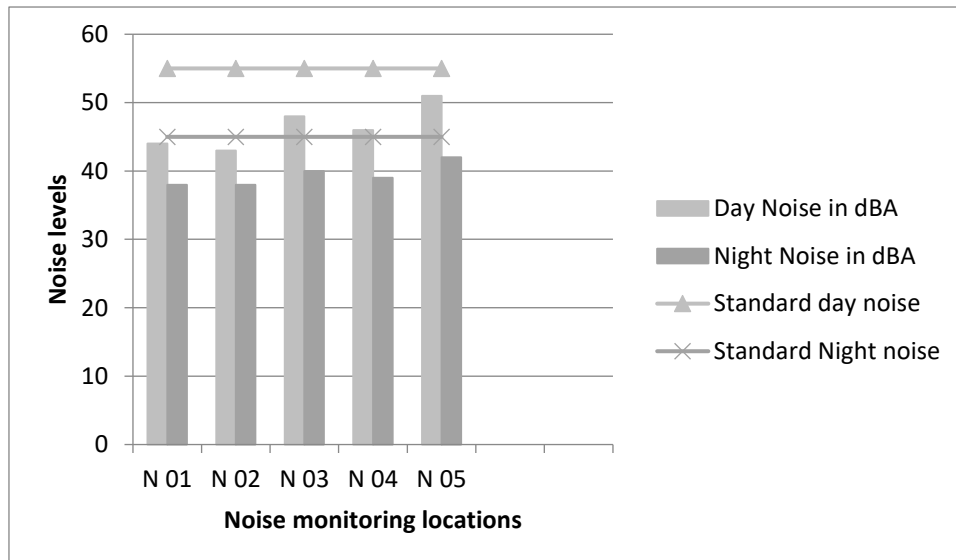
Project	Rough stone and Gravel Quarry-1.24.0 Ha	<i>Draft EIA Report</i>
Project Proponent	M/s. Svart Sten Associates	
Project Location	A.P. Nadanoor Village, Alangulam Taluk, Tenkasi (Tirunelveli) District	

Ambient Noise Levels are monitored in the chosen 5 Locations including the project Site and the monitoring results are summarized below

3.5.1 Day and Night Noise Level Maximum (Leq day)

Table 3-11 Day and Night Noise Level - Maximum (Leq)

Location	Leq in dB(A)		
	Max in Day	Max in Night	Average
Project Site	53	44	48.5
Sri Seevalaperi Sudalai Mada Swamy Kovil, Pottalpudhur	53	43	48
Sarguna Vidyalaya Hr. Sec. School, Koviloothu	56	48	52
Amman Kovil, Elanthaikulam	55	44	49.5
Merit Polytechnic College	61	50	55.5

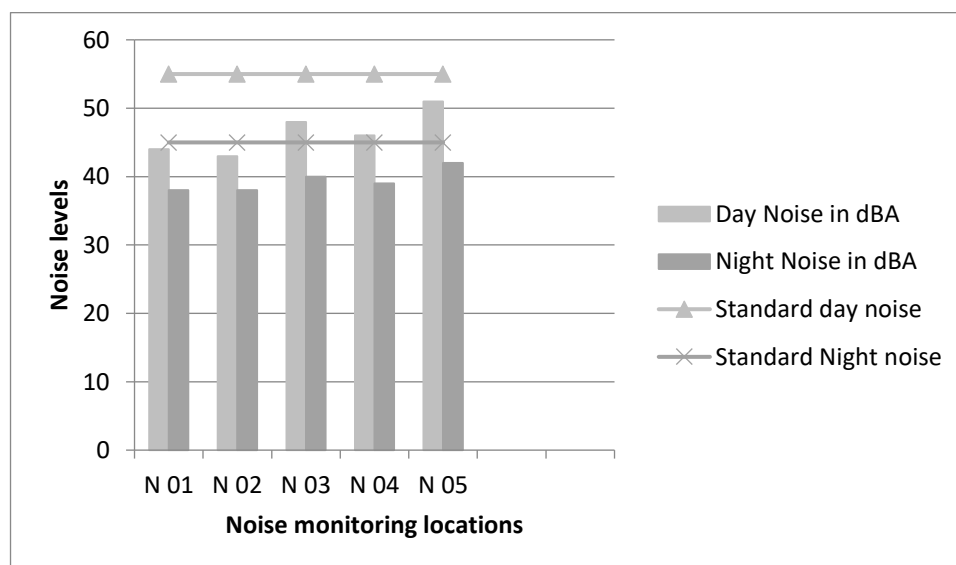


Project	Rough stone and Gravel Quarry-1.24.0 Ha	<i>Draft EIA Report</i>
Project Proponent	M/s. Svart Sten Associates	
Project Location	A.P. Nadanoor Village, Alangulam Taluk, Tenkasi (Tirunelveli) District	

3.5.2 Day and Night Noise Level Minimum (Leq Night)

Table 3-12 Day and Night Noise Level- Minimum (Leq)

Location	Leq Night in dB(A)		
	Min in Day	Min in Night	Average
Project Site	44	38	41
Sri Seevalaperi Sudalai Mada Swamy Kovil, Pottalpuhur	43	38	40.5
Sarguna Vidyalaya Hr. Sec. School, Koviloothu	48	40	44
Amman Kovil, Elanthaikulam	46	39	42.5
Merit Polytechnic College	51	42	46.5



Observation:

The maximum Day noise and Night noise were found to be 61 dB(A) and 50 dB(A) respectively in Merit Polytechnic College. The minimum Day Noise and Night noise were 43 dB (A) and 38 dB(A) respectively which was observed in Sri Seevalaperi Sudalai Mada Swamy Kovil, Pottalpuhur. The observed values are all well within the Standards prescribed by CPCB.

Project	Rough stone and Gravel Quarry-1.24.0 Ha	<i>Draft EIA Report</i>
Project Proponent	M/s. Svart Sten Associates	
Project Location	A.P. Nadanoor Village, Alangulam Taluk, Tenkasi (Tirunelveli) District	

3.6 SOIL ENVIRONMENT

Soil environment is studied for 10 km radius from the project site. The 5 km radius image shows that the soil is not affected by any kind of erosion.

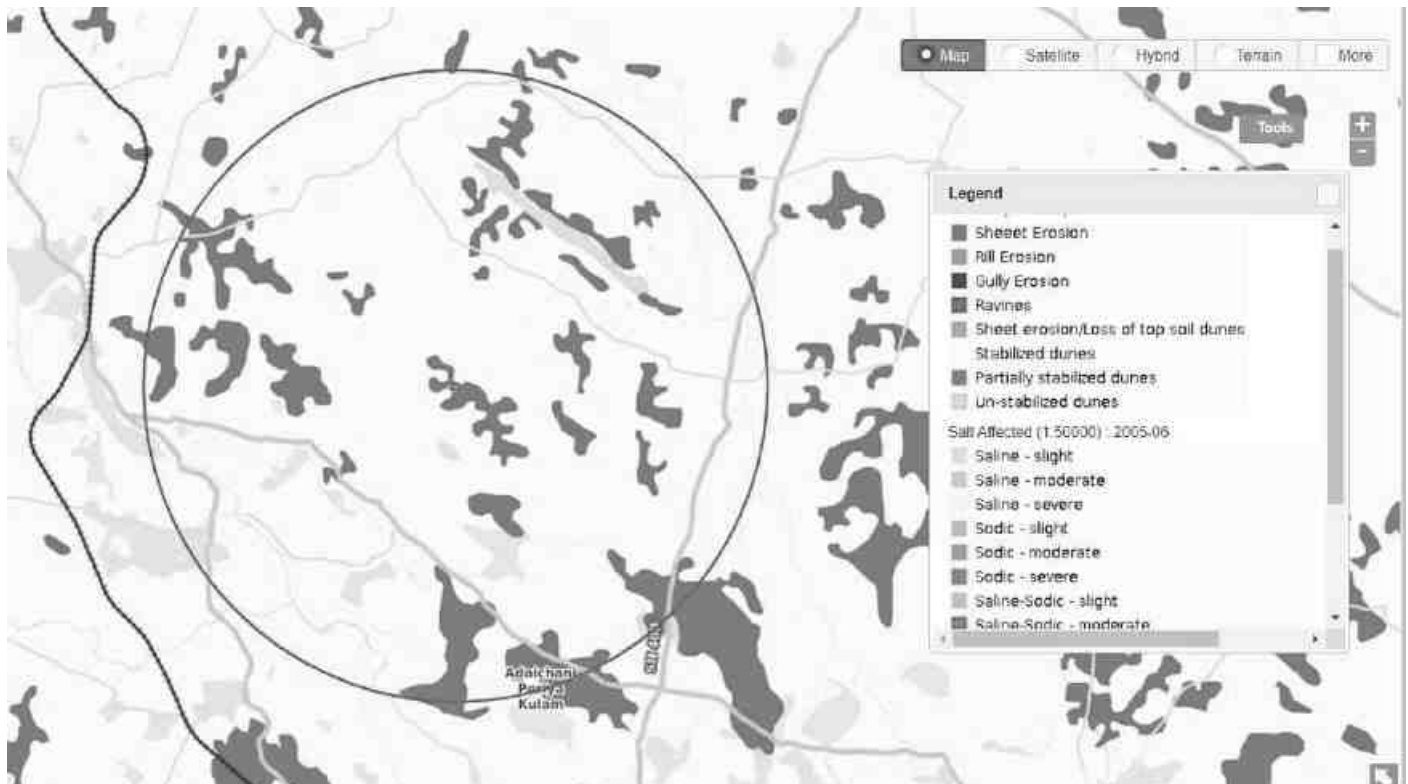


Figure 3.12 Soil Erosion pattern within 5 km radius of the project site

3.6.1 *Baseline Data:*

The present study of the soil quality establishes the baseline characteristics which will help in future in identifying the incremental concentrations if any, due to the operation Phase of the proposed project. The sampling locations have been identified with the following objectives:

- To determine the impact of proposed project on soil characteristics and

<i>Project</i>	<i>Rough stone and Gravel Quarry-1.24.0 Ha</i>	<i>Draft EIA Report</i>
<i>Project Proponent</i>	<i>M/s. Svart Sten Associates</i>	
<i>Project Location</i>	<i>A.P. Nadanoor Village, Alangulam Taluk, Tenkasi (Tirunelveli) District</i>	

- To determine the impact on soils more importantly from agricultural productivity point of view.

Table 3-13 Soil Quality Analysis

Environmental Parameters: <i>Soil Quality Analysis</i>	
Monitoring Period	March to May 2023
Design Criteria	Based on the environmental settings of the study area
Monitoring Locations	Project Site – SQ 1 Sri Seevalaperi Sudalai Mada Swamy Kovil, Pottalpuhur – SQ 2 Sarguna Vidyalaya Hr. Sec. School, Koviloothu – SQ 3 Amman Kovil, Elanthaikulam – SQ 4 Merit Polytechnic College – SQ 5
Methodology	Composite soil samples using sampling augers and field capacity apparatus
Frequency of Monitoring	Soil samples were collected from 5 locations Once in a season

To assess the soil quality of the study area, 5 monitoring stations were selected and the results are summarized below.

Table 3-14 Soil Quality Analysis

Parameters	Unit	Project Site SQ 1	Sri Seevalaperi Sudalai Mada Swamy Kovil, Pottalpuhur – SQ 2	Sarguna Vidyalaya Hr. Sec. School, Koviloothu – SQ 3	Amman Kovil, Elanthaikulam – SQ 4	Merit Polytechnic College – SQ 5
pH (at 25°C)	-	6.38	6.69	6.43	7.41	6.32

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Specific Electrical Conductivity	mS/cm	0.03	0.24	0.29	0.08	0.12
Water Holding Capacity	ml/l	3.8	2.6	4.8	4.4	5.8
Chloride	g/cm ³	25.53	65.8	71.8	11.9	19.5
Soluble Calcium	mg/kg	12.08	57.2	65.2	33.8	27.9
Soluble Sodium	mg/kg	101	413	430	233	275
Soluble Potassium	mg/kg	146	476	464	249	286
Organic matter	%	0.7	3.2	5.43	2.92	3.44
Magnesium	mg/kg	3.16	17.8	14.5	15.07	16.5
Sulphates	%	7.07	27.4	26.5	31	29.7
Cation Exchange Capacity	mg/kg	6.5	14.5	13.8	11.3	12.2
Carbonate	mg/kg	Nil	Nil	Nil	Nil	Nil
Bicarbonate	mg/kg	46.1	26.5	45.1	53	40.5
Total Kjeldahl Nitrogen	%	0.09	0.13	0.13	0.07	0.15
Bulk Density	meq/100g	1.48	1.32	1.4	1.63	1.31
Phosphorous	meq/kg	105	165	170	110	152
Sand	%	66.7	76.9	54.2	75.1	58.8
Clay	mg/kg	8.3	15.5	6.7	6.2	11.8
Silt	mg/kg	25	7.69	39.1	18.7	29.4
SAR	mg/kg	6.69	12.20	12.50	8.37	10.20
Silicon	%	0.77	0.91	0.95	0.93	0.98

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3.6.1.1 Physical Properties:

Regular cultivation practices increase the bulk density of soils thus inducing compaction. This results in reduction in water percolation rate and penetration of roots through soils. The soils with low bulk density have favorable physical conditions whereas those with high bulk density exhibit poor physical conditions for agriculture crops. The bulk density of the soil in the study area ranged between 1.31 to 1.63 meq/100g which indicates favorable physical condition for plant growth. The water holding capacity was found in the range of 2.6 ml/1 to 5.8 ml/1.

3.6.1.2 Chemical Properties:

Chemical characteristics of soils include pH, exchangeable cations and fertility status in the form of NPK values and organic matter. The value of the pH ranges from 6.32 to 7.41, which it indicates majority of pH of the soil is slightly alkaline. The soil in the project site is sodic in nature, which challenges because they tend to have very poor structure which limits or prevents water infiltration and drainage. The organic matter varies from 0.7 to 5.43 %, which indicates the soil is slightly unfertile.

3.7 ECOLOGY AND BIODIVERSITY

Ecology and Biodiversity is studied for 10 km radius around the project site. Project site and 2 km around the project site is considered as core zone and from 2 km to 10 km radius, it is considered as buffer zone.

- Primary field survey is carried out for the assessment of flora and fauna in the core zone
- Secondary data from Journals/Literature were studied and compiled to understand the species present in the buffer zone

3.7.1 *Methods available for floral analysis:*

3.7.1.1 Plot Sampling Methods

- Quadrat – 2D shape (e.g. square or rectangle, or other shape) used as a sampling unit
- Transect

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- Line transects feature only a length dimension, usually defined by a tape stretched across the area to be sampled.
- Belt transects have a width as well as length.
- Pace-transects are established when the observer strides along an imaginary line across the sample site and uses their foot placement to determine specific sampling points.

3.7.1.2 Plot less Sampling Methods

- Closest individual method - Distance is measured from each random point to the nearest individual.
- Nearest neighbour method - Distance is measured from an individual to its nearest neighbour.
- Random pairs method - Distance is measured from one individual to another on the opposite side of the sample point.
- Point-centered quarter (PCQ) method - Distance is measured from the sampling point to the nearest individual in each quadrat.

3.7.2 *Field study & Methodology adopted:*

To assess the suitability of the methodology, random field survey was done. Field survey was conducted around 2 km radius from the project site and five locations were chosen based on the species density. Quadrat method is chosen for the proposed study as compared to other sampling methods, because they are relatively simple to use. Quadrat plots are uniform in size and shape and distributed randomly throughout the sample area, which makes the study design straightforward. They are also one of the most affordable techniques because they require very few materials.

3.7.3 *Study outcome:*

Phyto-sociological parameters, such as *Density, Frequency, Basal Area, Abundance and Importance Value Index* of individual species (Trees) were determined in randomly placed quadrates of different sizes in the study area. Relative frequency, relative basal area and relative density were calculated and the sum of these three represented Importance Value Index (IVI) for various species. For shrubs, herbs and grasses, *Density, Frequency, Relative Density & Relative Frequency were found.*

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Sample plots were selected in such a way to get maximum representation of different types of vegetation and plots were laid out in different part of the study area of 2 km radius. Analysis of the vegetation will help in determining the relative importance of each species in the study area and to reveal if any economically valuable species is threatened in the process.

Table 3-15 Calculation of Density, Frequency (%), Dominance, Relative Density, Relative Frequency, Relative Dominance & Important Value Index

Parameters	Formula
Density	Total No. of individuals of species/ Total No. of Quadrats used in sampling
Frequency (%)	(Total No. of Quadrats in which species occur/ Total No. of Quadrats studied) * 100
Dominance	Total Basal Area /Total area sampled
Abundance	Total No. of individuals of species/ No. of Quadrats in which they occur
Relative Density	(Total No. of individuals of species/Sum of all individuals of all species) * 100
Relative Frequency	(Total No. of Quadrats in which species occur/ Total No. of Quadrats occupied by all species) * 100
Relative Dominance	Dominance of a given species/Total Dominance of all species
Important Value Index	Relative Density + Relative Frequency + Relative Dominance

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Table 3-16 Tree Species in the core Zone

S. No.	Scientific Name	Local Name	Total No. of species	Total of Quadrants with species	Total No. of Quadrants	Density	Frequency (%)	Abundance	Dominance	Relative Density	Relative Frequency	Relative Dominance	IVI	IUCN Conservation Status
1	Ficus Carica	Athi Maram	2	2	6	0.33	33.33	1	0.28	1.68	2.17	4.45	8.31	Least Concern
2	Cocos nucifera	Thennai	10	6	6	1.67	100.0	1.67	0.15	8.40	6.52	2.39	17.32	Not assessed
3	Azadirachta indica	Veppam	17	6	6	2.83	100.0	2.83	0.13	14.29	6.52	1.98	22.79	Not assessed
4	Tamarindus indica	Puli	10	6	6	1.67	100.0	1.66	0.20	8.40	6.52	3.09	18.02	Not assessed
5	Mangifera indica	Mamaram	7	6	6	1.17	100.0	1.16	0.07	5.88	6.52	1.11	13.52	Data insufficient
6	Morinda pubescens	Nuna	6	6	6	1.00	100.0	1	0.24	5.04	6.52	3.74	15.31	Not assessed
7	Couroupita guianensis	Nagalingam	5	3	6	0.83	50.00	1.67	0.14	4.20	3.26	2.18	9.64	Not assessed
8	Bombax ceiba	Sittan	4	4	6	0.67	66.67	1	0.08	3.36	4.35	1.27	8.98	Not assessed
9	Acacia nilotica	Karuvelai	4	4	6	0.67	66.67	1	0.28	3.36	4.35	4.45	12.16	Least Concern
10	Bambusa vulgaris	Moongil	4	4	6	0.67	66.67	1	0.50	3.36	4.35	7.92	15.63	Not assessed
11	Syzygium cumini	naval	5	1	6	0.83	16.67	5	0.11	4.20	1.09	1.79	7.07	Not assessed
12	Carica papaya	Papaya	3	3	6	0.50	50.00	1	0.09	2.52	3.26	1.43	7.21	Not assessed
13	Psidium guajava	Guava	3	3	6	0.50	50.00	1	0.23	2.52	3.26	3.61	9.39	Not assessed
14	Cassia siamea	ManjalKonrai	3	2	6	0.50	33.33	1.5	0.07	2.52	2.17	1.11	5.81	Least Concern
15	Ficus religiosa	Arasa maram	3	3	6	0.50	50.00	1	0.09	2.52	3.26	1.35	7.13	Not assessed

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16	Musa paradise	Vaazhai	3	3	6	0.50	50.00	1	0.08	2.52	3.26	1.19	6.97	Not assessed
17	Prosopis juliflora	Vaelikaruvai	3	3	6	0.50	50.00	1	0.21	2.52	3.26	3.34	9.13	Not assessed
18	Tectona grandis	Thekku	3	3	6	0.50	50.00	1	0.12	2.52	3.26	1.88	7.66	Not assessed
19	Thespesia populnea	Poovarasam	3	3	6	0.50	50.00	1	0.15	2.52	3.26	2.39	8.18	Not assessed
20	Causuarina equisetifolia	Savukku	2	2	6	0.33	33.33	1	0.21	1.68	2.17	3.34	7.20	Not assessed
21	Alstonia scholaris	Elilaipalai	2	2	6	0.33	33.33	1	0.27	1.68	2.17	4.31	8.16	Least Concern
22	Anacardium occidentale	Cashew	1	1	6	0.17	16.67	1	0.44	0.84	1.09	6.96	8.88	Not assessed
23	Artocarpus heterophyllus	Palaa	2	2	6	0.33	33.33	1	0.18	1.68	2.17	2.85	6.70	Not assessed
24	Aegle marmelos	Vilvam	1	1	6	0.17	16.67	1	0.16	0.84	1.09	2.50	4.43	Not assessed
25	Delonix elata	Perungondrai	1	1	6	0.17	16.67	1	0.17	0.84	1.09	2.62	4.54	Least Concern
26	Pithecellobium dulce	Kodukapuli	1	1	6	0.17	16.67	1	0.14	0.84	1.09	2.18	4.11	Not assessed
27	Citrus medica	Elumichai	2	2	6	0.33	33.33	1	0.23	1.68	2.17	3.61	7.46	Not assessed
Total			110	83					5.02					

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Table 3-17 Shrubs in the Core Zone

S. No.	Scientific Name	Local Name	Total No. of species	Total of Quadrants with species	Total No. of Quadrants	Density	Frequency (%)	Abundance	Relative Density	Relative Frequency	IUCN Conservation Status
1	Jatropagossypifolia	Kaatamanaku	32	17	24	1.17	0.71	1.65	14.43	17.17	Not Assessed
2	Calotropis gigantea	Erukam	16	12	24	0.58	0.50	1.17	7.22	12.12	Not Assessed
3	Tabernaemontanadivaricata	Crepe Jasmine	4	3	24	0.13	0.13	1	1.55	3.03	Not Assessed
4	Catharanthus roseus	Nithyakalyani	4	3	24	0.13	0.13	1	1.55	3.03	Not Assessed
5	Datura metal	Ummattangani	7	4	24	0.21	0.17	1.25	2.58	4.04	Not Assessed
6	Robiniapseudoacacia	Black locust	15	5	24	0.71	0.21	3.4	8.76	5.05	Least Concern
7	Acalypha indica	Kuppaimeni	18	8	24	0.83	0.33	2.5	10.31	8.08	Not Assessed
8	Stachytarpeaurticifolia	Rat tail	13	9	24	0.63	0.38	1.67	7.73	9.09	Not Assessed
9	Woodfordiafruiticosa	Velakkai	4	3	24	0.13	0.13	1	1.55	3.03	Least Concern
10	Hibiscus rosa sinensis	Sembaruthi	3	2	24	0.13	0.08	1.5	1.55	2.02	Not Assessed
11	Lantana camara	Unnichedi	8	6	24	0.38	0.25	1.5	4.64	6.06	Not Assessed
12	Parthenium hysterophorous	Vishapoondy	45	13	24	2.08	0.54	3.85	25.77	13.13	Not Assessed
13	Euphorbia geniculata	Amman Pacharisi	5	3	24	0.13	0.13	1	1.55	3.03	Not Assessed

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Table 3-18 Herbs & Grasses in the core zone

S. No.	Scientific Name	Local Name	Total No. of species	Total of Quadrants with species	Total No. of Quadrants	Density	Frequency (%)	Abundance	Relative Density	Relative Frequency	IUCN Conservation status
1	Helicteresisora	Valampuri	4	2	30	0.07	0.07	1	0.79	2.15	Not assessed
2	Tridax procumbens	Vettukaayathalai	7	4	30	0.17	0.13	1.25	1.98	4.30	Not assessed
3	Heraculem spondylium	Hog Weed	19	10	30	0.67	0.33	2	7.94	10.75	Not assessed
4	Tridax procumbens	Cuminipachai	18	4	30	0.50	0.13	3.75	5.95	4.30	Not assessed
5	Senna occidentalis	Nattamsakarai	30	4	30	0.83	0.13	6.25	9.92	4.30	Not assessed
6	Plumbago zeylanica	Chittiramoolam	12	3	30	0.10	0.10	1	1.19	3.23	Not assessed
7	Scrophularia nodosa	Sarakkothini	18	7	30	0.50	0.23	2.14	5.95	7.53	Not assessed
8	Viburnum dentatum	Viburnum	7	5	30	0.17	0.17	1	1.98	5.38	Least concern
9	Cynodondactylon	Arugu	15	6	30	0.40	0.20	2	4.76	6.45	Not assessed
10	Euphorbia hirta	Amman Pacharisi	7	4	30	0.17	0.13	1.25	1.98	4.30	Not assessed
11	Sida cordifolia	Maanikham	50	4	30	1.50	0.13	11.25	17.86	4.30	Not assessed
12	Sida acuta	Malaidangi	12	3	30	0.33	0.10	3.33	3.97	3.23	Not assessed
13	Laportea canadensis	Peruganchori	28	20	30	1.00	0.67	1.5	11.90	21.51	Not assessed
14	Sporobolus fertilis	Giant Parramatta Grass	10	4	30	0.30	0.13	2.25	3.57	4.30	Not assessed
15	Tephrosia purpurea	Kavali	23	4	30	0.67	0.13	5	7.94	4.30	Not assessed

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3.7.4 Calculation of species diversity by Shannon – wiener Index, Evenness and richness by Margalef:

Biodiversity index is a quantitative measure that reflects how many different type of species, there are in a dataset, and simultaneously takes into account how evenly the basic entities (such as individuals) are distributed among those types of species. The value of biodiversity index increases both when the number of types increases and when evenness increases. For a given number of type of species, the value of a biodiversity index is maximized when all type of species are equally abundant. Interpretation of Vegetation results in the study area is given below.

Table 3-19 Calculation of species diversity

Description	Formula
Species diversity – Shannon – Wiener Index	$H = \sum [(p_i) * \ln(p_i)]$ Where p_i : Proportion of total sample represented by species i : number of individuals of species i / total number of samples
Evenness	H/H_{max} $H_{max} = \ln(s) =$ maximum diversity possible $S =$ No. of species
Species Richness by Margalef	$RI = S - 1 / \ln N$ Where $S =$ Total Number of species in the community $N =$ Total Number of individuals of all species in the community

3.7.5 Calculation of species diversity by Shannon – wiener Index, Evenness and richness by Margalef for trees

i. Species Diversity

Scientific Name	Common Name	No. of Species	Pi	ln (Pi)	Pi x ln (Pi)
Ficus Carica	Athi Maram	2	0.018182	-4.00733	-0.07286

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Cocos nucifera	Thennai	10	0.090909	-2.3979	-0.21799
Azadirachta indica	Veppam	17	0.154545	-1.86727	-0.28858
Tamarindus indica	Puli	10	0.090909	-2.3979	-0.21799
Mangifera indica	Mamaram	7	0.063636	-2.75457	-0.17529
Morinda pubescens	Nuna	6	0.054545	-2.90872	-0.15866
Couroupita guianensis	Nagalingam	5	0.045455	-3.09104	-0.1405
Bombax ceiba	Sittan	4	0.036364	-3.31419	-0.12052
Acacia nilotica	Karuvelai	4	0.036364	-3.31419	-0.12052
Bambusa vulgaris	Moongil	4	0.036364	-3.31419	-0.12052
Syzygium cumini	naval	5	0.045455	-3.09104	-0.1405
Carica papaya	Papaya	3	0.027273	-3.60187	-0.09823
Psidium guajava	Guava	3	0.027273	-3.60187	-0.09823
Cassia siamea	ManjalKonrai	3	0.027273	-3.60187	-0.09823
Ficus religiosa	Arasa maram	3	0.027273	-3.60187	-0.09823
Musa paradise	Vaazhai	3	0.027273	-3.60187	-0.09823
Prosopis juliflora	Vaelikaruvai	3	0.027273	-3.60187	-0.09823
Tectona grandis	Thekku	3	0.027273	-3.60187	-0.09823
Thespesia populnea	Poovarasam	3	0.027273	-3.60187	-0.09823
Causuarina equisetifolia	Savukku	2	0.018182	-4.00733	-0.07286
Alstonia scholaris	Elilaipalai	2	0.018182	-4.00733	-0.07286
Anacardium occidentale	Cashew	1	0.009091	-4.70048	-0.04273
Artocarpus heterophyllus	Palaa	2	0.018182	-4.00733	-0.07286
Aegle marmelos	Vilvam	1	0.009091	-4.70048	-0.04273
Delonix elata	Perungondrai	1	0.009091	-4.70048	-0.04273
Pithecellobium dulce	Kodukapuli	1	0.009091	-4.70048	-0.04273
Citrus medica	Elumichai	2	0.018182	-4.00733	-0.07286
Total		110			-3.02215005

H (Shannon Diversity Index) =3.02

Shrubs

Scientific Name	Common Name	No. of Species	Pi	ln (Pi)	Pi x ln (Pi)
Jatropagossypifolia	Kaatamanaku	32	0.183908	-1.69332	-0.31142
Calotropis gigantea	Erukam	16	0.091954	-2.38647	-0.21945
Tabernaemontanadivaricata	Crepe Jasmine	4	0.022989	-3.77276	-0.08673
Catharanthus roseus	Nithyakalyani	4	0.022989	-3.77276	-0.08673
Datura metal	Ummattangani	7	0.04023	-3.21315	-0.12926
Robiniapseudoacacia	Black locust	15	0.086207	-2.45101	-0.21129
Acalypha indica	Kuppaimeni	18	0.103448	-2.26868	-0.23469
Stachytarphaurticifolia	Rat tail	13	0.074713	-2.59411	-0.19381

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Woodfordiafruiticosa	Velakkai	4	0.022989	-3.77276	-0.08673
Hibiscus rosa sinensis	Sembaruthi	3	0.017241	-4.06044	-0.07001
Lantana camara	Unnichi	8	0.045977	-3.07961	-0.14159
Parthenium hysterophorous	Vishapoonda	45	0.258621	-1.35239	-0.34976
Euphorbia geniculata	Amman Pacharisi	5	0.028736	-3.54962	-0.102
Total		174			-2.2234

H (Shannon Diversity Index) =2.22

Herbs

Scientific Name	Common Name	No. of Species	Pi	ln (Pi)	Pi x ln (Pi)
Helicteresisora	Valampuri	4	0.015385	-4.17439	-0.06422
Tridax procumbens	Vettukaayathalai	7	0.026923	-3.61477	-0.09732
Heraculem spondylium	Hog Weed	19	0.073077	-2.61624	-0.19119
Tridax procumbens	Cuminipachai	18	0.069231	-2.67031	-0.18487
Senna occidentalis	Nattamsakarai	30	0.115385	-2.15948	-0.24917
Plumbago zeylanica	Chittiramoolam	12	0.046154	-3.07577	-0.14196
Scrophularia nodosa	Sarakkothini	18	0.069231	-2.67031	-0.18487
Viburnum dentatum	Viburnum	7	0.026923	-3.61477	-0.09732
Cynodondactylon	Arugu	15	0.057692	-2.85263	-0.16457
Euphorbia hirta	Amman Pacharisi	7	0.026923	-3.61477	-0.09732
Sida cordifolia	Maanikham	50	0.192308	-1.64866	-0.31705
Sida acuta	Malaidangi	12	0.046154	-3.07577	-0.14196
Laportea canadensis	Peruganchori	28	0.107692	-2.22848	-0.23999
Sporobolus fertilis	Giant Parramatta Grass	10	0.038462	-3.2581	-0.12531
Tephrosia purpurea	Kavali	23	0.088462	-2.42519	-0.21454
Total		260			-2.51

H (Shannon Diversity Index) =2.5

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i. Species diversity calculation

Details	H	Hmax	Evenness	Species Richness (Margalef)
Trees	3.02	3.36	0.89	5.95
Shrubs	2.22	2.56	0.86	2.32
Herbs	2.51	2.70	0.92	2.51

From the above, it can be interpreted that herb community has higher diversity. While the tree community shows less diversity. It is also observed that most of the quadrates have controlled generation of plant species with older strands. Higher herb species diversity can be interpreted as a greater number of successful species and a more stable ecosystem where more ecological niches are available, environmental change is less likely to be damaging to the ecosystem. Species richness is high for herb community when compared with tree and shrubs.

3.7.6 Floral study in the Buffer Zone:

Economically important Flora of the study area

Agricultural crops: The important crops of this district are Paddy, Maize, Ragi, Banana, Sugarcane, Cotton, Tamarind, Coconut, Mango, Groundnut, Vegetables and Flowers also grown by the local people.

Medicinal species: The nearby area is also endowed with the several medicinal species which are commonly available in the shrub forest and waste lands. The common medicinal species of the region are *Asparagus racemosus* (satamulli), *Azadirachta indica* (Neem) etc.

Rare and endangered floral species: There are no rare or endangered or threatened (RET) species of in the study area. During the vegetation survey, there are no any species which are endangered or threatened under IUCN (International Union for Conservation of Nature and Natural resources) guidelines.

3.7.7 Faunal Communities

Both direct and indirect observation methods were used to survey the fauna.

- Point Survey Method: Observations were made in each site for 15 minutes duration.

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Roadside Counts: The observer traveled by motor vehicles from site to site, all sightings were recorded (this was done both in the day and night time). An index of abundance of each species was also established.

Pellet and Track Counts: All possible animal tracks and pellets were identified and recorded (South Wood, 1978).

Additionally, survey of relevant literature was also done to consolidate the list of fauna distributed in the buffer zone.

Based on the Wildlife Protection Act, 1972 (WPA 1972, Anonymous. 1991, Upadhyay 1995, Chaturvedi and Chaturvedi 1996) species were short-listed as Schedule II or I and considered herein as endangered species. Species listed in Ghosh (1994) are considered as Indian Red List species.

Methodology Adopted:

Point Survey method was adopted for this development project where observations were made in each site for 15 minutes duration (10 times).

Study in the core zone:

Point Survey method was adopted for the study within 2 km radius and the following species were observed.

Mammals: No wild mammalian species was directly sighted during the field survey. Discussion with local villagers located around the study area also could not confirm presence of any wild animal in that area. Three striped Palm Squirrel, Common Indian Hare, Common mongoose, Common Mouse etc were observed during primary survey.

Avifauna: Since birds are considered to be the indicators for monitoring and understanding human impacts on ecological systems (Lawton, 1996) attempt was made to gather quantitative data on the avifauna by walk through survey within the entire study area and surrounding areas. From the primary survey, a total of 26 species of avifauna were identified and recorded in the study area. The diversity of avifauna from this region was found to be quite high and encouraging.

The list of fauna species found in the study area is mentioned in Table below.

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Table 3-20 List of fauna species

Scientific Name	Common Name	Schedule of wild life protection act	IUCN conservation status
Mammals			
Funambulus pennanti	Palm Squirrel	IV	Least Concern
Mus rattus	Indian rat	IV	Not listed
Bandicota bengalensis	Indian mole rat	IV	Least Concern
Funambulus palmarum	Three stripped palm squirrel	IV	Least Concern
Herestes edwardsii	Common Mongoose	IV	Not listed
Mus musculus	Common Mouse	IV	Least Concern
Bandicota indica	Rat	IV	Least Concern
Lepus nigricollis	Indian Hare	IV	Least Concern
Felis catus	Cat	Not listed	Not listed
Canis lupus familiaris	Indian dog	Not listed	Not listed
Bos Indicus	Indian Cow	Not listed	Not listed
Bubalus bubalis	Buffalo	I	Not listed
Sus scrofa domesticus	Domestic pig	Not listed	Not listed
Birds			
Milvus migrans	Black kite	IV	Least concern
Saxicoloides fulicatus	Indian Robin	IV	Least concern
Pycnonotus cafer	Red vented Bulbul	IV	Least concern
Phragamaticola aedon	Thick billed warbler	IV	Least concern
Pericrocotus cinnamomeus	Small Minivet	IV	Least concern
Eudynamys scolopaceus	Koel	IV	Least concern
Psittacula krameni	Rose ringed parakeet	IV	Least concern
Dicrurus marcocercus	Black drongo	IV	Least concern
Columba livia	Rock pigeon	IV	Least concern
Corvus splendens	House crow	IV	Least concern

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Alcedo atthis	Small blue kingfisher	IV	Least concern
Cuculus canorus	Common Cukoo	IV	Least concern
Reptiles & Amphibians			
Chameleon zeylanicum	Chameleon	IV	Not listed
Calotes versicolor	Common garden lizard	II	Not listed
Bungarus caeruleus	Common krait	IV	Not listed
Ophisops leschenaultia	Snake eyed lizard	--	Not listed
Bufo melanostictus	Toad	IV	Least concern
Ptyas mucosa	Rat snakes	IV	Least concern
Hemidactylus sp.	House lizard	--	Not listed
Butterflies			
Danaus chrysippus	Plain Tiger	--	Not listed
Papilio demoleus	Common lime	--	Not listed
Euploea core	Common crow	--	Least concern
Danaus genutia	Common tiger	--	Not listed
Eurema brigitta	Small grass yellow	--	Least concern

3.8 DEMOGRAPHY AND SOCIO ECONOMICS

The demography survey study is done within 10km radius from the project site.

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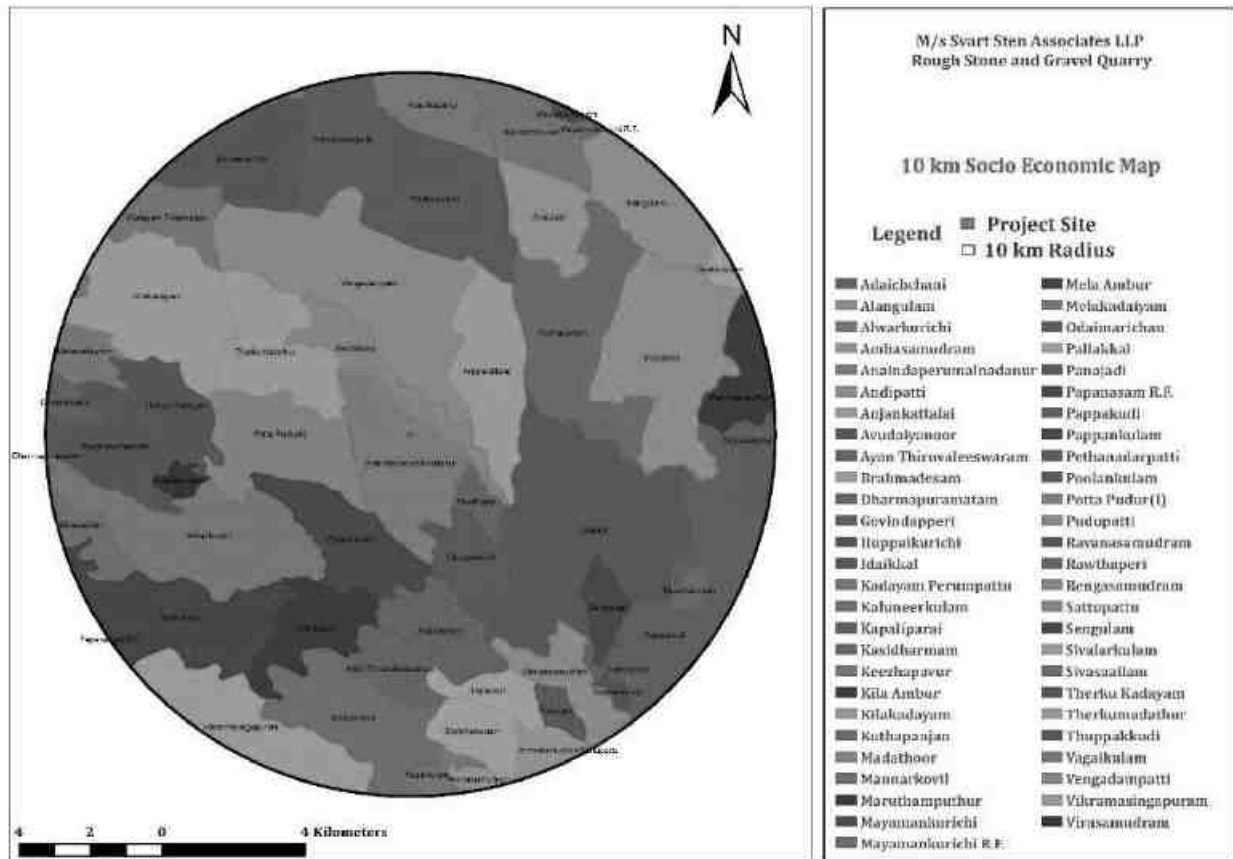


Figure 3.13 Socio Economic map surrounding the project site.

The population, Household, Sex ratio, Literacy rate, SC, ST details for all the villages in the study area is listed below:

Table 3-21: Demography Survey Study

Source: Census of India, 2011

Villages	Household	Population	Sex Ratio		Literacy Rate		SC	ST
			Male	Female	Male	Female		
Vengadampatti	2882	10438	5190	5248	3995	3380	790	7
Anjankattalai	921	3539	1740	1799	1214	1026	174	0

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Madathoor	439	1594	779	815	631	537	252	0
Kuthapanjan	2244	8748	4336	4412	3283	2768	1351	6
Idaikkal	1576	5733	2863	2870	2258	1853	1339	4
Sengulam	682	2692	1336	1356	1106	985	380	0
Rengasamudram	706	2381	1189	1192	886	695	689	0
Adaichchani	861	3073	1523	1550	1016	819	920	0
Ayan Thiruvaleeswaram	576	2113	1070	1043	794	629	409	0
Pallakkal	718	2699	1358	1341	1077	895	667	0
Ananindaperumalnadanur	1459	5297	2573	2724	2018	1712	539	30
Kila Ambur (CT)	1747	6233	3068	3165	2391	2026	1591	0
Pappankulam	1419	5192	2602	2590	2057	1717	1621	9
Pottal Pudur (I)	1697	6622	3144	3478	2477	2289	1138	9
Therkumadathur	1057	3964	1944	2020	1598	1363	81	0
Rawthaperi	176	666	323	343	245	208	78	0
Thuppakudi	391	1430	677	753	472	413	495	0

3.9 TRAFFIC IMPACT ASSESSMENT

Traffic data collected continuously for 24 hours by visual observation and counting of vehicles under three categories, viz., heavy motor vehicles, light motor vehicles and two/three wheelers. As traffic densities on the roads are high, two skilled persons were deployed simultaneously at each station during each shift- one person on each of the two directions for counting the traffic. At the end of each hour, fresh counting and recording was undertaken. Total numbers of vehicles per hour under the three categories were determined.

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Figure 3.14: Site Connectivity

Table 3-22: No. of Vehicles per Day

S. No	Vehicles Distribution	Number of Vehicles Distribution/Day	Passenger Car Unit (PCU)	Total Number of Vehicle in PCU
		SH 41 A	-	SH 41 A
1	Cars	631	1	631
2	Buses	251	3	753
3	Trucks	296	3	888
4	Two wheelers	618	0.5	309
5	Three wheelers	207	1.5	310
Total		2003	-	2891

Table 3-23: Existing Traffic Scenario and LOS

Road	V (Volume in PCU/hr)	C (Capacity in PCU/hr)	Existing V/C Ratio	LOS

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NH44	2891/24=120	253	0.38	B
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Note: The existing level may be "Very Good" for MDR=937.

V/C	LOS	Performance
0.0-0.2	A	Excellent
0.2-0.4	B	Very Good
0.4-0.6	C	Good/ Average/ Fair
0.6-0.8	D	Poor
0.8-1.0	E	Very Poor

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4 Anticipated Environmental Impacts & Mitigation Measures

This chapter describes the anticipated impacts on the environment and mitigation measures. The method of assessment of impacts including studies carried out, modeling techniques adopted to assess the impacts where pertinent should be elaborated in this chapter. It should give the details of the impacts on the baseline parameters, both during the construction and operational phases and suggests the mitigation measures to be implemented by the proponent.

4.1 INTRODUCTION

An environmental impact is defined as any change to the environment, whether adverse or beneficial, resulting from a facility's activities, products, or services. The anticipation of the possible & potential Environmental impact due to the proposed project is a key step in EIA. Based on the impacts assessed, appropriate mitigation measures should be adopted to maintain the environment with less or no damage.

Environmental Impacts can be group into Primary impacts & Secondary Impacts

Primary Impacts: These impacts are directly attributed by the project

Secondary Impacts: These are those which are induced by primary impacts and include the associated investments and changed patterns of the social and economic activities by the action.

Assessment of impacts is done for the following Environmental Parameters:

- Land Environment
- Water Environment
- Air Environment
- Noise Environment
- Biological Environment
- Socio Economic Environment

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4.2 LAND ENVIRONMENT:

Aspect	Impact	Mitigation Measures								
<p><i>Mining of rough stone and Gravel</i></p>	<p>The proposed 1.24.0 Ha mine located in A.P. Nadanoor Village having 216405 m³ of Rough stone and 22770 cu.m of Gravel. The quarry operation is proposed to carry out with conventional open cast mechanized mining with 5.0 meter vertical bench and bench width of 5.0 meter. At the end of 5 years, mining lease area will be converted into ultimate pit.</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: center;">Pit No.</th> <th style="text-align: center;">Length (Max) (m)</th> <th style="text-align: center;">Width (Max) (m)</th> <th style="text-align: center;">Depth (Max) (m)</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">I</td> <td style="text-align: center;">126</td> <td style="text-align: center;">77</td> <td style="text-align: center;">42</td> </tr> </tbody> </table> <p>The main impact of open cast mining on land-use is land degradation. The land is bound to be excavated for mining of Rough Stone and Gravel Quarry.</p> <p>Impact on soil of the study area will be minimal as there are no wastewater generated, heavy metal infusion, stack emissions.</p>	Pit No.	Length (Max) (m)	Width (Max) (m)	Depth (Max) (m)	I	126	77	42	<p>The proposed project site is not prone to any kind of soil erosion (Source: Bhuvan).</p> <p>In addition, garland drainage of 1m x 1m will be provided to avoid storm water run-off.</p> <p>It is proposed to plant 700 No's of local tree species (Neem, Vilvam Vaagai, Pungam, Magizha maram, Eachai, etc.,) along the roads, outer periphery of the mining area which enhances the binding property of the soil.</p> <p>It is proposed to improve the affected land wherever possible for better land use, so as to support vegetation and creation of water reservoir in the ultimate pit after quarrying.</p> <p>The source of dust generation is majorly due to drilling, blasting, loading & unloading of the mined out mineral, the impact will be mitigated by water sprinkling regularly once in 3hrs.</p>
Pit No.	Length (Max) (m)	Width (Max) (m)	Depth (Max) (m)							
I	126	77	42							

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	<p>Impact due to transformation of terrain characteristics over the large area results in soil degradation.</p> <p>Solid waste will be generated from the mining activity as there will be refuse also generation of domestic waste. If it is not properly managed, may cause odor and health problem to the workers.</p>	<p>The proposed mining activity is carried out in hilly terrain.</p> <p>After removal of minerals, undulating portion will be created. Excavated area or ultimate pit at the end of the mine period will be converted into water reservoir. Two tier tree belts will be planted along the safety distance.</p> <p>The 100% recovery is achieved by extracting the entire mineable reserve. Hence there will be no refuse generation due to the mining activity. Apart from that, a very meagre quantity of domestic waste will be generated in the project, which will be handed over to the local body on daily basis.</p>
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4.3 WATER ENVIRONMENT:

Aspect	Impact	Mitigation Measures
<i>Drilling, Blasting, Loading and unloading, Transportation of the excavated mineral.</i>	The mining in the area may cause ground water contamination due to intersection of the water table and mine runoff.	The water table will not be intersected during mining, as the ultimate depth is limited upto 42 m (below ground level), whereas the ground water table is at 53 m below the ground level. The municipal wastewater will be disposed into

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	<p>The ground water depletion may occur due to mining activity</p> <p>Chemicals consisting of nitrate used for blasting may pollute the surface run off.</p> <p>Improper management of Domestic wastewater in the Mine lease may create unhygienic conditions in the site thereby causing health impacts to the labours.</p>	<p>septic tanks of 5 cum and soak pit. No chemicals consisting of toxic elements will be used for carrying out mining activity.</p> <p>The ground water table is at a depth of 53 m BGL, the mining operation will not affect the aquifer. The ultimate pit at the end of the mining operation will be used for rain water storage, the stored water will be used for green belt development and further the stored water will be used for domestic purposes (other than drinking) after proper treatment.</p> <p>Further, the run-off water will be stored in sumps and after proper treatment; water will be used in the mining operation for dust suppression.</p> <p>Provision of urinals/Latrines along with septic tank followed by soak pit arrangement will be provided in the Mine Lease area for the proper management of wastewater</p>
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4.4 AIR ENVIRONMENT:

Aspect	Impact	Mitigation Measures
<p><i>Drilling, Blasting, Loading and unloading, Transportation of the excavated mineral.</i></p>	<p><i>Impacts during Operation Phase</i></p> <p>During mining operation, fugitive dust and other air pollutants like particulate matter (PM10 & PM 2.5) will be generated.</p> <p>The main source of pollutants arises due to drilling and blasting. 2 Nos of Tipper will be used for loading and unloading, 1 Nos of Excavator (1.20 m³ bucket capacity, and 5 Nos Jack Hammer will be used for excavation of the mineral which contributes to the generation of fugitive dust. In addition, blasting will be done using explosives leading to the generation of dust.</p>	<p><i>Mitigation Measures during Operation Phase</i></p> <p>It is proposed to plant 700 Nos of local species along the haul roads, outer periphery within the lease area to prevent the impact of dust in consultation with Forest department for the plantation of trees (Neem, Magizham, Tamarind, Elandhai and Vilvam) in two tier to combat air pollution and with herbs (Nerium) in between the tree species.</p> <p>Planning transportation routes of the mined out mineral, so as to reach the nearest paved roads (an approach road) by shortest route connecting to SH 41A.</p> <p>Alternatively, gravelled road may be constructed between mine lease area and nearest paved road connectivity. The speed of trucks plying on the haul road will be limited to 20km/hr to avoid generation of dust.</p>

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	<p><u><i>Effect on Human</i></u></p> <ul style="list-style-type: none"> • Adverse effect on human health of working labourers and neighbouring villagers like effect on breathing and respiratory system, damage to lung tissue, influenza or asthma. • Dust generation due to loading and unloading of mineral and due to transportation can also affect the workers as well as nearby villagers. <p><u><i>Effect on Plants</i></u></p> <ul style="list-style-type: none"> • Stomatal index may be minimized due to dust deposit on leaf. 	<p>The trucks will be covered by tarpaulin.</p> <p>Overloading will be avoided.</p> <p>Personal Protective Equipments (PPEs) like eye goggles, dust mask, leather gloves, safety shoes & boots will be provided to the workers engaged at dust generation points like excavation and loading points.</p> <p>0.5 KLD of water will be proposed for sprinkling on unpaved roads to avoid dust generation during transportation.</p>
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Air Quality Modeling:

The AERMOD is actually a modeling system with three separate components:

- AERMOD (AERMIC Dispersion Model),
- AERMAP (AERMOD Terrain Preprocessor)
- AERMET (AERMOD Meteorological Preprocessor)

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4.4.1 Source Characterization

A detailed listing of all emission sources and their corresponding modelling input release parameters and emission rates is listed in this report. A general description of how each source type was treated is presented below.

The emission Sources from the proposed operation are

Point Sources:

Point sources for mining operations typically include dust collectors, hot water heaters, and emergency generator(s). Since at the present project the following sources are anticipated.

1. Hydraulic excavator – 1.2 Cum Bucket Capacity (with Rock Breaker Attachment)
2. Jack Hammer 32 mm Dia
3. Tipper
4. Tractor Mounted - Compressor
5. Drilling and excavation with Accessories

Road Sources:

A road network was developed to depict the anticipated haul truck routes and truck discharge locations during the mine operations. The anticipated emissions from the road sources and corresponding anticipated impact during the monitoring period of March to May 2023 emissions were estimated. Emissions due to haul road and general plant traffic on the unpaved road network were modelled as volume sources. The model volume source parameter for the haul roads initially utilized USEPA developed emission factors for hauling trucking. The haul road sources utilized source to source spacing of 6 meters along the simulated haul roads. The initial lateral dimension of the sources were set to 3 m were used as an input to replicated a 2 truck travel adjacent for a typical mining scenario.

The parameters considered for the hauling operation include the following,

- size of haul trucks commonly used
- degree of dust control/compaction of permanent haul roads

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Other fugitive particulate emission sources:

Other fugitive particulate emission sources that were modelled as volume sources include the following:

- Fugitive emissions from trucks unloading at the primary crusher were represented by a single volume source. The release height was set to 0 meters (dump pocket is at grade level).
- Fugitive emissions due to wind erosion is not considered as the mining area is predominately rocky surface with minimal wind erosion. If an wind erosion is anticipated to occur, it would be localized.
- Fugitive emissions from transfer points were represented by single volume sources. The release heights for these sources were set to the actual height of the truck transfer process.

Post Project Scenario

Emissions from operations will result from process equipment and mining operations. Process equipment was modeled at maximum capacity. Emissions from mining were based upon the mining rate and haul truck travel necessary to transport the stones and waste from the pit to the storage area.

Predicted maximum ground level concentrations considering micro meteorological data of December 2022 to February 2023 are superimposed on the maximum baseline concentrations obtained during the study period to estimate the post project scenario, which would prevail at the post operational phase. The overall scenario with predicted concentrations over the maximum baseline concentrations is shown in the following table along with isopleths.

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Table 4-1 Emission Factors for uncontrolled mining

Activity	Emission Factor		References	
Topsoil handling	Scraper	0.029 Kg TSPM/ average time between spray application	USEPA (2008) Jose I. Huertas & Dumar A. Camacho & Maria E. Huertas, Standardized emissions inventory methodology for open-pit mining areas, Environmental Science Pollution Research, 2012.	
	Bulldozing	15.048 kg PM10/ Hr excavation		USEPA (2008)
	Loading	2.3237E-04 kg PM10/ average time between spray application		USEPA (2006a)
	Haulage	0.69718 kg PM10/VKT		USEPA (2006a) Cowherd (1988)
Rough stone mining	Wet drilling	8.00E-5 lbs PM10/ Ton produce	EPA. August, 2004. Section 11.19.2, Crushed Stone Processing and Pulverized Mineral Processing. In: Compilation of Air Pollutant Emission Factors, Volume 1: Stationary Point and Area Sources, Fifth Edition, AP-42. U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards. Research Triangle Park, North Carolina.	
	Loading	1.00E-4 lbs PM10/ Ton produce		

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4.5 NOISE ENVIRONMENT:

Aspect	Impact	Mitigation Measures
<i>Drilling, Blasting, Loading and unloading, Transportation of the excavated mineral.</i>	<p>Usage of Equipments (Excavator, Tipper, Jack Hammer), Machinery and trucks used for transportation will generate noise.</p> <p>Noise from the machinery can cause hypertension, high stress level, hearing loss, sleep disturbance etc due to prolonged exposure.</p> <p>Number of vehicles will be increased due to the proposed mining activity hence vehicle may collide which may result in unwanted sound and can also cause impact on human health like breathing and respiratory system, damage to lung tissue, influenza or asthma.</p>	<ul style="list-style-type: none"> • The machinery will be maintained in good running condition so that noise will be reduced to minimum possible level. • Awareness will be imparted to the workers once in six months about the permissible noise level and effect of maximum exposure to those levels. Adequate silencers will be provided in all the diesel engines of vehicles. • It will be ensured that all transportation vehicles carry a valid PUC Certificates. • Speed of trucks entering or leaving the mine will be limited to moderate speed (20km/hr) to prevent undue noise from empty vehicles. <p>The noise generated by the machinery will be reduced by proper lubrication of the machinery and other equipments.</p> <ul style="list-style-type: none"> • It is proposed to plant 700 Nos. of local species (Neem, Mandharai, Athi, Tamarind, Ashoka, Casuarinas and Villam) to reduce the

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		<p>impact of noise in the study area. The development of green belts around the periphery of the mine will be implemented to attenuate noise.</p> <ul style="list-style-type: none"> • The trucks will be diverted on two roads viz. SH 41 A and a District Road to avoid traffic congestion. • Health check-up camps will be organized once in six month. • Use of personal protective devices i.e., earmuffs and earplugs by workers, who are working in high noise generating areas. • Provision of quiet areas, where employees can get relief from workplace noise.
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4.6 BIOLOGICAL ENVIRONMENT:

Aspect	Impacts	Mitigation Measures
Site Clearance	Loss of habitat due to site clearance which may lead to ecological disturbance.	The proposed mining lease is already a dry land hence no site clearance is required. Only few shrubs and herbs like parthenium sp., prosopis juliflora were present.

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Planting of trees	Development of afforestation in the mine lease area will have a positive impact as the land was initially a barren.	safety distance will be provided all along the boundary of the mine lease area and safety. Around 0.18 Ha of land is utilized for greenbelt development (700 Nos – 5 years). This will attract avifauna thus enhancing the existing ecological environment.
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4.7 SOCIO ECONOMIC ENVIRONMENT:

Aspect	Impact	Mitigation Measures
Proposed implementation of Mining activity	Land acquisition for the implementation of the project may result in loss of assets, which in return will make the PAP to shift, losing their normal routine and livelihood	The proposed project is a patta land of Svart Sten Associates and the land is vacant where there are no human settlement within 300m radius. Hence the project does not involve Rehabilitation and resettlement
Drilling, Blasting, Loading and Transportation of the mined out mineral	The mining activities may cause dust emission, noise pollution thereby causing disturbance to the local habitat	No human activity is envisaged near the project site. The nearest human settlement is observed in Murugandiyur village which is 0.50 km, S from site
Grazing and Rearing activities in the nearby villages	The Grazing and rearing of local animals like Sheep, Goat and cows is observed in the nearby villages, which may be affected due to the project as the	It is proposed to use gravelled road and nearest paved road and preferred not to use unpaved roads. In addition to that, the speed of trucks will be limited to 20km/hr to avoid any accidents.

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	movement of the vehicles may affect/injure the animals	
Employment opportunity	The project will improve the livelihood of the local people	After the development of the proposed mine, it will improve the livelihood of local people and also provide the direct and indirect employment opportunities. The rough stone for the infrastructural development in the area will be made available from the local markets at reasonably lower price.
Corporate Environmental Responsibility	The proposed project will help in natural resource augmentation & Community resource development.	As a part of CER i.e, 5 Lakhs will be allocated. Developing sports facilities, providing hygienic toilet, R.O Water facilities to Roselin (Government Aided) Primary School, A.P. Nadanoor Village, Alangulam Taluk, Tenkasi District

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4.8 OTHER IMPACTS:

S. No	Aspect	Impact	Mitigation measure
1.	Risk due to the proposed mining	Accidents may occur in the mine area	Proper PPE kit (Safety jacket, Helmet, Safety Shoes, Gloves) etc will be provided to each and every employee in the mine lease concerning the safety of each labour
2.	Blasting	Injury to the labours due to the blasting activity	Alarm system in the form of Siren will be engaged in the project site to caution the blasting activity. In addition to that, the blasting activity will be scheduled at particular time – 5 P.M to 6 P.M (or whenever required) so that the employees will be aware of the activity. Smoking will be banned in the site and sign boards will be displayed in various places at site.
3.	Screening of Labors	Labors will be checked for health condition before employing them in mining activity	All the labors will be checked and screened for health before employing them. After employing them, periodical medical checkups will be held once in every six months.

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5 Analysis Of Alternatives

5.1 GENERAL

Analysis of alternative is a significant aspect in planning and designing any project. Cost benefit analysis should be work out along with other parameters while choosing an alternative in such a way that the production is maximum and the mining operation is environment friendly and cost effective. The mine plan and mine closure plan Mining Plan was approved by The Assistant Director , Geology & Mining, Tirunelveli District prior to submission of the Form-1 and PFR. ToR issued by the SEIAA-TN vide Letter No. SEIAA-TN/ F. No. 9546/ToR-1361/2023 Dated: 10.02.2023. The study for alternative analysis involves in-depth examination of site and technology.

5.1.1 *Analysis for Alternative Sites and Mining Technology*

5.1.1.1 **Alternative Site**

The proposed project is the mining of Rough Stone and Gravel Quarry and is proposed after prospecting the area. In other words, these can be implemented in the mineral available zone. Since the mining block has been allotted in principal by the State Government, there is no case for studying and exploring any other site as an alternative.

5.1.1.2 **Alternative Technology**

The open cast mining could be manual/mechanized depending upon the geological and topographical setup of the mineral (ROM) to be won and the daily/annual targeted production.

Table 5-1: Alternative for Technology and other Parameters

S. No.	Particular	Alternative Option 1	Alternative Option 2	Remarks

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1.	Technology	Opencast semi mechanized mining	Opencast mechanized mining	Opencast semi mechanized Involving drilling and blasting are preferred. Benefits: Material is hard so to make it loose and to bring it to
2.	Employment	Local employment.	Outsource employment	Local employment is preferred Benefits: Provides employment to local people along with financial benefits No residential building/
3.	Labour transportation	Public transport	Private transport	Local labours will be deployed from Murugandiyur village so they will either reach mine site by bicycle or by foot. Benefits: Cost of transportation of labors
4.	Material transportation	Public transport	Private transport	Material will be transported through trucks/trolleys on the contract basis Benefits: It will give indirect employment.
5.	Water	Tanker supplier	Ground water/	Tanker supply will be preferred. Water will be sourced from Murugandiyur village which is 0.50 km, W from site.

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6 Environmental Monitoring Program

6.1 GENERAL:

This chapter covers the planned environmental monitoring program. It also includes the technical aspects of monitoring the effectiveness of mitigation measures.

Monitoring is important to measure the efficiency of control measures. Post project monitoring of environmental parameters is of key importance to assess the status of environment. The monitoring program will serve as an indicator for identifying environmental degradation due to operation of the project and help in selection of appropriate mitigation measures to safeguard the environment.

Regular monitoring is as important as control of pollution since the efficacy of control measures can only be determined by monitoring. The project proponent has awarded **M/s. Ecotech Labs Pvt Ltd** for carrying out the post project environmental monitoring (PPM) and timely compliance report submission to various regulatory authorities.

Therefore, regular monitoring programme of the environmental parameters is essential to take into account the changes in the environmental quality. The objectives of monitoring are to:-

- Verify effectiveness of planning decisions;
- Measure effectiveness of operational procedures;
- Confirm statutory and corporate compliance; and
- Identify unexpected changes.

Table 6-1: Environmental Monitoring Programme

Parameters	Sampling	Frequency	Location
Air environment – Pollutants PM 10 PM 2.5 SO ₂	5 locations	24 hourly twice a week 4 hourly. Twice a week, One non monsoon season	Project Site, Sri Seevalaperi Sudalai Mada Swamy Kovil, Pottalpudhur Sarguna Vidyalaya Hr. Sec. School, Koviloothu

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NO _x		8 hourly, twice a week 24 hourly, twice a week	Amman Kovil, Elanthaikulam Merit Polytechnic College
Noise	5 locations	24 hourly Once in 5 locations	Project Site, Sri Seevalaperi Sudalai Mada Swamy Kovil, Pottalpuhur Sarguna Vidyalaya Hr. Sec. School, Koviloothu Amman Kovil, Elanthaikulam Merit Polytechnic College
Water (Ground water) <ul style="list-style-type: none"> • pH • Temperature • Turbidity • Magnesium Hardness • Total Alkalinity • Chloride • Sulphate • Fluoride • Nitrate • Sodium • Potassium • Salinity • Total nitrogen • Total Coliforms 	5 locations	Once in 5 locations	Project Site, Sri Seevalaperi Sudalai Mada Swamy Kovil, Pottalpuhur Sarguna Vidyalaya Hr. Sec. School, Koviloothu Amman Kovil, Elanthaikulam Merit Polytechnic College

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<ul style="list-style-type: none"> • Fecal Coliforms 			
<p>Water (surface water)</p> <ul style="list-style-type: none"> • pH • Temperature • Turbidity • Magnesium • Hardness • Total Alkalinity • Chloride • Sulphate • Fluoride • Nitrate • Sodium • Potassium • Salinity • Total nitrogen • Total Coliforms • Fecal Coliforms 	<p>Sample from nearby lakes/river</p>	<p>One time Sampling</p>	<p>Thuppakudi Periyakulam</p>
<p>Soil (Organic matter, Texture, pH, Electrical Conductivity, Permeability, Water holding capacity, Porosity)</p>	<p>5 locations</p>	<p>Once in 5 locations</p>	<p>Project Site, Sri Seevalaperi Sudalai Mada Swamy Kovil, Pottalpuhur Sarguna Vidyalaya Hr. Sec. School, Koviloothu Amman Kovil, Elanthaikulam Merit Polytechnic College</p>

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Ecology and biodiversity Study	Study area covering 5 km radius	One time Sampling	
Socio- Economic study (Population, Literacy Level, employment, Infrastructure like school, hospitals & commercial establishments)	Villages around 5 km radius	One time Sampling	

Table 6-2: Monitoring Schedule during Mining

S. No.	Attributes	Parameters	Frequency	Location
1.	Ambient Air Quality at Mine Site & Fugitive Dust Sampling	PM 10 PM 2.5 SO ₂ NO _x	Once in a Month	Project Site
2.	Ground water Quality	Drinking Water Parameters, As per IS - 10500: 2012	Half yearly	Project Site
3.	Surface Water Quality	Class will be assessed as per the CPCB Guidelines	Half yearly	Project Site
4.	Soil Quality	(Organic matter, Texture, pH, Electrical Conductivity, Permeability, Water holding capacity, Porosity)	Half yearly	Project Site

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5.	Noise Level Monitoring	Noise level in dB(A) Quarterly/half yearly	Half yearly	Project Site
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7 Additional Studies

7.1 GENERAL

This chapter covers the details of the additional studies viz. Risk assessment, Disaster Management, Public Hearing, Rehabilitation and Resettlement.

7.1.1 *Public Hearing:*

As the proposed mining project falls under 1(a), Category B1 – Cluster Mining (includes **Existing Quarries**- Thiru. N. Mohamed Mahaboob – 3.74.5 Ha
Abandoned /Old Quarries – Nil
Proposed Quarries – Thiru M Mohammed Ismail – 4.38.0 Ha, M/s. Svart Sten Associates LLP – 1.24.0 Ha

Hence under 7(III) of EIA notification 2006 and its subsequent amendments, the project involves the Public Consultation and the same will be conducted under SPCB (TN) in Virudhunagar District. The proceedings of the same will be incorporated in the Final EIA Report.

7.1.2 *Risk assessment:*

For mining projects to be successful, it should meet not only the production requirements, but also maintain the highest safety standards for all the workers. The industry has to identify the hazards, assess the associated risks and bring the risks to tolerable level regularly. Mining has considerable safety risk to miners. Unsafe conditions and practices in mines lead to a number of accidents and causes loss and injury to human lives, damages the property, interrupt production etc. Risk assessment is a systematic method of identifying and analyzing the hazards associated with an activity and establishing a level of risk. The hazards cannot be completely eliminated, and thus there is a need to define and estimate an accident risk level possible to be presented either in quantitative or qualitative way.

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7.1.3 Identification of Hazard

7.1.3.1 Blasting Pattern:

The quarrying operation will be carried out in conjunction with conventional method of mining using Jack hammer drilling and blasting for shattering effect and loosen the Rough stone.

7.1.3.2 Drilling and Blasting:

Drilling and Blasting parameters are as follows:

Parameters	Details
Depth of each hole	1 m to 1.5m
Diameter of hole	32-36 mm
Spacing between holes	0.6 m
Pattern of hole	Zigzag
Inclination of holes	70° from horizontal
Use of delay detonators	25 milli seconds delays
Detonating fuse	“Detonating” Cord

a. Types of explosives to be used:

Slurry Class 3 explosives, type of nitro compound are proposed to be used for shattering and heaving effect for removal and winning of Rough Stone. No deep hole drilling or Primary blasting is proposed. Detonators of Class 3 and Safety fuse of Class 6 are used.

b. Measures proposed to minimize ground vibration due to Blasting:

The quarry is situated more than 1.0 km from the nearby villages. Controlled blasting measures will be adopted for minimizing ground vibration and fly of rock. Shallow depths jackhammer drilling & blasting is proposed to be carried out with minimum use of explosive mainly to give the shattering effect in rough stone for easy excavation and to control fly of rocks.

Diameter of Holes = 32-36mm

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Depth = 1 to 1.5 m

Storage and safety measures to be taken while blasting: The proponent will engage an authorized explosive agency to carry out the small amount of blasting and it will be supervised by competent and statutory Foreman/Permit Mines Manager.

Heavy Machineries: The following heavy machineries will be used in the proposed area:

- For Mining – Excavator of 0.90 Cum Bucket capacity , Jack Hammers (30-32 mm Dia) of 4 Nos.
- Loading Equipment – Excavator of 0.9 Cum Bucket Capacity
- Transportation (includes within the mine and mine to destination) – Tipper 2 No of 10 M.T capacity (from quarry to needy peoples and local crushers)

a. Risk:

Most of the accidents during transport of mined out mineral using other heavy vehicles are often attributed to mechanical failures and human errors.

b. Mitigation measures to minimize the risk

- At the time of loading no person will be allowed within the swing radius of the excavation.
- The dumpers/ trucks will stand near the loading equipment and fully braked when the muck is filled in it.
- The truck would be brought to a lower level so that the loading operation suits to the ergonomic condition of the workers.
- The workers will be provided with helmets, gloves and safety boots; loading and unloading operations will be carried out only during daylight
- All the mining machineries will be regularly maintained and checked such as brakes, lights and horns to keep in the efficient working order.

7.1.4 General Precautionary measures for the Risk involved in the proposed mine:

- In order to take care of above hazard/disaster, the following control measures will be adopted:

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- All safety precautions and provisions of Mine Act, 1952, Metalliferous Mines Regulation, 1961 and Mines Rules, 1955 will be strictly followed during all mining operations;
- Entry of unauthorized persons will be prohibited;
- Firefighting and first-aid provisions in the ECC and mining area;
- Provisions of all the safety appliances such as safety boot, helmets, goggles etc. will be made available to the workers (15 Nos.) and regular inspection for their use;
- In case of eventuality, first aid will be given by the senior safety officer in the mine area initially to the injured person. The safety officer will give notice of accident as per Rule-23 of Mines Act-1952;
- The safety officer (common for 3 mines within 500m radius) will be responsible for coordination between management district authorities/DGMS etc. Regarding general safety as per Rule-181 of MMR 1961, “No person shall negligently or willfully do anything likely to endanger life or limb in the mine, or negligently or willfully omit to do anything necessary for the safety of the mine or of the persons employed there in”. The workers will be provided with protective footwear and safety helmets;
- Cleaning of mine faces will be regularly done;
- Handling of explosives, charging and blasting will be carried out by highly skilled laborers only;
- Regular maintenance and testing of all mining equipment as per manufacturer’s guidelines;
- Suppression of dust by sprinkling water on the haulage roads;

7.1.5 Safety Team:

The effective implementation of compliance of Safety Rules/ Statutory Provisions will be ensured. The safety officer will be engaged, meeting the requirement of Mines Act and their duties and responsibilities. The safety officer will be responsible for identification of the hazardous conditions and unsafe acts of workers and advice on corrective actions, conduct safety audit, organize training programs and provide professional expert advice on various issues related to occupational safety and health. Organizing safety training will be conducted to employees and contractor laborers periodically.

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7.1.6 *Emergency Control Centre*

The emergency control center will be provided to handle the emergency. The site main controller, key personnel and the senior officers of the fire and police services will attend it. The center will be equipped to receive and transmit information and directions from and to the incident controller and other areas of the works, as well as outside. The emergency control center will be sited in an area of minimum risk. This common Emergency control centre will be used for the mines around the 500m radius

7.2 DISASTER MANAGEMENT

The possible risks in the case of stone along with associated minor minerals mining projects are fly rock, vibration failure of pit, slope and waste dump, accidents due to transportation. Mining and allied activities are associated with several potential hazards to both the employees and the public at large. Safety of the mine and the employees is taken care of by the mining rules & regulations, which are well defined with laid down procedure for safety, which when scrupulously followed, safety is ensured not only to manpower but also to machines & working environment.

7.2.1 *Emergency Management Plan For Proposed Mines On Site- Offsite Emergency Preparedness Plan:*

The emergency plan delineates the procedures for dealing with accidents or unexpected events and natural calamities arising from mining activity. An experience of any accidents that have occurred in other manufacturing/mining projects is considered to prepare this plan. This Emergency plan should be periodically reviewed and modified. It should also be changed based on the observations of emergency mock drills and experience of handling actual emergencies.

Major objectives of this onsite – offsite emergency plan are:

- To take necessary proactive and preventive actions to avoid the emergency.

The main aim of any emergency plan should be to prevent emergency situations.

To train the manpower to handle the emergencies of the following nature:

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- Onsite (Within ML boundary)
- Offsite (Outside ML boundary)

7.2.1 *Onsite off-site emergency Plan:*

1- Emergency on account of:

- Fire
- Explosion
- Major accidents involving man-made collapse of the mining edges.
- Snake bites, attack by honey bees or attack by wild animals.

2- Disaster due to natural calamities like:

- Flood/ heavy rains which can involve natural landslides.
- Earth quake
- Cyclone
- Lightening

7.2.2 *Emergency Plan:*

- The mining operations should be immediately stopped in case of any emergency. A siren will be sounded during emergency time.
- An emergency assembly point will be created and all the workers will guide visitors or contractors to approach assembly point.
- Emergency vehicle (Ambulance) will be available in the nearby place, in proximity to the three mines and will rush to the emergency control centre at the blowing of emergency siren. The driver of emergency vehicle will follow the instructions of Incident Controller/Site Main Controller.
- Workers will be trained for the precautions to be taken during natural disasters like heavy rain, floods, earthquake and cyclone.
- All escape routes from mines to the assembly point or any other safe location will be made and the escape plan will be displayed in many places in the mine area

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7.2.3 *Emergency Control:*

- Shut down of mining operations: Raising the alarm or siren followed by immediate safe shut down of the power supply, and isolation of affected areas.
- Treatment of injured: First aid and hospitalization of injured persons
- Protection of environment and property: During mitigation, efforts will be made to prevent impacts on environment and property to the extent possible.
- Preserving all evidences and records: This will be done to enable a thorough investigation of the true causes of the emergency.
- Ensuring safety of personnel prior to restarting of operations: Efforts required will be made to ensure that work environment is safe prior to restarting the work.

7.3 NATURAL RESOURCE CONSERVATION

There are no natural resources within the premises. The conservation strategies for energy will be followed in the proposed mine lease area. The pollutants of the mine will be minimized by adopting appropriate mitigation measures as mentioned Chapter 5 to prevent the effects on nearest water bodies. No surface runoff from the project site will be let into the nearest water bodies.

7.4 RESETTLEMENT AND REHABILITATION:

The proposed Mine lease area is a patta land. There is no displacement of the population within the project area and adjacent nearby area and hence Rehabilitation & Resettlement is not applicable.

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8 Project Benefits

8.1 GENERAL

This chapter covers the benefits accruing to the locality, neighborhood, region and nation as a whole. It brings out the details of benefits by way of improvements in the physical infrastructure, social infrastructure, employment potential and other tangible benefits.

8.1.1 *Physical Benefits*

The opening of the proposed project will enhance the following physical infrastructure facilities in the adjoining areas:

Market: Generating useful economical resource for construction. Due to demand supply chain, excavated mineral (Rough stone) will sold in the market in the affordable price.

Infrastructure: The excavated rough stone will be used for *Laying Roads, Building & Construction Projects, Bridges.*

Enhancement of Green Cover & Green Belt Development: As a part of reclamation plan, native tree species will be planted along the safety boundary of the mine lease area. A suitable combination of trees that can grow fast and also have good leaf cover will be adopted to develop the green belt. It is proposed to plant 275 numbers of native species along with some fruit bearing and medicinal trees during the mining plan period.

8.2 SOCIAL BENEFITS

The mining in the area will create rural employment. During site visit, it has been observed that the economic conditions of the villages in the study area is quite normal. After the development of the proposed mine, it will improve the livelihood of local people and also provide the indirect employment opportunities. The rough stone for the infrastructural development in the area will be made available from the local markets at reasonably lower price.

As a part of CER, i.e., 5 Lakhs will be allocated. The detailed agenda, which is to be executed has been framed. The salient features of the programmes are as follows:

<i>Project</i>	<i>Rough stone and Gravel Quarry- 1.24.0 Ha</i>	<i>Draft EIA Report</i>
<i>Project Proponent</i>	<i>Svart Sten Associates</i>	
<i>Project Location</i>	<i>A.P. Nadanoor Village, Alangulam Taluk, Tenkasi (Tirunelveli) District</i>	

Construction of Infrastructure, additional class room, Environmental books for library (in Tamil language), Greenbelt facilities and basic amenities such as safe drinking water, Hygienic Toilets facilities, furniture to Government higher secondary School.

8.3 PROJECT COST / INVESTMENT DETAILS

1	<u>C. Fixed Asset Cost:</u> Land Cost Labour shed Sanitary Facility Fencing Cost Total=	: : Rs. 12,50,000/- : Rs.1,50,000/- : Rs. 70,000 : Rs.1,00,000 : Rs. 15,70,000/-
2	<u>D. Operational Cost:</u> 1.Machineries	: Rs.30,00,000/-
	Total Project Cost(A+B)	: Rs. 45,70,000/-

EMP Cost:

	Mitigation Measure	Provision for Implementation	Capital	Recurring
Air Environment	Compaction, gradation and drainage on both sides for Haulage Road	Rental Dozer & drainage construction on haul road @ Rs. 10,000/- per hectare; and yearly maintenance @ Rs. 10,000/- per hectare	12400	12400
	Fixed Water Sprinkling Arrangements + Water sprinkling by own water tankers	Fixed Sprinkler Installation and New Water Tanker Cost for Capital; and Water	80000 0	50000

Project	Rough stone and Gravel Quarry- 1.24.0 Ha	Draft EIA Report
Project Proponent	Svart Sten Associates	
Project Location	A.P. Nadanoor Village, Alangulam Taluk, Tenkasi (Tirunelveli) District	

		Sprinkling (thrice a day) Cost for recurring		
	Air Quality will be regularly monitored as per norms within ML area & Ambient Area	Yearly Compliance as per CPCB norms	0	50000
	Muffle blasting – To control fly rocks during blasting	Blasting face will be covered with sand bags / steel mesh / old tyres / used conveyor belts	0	5000
	Wet drilling procedure / latest eco-friendly drill machine with separate dust extractor unit	Dust extractor @ Rs. 25,000/- per unit deployed as capital & @ Rs. 2500 per unit recurring cost for maintenance	12500 0	12500
	No overloading of trucks/tippers/tractors	Manual Monitoring through Security guard	0	5000
	Stone carrying trucks will be covered by tarpaulin	Monitoring if trucks will be covered by tarpaulin	0	10000
	Enforcing speed limits of 20 km/hr within ML area	Installation of Speed Governors @ Rs. 5000/- per Tipper/Dumper deployed	10000	0
	Regular monitoring of exhaust fumes as per RTO norms	Monitoring of Exhaust Fumes by Manual Labour	0	5000
	Regular sweeping and maintenance of approach roads for at least about 200 m from ML Area	Provision for 2 labours @ Rs.10,000/labour (Contractual) per Hectare	0	10000
	Installing wheel wash system near gate of quarry	Installation + Maintenance + Supervision	50000	20000
Noise Environment	Source of noise will be during operation of transportation vehicles, HEMM for this proper maintenance will be done at regular intervals.	Provision made in Operating Cost	0	0

Project	Rough stone and Gravel Quarry- 1.24.0 Ha	Draft EIA Report
Project Proponent	Svart Sten Associates	
Project Location	A.P. Nadanoor Village, Alangulam Taluk, Tenkasi (Tirunelveli) District	

	Oiling & greasing of Transport vehicles and HEMM at regular interval will be done	Provision made in Operating Cost	0	0
	Adequate silencers will be provided in all the diesel engines of vehicles.	Provision made in Operating Cost	0	0
	It will be ensured that all transportation vehicles carry a fitness certificate.	Provision made in Operating Cost	0	0
	Safety tools and implements that are required will be kept adequately near blasting site at the time of charging.	Provision made in OHS part	0	0
	Line Drilling all along the boundary to reduce the PPV from blasting activity and implementing controlled blasting.	Provision made in Operating Cost	0	0
	Proper warning system before blasting will be adopted and clearance of the area before blasting will be ensured.	Blowing Whistle by Mining Mate / Blaster / Compentent Person	0	0
	Provision for Portable blaster shed	Installation of Portable blasting shelter	50000	2000
	NONEL Blasting will be practiced to control Ground vibration and fly rocks	Rs. 30/- per 6 Tonnes of Blasted Material	0	100000
Water Environment	Water management	Provision for garland drain @ Rs. 10,000/- per Hectare with maintenance of Rs. 5,000/- per annum	12400	5000
Waste Management	Waste management (Spent Oil, Grease etc.,)	Provision for domestic waste collection and disposal through authorized agency	25000	20000
		Installation of dust bins	5000	2000
	Bio toilets will be made available outside mine lease on the land of owner itself	Provision made in Operating Cost	0	0
Implementation of EC, Mining Plan &	Size 6' X 5' with blue background and white letters as mentioned in MoM Appendix II by the SEAC TN	Fixed Display Board at the Quarry Entrance as permanent structure mentioning Environmental Conditions	10000	1000

Project	Rough stone and Gravel Quarry- 1.24.0 Ha	Draft EIA Report
Project Proponent	Svart Sten Associates	
Project Location	A.P. Nadanoor Village, Alangulam Taluk, Tenkasi (Tirunelveli) District	

DGMS Condition	Workers will be provided with Personal Protective Equipment's	Provision of PPE @ Rs. 4000/- per employee with recurring based on wear and tear (say, @ Rs. 1000/- per employee)	60000	15000
	Health check up for workers will be provisioned	IME & PME Health check up @ Rs. 1000/- per employee	0	15000
	First aid facility will be provided	Provision of 2 Kits per Hectare @ Rs. 2000/-	0	2000
	Mine will have safety precaution signages, boards.	Provision for signages and boards made	10000	2000
	Barbed Wire Fencing to quarry area will be provisioned.	Per Hectare fencing Cost @ Rs. 2,00,000/- with Maintenance of Rs 10,000/- per annum	248000	12400
	No parking will be provided on the transport routes. Separate provision on the south side of the hill will be made for vehicles /HEMMs. Flaggers will be deployed for traffic management	Parking area with shelter and flags @ Rs. 50,000/- per hectare project and Rs. 10,000/- as maintenance cost	62000	12400
	Installation of CCTV cameras in the mines and mine entrance	Camera 4 Nos, DVR, Monitor with internet facility	30000	5000
	Implementation as per Mining Plan and ensure safe quarry working	Mines Manager (1 st Class / 2 nd Class / Mine Foreman) under regulation 34 / 34 (6) of MMR, 1961 and Mining Mate under regulation 116 of MMR,1961 @ 40,000/- for Manager & @ 25,000/- for Foreman / Mate	0	780000

Project	Rough stone and Gravel Quarry- 1.24.0 Ha	Draft EIA Report
Project Proponent	Svart Sten Associates	
Project Location	A.P. Nadanoor Village, Alangulam Taluk, Tenkasi (Tirunelveli) District	

Green Belt Development	Green belt development - 500 trees per one hectare (200 Inside Lease Area & 300 Outside Lease Area)	Site clearance, preparation of land, digging of pits / trenches, soil amendments, transplantation of saplings @ 200 per plant (capital) for plantation inside the lease area and @ 30 per plant maintenance (recurring)	60000	9000
		Avenue Plantation @ 300 per plant (capital) for plantation outside the lease area and @ 30 per plant maintenance (recurring)	120000	12000
			1689800	1174700
		Total	2864500	

Year 1	Year 2	Year 3	Year 4	Year 5
2864500	1233435	1295107	1359862	1427855

Total EMP Cost -81 (Lakhs)

<i>Project</i>	<i>Rough stone and Gravel Quarry- 1.24.0 Ha</i>	<i>Draft EIA Report</i>
<i>Project Proponent</i>	<i>Svart Sten Associates</i>	
<i>Project Location</i>	<i>A.P. Nadanoor Village, Alangulam Taluk, Tenkasi (Tirunelveli) District</i>	

9 Environmental Management Plan

9.1 INTRODUCTION

This chapter comprehensively presents the Environmental Management Plan (EMP), which includes the administrative and technical setup, summary matrix of EMP, the cost involved to implement the EMP, during various Mining activities and provisions made towards the same in the cost estimates of project. This chapter describes the proposed monitoring scheme as well as inter-organizational arrangements for effective implementation of the mitigation measures.

9.2 SUBSIDENCE

Mining will be carried out by opencast mechanized mining method with drilling & blasting as per mining plan approved by Department of Mining and Geology, Tenkasi (Tirunelveli). Subsidence/slope failures are not envisaged because there are no loose strata overlying the deposit (mineral to be excavated). The bench height will be 5m. The individual bench slope has been proposed to be kept at 60° from horizontal. Moreover, all safety standards/ safeguards will be implemented as per guidelines prescribed by Director General of Mines Safety.

9.3 MINE DRAINAGE

9.3.1 *Storm water Management*

The following measures will be taken with respect to the prevailing site conditions.

- Storm water drains with silt traps of size 1m x 1m will be suitably constructed all along the periphery of the pit area to collect the run-off from the mine area and divert into the pit.
- All measures will be taken not to disturb the existing drainage pattern adjacent to the mine lease area.
- The storm water collected from the mine area will be utilized for dust suppression on haul roads, plantation within the premises, etc.,

9.3.2 *Drainage*

Local workers will be deployed for the project. But, urinals and Latrines will be provided and the same will be connected to septic tank followed by soak pit arrangement. No domestic waste will be deposited into the nearby area. Regular checking will be carried out to find any

<i>Project</i>	<i>Rough stone and Gravel Quarry- 1.24.0 Ha</i>	<i>Draft EIA Report</i>
<i>Project Proponent</i>	<i>Svart Sten Associates</i>	
<i>Project Location</i>	<i>A.P. Nadanoor Village, Alangulam Taluk, Tenkasi (Tirunelveli) District</i>	

blockage due to silting or accumulation of loose materials. The drains will also be checked for any damage in lining / stone pitching, etc.

9.3.3 *Administrative and Technical Setup*

The Environment Management Plan (EMP) will consist of all mitigation measures for each component of the environment due to the activities increased during mining operation to minimize adverse environmental impacts resulting from the activities of the project.

To carry out the above activities, M/s. Svart Sten Associates will work in association with M/s. Ecotech Labs Pvt Ltd.

Project	Rough stone and Gravel Quarry- 1.24.0 Ha	Draft EIA Report
Project Proponent	Svart Sten Associates	
Project Location	A.P. Nadanoor Village, Alangulam Taluk, Tenkasi (Tirunelveli) District	

Table 9-1: Impacts and mitigation measures

S. No	Impacts on Environment	Activity / Aspect	Anticipated impacts	Mitigation measures
1.	Air	Fugitive Emission	During mining operation, fugitive dust and other air pollutants like particulate matter (PM10 & PM 2.5) will be generated.	Planting of trees along the safety distance of the Mine Lease Area Water will be sprinkled in the site as dust suppression measure.
2.	Water	Wastewater Generation	Improper management of Domestic wastewater in the Mine lease may create unhygienic conditions in the site thereby causing health impacts to the labors	Provision of urinals/Latrines along with septic tank followed by soak pit arrangement will be provided in the Mine Lease area for the proper management of wastewater.
3.	Noise	Mining activities like drilling, blasting, loading and transportation	Noise from the machinery can cause hypertension, high stress level, hearing loss, sleep disturbance etc due to prolonged exposure. Apart from Mining activities like drilling, blasting may generate noise	Use of personal protective devices i.e., earmuffs and earplugs by workers, who are working in high noise generating areas.
4.	Land	Improper management of Storm water Runoff	Storm water Runoff may result in Soil Erosion	Garland drainage of 1m x 1m will be provided to avoid storm water runoff.
5.	Social Responsibility	Mining workers	Unhygienic site sanitation facilities may cause health damage to workers.	The objective is to ensure health and safety of the workers with effective provisions for the basic facilities of sanitation, drinking water, safety of equipments or machinery etc. The following will be done in the site

<i>Project</i>	<i>Rough stone and Gravel Quarry- 1.24.0 Ha</i>	<i>Draft EIA Report</i>
<i>Project Proponent</i>	<i>Svart Sten Associates</i>	
<i>Project Location</i>	<i>A.P. Nadanoor Village, Alangulam Taluk, Tenkasi (Tirunelveli) District</i>	

				<ul style="list-style-type: none"> ✓ By complying with the safety procedures, norms and guidelines (as applicable) as outlined in the National Building Code of India, Bureau of Indian Standards. ✓ Provide adequate number of decentralized latrines and urinals ✓ Providing Septic tank along with Soak pit arrangement ✓ Providing First Aid room, conducting frequent health checkups to labor and conducting free medical camps ✓ Providing safety helmet, Gloves, Jacket & Boots ✓ Providing measures to prevent fires. Fire fighting extinguishers and buckets of sand will be provided in the construction site
6.	Building materials resource conservation	Building Material consumption	Use of farfetched construction materials than the locally available construction materials may lead to over exploitation of natural resources & increase in carbon footprint.	<ul style="list-style-type: none"> • Use of locally available construction materials.

<i>Project</i>	<i>Rough stone and Gravel Quarry- 1.24.0 Ha</i>	<i>Draft EIA Report</i>
<i>Project Proponent</i>	<i>Svart Sten Associates</i>	
<i>Project Location</i>	<i>A.P. Nadanoor Village, Alangulam Taluk, Tenkasi (Tirunelveli) District</i>	

<i>Project</i>	<i>Rough stone and Gravel Quarry- 1.24.0 Ha</i>	<i>Draft EIA Report</i>
<i>Project Proponent</i>	<i>Svart Sten Associates</i>	
<i>Project Location</i>	<i>A.P. Nadanoor Village, Alangulam Taluk, Tenkasi (Tirunelveli) District</i>	

10 Summary & Conclusion

This chapter summarizes the overall justification for implementation of the project and explains how the potential impacts are mitigated.

10.1 INTRODUCTION

M/s. Svart Sten Associates site is a cluster of four mining project. Total cluster area is 5.62.0 Ha. The individual mine lease area is 1.24.0 Ha of Rough Stone and Gravel Quarry located at S.F.Nos. 477/1, 477/2, 477/6, 478/2 (P), 478/3 (P) and 478/4 (P) of A.P. Nadanoor Village, Alangulam Taluk, Tenkasi (Tirunelveli) District.

10.2 PROJECT OVERVIEW

Table 10-1: Project Overview

S. No.	Description	Details
1	Project Name	Svart Sten Associates Rough Stone and Gravel Quarry
2	Proponent	Svart Sten Associates
3	Mining Lease Area Extent	1.24.0 Ha
4	Location	477/1, 477/2, 477/6, 478/2 (P), 478/3 (P) and 478/4 (P)
5	Latitude	Latitude : 8° 48' 11.8373" N to 8° 48' 9.7487" N
6	Longitude	Longitude : 77° 26' 5.2133" E to 77° 25' 59.9788" E
7	Topography	Plain terrain
8	Site Elevation above MSL	97 m from MSL
9	Topo sheet No.	58 H/5 of Survey of India
10	Minerals of Mine	Rough Stone and Gravel Quarry
11	Proposed production of Mine	216405 m ³ of Rough stone and 22770 cu.m of Gravel
12	Ultimate depth of Mining	42 m below ground level
13	Method of Mining	Open cast mechanized mining

<i>Project</i>	<i>Rough stone and Gravel Quarry- 1.24.0 Ha</i>	<i>Draft EIA Report</i>
<i>Project Proponent</i>	<i>Svart Sten Associates</i>	
<i>Project Location</i>	<i>A.P. Nadanoor Village, Alangulam Taluk, Tenkasi (Tirunelveli) District</i>	

14	Water demand	2.0 KLD
15	Source of water	Water will be supplied through tankers supply
16	Man power	15 Nos.
17	Mining Plan Approval	Mining Plan was approved by The Assistant Director, Geology & Mining, Tenkasi vide letter Rc.No.M2/36809/2020 dated 11.04.2022.
18	Production details	Geological reserves: 480000 m ³ of Rough stone and 24000 cu.m of Gravel Proposed year wise reserves: 216405 m ³ of Rough stone and 22770 cu.m of Gravel
19	Boundary Fencing	7.5 m barrier all along the boundary for adjacent patta lands and 10 m safety distance for Govt. Lands. Fencing will be provided.
20	Disposal of overburden	The overburden is in the form of Gravel formation, it has been removed earlier quarry operation. The excavated rough stone will be directly loaded into tipper to the needy crushers/ other buyers for road project and construction works for filling and levelling of low lying areas.
21	Ground water	Ground water table in this area is below 53 mts from ground level. The quarrying is up to a maximum depth of 17m below the ground level. Hence the quarry operation will not be affected by the ground water. There are few agricultural wells within 1 km radius of the project area.
22	Habitations within 300m radius of the Project Site	There is no Habitation within 300m radius of the project site.
23	Drinking water	Water will be supplied through tankers from Murugandiyur village which is 0.50 Km W of the area

<i>Project</i>	<i>Rough stone and Gravel Quarry- 1.24.0 Ha</i>	<i>Draft EIA Report</i>
<i>Project Proponent</i>	<i>Svart Sten Associates</i>	
<i>Project Location</i>	<i>A.P. Nadanoor Village, Alangulam Taluk, Tenkasi (Tirunelveli) District</i>	

10.3 JUSTIFICATION OF THE PROPOSED PROJECT

The said project plays a significant role in the domestic as well as infrastructural market. To achieve a huge infrastructure being envisaged by Government of India, particularly in road and housing sector, there is a need for basic building materials. The rough stone form the primary building material.

Rough stone is one of the most valuable natural building materials. Aggregates are mostly used for building roads and footpaths Aggregates – stone used for its strong physical properties – crushed and sorted into various sizes for use in concrete, coated with bitumen to make asphalt or used 'dry' as bulk fill in construction. Mostly used in roads, concrete and building products. Aggregates represent about 98% of quarry output, most of which is used in road construction, maintenance and repair. Much of this goes to the production of asphalt; the remainder is used 'dry' without the addition of other materials to provide a sturdy base for roads.

Southern Granulite Terrain (SGT) of Tamil Nadu lying south of Palaghat-Cauvery shear zone has been divided into two major tectonic blocks by the Madurai block and Nagercoil-Trivandrum Block in the south. It is separated by WNW-ESE trending Achankovil-Tambaraparani Lineament. Tirunelveli and Thothukudi are significantly the only districts in the state to witness the geology and structure of both the blocks. Tirunelveli district represents a well-developed lithopackage of meta-sedimentary sequence inter banded with charnockite Group of rocks. The rock types exposed are of quartzite, calc-granulite, garnet-biotite-sillimanite gneiss, garnet quartzo-feldspathic gneiss and garnetbiotite-cordierite gneiss belonging to Khondalite Group of rock. Charnockite and pyroxene granulite are the Charnockite Group. Hornblende-biotite gneiss belongs to Migmatitic Complex. Besides, basic intrusive (pyroxenite) and acid intrusive (granite) are noticed. The younger intrusive are represented by pegmatite and quartz veins. Evidence of development of incipient / patchy charnockite along the shear plane is noticed in the district along the Western Ghat high hills

<i>Project</i>	<i>Rough stone and Gravel Quarry- 1.24.0 Ha</i>	<i>Draft EIA Report</i>
<i>Project Proponent</i>	<i>Svart Sten Associates</i>	
<i>Project Location</i>	<i>A.P. Nadanoor Village, Alangulam Taluk, Tenkasi (Tirunelveli) District</i>	

Table 10-2: Anticipate Impacts & Appropriate Mitigation Measures

S. No.	Potential Impact	Mitigation Measure
1	The main impact in the air environment is dust emission during various mining activities such drilling, blasting, excavation, loading and transportation. The dust emission may affect the quality of ambient air in the and around the mine area. The increased emission may cause respiratory & Cardiovascular problems in human health	Proper mitigation measures like water sprinkling on haul roads will be adopted to control dust emissions. To control the emissions regular preventive maintenance of equipments will be carried out on contractual basis. Plantation will be carried out along approach roads & mine premises.
2	Waste water will be generated due to mining activity and from other domestic activities. These may contaminate the ground water leading to ground water. The mining activity may affect the ground water table	No waste water will be generated from the mining activity of minor minerals as the project only involves lifting of over burden from mine site. The wastewater generated from the domestic activity will be disposed off safely through the proposed septic tank. Mining will not intersect ground water table. Hence the water table will not be impacted due to the proposed project
3	Noise will be generated in the mine area during various mining activities such as blasting, drilling, excavation. During transportation of the mined out mineral, there may be noise generation due to the movement of vehicles. This may impact the health condition of the workers by creating headache	Periodical monitoring of noise will be done. No other equipments except the transportation vehicles and Excavator (as & when required) for loading will be allowed at site.

<i>Project</i>	<i>Rough stone and Gravel Quarry- 1.24.0 Ha</i>	<i>Draft EIA Report</i>
<i>Project Proponent</i>	<i>Svart Sten Associates</i>	
<i>Project Location</i>	<i>A.P. Nadanoor Village, Alangulam Taluk, Tenkasi (Tirunelveli) District</i>	

		<p>Noise generated by these equipments shall be intermittent and does not cause much adverse impact.</p> <p>Plantation will be carried out along approach roads. The plantation minimizes propagation of noise and also arrest dust.</p>
4	Solid waste will be generated from the mining activity as there will be refuse after 95% recovery and also generation of domestic waste	<p>The 100% recovery is achieved by extracting the entire mineable reserve. Hence there will be no refuse generation due to the mining activity. Apart from that, a very meagre quantity of domestic waste will be generated in the project, which will be handed over to the local body on daily basis.</p>
5	During mining activities, there are chances of workers getting health issues or may be prone to accidents	<p>Dust masks will be provided as additional personal protection equipment to the workers working in the dust prone area.</p> <p>Periodical trainings will be conducted to create awareness about the occupational health hazards due to activities like blasting, drilling, excavation</p> <p>Workers health related problem if any, will be properly addressed.</p>

<i>Project</i>	<i>Rough stone and Gravel Quarry- 1.24.0 Ha</i>	<i>Draft EIA Report</i>
<i>Project Proponent</i>	<i>Svart Sten Associates</i>	
<i>Project Location</i>	<i>A.P. Nadanoor Village, Alangulam Taluk, Tenkasi (Tirunelveli) District</i>	

11 Disclosure of Consultant

11.1 INTRODUCTION

This chapter presents the details of the environmental consultants engaged, their background and the brief description of the key personnel involved in the project. Specific studies on the mining project have been carried out by engaging engineers/experts of Ecotech Labs Pvt. Ltd, Chennai. Ecotech Labs Pvt. Ltd (ETL), Chennai is NABET accredited consultancy organization. ETL is equipped with in-house, spacious laboratory, accredited by NABL (National Accreditation Board for Testing & Calibration Laboratories), Department of Science & Technology, Government of India and MoEF & CC.

11.2 ECO TECH LABS PVT. LTD – ENVIRONMENT CONSULTANT

Eco Tech Labs Pvt. Ltd is a multi-disciplinary testing and research laboratory in India. Eco Tech labs provides high quality services in environmental consultancy, engineering solution, chemical and microbiological laboratory analysis of food, water and environment (Air, Water, Soil) with highest accuracy.

The Quality policy

- We at Eco Tech Labs Pvt. Ltd. engaged in providing Environmental consulting services and we are committed to strengthen our capabilities in all areas of our operations in line with customer requirements & expectations, applicable legal requirements & stakeholders expectations.
- We are committed to establish and maintain Quality Management System (QMS) for continual improvement in processes and Services
- We are committed to provide customized solutions in realistic, time bound and cost effective to achieve highest degree of customer satisfaction and Environmental improvement.
- We shall establish, maintain & periodically review our documented management systems, objectives and performance in consultation with our employees and prevailing best practices.
- Effective communication of organization's policy and objectives to employees and seeking feedbacks from all our employees and concerned stakeholders for continual improvement.

ANNEXURE-I

**STANDARD TOR CONDITIONS WITH
ADDITIONAL TOR POINTS**



THIRU.DEEPAK S. BILGI, I.F.S.
MEMBER SECRETARY

STATE LEVEL ENVIRONMENT IMPACT
ASSESSMENT AUTHORITY-TAMILNADU
3rd Floor, Panagal Maaligai,
No.1, Jeenis Road, Saidapet,
Chennai - 600 015.
Phone No. 044-24359973
Fax No. 044-24359975

TERMS OF REFERENCE (ToR)

Lr No.SEIAA-TN/F.No.9546/ToR- 1361/2023 Dated: 10.02.2023.

To

M/s. Svart Sten Associates LLP
Asum Tower, Ezhumangad,
Arangottukara Post
Palakkad District,
Kerala - 679 533

Sir / Madam,

Sub: SEIAA, Tamil Nadu – Terms of Reference with public Hearing (ToR) for the proposed Rough stone & gravel over an extent of 1.24.0 Ha at S.F. No: 477/1, 477/2, 477/6, 478/2(P), 478/3(P) & 478/4(P) of A.P.Nadanoor Village, Alangulam Taluk, Tenkasi District, Tamil Nadu by M/s. SvartSten Associates LLP - under project category – “B1” and Schedule S.No.1 (a) – ToR issued along with Public Hearing - preparation of EIA report – Regarding.

Ref: 1. Online proposal No.SIA/TN/MIN/404983/2022, dated: 03.11.2022.
2. Your application submitted for Terms of Reference dated: 07.11.2022.
3. Minutes of the 346th SEAC meeting held on 12.01.2023.
4. Minutes of the 591st Authority meeting held on 10.02.2023.

Kindly refer to your proposal submitted to the State Level Impact Assessment Authority for Terms of Reference.


MEMBER SECRETARY
SEIAA-TN

The proponent, M/s. Svart Sten Associates LLP has submitted application for Terms of Reference (ToR), for the proposed Rough stone & gravel over an extent of 1.24.0 Ha at S.F. No: 477/1, 477/2, 477/6, 478/2(P), 478/3(P) & 478/4(P) of A.P.Nadanoor Village, Alangulam Taluk, Tenkasi District, Tamil Nadu.

SEAC Remarks:-


The proposal was placed in 346th SEAC meeting held on 12.01.2023. The details of the project furnished by the proponent are given in the website (parivesh.nic.in).

The SEAC noted the following:


1. The Project Proponent, M/s. SvartSten Associates LLP has applied for Terms of Reference for the Proposed Rough stone & gravel over an extent of 1.24.0 Ha at S.F. No: 477/1, 477/2, 477/6, 478/2(P), 478/3(P) & 478/4(P) of A.P.Nadanoor Village, Alangulam Taluk, Tenkasi District, Tamil Nadu.
2. The project/activity is covered under Category "B1" of Item 1(a) "Mining Projects" of the Schedule to the EIA Notification, 2006.
3. The Production for the five years states that total quantity should not exceed 2,16,405m³ of rough stone & 22,770m³ of Gravel for an ultimate depth of mining upto 42m (2m Gravel + 40m Rough Stone) with an annual peak production of 56,315m³ for rough stone (5th Year) and 22,770m³ for gravel (1st Year).

Based on the presentation made by the proponent SEAC recommended grant of Terms of Reference (TOR) with Public Hearing, subject to the following TORs, in addition to the standard terms of reference for EIA study for non-coal mining projects and details issued by the MOEF & CC to be included in EIA/EMP Report:


1. Considering the safety aspect, bench width less than 12m is removed and hence the revised quantity is 2,16,130 m³.
2. The proponent is requested to submit the valid registered lease document pertaining to the survey numbers mentioned in the proposal during the EIA appraisal.
3. The proponent is requested to carry out a survey and enumerate on the structures including the crematory shed located within 100m, 200m, 300m from the boundary of the mine lease area.


MEMBER SECRETARY
SEIAA-TN

4. The PP shall furnish DFO letter stating that the proximity distance of Reserve Forests, Protected Areas, Kanyakumari Sanctuary, Tiger reserve etc., upto a radius of 25 km from the proposed site.
5. The proponent shall furnish photographs of adequate fencing, green belt along the periphery including replantation of existing trees & safety distance between the adjacent quarries & water bodies nearby provided as per the approved mining plan.
6. The Project Proponent shall conduct the hydro-geological study considering the contour map of the water table detailing the number of ground water pumping & open wells, and surface water bodies such as rivers, tanks, canals, ponds etc. within 1 km (radius) along with the collected water level data for both monsoon and non-monsoon seasons from the PWD / TWAD so as to assess the impacts on the wells due to mining activity. Necessary data and documentation in this regard may be provided.
7. The proponent shall submit the details regarding the nature of blasting activity which will be carried out.
8. The PP shall provide individual notice regarding the Public Hearing to the nearby house owners located in the vicinity of the project site.
9. In the case of proposed lease in an existing (or old) quarry where the benches are non-existent (or) partially formed critical of the bench geometry approved in the Mining Plan, the Project Proponent (PP) shall prepare and submit an 'Action Plan' for carrying out the realignment of the 'highwall' benches to ensure slope stability in the proposed quarry lease which shall be vetted by the concerned Asst. Director of Geology and Mining, during the time of appraisal for obtaining the EC.
10. The Proponent shall submit a conceptual 'Slope Stability Plan' for the proposed quarry indicating the proposed stabilizing measures during the appraisal while obtaining the EC, as the depth of the proposed working is extended beyond 30 m below ground level.
11. **If the blasting operation is to be carried out, the PP shall present a conceptual design for carrying out the NONEL initiation based controlled blasting operation involving line drilling & muffle blasting through a Simulation Model indicating the anticipated Blast-induced Ground Vibration levels in the proposed quarry satisfying the DGMS Circular No.7 of 1997, during the EIA Proposal.**
12. Details of Green belt & fencing shall be included in the EIA Report.


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13. The EIA Coordinators shall obtain and furnish the details of quarry/quarries operated by the proponent in the past, either in the same location or elsewhere in the State with video and photographic evidences.
14. If the proponent has already carried out the mining activity in the proposed mining lease area after 15.01.2016, then the proponent shall furnish the following details from AD/DD, mines,
 - a) What was the period of the operation and stoppage of the earlier mines with last work permit issued by the AD/DD mines?
 - b) Quantity of minerals mined out.
 - c) Highest production achieved in any one year
 - d) Detail of approved depth of mining.
 - e) Actual depth of the mining achieved earlier.
 - f) Name of the person already mined in that leases area.
 - g) If EC and CTO already obtained, the copy of the same shall be submitted.
 - h) Whether the mining was carried out as per the approved mine plan (or EC if issued) with stipulated benches.
15. All corner coordinates of the mine lease area, superimposed on a High Resolution Imagery/Topo sheet, topographic sheet, geomorphology, lithology and geology of the mining lease area should be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone).
16. The PP shall carry out Drone video survey covering the cluster, Green belt, fencing etc.,
17. The Project Proponent shall provide the details of mineral reserves and mineable reserves, planned production capacity, proposed working methodology with justifications, the anticipated impacts of the mining operations on the surrounding environment and the remedial measures for the same.
18. The Project Proponent shall provide the Organization chart indicating the appointment of various statutory officials and other competent persons to be appointed as per the provisions of Mines Act'1952 and the MMR, 1961 for carrying out the quarrying operations scientifically and systematically in order to ensure safety and to protect the environment.


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19. The proponent shall furnish the baseline data for the environmental and ecological parameters with regard to surface water/ground water quality, air quality, soil quality & flora/fauna including traffic/vehicular movement study.
20. The Proponent shall carry out the Cumulative impact study due to mining operations carried out in the quarry specifically with reference to the specific environment in terms of soil health, biodiversity, air pollution, water pollution, climate change and flood control & health impacts. Accordingly, the Environment Management plan should be prepared keeping the concerned quarry and the surrounding habitations in the mind.
21. Rain water harvesting management with recharging details along with water balance (both monsoon & non-monsoon) be submitted.
22. Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given.
23. Details of the land for storage of Overburden/Waste Dumps (or) Rejects outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be provided.
24. Proximity to Areas declared as 'Critically Polluted' (or) the Project areas which attracts the court restrictions for mining operations, should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the TNPCB (or) Dept. of Geology and Mining should be secured and furnished to the effect that the proposed mining activities could be considered.
25. Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided.
26. Impact on local transport infrastructure due to the Project should be indicated.
27. A tree survey study shall be carried out (nos., name of the species, age, diameter etc.,) both within the mining lease applied area & 300m buffer zone and its management during mining activity.
28. A detailed mine closure plan for the proposed project shall be included in EIA/EMP


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- report which should be site-specific.
29. Public Hearing points raised and commitments of the Project Proponent on the same along with time bound Action Plan with budgetary provisions to implement the same should be provided and also incorporated in the final EIA/EMP Report of the Project and to be submitted to SEIAA/SEAC with regard to the Office Memorandum of MoEF& CC accordingly.
 30. The Public hearing advertisement shall be published in one major National daily and one most circulated vernacular daily.
 31. The PP shall produce/display the EIA report, Executive summery and other related information with respect to public hearing in Tamil Language also.
 32. As a part of the study of flora and fauna around the vicinity of the proposed site, the EIA coordinator shall strive to educate the local students on the importance of preserving local flora and fauna by involving them in the study, wherever possible.
 33. The purpose of Green belt around the project is to capture the fugitive emissions, carbon sequestration and to attenuate the noise generated, in addition to improving the aesthetics. A wide range of indigenous plant species should be planted as given in the **appendix-I** in consultation with the DFO, State Agriculture University. The plant species with dense/moderate canopy of native origin should be chosen. Species of small/medium/tall trees alternating with shrubs should be planted in a mixed manner.
 34. Taller/one year old Saplings raised in appropriate size of bags, preferably eco-friendly bags should be planted as per the advice of local forest authorities/botanist/Horticulturist with regard to site specific choices. The proponent shall earmark the greenbelt area with GPS coordinates all along the boundary of the project site with at least 3 meters wide and in between blocks in an organized manner
 35. A Disaster management Plan shall be prepared and included in the EIA/EMP Report for the complete life of the proposed quarry (or) till the end of the lease period.
 36. A Risk Assessment and management Plan shall be prepared and included in the EIA/EMP Report for the complete life of the proposed quarry (or) till the end of the lease period.
 37. Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination


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- and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed.
38. Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations.
39. The Socio-economic studies should be carried out within a 5 km buffer zone from the mining activity. Measures of socio-economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation.
40. Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.
41. Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc.
42. If any quarrying operations were carried out in the proposed quarrying site for which now the EC is sought, the Project Proponent shall furnish the detailed compliance to EC conditions given in the previous EC with the site photographs which shall duly be certified by MoEF&CC, Regional Office, Chennai (or) the concerned DEE/TNPCB.
- 43. The PP shall prepare the EMP for the entire life/lease of mine and also furnish the sworn affidavit stating to abide the EMP for the entire life of mine.**
44. Concealing any factual information or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this Terms of Conditions besides attracting penal provisions in the Environment (Protection) Act, 1986.

SEIAA Remarks:-

The proposal was placed in the 591st Authority meeting held on 10.02.2023. The proposal is placed in this 346th SEAC Meeting held on 12.01.2023.

Based on the presentation made by the proponent SEAC decided to recommend for grant of Terms of Reference (TOR) with Public Hearing. After detailed deliberations, the Authority accepted the


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recommendations of SEAC and decided to grant Terms of Reference subject to the conditions as recommended by SEAC in addition to the following conditions and conditions stated therein vide Annexure 'B':

1. As per KML file uploaded in Parivesh it is ascertained that there are sheds within 100m and 150m. Hence, as per TNMMCR, 1959, Section V, Rule 36 (1-A) (c), the proponent is requested to obtain permission (NOC) from director of Geology and Mining and shall furnish the same along with EIA Report.

Annexure 'B'

Cluster Management Committee

1. Cluster Management Committee shall be framed which must include all the proponents in the cluster as members including the existing as well as proposed quarry.
2. The members must coordinate among themselves for the effective implementation of EMP as committed including Green Belt Development, Water sprinkling, tree plantation, blasting etc.,
3. The List of members of the committee formed shall be submitted to AD/Mines before the execution of mining lease and the same shall be updated every year to the AD/Mines.
4. Detailed Operational Plan must be submitted which must include the blasting frequency with respect to the nearby quarry situated in the cluster, the usage of haul roads by the individual quarry in the form of route map and network.
5. The committee shall deliberate on risk management plan pertaining to the cluster in a holistic manner especially during natural calamities like intense rain and the mitigation measures considering the inundation of the cluster and evacuation plan.
6. The Cluster Management Committee shall form Environmental Policy to practice sustainable mining in a scientific and systematic manner in accordance with the law. The role played by the committee in implementing the environmental policy devised shall be given in detail.
7. The committee shall furnish action plan regarding the restoration strategy with respect to the individual quarry falling under the cluster in a holistic manner.
8. The committee shall furnish the Emergency Management plan within the cluster.
9. The committee shall deliberate on the health of the workers/staff involved in the mining as well as the health of the public.


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10. The committee shall furnish an action plan to achieve sustainable development goals with reference to water, sanitation & safety.
11. The committee shall furnish the fire safety and evacuation plan in the case of fire accidents.

Impact study of mining

12. Detailed study shall be carried out in regard to impact of mining around the proposed mine lease area covering the entire mine lease period as per precise area communication order issued from reputed research institutions on the following
 - a) Soil health & soil biological, physical land chemical features .
 - b) Climate change leading to Droughts, Floods etc.
 - c) Pollution leading to release of Greenhouse gases (GHG), rise in Temperature, & Livelihood of the local people.
 - d) Possibilities of water contamination and impact on aquatic ecosystem health.
 - e) Agriculture, Forestry & Traditional practices.
 - f) Hydrothermal/Geothermal effect due to destruction in the Environment.
 - g) Bio-geochemical processes and its foot prints including environmental stress.
 - h) Sediment geochemistry in the surface streams.

Agriculture & Agro-Biodiversity


13. Impact on surrounding agricultural fields around the proposed mining Area.
14. Impact on soil flora & vegetation around the project site.
15. Details of type of vegetations including no. of trees & shrubs within the proposed mining area and. If so, transplantation of such vegetations all along the boundary of the proposed mining area shall committed mentioned in EMP.
16. The Environmental Impact Assessment should study the biodiversity, the natural ecosystem, the soil micro flora, fauna and soil seed banks and suggest measures to maintain the natural Ecosystem.
17. Action should specifically suggest for sustainable management of the area and restoration of ecosystem for flow of goods and services.
18. The project proponent shall study and furnish the impact of project on plantations in adjoining patta lands, Horticulture, Agriculture and livestock.

Forests

19. The project proponent shall detailed study on impact of mining on Reserve forests free ranging wildlife.
20. The Environmental Impact Assessment should study impact on forest, vegetation, endemic, vulnerable and endangered indigenous flora and fauna.
21. The Environmental Impact Assessment should study impact on standing trees and the existing trees should be numbered and action suggested for protection.
22. The Environmental Impact Assessment should study impact on protected areas, Reserve Forests, National Parks, Corridors and Wildlife pathways, near project site.

Water Environment

23. Hydro-geological study considering the contour map of the water table detailing the number of ground water pumping & open wells, and surface water bodies such as rivers, tanks, canals, ponds etc. within 1 km (radius) so as to assess the impacts on the nearby waterbodies due to mining activity. Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided, covering the entire mine lease period.
24. Erosion Control measures.
25. Detailed study shall be carried out in regard to impact of mining around the proposed mine lease area on the nearby Villages, Water-bodies/ Rivers, & any ecological fragile areas.
26. The project proponent shall study impact on fish habitats and the food WEB/ food chain in the water body and Reservoir.
27. The project proponent shall study and furnish the details on potential fragmentation impact on natural environment, by the activities.
28. The project proponent shall study and furnish the impact on aquatic plants and animals in water bodies and possible scars on the landscape, damages to nearby caves, heritage site, and archaeological sites possible land form changes visual and aesthetic impacts.
29. The Terms of Reference should specifically study impact on soil health, soil erosion, the soil physical, chemical components and microbial components.
30. The Environmental Impact Assessment should study on wetlands, water bodies, rivers streams, lakes and farmer sites.


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Energy

31. The measures taken to control Noise, Air, Water, Dust Control and steps adopted to efficiently utilise the Energy shall be furnished.

Climate Change

32. The Environmental Impact Assessment shall study in detail the carbon emission and also suggest the measures to mitigate carbon emission including development of carbon sinks and temperature reduction including control of other emission and climate mitigation activities.

33. The Environmental Impact Assessment should study impact on climate change, temperature rise, pollution and above soil & below soil carbon stock.

Mine Closure Plan

34. Detailed Mine Closure Plan covering the entire mine lease period as per precise area communication order issued.

EMP

35. Detailed Environment Management Plan along with adaptation, mitigation & remedial strategies covering the entire mine lease period as per precise area communication order issued.

36. The Environmental Impact Assessment should hold detailed study on EMP with budget for Green belt development and mine closure plan including disaster management plan.

Risk Assessment


37. To furnish risk assessment and management plan including anticipated vulnerabilities during operational and post operational phases of Mining.

Disaster Management Plan

38. To furnish disaster management plan and disaster mitigation measures in regard to all aspects to avoid/reduce vulnerability to hazards & to cope with disaster/untoward accidents in & around the proposed mine lease area due to the proposed method of mining activity & its related activities covering the entire mine lease period as per precise area communication order issued.

Others

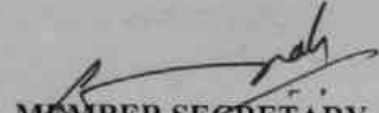
39. The project proponent shall furnish VAO certificate with reference to 300m radius regard to approved habitations, schools, Archaeological sites, Structures, railway lines, roads, water bodies such as streams, odai, vaari, canal, channel, river, lake pond, tank etc.


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40. As per the MoEF& CC office memorandum F.No.22-65/2017-IA.III dated: 30.09.2020 and 20.10.2020 the proponent shall address the concerns raised during the public consultation and all the activities proposed shall be part of the Environment Management Plan.
41. The project proponent shall study and furnish the possible pollution due to plastic and microplastic on the environment. The ecological risks and impacts of plastic & microplastics on aquatic environment and fresh water systems due to activities, contemplated during mining may be investigated and reported.


A. STANDARD TERMS OF REFERENCE

- 1) Year-wise production details since 1994 should be given, clearly stating the highest production achieved in any one year prior to 1994. It may also be categorically informed whether there had been any increase in production after the EIA Notification 1994 came into force, w.r.t. the highest production achieved prior to 1994.
- 2) A copy of the document in support of the fact that the Proponent is the rightful lessee of the mine should be given.
- 3) All documents including approved mine plan, EIA and Public Hearing should be compatible with one another in terms of the mine lease area, production levels, waste generation and its management, mining technology etc. and should be in the name of the lessee.
- 4) All corner coordinates of the mine lease area, superimposed on a High Resolution Imagery/ topo sheet, topographic sheet, geomorphology and geology of the area should be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone).
- 5) Information should be provided in Survey of India Topo sheet in 1:50,000 scale indicating geological map of the area, geomorphology of land forms of the area, existing minerals and mining history of the area, important water bodies, streams and rivers and soil characteristics.
- 6) Details about the land proposed for mining activities should be given with information as to whether mining conforms to the land use policy of the State; land diversion for mining should have approval from State land use board or the concerned authority.
- 7) It should be clearly stated whether the proponent Company has a well laid down Environment Policy approved by its Board of Directors? If so, it may be spelt out in the EIA Report with description of the prescribed operating process/procedures to bring into focus any infringement/deviation/violation of the environmental or forest norms/ conditions? The


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hierarchical system or administrative order of the Company to deal with the environmental issues and for ensuring compliance with the EC conditions may also be given. The system of reporting of non-compliances / violations of environmental norms to the Board of Directors of the Company and/or shareholders or stakeholders at large, may also be detailed in the EIA Report.

- 8) Issues relating to Mine Safety, including subsidence study in case of underground mining and slope study in case of open cast mining, blasting study etc. should be detailed. The proposed safeguard measures in each case should also be provided.
- 9) The study area will comprise of 10 km zone around the mine lease from lease periphery and the data contained in the EIA such as waste generation etc. should be for the life of the mine / lease period.
- 10) Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given.
- 11) Details of the land for any Over Burden Dumps outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be given.
- 12) Certificate from the Competent Authority in the State Forest Department should be provided, confirming the involvement of forest land, if any, in the project area. In the event of any contrary claim by the Project Proponent regarding the status of forests, the site may be inspected by the State Forest Department along with the Regional Office of the Ministry to ascertain the status of forests, based on which, the Certificate in this regard as mentioned above be issued. In all such cases, it would be desirable for representative of the State Forest Department to assist the Expert Appraisal Committees.
- 13) Status of forestry clearance for the broken up area and virgin forestland involved in the Project including deposition of Net Present Value (NPV) and Compensatory Afforestation (CA) should be indicated. A copy of the forestry clearance should also be furnished.
- 14) Implementation status of recognition of forest rights under the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 should be indicated.
- 15) The vegetation in the RF / PF areas in the study area, with necessary details, should be given.


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- 16) A study shall be got done to ascertain the impact of the Mining Project on wildlife of the study area and details furnished. Impact of the project on the wildlife in the surrounding and any other protected area and accordingly, detailed mitigative measures required, should be worked out with cost implications and submitted.
- 17) Location of National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Ramsar site Tiger/ Elephant Reserves/(existing as well as proposed), if any, within 10 km of the mine lease should be clearly indicated, supported by a location map duly authenticated by Chief Wildlife Warden. Necessary clearance, as may be applicable to such projects due to proximity of the ecologically sensitive areas as mentioned above, should be obtained from the Standing Committee of National Board of Wildlife and copy furnished.
- 18) A detailed biological study of the study area [core zone and buffer zone (10 km radius of the periphery of the mine lease)] shall be carried out. Details of flora and fauna, endangered, endemic and RET Species duly authenticated, separately for core and buffer zone should be furnished based on such primary field survey, clearly indicating the Schedule of the fauna present. In case of any scheduled-I fauna found in the study area, the necessary plan along with budgetary provisions for their conservation should be prepared in consultation with State Forest and Wildlife Department and details furnished. Necessary allocation of funds for implementing the same should be made as part of the project cost.
- 19) Proximity to Areas declared as 'Critically Polluted' or the Project areas likely to come under the 'Aravali Range', (attracting court restrictions for mining operations), should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the SPCB or State Mining Department should be secured and furnished to the effect that the proposed mining activities could be considered.
- 20) Similarly, for Coastal Projects, a CRZ map duly authenticated by one of the authorized agencies demarcating LTL, HTL, CRZ area, location of the mine lease with respect to CRZ, coastal features such as mangroves, if any, should be furnished. (Note: The Mining Projects falling under CRZ would also need to obtain approval of the concerned Coastal Zone Management Authority).
- 21) R&R Plan/compensation details for the Project Affected People (PAP) should be furnished. While preparing the R&R Plan, the relevant State/National Rehabilitation & Resettlement Policy should be kept in view. In respect of SCs /STs and other weaker sections of the society


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in the study area, a need based sample survey, family-wise, should be undertaken to assess their requirements, and action programmes prepared and submitted accordingly, integrating the sectoral programmes of line departments of the State Government. It may be clearly brought out whether the village(s) located in the mine lease area will be shifted or not. The issues relating to shifting of village(s) including their R&R and socio-economic aspects should be discussed in the Report.

- 22) One season (non-monsoon) [i.e. March-May (Summer Season); October-December (post monsoon season) ; December-February (winter season)] primary baseline data on ambient air quality as per CPCB Notification of 2009, water quality, noise level, soil and flora and fauna shall be collected and the AAQ and other data so compiled presented date-wise in the EIA and EMP Report. Site-specific meteorological data should also be collected. The location of the monitoring stations should be such as to represent whole of the study area and justified keeping in view the pre-dominant downwind direction and location of sensitive receptors. There should be at least one monitoring station within 500 m of the mine lease in the pre-dominant downwind direction. The mineralogical composition of PM10, particularly for free silica, should be given.
- 23) Air quality modeling should be carried out for prediction of impact of the project on the air quality of the area. It should also take into account the impact of movement of Vehicles for transportation of mineral. The details of the model used and input parameters used for modeling should be provided. The air quality contours may be shown on a location map clearly indicating the location of the site, location of sensitive receptors, if any, and the habitation. The wind roses showing pre-dominant wind direction may also be indicated on the map.
- 24) The water requirement for the Project, its availability and source should be furnished. A detailed water balance should also be provided. Fresh water requirement for the Project should be indicated.
- 25) Necessary clearance from the Competent Authority for drawl of requisite quantity of water for the Project should be provided.
- 26) Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided.
- 27) Impact of the Project on the water quality, both surface and groundwater, should be assessed


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and necessary safeguard measures, if any required, should be provided.

- 28) Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided. In case the working will intersect groundwater table, a detailed Hydro Geological Study should be undertaken and Report furnished. The Report inter-alia, shall include details of the aquifers present and impact of mining activities on these aquifers. Necessary permission from Central Ground Water Authority for working below ground water and for pumping of ground water should also be obtained and copy furnished.
- 29) Details of any stream, seasonal or otherwise, passing through the lease area and modification / diversion proposed, if any, and the impact of the same on the hydrology should be brought out.
- 30) Information on site elevation, working depth, groundwater table etc. Should be provided both in AMSL and bgl. A schematic diagram may also be provided for the same.
- 31) A time bound Progressive Greenbelt Development Plan shall be prepared in a tabular form (indicating the linear and quantitative coverage, plant species and time frame) and submitted, keeping in mind, the same will have to be executed up front on commencement of the Project. Phase-wise plan of plantation and compensatory afforestation should be charted clearly indicating the area to be covered under plantation and the species to be planted. The details of plantation already done should be given. The plant species selected for green belt should have greater ecological value and should be of good utility value to the local population with emphasis on local and native species and the species which are tolerant to pollution.
- 32) Impact on local transport infrastructure due to the Project should be indicated. Projected increase in truck traffic as a result of the Project in the present road network (including those outside the Project area) should be worked out, indicating whether it is capable of handling the incremental load. Arrangement for improving the infrastructure, if contemplated (including action to be taken by other agencies such as State Government) should be covered. Project Proponent shall conduct Impact of Transportation study as per Indian Road Congress Guidelines.
- 33) Details of the onsite shelter and facilities to be provided to the mine workers should be included in the EIA Report.
- 34) Conceptual post mining land use and Reclamation and Restoration of mined out areas (with plans and with adequate number of sections) should be given in the EIA report.


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- 35) Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed.
- 36) Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations.
- 37) Measures of socio economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation.
- 38) Detailed Environmental Management Plan (EMP) to mitigate the environmental impacts which, should inter-alia include the impacts of change of land use, loss of agricultural and grazing land, if any, occupational health impacts besides other impacts specific to the proposed Project.
- 39) Public Hearing points raised and commitment of the Project Proponent on the same along with time bound Action Plan with budgetary provisions to implement the same should be provided and also incorporated in the final EIA/EMP Report of the Project.
- 40) Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given.
- 41) The cost of the Project (capital cost and recurring cost) as well as the cost towards implementation of EMP should be clearly spelt out.
- 42) A Disaster management Plan shall be prepared and included in the EIA/EMP Report.
- 43) Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc.
- 44) Besides the above, the below mentioned general points are also to be followed:-
 - a) Executive Summary of the EIA/EMP Report
 - b) All documents to be properly referenced with index and continuous page numbering.
 - c) Where data are presented in the Report especially in Tables, the period in which the data were collected and the sources should be indicated.
 - d) Project Proponent shall enclose all the analysis/testing reports of water, air, soil, noise


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etc. using the MoEF&CC/NABL accredited laboratories. All the original analysis/testing reports should be available during appraisal of the Project.

- e) Where the documents provided are in a language other than English, an English translation should be provided.
- f) The Questionnaire for environmental appraisal of mining projects as devised earlier by the Ministry shall also be filled and submitted.
- g) While preparing the EIA report, the instructions for the Proponents and instructions for the Consultants issued by MoEF&CC vide O.M. No. J-11013/41/2006-IA. II(I) dated 4th August, 2009, which are available on the website of this Ministry, should be followed.
- h) Changes, if any made in the basic scope and project parameters (as submitted in Form-I and the PFR for securing the TOR) should be brought to the attention of MoEF&CC with reasons for such changes and permission should be sought, as the ToR may also have to be altered. Post Public Hearing changes in structure and content of the draft EIA/EMP (other than modifications arising out of the P.H. process) will entail conducting the PH again with the revised documentation.
- i) As per the circular no. J-11011/618/2010-IA. II(I) dated 30.5.2012, certified report of the status of compliance of the conditions stipulated in the Environment Clearance for the existing operations of the project, should be obtained from the Regional Office of Ministry of Environment, Forest and Climate Change, as may be applicable.
- j) The EIA report should also include (i) surface plan of the area indicating contours of main topographic features, drainage and mining area, (ii) geological maps and sections and (iii) sections of the mine pit and external dumps, if any, clearly showing the land features of the adjoining area.


In addition to the above, the following shall be furnished:-

The Executive summary of the EIA/EMP report in about 8-10 pages should be prepared incorporating the information on following points:

1. Project name and location (Village, District, State, Industrial Estate (if applicable)).
2. Process description in brief, specifically indicating the gaseous emission, liquid effluent and solid and hazardous wastes.
3. Measures for mitigating the impact on the environment and mode of discharge or disposal.
4. Capital cost of the project, estimated time of completion.


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5. The proponent shall furnish the contour map of the water table detailing the number of wells located around the site and impacts on the wells due to mining activity.
6. A detailed study of the lithology of the mining lease area shall be furnished.
7. Details of village map, "A" register and FMB sketch shall be furnished.
8. Detailed mining closure plan for the proposed project approved by the Geology of Mining department shall be submitted along with EIA report.
9. Obtain a letter /certificate from the Assistant Director of Geology and Mining standing that there is no other Minerals/resources like sand in the quarrying area within the approved depth of mining and below depth of mining and the same shall be furnished in the EIA report.
10. EIA report should strictly follow the Environmental Impact Assessment Guidance Manual for Mining of Minerals published February 2010.
11. Detail plan on rehabilitation and reclamation carried out for the stabilization and restoration of the mined areas.
12. The EIA study report shall include the surrounding mining activity, if any.
13. Modeling study for Air, Water and noise shall be carried out in this field and incremental increase in the above study shall be substantiated with mitigation measures.
14. A study on the geological resources available shall be carried out and reported.
15. A specific study on agriculture & livelihood shall be carried out and reported.
16. Impact of soil erosion, soil physical chemical and biological property changes may be assumed.
17. Site selected for the project - Nature of land - Agricultural (single/double crop), barren, Govt./ private land, status of its acquisition, nearby (in 2-3 km.) water body, population, within 10km other industries, forest, eco-sensitive zones, accessibility, (note - in case of industrial estate this information may not be necessary)
18. Baseline environmental data - air quality, surface and ground water quality, soil characteristic, flora and fauna, socio-economic condition of the nearby population
19. Identification of hazards in handling, processing and storage of hazardous material and safety system provided to mitigate the risk.
20. Likely impact of the project on air, water, land, flora-fauna and nearby population
21. Emergency preparedness plan in case of natural or in plant emergencies
22. Issues raised during public hearing (if applicable) and response given


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23. CER plan with proposed expenditure.
24. Occupational Health Measures
25. Post project monitoring plan
26. The project proponent shall carry out detailed hydro geological study through intuitions/NABET Accredited agencies.
27. A detailed report on the green belt development already undertaken is to be furnished and also submit the proposal for green belt activities.
28. The proponent shall propose the suitable control measure to control the fugitive emissions during the operations of the mines.
29. A specific study should include impact on flora & fauna, disturbance to migratory pattern of animals.
30. Reserve funds should be earmarked for proper closure plan.
31. A detailed plan on plastic waste management shall be furnished. Further, the proponent should strictly comply with, Tamil Nadu Government Order (Ms) No.84 Environment and forests (EC.2) Department dated 25.06.2018 regarding ban on one time use and throw away plastics irrespective of thickness with effect from 01.01.2019 under Environment (Protection) Act, 1986. In this connection, the project proponent has to furnish the action plan.


Besides the above, the below mentioned general points should also be followed:-

- a. A note confirming compliance of the TOR, with cross referencing of the relevant sections / pages of the EIA report should be provided.
- b. All documents may be properly referenced with index, page numbers and continuous page numbering.
- c. Where data are presented in the report especially in tables, the period in which the data were collected and the sources should be indicated.
- d. While preparing the EIA report, the instructions for the proponents and instructions for the consultants issued by MoEF& CC vide O.M. No. J-11013/41/2006-IA.II (I) dated 4th August, 2009, which are available on the website of this Ministry should also be followed.
- e. The consultants involved in the preparation of EIA/EMP report after accreditation with Quality Council of India (QCI)/National Accreditation Board of Education and Training (NABET) would need to include a certificate in this regard in the EIA/EMP reports prepared by them and data provided by other organization/Laboratories including their status of


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approvals etc. In this regard circular no F. No.J -11013/77/2004-IA-II(I) dated 2nd December, 2009, 18th March 2010, 28th May 2010, 28th June 2010, 31st December 2010 & 30th September 2011 posted on the Ministry's website <http://www.moef.nic.in/> may be referred.

- After preparing the EIA (as per the generic structure prescribed in Appendix-III of the EIA Notification, 2006) covering the above mentioned points, the proponent will take further necessary action for obtaining environmental clearance in accordance with the procedure prescribed under the EIA Notification, 2006.
- The final EIA report shall be submitted to the SEIAA, Tamil Nadu for obtaining Environmental Clearance.
- The TORs with public hearing prescribed shall be **valid for a period of three years** from the date of issue, for submission of the EIA/EMP report as per OMNo.J-11013/41/2006-IA-II(I)(part) dated 29th August, 2017.


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Copy to:

1. The Additional Chief Secretary to Government, Environment & Forests Department, Govt. of Tamil Nadu, Fort St. George, Chennai - 9
2. The Chairman, Central Pollution Control Board, Parivesh Bhavan, CBD Cum-Office Complex, East Arjun Nagar, New Delhi 110032.
3. The Member Secretary, Tamil Nadu Pollution Control Board, 76, Mount Salai, Guindy, Chennai-600 032.
4. The APCCF (C), Regional Office, MoEF& CC (SZ), 34, HEPC Building, 1st & 2nd Floor, Cathedral Garden Road, Nungambakkam, Chennai -34.
5. Monitoring Cell, IA Division, Ministry of Environment, Forests & CC, Paryavaran Bhavan, CGO Complex, New Delhi 110003
6. The District Collector, Tenkasi District.
7. Stock File.

TOR Reply of Proposed Rough stone & Gravel Quarry Over an Extent of 1.24.0 Ha

COMPLIANCE OF TOR CONDITIONS

Point wise compliance of ToR points issued by SEIAA, TN vide letter No. SEIAA-TN/F. No. 9546/ToR-1361/2023 Dated: 10.02.2023 for Mining of Minor Minerals in the Mine of “Proposed Rough stone & Gravel Quarry Over an Extent of 1.24.0 Ha at S.F.No. 477/1, 477/2, 477/6, 478/2 (P), 478/3(P) & 478/4(P) of A.P.Nadanoor Village, Alangulam Taluk, Tenkasi (Tirunelveli) District, Tamilnadu State.

ToR Ref.	Description	Response	Page Ref. in EIA Report
1	Year-wise production details since 1994 should be given, clearly stating the highest production achieved in any one year prior to 1994. It may also be categorically informed whether there had been any increase in production after the EIA Notification, 1994 came into force w.r.t. the highest production achieved prior to 1994.	<p>Precise Area Communication Letter received from Assistant Director, Department of Geology and Mining; Tenkasi vide letter Rc.No.M2/36809/2020 dated 24.01.2022.</p> <p>Mining Plan was approved by the Assistant Director, Geology & Mining, Tenkasi vide letter Rc.No.M2/36809/2020 dated 11.04.2022</p> <p>As area is being exploited for the first time hence Year-wise production details since 1994 and before 1994 are not relevant or applicable.</p> <p>Proposed Production of Rough Stone & Gravel for five years is proposed in the</p>	<p>Chapter-2</p> <p>Table No.2.2</p> <p>Page No.38</p>

TOR Reply of Proposed Rough stone & Gravel Quarry Over an Extent of 1.24.0 Ha

		Year	Rough stone (m ³)	Gravel (m ³)	
		I	52935	22770	
		II	43660	-	
		III	35385	-	
		IV	28110	-	
		V	56040	-	
		Total	216130	22770	
		EIA/EMP in chapter no-2.			
2.	A copy of document in support of the fact that the Proponent is the rightful lessee of the mine should be given.	The mine lease area of 1.24.0 hectare in A.P. Nadanoor Village for Rough stone and Gravel quarry approved by Assistant Director, Dept. of Geology & Mining, Tenkasi vide Rc.No.M2/36809/2020 dated 11.04.2022	Annexur e-III		
3	All documents including approved mine plan, EIA and public hearing should be compatible with one another in terms of the mine lease area, production levels, waste generation and its management and mining technology and should be in the name of the lessee.	All the documents i.e., Mining Plan, EIA and public hearing are compatible with each other in terms of ML area production levels, waste generation and its management and mining technology are compatible with one another. The mining plan of the project site has been submitted to The Assistant Director, Dept. of Geology & Mining, Tenkasi	Annexure-VI Chapter-II		
4	All corner coordinates of the mine lease area, superimposed on a High-Resolution Imagery/toposheet	Details of coordinates of all corners of proposed mining lease area have been incorporated in mining plan and	Chapter-2,		

TOR Reply of Proposed Rough stone & Gravel Quarry Over an Extent of 1.24.0 Ha

	should be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological features of the study area (core and buffer zone).	Chapter 2 of EIA/ EMP Report.	Fig no. 2.2 Page. no. 42
5	Information should be provided in Survey of India Topo sheet in 1:50,000 scale indicating geological map of the area, important water bodies, streams and rivers and soil characteristics	Topo map as attached in Chapter-2	Chapter-2, Fig no. 2.4 Page. no. 44
6.	Details about the land proposed for mining activities should be given with information as to whether conforms to the land use policy of the state; land diversion for mining should have approval from State land use board or the concerned authority	Details about the land proposed for mining activities should be given Chapter 2.	Chapter-2 Page 43
7	It should be clearly stated whether the proponent company has a well laid down Environment Policy approved by its Board of Directors? If so, it may be spelt out in the EIA report with description of the prescribed operating process/procedures to bring into focus any infringement/deviation/violation of the environmental or forest norms/ conditions?	Noted.	

TOR Reply of Proposed Rough stone & Gravel Quarry Over an Extent of 1.24.0 Ha

	<p>The hierarchical system or administrative order of the Company to deal with the environmental issues and for ensuring compliance with the EC conditions may also be given. The system of reporting of non-compliances / violations of environmental norms to the Board of Directors of the Company and/or shareholders or stakeholders at large may also be detailed in the EIA report.</p>		
8	<p>Issues relating to Mine Safety, including subsidence study in case of underground mining and slope study in case of open cast mining, blasting study etc. should be detailed. The proposed safeguard measures in each case should also be provided.</p>	<p>It is an open cast mining project. Blasting details are incorporated in chapter 2</p>	<p>Chapter-2, Page no.56</p>
9	<p>The study area will comprise of 10 km zone around the mine lease from lease periphery and the data contained in the EIA such as waste generation etc should be for the life of the mine / lease period.</p>	<p>Study area comprises of 10 km radius from the mine lease boundary. Key Plan showing core zone (ML area).</p>	<p>Chapter-2 Fig no. 2.5 Page no.45</p>
10	<p>Land use of the study area delineating forest area, agricultural land, grazing land,</p>	<p>Land Use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, National park,</p>	<p>Chapter-2, Table no. 2.4</p>

TOR Reply of Proposed Rough stone & Gravel Quarry Over an Extent of 1.24.0 Ha

	<p>wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated.</p> <p>Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of land use should be given.</p>	<p>migratory routes of fauna, water bodies, human settlements and other ecological features has been prepared and incorporated in Chapter-3 of EIA/EMP Report.</p> <p>There is no wildlife sanctuary and national park, migratory routes of fauna in the study area.</p>	Page no.47
11	<p>Details of the land for any Over Burden Dumps outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be given.</p>	<p>The over burden in the form of Gravel is used for filling and levelling of low lying areas of road projects and other infrastructure development work in and around the district.</p>	Chapter-2, Page no.53
12	<p>A Certificate from the Competent Authority in the State Forest Department should be provided, confirming the involvement of forest land, if any, in the project area.</p> <p>In the event of any contrary claim by the Project Proponent regarding the status of forests, the site may be inspected by the State Forest</p>	<p>Complied.</p> <p>The proposed mining lease area is not falling under forest land.</p>	

TOR Reply of Proposed Rough stone & Gravel Quarry Over an Extent of 1.24.0 Ha

	Department along with the Regional Office of the Ministry to ascertain the status of forests, based on which, the Certificate in this regard as mentioned above be issued. In all such cases, it would be desirable for representative of the State Forest Department to assist the Expert Appraisal Committees.		
13	Status of forestry clearance for the broken-up area and virgin forestland involved in the Project including deposition of net present value (NPV) and compensatory afforestation (CA) should be indicated. A copy of the forestry clearance should also be furnished.	The proposed mining lease area is not falling under forest land.	
14	Implementation status of recognition of forest rights under the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 should be indicated.	Not Applicable. There is no involvement of forest land in the project area.	
15	The vegetation in the RF / PF areas in the study area, with necessary details, should be given.	Details of flora have been discussed in Chapter-3 of the EIA/EMP Report.	Chapter-3 Pg No. 64

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16	A study shall be got done to ascertain the impact of the Mining Project on wildlife of the study area and details furnished. Impact of the project on the wildlife in the surrounding and any other protected area and accordingly detailed mitigative measures required, should be worked out with cost implications and submitted.	There is a relatively poor sighting of animals in the core and buffer areas of the mining lease. No significant impact is anticipated	
17	Location of National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Tiger/Elephant Reserves/ (existing as well as proposed), if any, within 10km of the mine lease should be clearly indicated, supported by a location map duly authenticated by Chief Wildlife Warden. Necessary clearance, as may be applicable to such projects due to proximity of the ecologically sensitive areas as mentioned above, should be obtained from the Standing Committee of National Board of Wildlife and copy furnished.	There is no National Parks, Sanctuaries, Biosphere Reserves, Wildlife Corridors, Tiger / Elephant Reserves / Critically Polluted areas within 10 km radius of the mining lease area.	

TOR Reply of Proposed Rough stone & Gravel Quarry Over an Extent of 1.24.0 Ha

18	<p>A detailed biological study of the study area [core zone and buffer zone (10 km radius of the periphery of the mine lease)] shall be carried out. Details of flora and fauna, duly authenticated, separately for core and buffer zone should be furnished based on such primary field survey, clearly indicating the Schedule of the fauna present. In case of any scheduled-I fauna found in the study area, the necessary plan for their conservation should be prepared in consultation with State Forest and Wildlife Department and details furnished. Necessary allocation of funds for implementing the same should be made as part of the project cost.</p>	<p>Details biological study (flora & fauna) within 10 km radius of the project site have been incorporated in Chapter-3 of EIA/ EMP Report.</p> <p>No flora & fauna listed in scheduled I have been found in study area so there is no need of conservation plan. However, all care will be taken for protection of flora & fauna, if any in the lease hold area.</p>	<p>Chapter – 3 Pg No. 98</p>
19	<p>Proximity to Areas declared as ‘Critically Polluted’ or the Project areas likely to come under the ‘Aravali Range’, (attracting court restrictions for mining operations), should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the SPCB or State Mining Dept. Should be secured and furnished to the effect that the proposed mining activities</p>	<p>The proposed mining lease area is not falling under critically polluted area.</p>	

TOR Reply of Proposed Rough stone & Gravel Quarry Over an Extent of 1.24.0 Ha

	could be considered.		
20	Similarly, for coastal projects, A CRZ map duly authenticated by one of the authorized agencies Similarly, for coastal projects, A CRZ map duly authenticated by one of the authorized agencies demarcating LTL, HTL, CRZ area, location of the mine lease w.r.t CRZ, coastal features such as mangroves, if any, should be furnished. (Note: The Mining Projects falling under CRZ would also need to obtain approval of the concerned Coastal Zone Management Authority)	There is no Coastal Zone within 15km radius of the project site.	
21	R&R Plan/compensation details for the Project Affected People (PAP) should be furnished. While preparing the R&R Plan, the relevant State/National Rehabilitation & Resettlement Policy should be kept in view. In respect of SCs /STs and other weaker sections of the society in the study area, a need based sample survey, family wise, should be undertaken to assess their requirements, and action programmes prepared and submitted accordingly, integrating the sectoral programmes of line	There is no Rehabilitation and resettlement is involved. Land classified as Patta land	

TOR Reply of Proposed Rough stone & Gravel Quarry Over an Extent of 1.24.0 Ha

	<p>departments of the State Government. It may be clearly brought out whether the village located in the mine lease area will be shifted or not. The issues relating to shifting of Village including their R&R and socio-economic aspects should be discussed in the report.</p>		
22	<p>One season (non-monsoon) and (Summer Season), (Post monsoon) primary baseline data on ambient air quality CPCB Notification of 2009 water quality, noise level, soil and flora and fauna shall be collected and the AAQ and other data so compiled presented date-wise in the EIA and EMP Report.</p> <p>Site-specific meteorological data should also be collected. The location of the monitoring stations should be such as to represent whole of the study area and justified keeping in view the predominant downwind direction and location of sensitive receptors. There should be at least one monitoring station within 500m of the mine lease in the predominant downwind direction.</p>	<p>Baseline data collected during Summer Monsoon (March 2023 to May 2023) has been incorporated in EIA/EMP report.</p> <p>The key plan of monitoring station has been discussed in Chapter-4. Locations of the monitoring stations have been selected keeping in view the predominant downwind direction and location of the sensitive receptors and also that they represent whole of the study area.</p>	Chapter 3

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	The mineralogical composition of PM10, particularly for free silica, should be given.		
23	<p>Air quality modelling should be carried out for prediction of impact of the project on the air quality of the area. It should also take into account the impact of movement of vehicles for transportation of mineral. The details of the model used and input parameters used for modelling should be provided.</p> <p>The air quality contours may be shown on a location map clearly indicating the location of the site, location of sensitive receptors, if any, and the habitation. The wind roses showing predominant wind direction may also be indicated on the map.</p>	<p>Air quality modelling & Impact of Air quality will be furnished in Final EIA report</p> <p>Transportation of mineral during operation of mines will be done by road SH 41 A through dumpers and the impact of movement of vehicles are incorporated in EIA/EMP report.</p> <p>Air quality modelling & Impact of Air quality will be furnished in Final EIA report</p>	<p>Chapter-4</p> <p>Page No.116</p>
24	The water requirement for the Project, its availability and source should be furnished. A detailed water balance should also be provided. Fresh water requirement for the Project should be indicated.	<p>Total water requirement: 2.0 KLD</p> <p>Dust Suppression: 1.0 KLD</p> <p>Domestic Purpose: 0.5 KLD</p> <p>Plantation :0.5 KLD</p> <p>Domestic Water will be sourced from nearby Murugandiyur village which is about 0.50 Km W of the area.</p>	<p>Chapter-2</p> <p>Page no.59</p>
25	Necessary clearance from	Not Applicable	

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	the Competent Authority for drawl of requisite quantity of water for the Project should be provided.	Water will be taken from nearby villages	
26	Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided.	At the last stage of mining operation, almost complete area will be worked to restore the land to its optimum reclamation for future use as water reservoir.	
27	Impact of the project on the water quality, both surface and groundwater should be assessed and necessary safeguard measures, if any required, should be provided.	Impact of the project on the water quality & its mitigation measures has been incorporated in Chapter-4 of EIA/EMP report.	Chapter-4 Page No.117
28	Based on actual monitored data, it may clearly be shown whether working will intersect groundwater. Necessary data and documentation in this regard may be provided. In case the working will intersect groundwater table, a detailed Hydro Geological Study should be undertaken and Report furnished. Necessary permission from Central Ground Water Authority for working below ground water and for pumping of ground water should also be obtained and copy furnished.	Maximum working depth: 42 m BGL The ground water table is reported as 56m below surface ground level in nearby wells of this area. Now, the present quarry shall be proposed above the water table and hence, quarrying may not affect the ground water So mine working will not be intersecting the ground water table.	Chapter-2 Page no. 40
29	Details of any stream, seasonal or	There is no any stream crossing in the	Executive

TOR Reply of Proposed Rough stone & Gravel Quarry Over an Extent of 1.24.0 Ha

	otherwise, passing through the lease area and modification / diversion proposed, if any, and the impact of the same on the hydrology should be brought out.	proposed quarry	Summary
30	Information on site elevation, working depth, groundwater table etc. Should be provided both in AMSL and bgl. A schematic diagram may also be provided for the same.	Highest elevation: 97 MSL Water Table Depth: 53 m Below Ground Level	Chapter-2 Table no. 2.2 Page no. 40
31	A time bound Progressive Greenbelt Development Plan shall be prepared in a tabular form (indicating the linear and quantitative coverage, plant species and time frame) and submitted, keeping in mind, the same will have to be executed up front on commencement of the project. Phase-wise plan of plantation and compensatory afforestation should be charted clearly indicating the area to be covered under plantation and the species to be planted. The plant species selected for green belt should have greater ecological value and should be of good utility value to the local population with emphasis on local and native species and the	Green Belt Development plan is proved given in Chapter 2.	Chapter-2

TOR Reply of Proposed Rough stone & Gravel Quarry Over an Extent of 1.24.0 Ha

	species which are tolerant to pollution		
32	Impact on local transport infrastructure due to the Project should be indicated. Projected increase in truck traffic as a result of the Project in the present road network (including those outside the Project area) should be worked out, indicating whether it is capable of handling the incremental load. Arrangement for improving the infrastructure, if contemplated (including action to be taken by other agencies such as State Government) should be covered. Project proponent shall conduct impact of Transportation study as per Indian Road Congress Guidelines	Impact on local transport infrastructure due to the project has been assessed. There shall not be much impact on local transport. Traffic density from the proposed mining activity has been incorporated in EIA/EMP report.	Chapter-3 Page No.114
33	Details of the onsite shelter and facilities to be provided to the mine workers should be included in the EIA report.	Adequate infrastructure & other facilities shall be provided to the mine workers. Details are given in chapter-2 of EIA/EMP	Chapter-2
34	Conceptual post mining land use and Reclamation and Restoration of mined out areas (with plans and with adequate number of sections) should be given in the EIA report.	Conceptual post mining land use and Reclamation and restoration sectional plates are given in Mining Plan followed by Scheme of mining.	Mining plates Annexure VII
35	Occupational Health impacts of the Project should be anticipated and the	Suitable measure will be adopted to	Chapter-10

TOR Reply of Proposed Rough stone & Gravel Quarry Over an Extent of 1.24.0 Ha

	proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project in the mining area may be detailed.	minimize occupational health impacts of the project. The project shall have positive impact on local environment. Details are given in chapter-10 of EIA/EMP.	Pg No. 151
36	Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations.	Suitable measure will be adopted to minimize occupational health impacts of the project.	Chapter-10 Pg No. 143
37	Measures of socio-economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation.	Suitable measures has been discussed in Chapter 4	Chapter-4 Pg No. 116
38	Detailed environmental management plan to mitigate the environmental impacts which, should inter-alia include the impacts of change of land use, loss of agricultural and grazing land, if any, occupational health impacts besides other impacts specific to the proposed Project.	Environment Management Plan has been described in detail in Chapter-9 of the EIA/EMP Report.	Chapter-9 Pg No. 145

TOR Reply of Proposed Rough stone & Gravel Quarry Over an Extent of 1.24.0 Ha

39	Public hearing points raised and commitment of the project proponent on the same along with time bound action plan to implement the same should be provided and incorporated in the final EIA/EMP Report of the Project.	Public Hearing proceedings will be furnished in Final EIA report													
40	Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the project should be given.	Not applicable No. litigation is pending against the project in any court.													
41	The cost of the project (capital cost and recurring cost) as well as the cost towards implementation of EMP should clearly be spelt out.	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">S. No</th> <th style="text-align: center;">Description</th> <th style="text-align: center;">Cost</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1</td> <td>Fixed Asset Cost</td> <td style="text-align: right;">15,70,000</td> </tr> <tr> <td style="text-align: center;">2</td> <td>Operational Cost</td> <td style="text-align: right;">30,00,000</td> </tr> <tr> <td></td> <td>Total</td> <td style="text-align: right;">45,70,000/-</td> </tr> </tbody> </table>	S. No	Description	Cost	1	Fixed Asset Cost	15,70,000	2	Operational Cost	30,00,000		Total	45,70,000/-	Chapter-8 Pg No. 151
S. No	Description	Cost													
1	Fixed Asset Cost	15,70,000													
2	Operational Cost	30,00,000													
	Total	45,70,000/-													
42	Disaster Management Plan shall be prepared and included in the EIA/EMP Report.	Disaster Management and Risk Assessment has been incorporated in Chapter-7	Chapter-7 Pg No. 136												
43	Benefits of the project if the project is implemented should be spelt out. The benefits of the project shall clearly indicate environmental, social economic, employment potential etc.	Benefits of the project has incorporated	Chapter-8 Pg No. 143												
44	Besides the above, the below mentioned general points are also to be followed:														

TOR Reply of Proposed Rough stone & Gravel Quarry Over an Extent of 1.24.0 Ha

(a)	Executive Summary of the EIA/EMP report	Executive Summary of EIA Report is given from page No.10-25	
(b)	All documents to be properly referenced with index and continuous page numbering.	Complied	
(c)	Where data are presented in the report especially in tables, the period in which the data were collected and the sources should be indicated.	Complied	
(d)	Project Proponent shall enclose all the analysis/testing reports of water, air, soil, noise etc. using the MoEF & CC NABL accredited laboratories. All the original analysis/testing reports should be available during appraisal of the project.	Complied	
(e)	Where the documents provided are in a language other than English, an English translation should be provided.	Complied	
(f)	The Questionnaire for environmental appraisal of mining projects as devised earlier by the Ministry shall also be filled and submitted.	The complete questionnaire has been prepared	
(g)	While preparing the EIA report, the instructions for the proponents and instructions for the consultants issued by MoEF vide O.M. No. J-	The EIA report has been prepared and complying with the circular issued by MoEF vide O.M. No. J-11013/41/2006-IA. II(I) dated 4th August 2009.	

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	11013/41/2006-IA. II(I) dated 4th August 2009, which are available on the website of this Ministry, should also be followed.		
(h)	Changes, if any made in the basic scope and project parameters (as submitted in Form-I and the PFR for securing the TOR) should be brought to the attention of MoEF with reasons for such changes and permission should be sought, as the TOR may also have to be altered. Post Public Hearing changes in structure and content of the draft EIA/EMP (other than modifications arising out of the P.H. process) will entail conducting the PH again with the revised documentation	There are no changes in prepared EIA as per submitted Form-1 & PFR	
(i)	As per the circular no. J-11011/618/2010-IA. II(I) dated 30.5.2012, report on the status of compliance of the conditions stipulated in the environment clearance for the existing operations of the project by the Regional Office of Ministry of Environment & Forest and climate change as may be applicable.	Will be complied after grant environment clearance from SEIAA, Tamilnadu	
(j)	The EIA report should also include (i) surface plan of the area indicating		

TOR Reply of Proposed Rough stone & Gravel Quarry Over an Extent of 1.24.0 Ha

	contours of main topographic features, drainage and mining area, (ii) geological maps and sections (iii) sections of mine pit and external dumps, if any clearly showing the features of the adjoining area.	All Sectional Plates of Quarry is enclosed in Mining Plan.	
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TOR Reply of Proposed Rough stone & Gravel Quarry Over an Extent of 1.24.0 Ha

Additional TOR by SEAC

S.No.	Condition	Compliance
1.	Considering the safety aspect, bench width less than 12 m is removed and hence the revised quantity is 2,16,130 cu.m	Agreed and Noted. The bench width less than 12 m had removed and hence the revised quantity is 2,16,130 cu.m
2.	The proponent is requested to submit the valid registered lease document pertaining to the survey numbers mentioned in the proposal during the EIA Appraisal.	Noted and Agreed to comply. The lease documents all are attached wit EIA Report as Annexure.
3.	The Proponent is requested to carry out a survey and enumerate on the structures including the crematory shed located within 100m, 200m , 300m from the boundary of the mine lease area.	Noted and Agreed to comply. The enumeration study will be attached in Final EIA Report.
4.	The PP shall furnish DFO letter stating that the proximity distance of Reserve Forests, Protected Areas, Kanyakumari Sanctuary, Tiger Reserve, etc., upto a radius of 25 km from the proposed site.	Agreed and Noted. The DFO letter will be attached in final EIA Report.
5.	The proponent shall furnish photographs of adequate fencing, greenbelt along the periphery including replantation of existing trees and safety distance between the adjacent quarries and water bodies nearby provided as per the approved mining plan.	Complied. The photographs of fencing and greenbelt attached as per SEAC Recommendations.
6.	The Project Proponent shall conduct the hydro-geological study considering the contour map of the water table detailing the number of ground water pumping & open wells, and surface water bodies such as rivers, tanks, canals, ponds etc.	Hydro geological study report will be submitted along final EIA report

TOR Reply of Proposed Rough stone & Gravel Quarry Over an Extent of 1.24.0 Ha

	<p>within 1 km (radius) along with the collected water level data for both monsoon and non-monsoon seasons from the PWD / TWAD so as to assess the impacts on the wells due to mining activity. Necessary data and documentation in this regard may be provided.</p>	
7.	<p>The proponent shall submit the details regarding the nature of blasting activity which will be carried out.</p>	<p>The nature of blasting activity has been enclosed within Draft EIA Report.</p>
8.	<p>The PP shall provide individual notice regarding the Public Hearing to the nearby house owners located in the vicinity of the project site.</p>	<p>Noted Agreed to comply.</p>
9.	<p>In the case of proposed lease in an existing (or old) quarry where the benches are not formed (or) partially formed as per the approved Mining Plan, the Project Proponent (PP) shall prepare and submit an 'Action Plan' for carrying out the realignment of the benches in the proposed quarry lease after it is approved by the concerned Asst. Director of Geology and Mining during the time of appraisal for obtaining the EC.</p>	<p>Agreed to comply.</p>
10.	<p>The Proponent shall submit a conceptual 'Slope Stability Plan' for the proposed quarry during the appraisal while obtaining the EC, when the depth of the working is extended beyond 30m below ground level</p>	<p>Noted and Agreed to comply.</p>
11.	<p>If the blasting operation is to be carried out, the PP shall present a conceptual design for carrying out the NONEL initiation</p>	<p>Noted and Agreed to comply.</p>

TOR Reply of Proposed Rough stone & Gravel Quarry Over an Extent of 1.24.0 Ha

	<p>based controlled blasting operation involving line drilling & muffle blasting through a Simulation Model indicating the anticipated Blast-induced Ground Vibration levels in the proposed quarry satisfying the DGMS Circular No.7 of 1997, during the EIA Proposal.</p>	
12.	<p>Details of Greenbelt and Fencing shall be included in the EIA Report</p>	<p>Details of Greenbelt and fencing will be included in Draft EIA Report.</p>
13.	<p>The EIA coordinators shall obtain and furnish the details of quarry/quarries operated by the proponent in the past, either in the same location or elsewhere in the State with video and photographic evidences</p>	<p>Complied. The photographs are attached in EIA Report.</p>
14.	<p>If the proponent has already carried out the mining activity in the proposed mining lease area after 15.01.2016, then the proponent shall furnish the following details from AD/DD, mines,</p> <ol style="list-style-type: none"> a. What was the period of the operation and stoppage of the earlier mines with the last work permit issued by the AD/DD mines? b. Quantity of minerals mines out. c. Highest production achieved in any one year. d. Details of approved depth of mining. e. Actual depth of the mining achieved earlier. f. Name of the person already mined in that leases area. g. If EC and CTO already obtained, the copy of the same shall be submitted. 	<p>It is a fresh quarry (Patta Land) Agree to comply.</p>

TOR Reply of Proposed Rough stone & Gravel Quarry Over an Extent of 1.24.0 Ha

	Whether the mining was carried out as per the approved mine plan (or EC if issued) with stipulated benches.	
15.	All corner coordinates of the mine lease area, superimposed on a High Resolution Imagery/Topo sheet, topographic sheet, geomorphology, lithology and geology of the mining lease area should be provided. Such an Imagery of the proposed area should clearly show the land use and other ecological feature of the study area (core and buffer zone)	Complied. All corners with coordinates of the mine lease area has attached with EIA report in chapter 2
16.	The PP shall carry out Drone vide survey covering the cluster, Greenbelt, Fencing, etc.,	The drone video survey covering the cluster, greenbelt, fencing etc will be attached in Final EIA Report.
17.	The Project Proponent shall provide the details of mineral reserves and mineable reserves, planned production capacity, proposed working methodology with justifications, the anticipated impacts of the mining operations on the surrounding environment and the remedial measures for the same.	The details of Mineable and Planed production capacity has been attached in EIA Report in Executive Summary and the anticipated impacts of mining operation and the remedial measures has been discussed in Chapter 4. The mining methodology and impacts are followed as on prescribed norms by Government.
18.	The Project Proponent shall provide the organization chart indicating the appointment of various statutory officials and other competent persons to be appointed as per the provisions of Mines Act' 1952 and the MMR, 1961 for carrying out the quarrying operations scientifically and systematically in order to ensure safety and to	Complied. Manpower requirements table attached in EIA Report Chapter 2.

TOR Reply of Proposed Rough stone & Gravel Quarry Over an Extent of 1.24.0 Ha

	protect the environment.	
19.	The proponent shall furnish the baseline data for the environmental and ecological parameters with regard to surface water/ground water quality, air quality, soil quality & flora/fauna including traffic/vehicular movement study.	The proponent has furnished the baseline data for the environmental and ecological parameters with regard to surface water/ground water quality, air quality, soil quality & flora/fauna including traffic/vehicular movement study details attached in EIA report chapter 3
20.	The Proponent shall carry out the Cumulative impact study due to mining operations carried out in the quarry specifically with reference to the specific environment in terms of soil health, biodiversity, air pollution, water pollution, climate change and flood control & health impacts. Accordingly, the Environment Management plan should be prepared keeping the concerned quarry and the surrounding habitations in the mind.	Noted. Agree to comply.
21.	Rain water harvesting management with recharging details along with water balance (both monsoon & non-monsoon) be submitted.	Noted. Agree to comply
22.	Land use of the study area delineating forest area, agricultural land, grazing land, wildlife sanctuary, national park, migratory routes of fauna, water bodies, human settlements and other ecological features should be indicated. Land use plan of the mine lease area should be prepared to encompass preoperational, operational and post operational phases and submitted. Impact, if any, of change of	Current land use of the study area has attached in EIA report chapter 3. Operational and post operational land use will be submitted.

TOR Reply of Proposed Rough stone & Gravel Quarry Over an Extent of 1.24.0 Ha

	land use should be given	
23.	Details of the land for storage of Overburden/Waste dump (or) Rejects outside the mine lease, such as extent of land area, distance from mine lease, its land use, R&R issues, if any, should be provided.	There is no overburden formed
24.	Proximity to Areas declared as 'Critically Polluted' (or) the Project areas which attracts the court restrictions for mining operations, should also be indicated and where so required, clearance certifications from the prescribed Authorities, such as the TNPCB (or) Dept. of Geology and Mining should be secured and furnished to the effect that the proposed mining activities could be considered	Noted
25.	Description of water conservation measures proposed to be adopted in the Project should be given. Details of rainwater harvesting proposed in the Project, if any, should be provided	The ultimate pit at the end of the mining operation will be used for rainwater storage, the stored water will be used for green belt development and further the stored water will be used for domestic purposes (other than drinking) after proper treatment
26.	Impact on local transport infrastructure due to the Project should be indicated. Traffic impact assessment has given in EIA report chapter	Impact on local transport infrastructure due to the Project should be indicated. Traffic impact assessment has given in EIA report chapter 3
27.	A tree survey study shall be carried out (nos., name of the species, diameter, etc.,) both within the mining lease applied area & 300m buffer zone and its management during mining activity.	No tree species were found inside the project site. only few shrubs and thorny bushes were present. Tree survey study details given in EIA

TOR Reply of Proposed Rough stone & Gravel Quarry Over an Extent of 1.24.0 Ha

		report chapter 3.
28.	A detailed mine closure plan for the proposed project shall be included in EIA/EMP report which should be site-specific.	Noted. The mine plan and mine closure plan has been approved by the Assistant Director, Department of Mining and Geology, Tenkasi District
29.	Public hearing points raised and commitments of the PP on the same along with time bound Action Plan with budgetary provisions to implement the same should be provided and also incorporated in the final EIA/EMP Report of the Project and to be submitted to SEIAA/SEAC with regard to the Office Memorandum of MoEF & CC accordingly.	Noted and will be complied in Final EIA report.
30.	The Public hearing advertisement shall be published in on major National daily and one most circulated vernacular daily	Noted. Agree to comply.
31.	The PP shall produce/display the EIA report, Executive summary and other related information with respect to public hearing Tamil Language also.	Noted
32.	As a part of the study of flora and fauna around the vicinity of the proposed site, the EIA coordinator shall strive to educate the local students on the importance of preserving local flora and fauna by involving them in the study, wherever possible.	Noted. Agree to comply
33	The purpose of Green belt around the project is to capture the fugitive emissions, carbon sequestration and to attenuate the noise generated, in addition to improving the aesthetics. A wide range of indigenous plant species should be planted as given in the appendix-I in consultation with the DFO,	Noted. Agree to comply

TOR Reply of Proposed Rough stone & Gravel Quarry Over an Extent of 1.24.0 Ha

	State Agriculture University and local school/college authorities. The plant species with dense/moderate canopy of native origin should be chosen. Species of small/medium/tall trees alternating with shrubs should be planted in a mixed manner.	
34	Taller/one year old Saplings raised in appropriate size of bags, preferably eco-friendly bags should be planted as per the advice of local forest authorities/botanist/Horticulturist with regard to site specific choices. The proponent shall earmark the greenbelt area with GPS coordinates all along the boundary of the project site with at least 3 meter wide and in between blocks in an organized manner.	The green belt plan enclosed with mining plates in Annexure VI
35	A Disaster management Plan shall be prepared and included in the EIA/EMP Report for the complete life of the proposed quarry (or) till the end of the lease period.	Disaster management plan has prepared and enclosed in Chapter 7.
36	A Risk Assessment and management Plan shall be prepared and included in the EIA/EMP Report for the complete life of the proposed quarry (or) till the end of the lease period.	Risk assessment and management plan has prepared and enclosed in chapter 7.
37	Occupational Health impacts of the Project should be anticipated and the proposed preventive measures spelt out in detail. Details of pre-placement medical examination and periodical medical examination schedules should be incorporated in the EMP. The project specific occupational health mitigation measures with required facilities proposed in the mining area may be detailed.	Occupational Health impacts of the project has prepared and incorporated in Environmental management plan.

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38	Public health implications of the Project and related activities for the population in the impact zone should be systematically evaluated and the proposed remedial measures should be detailed along with budgetary allocations.	Suitable measure will be adopted to minimize occupational health impacts of the project.
39	The Socio-economic studies should be carried out within a 5km buffer zone from the mining activity. Measures of socio-economic significance and influence to the local community proposed to be provided by the Project Proponent should be indicated. As far as possible, quantitative dimensions may be given with time frames for implementation.	The socio-economic study has been discussed in chapter 3.
40	Details of litigation pending against the project, if any, with direction /order passed by any Court of Law against the Project should be given	No. litigation is pending against the project in any court.
41	Benefits of the Project if the Project is implemented should be spelt out. The benefits of the Project shall clearly indicate environmental, social, economic, employment potential, etc.,	Benefits of the project has incorporated in EIA report chapter 8
42	If any quarrying operations were carried out in the proposed quarrying site for which now the EC is sought, the Project Proponent shall furnish the detailed compliance to EC conditions given in the previous EC with the site photographs which shall duly be certified by MoEF&CC, Regional Office, Chennai (or) the concerned DEE/TNPCB	It is a fresh quarry. So, certified compliance report is no needed.
43	The PP shall prepare the EMP for the entire life of mine and also furnish the sworn affidavit stating to abide the EMP for the entire life of mine.	Noted. Agree to comply.

TOR Reply of Proposed Rough stone & Gravel Quarry Over an Extent of 1.24.0 Ha

44	Concealing any factual information or submission of false/fabricated data and failure to comply with any of the Condition mentioned above may result in withdrawal of this Terms of conditions besides attracting penal provisions in the Environment (Protection) Act, 1986	Noted.
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Additional TOR by SEIAA

S.No.	Condition	Compliance
Cluster Management Committee		
1.	Cluster Management Committee shall be framed which must include all the proponents in the cluster as members including the existing as well as proposed quarry	Noted and Complied. All the proponents in the cluster is discussed in Chapter-2, Page number-35
2.	The members must coordinate among themselves for the effective implementation of EMP as committed including Green Belt Development, Water sprinkling, tree plantation, blasting etc.,	Green belt development, water sprinkling, tree plantation is discussed in chapter-2, Page number-58
3.	The List of members of the committee formed shall be submitted to AD/Mines before the execution of mining lease and the same shall be updated every year to the AD/Mines.	Agreed to comply.
4	Detailed Operational Plan must be submitted which must include the blasting frequency with respect to the nearby quarry situated in the cluster, the usage of haul roads by the individual quarry in the form of route map and network.	Agreed to comply. It will be furnished in final EIA report.
5.	The committee shall deliberate on risk management plan pertaining to the cluster in a holistic manner especially during natural	Risk management plan is discussed in Chapter-7, page number-135

TOR Reply of Proposed Rough stone & Gravel Quarry Over an Extent of 1.24.0 Ha

	calamities like intense rain and the mitigation measures considering the inundation of the cluster and evacuation plan	
6.	The Cluster Management Committee shall form Environmental Policy to practice sustainable mining in a scientific and systematic manner in accordance with the law. The role played by the committee in implementing the environmental policy devised shall be given in detail.	Agreed to comply. It will be furnished in final EIA report.
7.	The committee shall furnish action plan regarding the restoration strategy with respect to the individual quarry falling under the cluster in a holistic manner.	Agreed to comply. It will be furnished in final EIA report.
8.	The committee shall furnish the Emergency Management plan within the cluster.	Emergency management plan is discussed in Chapter-7, page number-139
9.	The committee shall deliberate on the health of the workers/staff involved in the mining as well as the health of the public.	Health of workers and staff is discussed in Chapter-9 Page number-153
10.	The committee shall furnish an action plan to achieve sustainable development goals with reference to water, sanitation and safety.	Agreed to comply. It will be furnished in final EIA report
11.	The committee shall furnish the fire safety and evacuation plan in the case of fire accidents	Fire safety and evacuation plan is discussed in chapter-7
Impact Study of Mining		
12	Detailed study shall be carried out in regard to impact of mining around the proposed mine lease area covering the entire mine lease period as per precise area communication order issued from	The biodiversity has been studied and discussed in chapter 3. The soil erosion map 5km surrounding the project site has

TOR Reply of Proposed Rough stone & Gravel Quarry Over an Extent of 1.24.0 Ha

	<p>reputed research institutions on the following.</p> <ul style="list-style-type: none"> a) Soil health & bio-diversity b) Climate change leading to Droughts, Floods etc., c) Pollution leading to release Greenhouse gases (GHG), rise in Temperature & Livelihood of the local people. d) Possibilities of water containment and impact on aquatic ecosystem health. e) Agriculture, Forestry & Traditional practices. f) Hydrothermal/Geothermal effects due to destruction in the Environment. g) Bio-geochemical processes and its foot prints including environmental stress h) Sediment geochemistry in the surface streams <p>Sediment geochemistry in the surface streams.</p>	<p>been given in chapter 3.</p> <p>The detailed study will be carried out and will be enclosed in the Draft EIA Report.</p>
Agriculture & Agro-Biodiversity		
13.	Impact on surrounding agricultural fields around the proposed mining area.	There is no agricultural fields around the proposed mining area
14.	Impact on soil flora & vegetation around the project site	Impact on soil flora & vegetation around the project site discussed in Chapter-4 page number-110
15	Details of type of vegetation no.of trees & shrubs within the proposed mining area and. If so, transplantation of such vegetations all along the boundary of the proposed mining area shall committed mentioned in EMP.	Type of vegetation no.of trees & shrubs is discussed in Chapter-3 page number-100
16.	The Environmental Impact Assessment should	The biodiversity has been studied

TOR Reply of Proposed Rough stone & Gravel Quarry Over an Extent of 1.24.0 Ha

	study the biodiversity, the natural ecosystem, the soil micro flora, fauna and soil seed banks and suggest measures to maintain the natural Ecosystem.	and discussed in chapter 3 – Pg No. 113.
17.	Action should specifically suggest for sustainable management of the area and restoration of ecosystem for flow of goods and services.	Noted. Agree to comply.
18.	The PP shall study and furnish the impact on plantations in adjoining Patta lands, Horticulture, Agriculture and livestock.	There is no plantation surrounding 500m from project site. Hence there won't be any impact in adjoining patta lands, Horticulture, Agriculture and livestock.
Forests		
19.	The PP shall detailed study on impact of mining on Reserve forests free ranging wildlife.	There is no Reserve Forest within 1 km radius of the Project Site. Hence our project will not cause any damage to reserve forest. Also, we have received letter from DFO indicating the nearest reserve forest and attached with Annexures.
20.	The Environmental Impact Assessment should study impact on forest, vegetation, endemic, vulnerable and endangered indigenous flora and fauna.	The biological environment impacts, and its mitigation measures has been given in Chapter 4
21	The Environmental Impact Assessment should study impact on standing trees and the existing trees should be numbered and action suggested for protection.	There is no existing trees in the project site and surrounding the project site. Only thorny shrubs were present.

TOR Reply of Proposed Rough stone & Gravel Quarry Over an Extent of 1.24.0 Ha

22.	<p>The EIA should study impact on protected areas, Reserve forests, National parks, Corridors and Wildlife pathways, near project site.</p>	<p>There is no Reserve Forest within 1 km radius of the Project Site. Hence our project will not cause any damage to reserve forest. Also, we have received letter from DFO indicating the nearest reserve forest and attached with Annexures.</p> <p>There is no protected areas, National Parks, Corridors and Wildlife pathways near project site.</p>
Water Environment		
23.	<p>Hydro-geological study considering the contour map of the water table detailing the number of ground water pumping & open wells, and surface water bodies such as rivers, tanks, canals, ponds etc., within 1 km (radius) so as to assess the impacts on the nearby waterbodies due to mining activity. Based on actual monitored data and documentation in this regard may be provided, covering the entire mine lease period.</p>	<p>The hydro-geological study will be conducted and submitted in final EIA report.</p>
24.	<p>Erosion Control Measures</p>	<p>Complied. Erosion details has been attached in Chapter 3. Greenbelt will be planted to avoid and control erosion.</p>
25.	<p>Detailed study shall be carried out regard to impact of mining around the proposed mine lease area on</p>	<p>The detailed study will be carried out and will be furnished in the</p>

TOR Reply of Proposed Rough stone & Gravel Quarry Over an Extent of 1.24.0 Ha

	the nearby villages, Water-bodies/Rivers, & any ecological fragile areas.	Final EIA Report.
26.	The project proponent shall study impact on fish habitats and the food WEB/food chain in the water body and reservoir.	There is no water bodies within 1km radius, The seasonal pond named A.P. Nadanoor Pond located at 0.52 km southwest from the project site. Water gets stagnant only during rainy season. Hence there won't be much impact on fish habitats and the food WEB/ food chain in the water body and Reservoir.
27.	The PP shall study and furnish the details on potential fragmentation impact of natural environment, by the activities.	Noted and will be complied in Final EIA report.
28.	The PP shall study and furnish the impact on aquatic plants and animals in water bodies and possible scars on the landscape, damages to nearby caves, heritage site and archaeological sites possible landform changes visual and aesthetic impacts	Noted. Agree to comply.
29	The Terms of Reference should specifically study impact on soil health, soil erosion, the soil physical, chemical components and microbial components.	The soil erosion map 5km surrounding the project site has been given in chapter 3. The soil samples have been collected surrounding the project site and physical, chemical components and microbial components study has been carried out and the results are

TOR Reply of Proposed Rough stone & Gravel Quarry Over an Extent of 1.24.0 Ha

		tabulated in chapter 3
30	The Environmental Impact Assessment should study on wetlands, water bodies, river streams, lakes and farmer sites.	The water environment impacts and its mitigation measures has been given in Chapter 4
Energy		
31	The measures taken to control Noise, Air, Water, Dust Control and steps adopted to efficiently utilize the energy shall be furnished	Agreed to Comply.
Climate Change		
32	The Environmental Impact Assessment shall study in detail the carbon emission and also suggest the measures to mitigate carbon emission including development of carbon sinks, and temperature reduction including control of other emission and climate mitigation activities.	Noted and will be complied in Final EIA report.
33.	The EIA should study impact on climate change, temperature rise, pollution and above soil carbon stock.	Noted and will be complied in Final EIA report.
Mine Closure Plan		
34.	Detailed mine closure plan covering the entire mine lease period as per precise area communication order issued.	Mine closure plan has been attached along with mining plates as Annexure VI.
EMP		
35	Detailed Environment Management plan along with adaptation, mitigation & remedial strategies covering the entire mine lease period as per precise area communication order issued.	Environment Management Plan has been described in detail in Chapter-10 of the Draft EIA/EMP Report.
36	The EIA should hold detailed study on EMP with budget for Green belt development and mine closure plan including disaster management plan.	The EMP details has been given in Chapter 8

TOR Reply of Proposed Rough stone & Gravel Quarry Over an Extent of 1.24.0 Ha

Risk Assessment		
37	To furnish risk assessment and management plan including anticipated vulnerabilities during operational and post operational phases of mining.	A Risk Assessment and management Plan will be prepared and included in the final EIA/EMP Report.
Disaster Management Plan		
38	To furnish disaster management plan and disaster mitigation measures in regard to all aspects to avoid/reduce vulnerability to hazard & to cope with disaster/untoward accidents in & around the proposed mine lease area due to the proposed method of mining activity & its related activities covering the entire mine lease period as per precise area communication order issued.	Disaster Management and Risk Assessment has be incorporated in Chapter-7
Others		
39.	The project proponent shall furnish VAO Certificate with reference to 300m radius regard to approved habitations, schools, Archaeological structures etc.	Obtained and same has been attached as Annexure.
40.	As per the MoEF& CC office memorandum F.No.22-65/2017-IA.III dated: 30.09.2020 and 20.10.2020 the proponent shall address the concerns raised during the public consultation and all the activities proposed shall be part of the Environment Management Plan.	Noted and public hearing details will be included along with final EIA report.
41	The PP shall study and furnish the possible pollution due to plastic and microplastic on the environment. The ecological risks and impact of plastic & microplastic on aquatic environment and fresh water systems due to activities, contemplated	There will not be any plastic and microplastic pollution due to mining activity. Also, we ensure that we won't use any single use plastics in the project site.

TOR Reply of Proposed Rough stone & Gravel Quarry Over an Extent of 1.24.0 Ha

	during mining may be investigated and reported.	
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ANNEXURE-II
PRECISE AREA COMMUNICATION LETTER

Rc. No.M2/36809/2020

District Collector's Office
Geology and Mining,
Tenkasi.



Dated. 24.01.2022

Notice

Sub: Mines and Quarries - Minor Minerals - Roughstone and Gravel - Tenkasi District - Alangulam Taluk - A.P.Nadanoor Village - SF. Nos. 477/1, 477/2, 477/6, 478/2(P), 478/3(P) & 478/4(P) - over an extent of 1.24.0 hectares of patta lands - Quarry lease application preferred by M/s. SVART STEN ASSOCIATES LLP - Precise area communicated - Approved Mining Plan and Environmental clearance - Called for - Reg.

- Ref:**
1. G.O (Ms) No. 169, Industries (MMC-1) Department dated. 04.08.2020.
 2. Quarry lease application preferred by M/s. SVART STEN ASSOCIATES LLP, dated. 08.12.2020.
 3. The Revenue Divisional Officer, Tenkasi Letter No. A3/2989/2021, dated. 20.07.2021.
 4. Inspection report of the Assistant Director of Geology and Mining, Tenkasi, dated.02.11.2021.

Thiru.Peter, S/o.Puravath, Designated partner of M/s. SVART STEN ASSOCIATES LLP, Asum Tower, Ezhumanged, Arangoltukara Post, Palakkad District, Kerala - 679 533 has applied on 08.12.2020 for grant of quarry lease for quarrying Roughstone and Gravel over an extent of 1.24.0 hectares of patta land in SF. Nos. 477/1 (0.24.5), 477/2 (0.24.0), 477/6 (0.22.5), 478/2(P) (0.18.0), 478/3(P) (0.16.0) & 478/4(P) (0.19.0) of



4. In view of the above, you are hereby directed to produce the mining plan duly prepared by a Recognized Qualified Person in respect of the precise area communicated for approval to the Assistant Director of Geology and Mining, Tenkasi within a period of 90 days from the date of receipt of this notice as required under rule 41 (5) of Tamil Nadu Minor Mineral Concession Rules, 1959.

5. You are further directed to produce Approved Mining Plan and Environmental Clearance obtained from the State Level Impact Assessment Authority (SEIAA) as required under Rule 42 of Tamil Nadu Minor Mineral Concession Rules, 1959 for grant of quarry lease for quarrying Roughstone and Gravel in respect of the precise area communicated.

[Signature]
24/1/22
Assistant Director,
Geology and Mining,
Tenkasi.

To
M/s. SVART STEN ASSOCIATES LLP,
Asun Tower,
Ezhumangad,
Arangottukara Post,
Palakkad District,
Kerala - 679 533.

[Signature]
24/01/22

[Signature]
S.DHANASEKAR, M.Sc. (Geo)
Qualified Person

ANNEXURE-III
MINING PLAN APPROVED LETTER

From

Thiru.T.Vinoth, M.Sc.,
Assistant Director,
Geology and Mining,
Tenkasi.

To

M/s. Svart Sten Associates LLP,
Asum Tower,
Ezhumangad,
Arangottukara Post,
Palakkad District,
Kerala - 679 533.

Rc.No.M2/36809/2020, dated. 11.04.2022

Sir,

Sub: Mines and Minerals - Minor Minerals - Tenkasi - Quarry lease application preferred by M/s. SVART STEN ASSOCIATES LLP for quarrying Roughstone and Gravel - Alangulam Taluk - A.P.Nadanoor Village - SF. Nos. 477/1, 477/2, 477/6, 478/2(P), 478/3(P) & 478/4(P) - over an extent of 1.24.0 hectares of patta lands - precise area communicated - Mining plan submitted - Approval accorded - Reg.

Ref:

1. G.O (Ms) No. 169, Industries (MMC-1) Department dated. 04.08.2020.
2. Quarry lease application preferred by M/s. SVART STEN ASSOCIATES LLP, dated. 08.12.2020.
3. G.O. (Ms). No. 79, Industries (MMC1), Department, dated: 06.04.2015.
4. Precise Area Communication Notice in Rc. No.M2/36809/2020, dated. 24.01.2022.
5. Letter dated. 28.02.2022 received from the applicant company M/s. Svart Sten Associates LLP.

Thiru.Peter, S/o.Puravath, Designated partner of M/s. SVART STEN ASSOCIATES LLP, Asum Tower, Ezhumanged, Arangottukara Post, Palakkad District, Kerala - 679 533 has applied on 08.12.2020 for grant of

quarry lease for quarrying Roughstone and Gravel over an extent of 1.24.0 hectares of patta land in SF. Nos. 477/1 (0.24.5), 477/2 (0.24.0), 477/6 (0.22.5), 478/2(P) (0.18.0), 478/3(P) (0.16.0) & 478/4(P) (0.19.0) of A.P.Nadanoor Village, Alangulam Taluk, Tenkasi District for a period of five years under Rule 19 (1) of Tamil Nadu Minor Mineral Concession Rules, 1959.

2. Based on the recommendations of the Revenue Divisional Officer, Tenkasi and the Assistant Director of Geology and Mining, Tenkasi precise area has been communicated by the Assistant Director of Geology and Mining, Tenkasi vide reference 4th cited to M/s. SVART STEN ASSOCIATES LLP for grant of quarry lease for quarrying and transportation of Roughstone and Gravel over an extent of 1.24.0 hectares of patta land in SF. Nos. 477/1 (0.24.5), 477/2 (0.24.0), 477/6 (0.22.5), 478/2(P) (0.18.0), 478/3(P) (0.16.0) & 478/4(P) (0.19.0) of A.P.Nadanoor Village, Alangulam Taluk, Tenkasi District for a period of 5 years.

3. In response to the precise area communicated, the applicant has submitted three copies of draft Mining Plan duly prepared by a Qualified Person and requested for approval of the same vide reference 5th cited.

4. The draft Mining Plan submitted in respect of the precise area communicated have been verified with reference to field conditions.

All the conditions stipulated in the precise area communicated have been incorporated in the Mining Plan. The required safety distance of 7.5 meters to the adjacent patta lands have been clearly demarcated.

5. In exercise of the powers vested under sub rule (2) and (5) of Rule 41 of Tamil Nadu Minor Mineral Concession Rules, 1959, I hereby approve the mining plan subject to the following conditions:-

- i. The mining plan is approved without prejudice to any other order or direction from any court of contempt jurisdiction.
- ii. The mining plan is approved without prejudice to any other Law applicable to the quarry lease from time to time whether such laws are made by the Central Government, State Government or any other authority.
- iii. The approval of the mining plan does not in any way imply the approval of the Government in terms of any other provisions of the Mines and Minerals (Development and Regulation) Act 1957, or any other connected laws including Forest (Conservation) Act, 1980, Forest Conservation Rules, 1981, Environment Protection Act, 1980, Indian Explosives Act, 1884 (Central Act IV of 1884) and the Rules made there under and the Tamil Nadu Minor Mineral Concession Rules, 1959.
- iv. Quarrying operations should be carried out in accordance with the Approved Mining Plan.
- v. The applicant is entitled for production of 2,16,405 cbm of Roughstone and 22,770 cbm of Gravel upto a depth of 42 meters for a period of 5 years as per the Approved Mining Plan.
- vi. A safety distance of 7.5 meters should be provided to the adjoining patta lands.

- vii. No hindrance shall be caused to the adjacent pattadars, lands and public while carrying out quarrying operations.
- viii. No dimensional blocks with a size of 30c.m x 30c.m x 30c.m suitable for polishing shall be produced.
- ix. Environmental Clearance should be obtained from the State Level Environment Impact Assessment Authority, Chennai.

6. As directed by the Assistant Director of Geology and Mining, Tenkasi in the reference 4th cited, you are hereby requested to produce Environmental Clearance obtained from the State Level Environment Impact Assessment Authority (SEIAA), Chennai as applicable under Rule 42 of Tamil Nadu Minor Mineral Concession Rules, 1959 for grant of quarry lease, in respect of the precise area communicated.

Encl: Approved Mining plan.


**Assistant Director,
Geology and Mining,
Tenkasi.**


4/4/22

ANNEXURE-IV
500M Radius letter

From

Thiru.T.Vinoth, M.Sc.,
Assistant Director,
Geology and Mining,
Tenkasi.

To

M/s. Svart Sten Associates LLP,
Asum Tower,
Ezhumangad,
Arangottukara Post,
Palakkad District,
Kerala - 679 533.

Rc. No.M2/36809/2020, dated. 12.04.2022

Sir,

Sub: Mines and Minerals - Minor Minerals - Roughstone and Gravel - Tenkasi District - Alangulam Taluk - A.P.Nadanoor Village - SF. Nos. 477/1, 477/2, 477/6, 478/2(P), 478/3(P) & 478/4(P) - over an extent of 1.24.0 hectares of patta lands - Quarry lease application preferred by M/s. SVART STEN ASSOCIATES LLP - Certain Particulars requested - for obtaining Environmental Clearance - furnished - reg.

- Ref:**
- 1 G.O (Ms) No. 169, Industries (MMC-1) Department dated. 04.08.2020.
 - 2 Quarry lease application preferred by M/s. SVART STEN ASSOCIATES LLP, dated. 08.12.2020.
 - 3 Precise Area Communication Notice in Rc. No.M2/36809/2020, dated. 24.01.2022.
 - 4 Letter dated. 11.04.2022 received from the applicant company M/s. Svart Sten Associates LLP.
 - 5 Mining Plan Approval letter No. M2/36809/2020, dated. 11.04.2022.

Thiru.Peter, S/o.Puravath, Designated partner of M/s. SVART STEN ASSOCIATES LLP, Asum Tower, Ezhumanged, Arangottukara Post, Palakkad District, Kerala - 679 533 has applied on 08.12.2020 for grant of

quarry lease for quarrying Roughstone and Gravel over an extent of 1.24.0 hectares of patta land in SF. Nos. 477/1 (0.24.5), 477/2 (0.24.0), 477/6 (0.22.5), 478/2(P) (0.18.0), 478/3(P) (0.16.0) & 478/4(P) (0.19.0) of A.P.Nadanoor Village, Alangulam Taluk, Tenkasi District for a period of five years under Rule 19 (1) of Tamil Nadu Minor Mineral Concession Rules, 1959 vide reference 1st cited.

2. Based on the recommendations of the Revenue Divisional Officer, Tenkasi and the Assistant Director of Geology and Mining, Tenkasi precise area has been communicated by the Assistant Director of Geology and Mining, Tenkasi vide reference 4th cited to M/s. SVART STEN ASSOCIATES LLP for grant of quarry lease for quarrying and transportation of Roughstone and Gravel over an extent of 1.24.0 hectares of patta land in SF. Nos. 477/1 (0.24.5), 477/2 (0.24.0), 477/6 (0.22.5), 478/2(P) (0.18.0), 478/3(P) (0.16.0) & 478/4(P) (0.19.0) of A.P.Nadanoor Village, Alangulam Taluk, Tenkasi District for a period of 5 years.

3. The Mining Plan submitted by the lessee, M/s. SVART STEN ASSOCIATES LLP for quarrying roughstone has been approved vide this office letter No.M2/36809/2020, dated.11.04.2022 for obtaining Environmental Clearance as per the newly introduced Rule Number 41 and 42 of Mineral Concession Rules 1959.

4. In the reference 4th cited, M/s. SVART STEN ASSOCIATES LLP have requested to furnish certain particulars such as existing / proposed / abandoned mines within a radial distance of 500 meters

from the periphery of the existing mining lease hold area for obtaining environmental clearance from the State Level Environment Impact Assessment Authority, Chennai.

5. The details of quarry leases granted for Roughstone falling within a radial distance of 500 meters from the subject leasehold area are furnished below:-

Sl. No	Name of the Lessee	Village & SF. No.	Extent - Hects	Lease status
1. Abandoned quarries				
-Nil-				
2. Existing quarries				
	Thiru.N.Mohamed Mahaboob, S/o. Nagoor Pitchai, No. 8/143, Main Road, Pottalpurur Village kasp, Ambasamudram Taluk, Tenkasi.	A.P.Nadanoor & SF. Nos. 434/1C, 434/4E, 434/4F, 434/4G, 434/4H, 434/4I, 434/4J, 470/1, 471/2, 471/3, 472/1B & 472/1C	3.74.5	Proceedings No. M1/44736/2016, dt. 20.03.2018 for a period of 5 years from 16.04.2018 to 15.04.2023
3. proposed quarries				
1.	M.Mohammed Ismail, S/o. Mohammed Mahaboob, 8/143, Main Road, Pottal Purur, Tenkasi District.	A.P.Nadanoor Village, SF. Nos. 467/2, 467/3, 468/1, 477/3, 477/4 & 477/5	4.38.0	Proposed Quarry

2.	M/s. Svart Sten Associates LLP, Asum Tower, Ezhumangad, Arangottukara Post, Palakkad District, Kerala - 679 533.	A.P.Nadanoor Village, SF. Nos. 477/1, 477/2, 477/6, 478/2(P), 478/3(P) & 478/4(P)	1.24.0	Proposed Quarry
Total extent of proposed quarries			5.62.0	

6. In view of the above it is recommended that Environmental Clearance may be issued in favour of the applicant subject to the usual terms and conditions.

P. A. / 12/11/22
**Assistant Director,
Geology and Mining,
Tenkasi.**

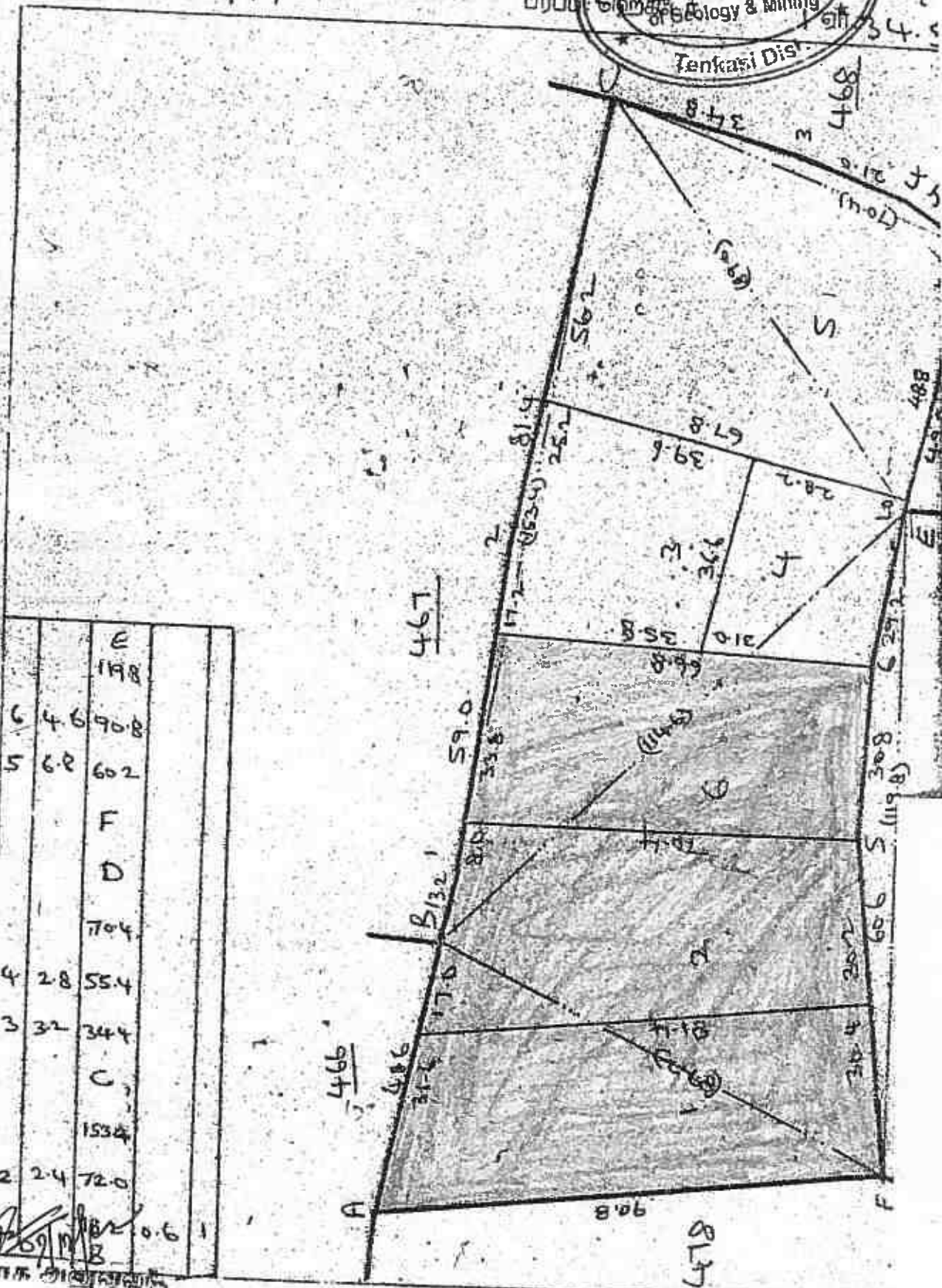
[Signature]
12/11/22

ANNEXURE-V
FMB, A REGISTER, VILLAGE MAP AND
DEED OF AGREEMENT

சுற்றுலா, தொழில்நுட்ப அமைச்சு

சுற்றுலா, தொழில்நுட்ப அமைச்சு
 உரிம எண். 477

ANNEXURE

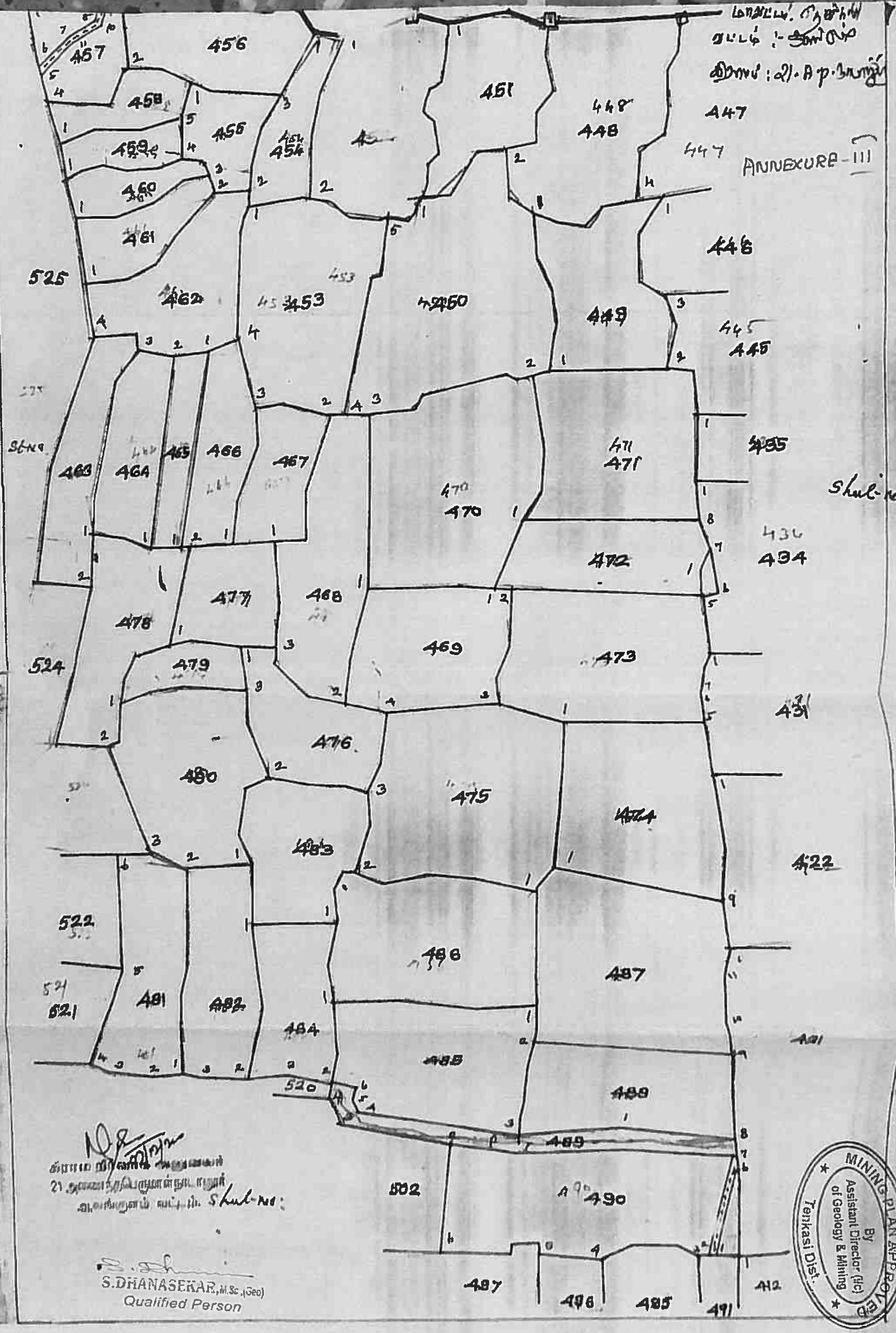


		E	
		198	
6	4.6	90.8	
5	6.8	60.2	
		F	
		D	
		704	
4	2.8	55.4	
3	3.2	34.4	
		C	
		1534	
2	2.4	72.0	
		1820.6	

சுற்றுலா, தொழில்நுட்ப அமைச்சு
 இயக்குநர்
 திரு. ச. திருமதி

அளவு. 1:1000

S. DHANASEKAR, II.Sc. (Geo)
 Qualified Person



LONDRE. 1908/10
 2006 :- 2008
 21. A p. 3. 10/10

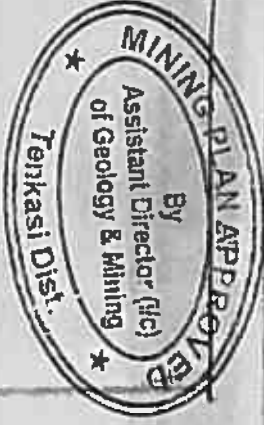
ANNEXURE - III

Shul. No.

ST. No.

சிறீமதி டி. சந்திரா
 21 ஆவது சட்டப்பகுதி அளவுகோல், 1980
 அடிப்படையில் அளவிடப்பட்டது. Shul. No.:

S. DHANASEKAR, M.Sc. (Geo)
 Qualified Person





தமிழக அரசு

வருவாய்த் துறை

நில உரிமை விபரங்கள் : இ. எண் 10(1) பிரிவு

மாவட்டம் : தென்காசி

வட்டம் : ஆலங்குளம்

வருவாய் கிராமம் : அணைந்தபெருமாள்நாடானூர்
எண் : 3040

பட்டா

உரிமையாளர்கள் பெயர்

X -

1. புரவத் மகன் பீட்டர்

புல எண்	உட்பிரிவு	புன்செய்		நுன்செய்		மற்றவை		குறிப்புரைகள்
		பரப்பு	தீர்வை	பரப்பு	தீர்வை	பரப்பு	தீர்வை	
		ஹெக் - ஏர்	ரூ - பை	ஹெக் - ஏர்	ரூ - பை	ஹெக் - ஏர்	ரூ - பை	
478	1	0 - 15.00	0.26	--	--	--	--	2020/0103/34/225261 --- -- 01-07-2020
478	2	0 - 34.50	0.59	--	--	--	--	2020/0103/34/225261 --- -- 01-07-2020
468	2A	0 - 70.20	1.30	--	--	--	--	2020/0105/34/120066 --- 2020/34/11/000238SD -- 16-10-2020
477	1	0 - 24.50	0.42	--	--	--	--	2020/0103/34/225261 --- -- 01-07-2020
478	3	0 - 36.00	0.61	--	--	--	--	2020/0103/34/225261 --- -- 01-07-2020
478	4	0 - 46.00	0.78	--	--	--	--	2020/0103/34/225261 --- -- 01-07-2020
524	2B	0 - 35.00	0.60	--	--	--	--	2020/0103/34/225261 --- -- 01-07-2020
		2 - 61.20	4.56					

குறிப்பு 2 :

1. மேற்கண்ட தகவல் / சான்றிதழ் நகல் விவரங்கள் மின் பதிவேட்டிலிருந்து பெறப்பட்டவை. இவற்றை தாங்கள் <https://eservices.tn.gov.in> என்ற இணைய தளத்தில் 34/11/021/03040/40117 என்ற குறிப்பு எண்ணை உள்ளீடு செய்து உறுதி செய்துகொள்ளவும்.
2. இத் தகவல்கள் 01-12-2020 அன்று 01:00:18 PM நேரத்தில் அச்சடிக்கப்பட்டது.



தமிழக அரசு

வருவாய்த் துறை

நில உரிமை விபரங்கள் : இ. எண் 10(1) பிரிவு

மாவட்டம் : தென்காசி

வட்டம் : ஆலங்குளம்

வருவாய் கிராமம் : அணைந்தபெருமாள்நாடானூர்
எண் : 3039

பட்டா

உரிமையாளர்கள் பெயர்

1. புரவத்

மகன்

பீட்டர்



புல எண்	உட்பிரிவு	புன்செய்		நன்செய்		மற்றவை		குறிப்புரைகள்
		பரப்பு	தீர்வை	பரப்பு	தீர்வை	பரப்பு	தீர்வை	
		ஹெக் - ஏர்	ரூ - பை	ஹெக் - ஏர்	ரூ - பை	ஹெக் - ஏர்	ரூ - பை	
477	6	0 - 22.50	0.31	--	--	--	--	2020/0103/34/225269 --- -- 24-06-2020
480	1B	0 - 14.00	0.24	--	--	--	--	2020/0103/34/225269 --- -- 24-06-2020
480	1H	0 - 35.50	0.60	--	--	--	--	2020/0103/34/225269 --- -- 24-06-2020
477	2	0 - 24.00	0.33	--	--	--	--	2020/0103/34/225269 --- -- 24-06-2020
		0 - 96.00	1.48					

குறிப்பு 2 :



- மேற்கண்ட தகவல் / சான்றிதழ் நகல் விவரங்கள் மின் பதிவேட்டிலிருந்து பெறப்பட்டவை. இவற்றை தாங்கள் <https://eservices.tn.gov.in> என்ற இணைய தளத்தில் 34/11/021/03039/40105 என்ற குறிப்பு எண்ணை உள்ளீடு செய்து உறுதி செய்துகொள்ளவும்.
- இத் தகவல்கள் 01-12-2020 அன்று 01:03:46 PM நேரத்தில் அச்சடிக்கப்பட்டது.
- கைப்பேசி கேமராவின் 2D barcode படப்பான் மூலம் படித்து 3G/GPRS வழி இணையதளத்தில் சரிபார்க்கவும்



1425- ஆம் பசலியில்

(தஞ்சை) மாவட்டம்

3006

3006

நில வரித் திட்டத்தின்படி புலன்களின் விபரம்.					கைப்பற்று தாரகுடைய பெயரும் எண்ணும் அல்லது அனுபோக தாரகுடைய பெயர்.	சாகுபடி யாளரின் பெயர்.	நிலத்தின் எந்த பகுதி பாசலி சாகுபடியாளரால் பயிற் பட்டுள்ளது.	எந்த மாதத்தில் பயிற் செய்யப்பட்டு எந்த மாதத்தில் அறுவடை செய்யப்பட்டு.	பயிரின் பெயர்.	பயிராளர் (அறுவடை) யின் பெயர்.	செய்வகம் அல்லது மரச்சாலை ஆகியவை.	பிழைச்சல் அளவு விபரம்.
(1)	(2)	(3)	(4)	(5)		(6)						
477	6	0.225	0.31	3035	4. புலவர்							
480	1B	0.140	0.24	3035	- do -							
480	1H	0.355	0.60	3035	- do -							
477	2	0.24	0.33	3035	- do -							
478	6	0.280	0.48	3033	சு. அமலாசாமி (2)							
484	2A	0.240	0.41	3033	- do -							
480	1 I	0.330	0.46	3033	- do -							
479	2A	0.205	0.35	3033	- do -							
524	2N	1.250	2.13	3033	- do -							
480	1A	0.130	0.22	3033	- do -							
479	2B	0.200	0.34	3033	- do -							
479	1A	0.220	0.37	3033	- do -							
484	2B	0.520	0.81	3033	- do -							
482	2B	0.120	0.20	3033	- do -							
484	2C	0.300	0.53	3033	- do -							

(2 மார்ச் 2017)

 தலைவர்
 21. அண்ணத்தெருமான் நடைநூர்
 ஆலங்குளம் வட்டம்
 தஞ்சை மாவட்டம்.

MINING PLAN APPROVED
By
Assistant Director (i/c)
of Geology & Mining
Tenkasi Dist.

1	2	3	4	5	6	7	8	9	10	11	12	13	14
476	4	476.4	r	ய	...	7-4	5	1 70	0 56.0	0 93	217	சு. பை. ஹெ.வார்ஸ்	தம்பி நாடார்.
									2 49.5	4 25			
477	1	477-1	r	ய	...	7-4	5	1 70	0 24.5	0 42	1335	சு. நடராஜன் (1), பிச்சக கண்ணு (2), சித்திரைக் கண்ணு (3)	
	2	-2	r	ய	...	7-4	5	1 38	0 24.0	0 33	49	கா. அப்பாத்த துரை நாடார்.	
	3	-3	r	ய	...	7-4	5	1 38	0 15.0	0 21	748	சு. முப்பிடாடி	
	4	-4	r	ய	...	7-4	5	1 70	0 10.5	0 18	668	சு. நாராயண நாடார்.	
	5	-5	r	ய	...	7-4	5	1 38	0 38.0	0 53	1409	ரா. ராமசாமி நாடார் மற்றும் மூன்று பேர்களும். *	
	6	-6	r	ய	...	7-4	5	1 38	0 22.5	0 31	308	வி. சாத்தநார் குட்டி.	
									1 34.5	1 98			
478	1	478-1	r	ய	...	7-4	5	1 70	0 15.0	0 26	949	ரா. ராமநாதன்	
	2	-2	r	ய	...	7-4	5	1 70	0 34.5	0 59	244	ரா. தங்க நாடார் (1). தமிழ்ச்செல் வன் (2).	
	3	-3	r	ய	...	7-4	5	1 70	0 36.0	0 61	367	சு. சுடலைமாட நாடார்.	
	4	-4	r	ய	...	7-4	5	1 70	0 46.0	0 78	65	ரா. ஆறுமுக நயினார்.	
	5	-5	r	ய	...	7-4	5	1 70	0 76.0	1 30	543	ரா. பரமசிவன்.	
	6	-6	r	ய	...	7-4	5	1 70	0 28.0	0 48	1544	ரா. ராம நாதன் மற்றும் ஐந்து பேர்களும். *	
									2 35.5	4 02			

* விவரப்பட்டியலைப் பார்க்கவும்.

S.DHANASEKAR, M.Sc. (Geo)
Qualified Person

கிராம நிர்வாக அலுவலர்
21 ஆணைத்தபெருமார் நாடாளு
பாளையம் வட்டம்.



தமிழ்நாடு தமிழ்நாடு TAMIL NADU

11/10/21

M.P. Peter
Kerala

49AB 201677

M.K. கந்தசாமி, பி.எஸ்.ஸி.
முத்திரைத்தான் கிற்பனையாளர்
உரிமம் எண். 20/2008/NMKL
நாமக்கல் (Lவன்), தமிழ்நாடு

குத்தகை ஒப்பந்த பத்திரம்

1. பீட்டர் வயது 54, ஆதார் எண் : (6512 8279 4417) (Managing Patner SVART STEN ASSOCIATES LLP) முகவரி மடத்திசூடியில், கிங்கினிமட்டம் அஞ்சல், எர்ணாகுளம், கேரளா-682 311.
2. SVART STEN ASSOCIATES LLP நிறுவனம் அசம் டவர் எழுமங்காட், அரங்கொட்டுக்கார அஞ்சல், பாலக்காடு மாவட்டம், கேரளா-679 533.



Before me
T.P. SARAVANAN, M.A., B.L.
ADVOCATE & NOTARY PUBLIC
No. 3, Trichy Road,
(Near SBM School)
NAMAKKAL - 637 001, TamilNad



-2-

மேற்படி (1) ஆகிய நான் எனது அனுபவத்தில் உள்ள புல எண்கள்

477/1 (0.24.5 ha), 477/2 (0.22.5 ha) , 478/2(p) (0.18.0 ha), 478/3 (p) (0.16.0 ha) & 478/4 (p) (0.19.0 ha) ஆக மொத்தம் 1.24.0 ha அணைந்தபெருமாள் நாடானூர் கிராமம், ஆலங்குளம் தாலுகா, தென்காசி மாவட்டம்.

இந்த நிலையில் உள்ள சாதாரண கற்கள் வெட்டியெடுக்க 12 ஆண்டுகளுக்கு மேற்படி (2) ல் கூறிய SVART STEN ASSOCIATES LLP நிறுவனத்திற்கு குத்தகை உரிமம் வழங்க முழு மனதுடன் சம்மதிக்கிறேன்.

Before me



T.P. Saravanan
T.P. SARAVANAN, M.A., B.L.
ADVOCATE & NOTARY PUBLIC
No. 3, Trichy Road,
(Near SBM School)
NAMAKKAL - 637 001, TamilNad

S. Dhanasekar
S.DHANASEKAR, M.Sc. (Geo)
Qualified Person



सत्यमेव जयते

GOVERNMENT OF INDIA
MINISTRY OF CORPORATE AFFAIRS
Central Registration Centre

Form 16

[Refer Rule 11(3) of the Limited Liability Partnership Rules, 2009]
CERTIFICATION OF INCORPORATION

LLP Identification Number: AAS-5013

It is hereby certified that SVART STEN ASSOCIATES LLP is incorporated pursuant to section 12(1) of the Limited Liability Partnership Act, 2008.

Given under my hand at Manesar this Twenty eighth day of May Two thousand twenty.



SHIV PAL SINGH

ASST. REGISTRAR OF COMPANIES

For and on behalf of the Jurisdictional Registrar of Companies

Registrar of Companies

Central Registration Centre

Disclaimer: This certificate only evidences incorporation of the LLP on the basis of documents and declarations of the applicant(s). This certificate is neither a license nor permission to conduct business or solicit deposits or funds from public. Permission of sector regulator is necessary wherever required. Registration status and other details of the LLP can be verified on www.mca.gov.in

Mailing Address as per record available in Registrar Office:

SVART STEN ASSOCIATES LLP

50(3/225), IRUMBAKASSERY PEEDIKAYIL(H), EZHUMANGAD,
ARANGOTTUKARA.P.O., THIRUMITTAKODE, Palakkad, Kerala, 679533, India




S.DHANASEKAR, M.Sc. (Geo)
Qualified Person



കേരളം കേരल KERALA

902390

LIMITED LIABILITY PARTNERSHIP AGREEMENT

SVART STEM ASSOCIATES LLP

THIS LIMITED LIABILITY PARTNERSHIP AGREEMENT ("LLP Agreement") is made and entered into as on the 06th Day of June, 2020 at Palakkad between each of the Partners whose name and address appear in Schedule I of this Agreement.

WITNESSETH

WHEREAS, the parties hereto desire to adopt a Limited Liability Partnership Agreement for new venture (the "LLP") to more particularly provide for their respective rights, powers, duties and obligations as Partners and the management, operations and activities of the LLP.

WHEREAS, as soon as practicable following execution of this Agreement, Incorporation Document for the LLP shall be filed with the Registrar of LLP.

NOW, THEREFORE, the Partners by this Agreement set forth the Limited Liability Partnership Agreement for the LLP under the Limited Liability Partnership Act, 2008 upon the following terms and conditions:

[Handwritten signature]

[Handwritten signature]

No. 5115 VALUE Rs: 5000

C. I. VARGHESE
VENDOR No: 31
| THRISSUR

Svart Stem Associates LLP

6 JUN 2020

Palakkad





1. Definitions

1.1 In this Agreement and the Schedules to it the following terms shall have the following meanings unless the context otherwise requires.

"Accountants" means the initial Accountants, their replacement or any additional accountants appointed by the partners to manage the accounts of the LLP and includes initial accountants, their replacement or any additional accountants appointed by the partners to manage the accounts of LLP.

"Accounts" means the balance sheet and profit and loss account as prepared by the accountants at the end of each financial year.

"Accounts Date" means the 31st March in each year.

"Agreement" means this Limited Liability Partnership Agreement, as originally executed and as amended, modified or supplemented from time to time.

"Board of Directors or Board" Means Board Constituted in accordance with clause 18.8

"Capital" means all the property and all other assets vested in the LLP or held in trust of LLP.

"Capital Accounts" are accounts showing the balances of the capital that belongs to each partner as calculated in accordance with clause 8

"Capital Contributions" means the contributions made by the partners to the LLP pursuant to clause 8 hereof and, in the case of all the partners, the aggregate of all such capital contributions.

"Cessation Date" is a date on which an outgoing partner ceases, or is deemed under this agreement to cease, to be partner.

"Cessation Provisions" are the provisions that shall apply on a Cessation Date.

"Chairman" means a chairman appointed in accordance with clause 18.7

"Continuing Partners" mean the other partners that continue in their role as partners when one or more partner leaves the LLP

"Contribution" means the amounts of money contributed by any partner into the LLP by way of addition to his or her capital accounts or the value of any assets transferred by them to the LLP.

"Defaulting Partner" means a partner who is being expelled from the LLP under clause 22.5.

"Designated Partner" has the meaning set out in section 7 of the Limited Liability Partnerships Act 2008.

"Director or Board Member" mean such partners as are from time to time appointed under clause 18.8 to carry out such functions of management of LLP.

"Financial Year" means the period from the 1st April of a year to 31st day of March of the following year.

"LLP" means the Limited Liability Partnership carried on by the partners under this agreement as varied by any supplemental agreement.

"LLP Funds" are the total sum of the partners' capital accounts and current accounts.

"Managing Director" means the partner occupying the office of Managing Director appointed in accordance with clause 18.1 and includes a Managing Partner.

"Name" is the trading of the LLP or any additional name adopted for the trade of the LLP.

"Ordinary Resolution" means vote casted in favour of a resolution at partners meeting or partners resolution by circulation is more than vote casted against the resolution.

"Outgoing Partner" means a partner who ceases to be a partner of the LLP for any reason.



"Partner" means each party to this Agreement shall be a Partner in the LLP, within the meaning of the LLP Act, 2008 until they cease to be a partner in accordance with the provisions of the LLP Act, 2008 or this Agreement (the "Partners"). The names and addresses of the initial Partners are set forth on Schedule I hereto. Additional Persons may be admitted as Partners on the express terms and conditions expressly set forth herein.

"Partner's Interest" means the ownership interest of a Partner in the LLP, including a partner's right to share in the LLP's items of income, gain, loss, deduction, credits and similar items, and the right to receive distributions from the LLP, as well as a LLP's rights to vote and otherwise participate in the operation or affairs of the LLP as provided for herein and under the LLP Act.

"Person" includes company, LLP and body corporate.

"Premises" means the property or properties to be occupied by the LLP for the purpose of the Business of the LLP.

"Proper Cause" means acting in accordance with the provisions, duties, rights and entitlements that are provided for within the terms of this agreement.

"Property" means the premises and all items used for the purposes of the business (or rights in them as appropriate) including all intellectual property and computers and associated equipment and all office equipment, furniture and other property and equipment.

"Reference to a Partner, Former Partner or Outgoing Partner" (where the context admits) includes a reference to his personal representatives, estate, receiver or trustee in bankruptcy."

"Reference to a statute or statutory provision" includes a reference to that statute or statutory provision as amended, extended or reenacted.

Words denoting the singular number include the plural and vice versa.

"Repayment" means the amount of money repaid to any partners from the bank accounts of the LLP by way of reduction of their Capital Accounts of the Value of any assets transferred to them by the LLP.

"Special Resolution" means vote casted in favour of a resolution at partners meeting or resolution by circulation is three times more than vote casted against the resolution.

"Successing Date" means a date on which a outgoing partner ceases, or is deemed under this agreement to cease, to be a partner.

"The Act" means the Limited Liability Partnership Act, 2008 (6 of 2009).

Words or expressions not defined in this agreement have the meaning as assigned in the Act.

Unless the context otherwise requires, a reference to any clause, sub clause, paragraph or schedule is to a clause, sub clause, paragraph or schedule of or to this agreement.

2. Term

The LLP Agreement shall come into effect from the date of incorporation of LLP by way of its registration with the Registrar and shall continue until dissolved and liquidated in accordance with clauses 28 and 29.

3. Incorporation of the LLP

The incorporated LLP shall be duly organized, validly existing and is in good standing under the laws of the jurisdiction of its incorporation, is qualified to do business and has all requisite powers and authority, corporate or otherwise, to conduct its business as now being conducted, to own, lease and operate its properties and to execute, deliver and perform this Agreement.



The Partners shall complete and deliver such forms as may be required to the Registrar's Office and pay all required fees to incorporate the Limited Liability Partnership in accordance with the Limited Liability Partnership Act, 2008. The LLP certificate of registration shall be kept at the Registered Office.

4. Nature of the Business

The nature or purpose of the business to be conducted or promoted by the LLP is to engage in any lawful act or activity for which a LLP may be formed under the LLP Act. The LLP may engage in any and all activities necessary, desirable or incidental to the accomplishment of the foregoing. Notwithstanding anything herein to the contrary, nothing set forth herein shall be construed as authorizing the partners to possess any purpose or power, or to do any act or thing, forbidden by law to a LLP formed under the LLP Act, 2008.

The partners of this LLP shall carry on the business of,

Acquisition of land, contract work, construction work, mining, crusher units, purchase and sale of machinery and equipments

5. LLP Name

The business of the Partnership shall be conducted under the name of "SVART STEN ASSOCIATES LLP".

The Partners may change the name of the LLP at any time. Such change must be notified to the Registrar Office by the Designated Partners in accordance with the provisions of the Act.

The Registration Number of LLP is: AAS-5013

6. Registered Office

The Registered office of the LLP shall be situated at 50(3/225), Irumbakassery, Peedikayal(H), Erhumangad, Arangottukara, P.O., Thirumittakode, Palakkad-679333 in the State of Kerala and or at such other place, as may be mutually agreed upon. Upon any change in the registered office address of the LLP, it shall be the duty of the designated partner of the LLP to notify it to the Registrar in the prescribed form.

7. Place of Business/LLP Property

7.1 The LLP business shall be carried out at the Premises referred to in this Agreement, which shall remain the property of the LLP at all times. The costs of all rent, rates, repairs, insurance and other outgoings and expenses relating to the Premises and any other premises acquired for the purpose of the LLP business shall be borne by the LLP.

7.2 The legal estate in all freehold or leasehold properties acquired for the purpose of the LLP shall be vested in the Partners upon trust for sale, or in some of the partners as trustees for all the remaining partners. The net proceeds of sale and the rents and profits until sale shall form part of the assets of the LLP. The trustees shall be indemnified by the LLP against the rent and other outgoings in respect of the properties and the costs and expenses of observing the covenants relating to them.



8. Capital Contributions

A single Capital Account shall be maintained for each Partner. The capital of the LLP shall be Rs. 1,00,000.00 (Rupees One Lakh Only) which shall be contributed by the partners by equity unit in such a manner as they would like to contribute. Each partner's contribution to, or capital withdrawal from, the partnership shall be credited, or debited, respectively, to that partner's capital account.

Except as otherwise specifically provided in this Agreement, the Capital Commitment of a Partner (i) shall represent the maximum aggregate amount of cash and property that such Partner shall be required to contribute to the capital of the LLP and (ii) without such Partner's consent, shall not be changed during the term of the LLP.

The percentage of capital contribution by the partners to the total capital of LLP is:

1. Madappilly David Paulose - 50%
2. Peter Madathikudiyil Puravath - 50%

8.1 Additional contribution

The partners hereto have also agreed to subscribe additional capital in the ratio as per requirement whenever it is required to do so for the efficiency of the business. At the time of increase of the capital, the additional capital of the partner(s) may be adjusted against the increased capital.

8.2 Withdrawal or Reduction of Capital Contributions

Except as expressly provided in this Agreement, no Partner shall have the right to withdraw from the LLP all or any part of its capital contribution.

A partner, irrespective of the nature of its capital contribution, shall only have the right to demand and receive cash in return for its capital contribution, unless the partners shall have unanimously agreed that such partner may receive a distribution in kind.

8.3 Interest on Capital Contributions.

Interest shall be payable on or with respect to the capital contributions or capital accounts of partners. Interest rate shall be fixed by the designated partners in their meeting.

9. Banking

Bank account of the LLP should be opened by Designated Partners and any one Designated Partner can operate the bank account singly, and one of such Designated Partner should be the Managing Director/Managing Partner, if anyone has been appointed so.

10. Accounts

- (a) The accounts of the LLP shall be maintained according to the financial year, from 1st April to 31st March and general account shall be taken of all the capital assets and liabilities to the time being of the LLP as on 31st March in each year and a balance sheet and profit and loss account shall be prepared by any Chartered Accountant to be agreed upon by the partners.
- (b) The LLP shall maintain usual account and other books at the registered office of the LLP and they shall be kept properly posted up-to-date and shall not be removed from the registered office without the consent of all the partners.



- (c) The accounts of the LLP shall be approved by all the partners of LLP which shall be binding on all the partners and a copy thereof shall be distributed to each of partners
- (d) Complete books and records of the LLP shall be maintained accurately reflecting the accounts, business and transactions of the LLP on a financial year basis and on accrual basis and according to the double entry system of accounting.

11. Inspection of Company Records, Annual and Other Reports

11.1 Records to be kept

The LLP shall keep at its registered office:

- (a) A current list of the full name and last known business, residence or mailing address of each Partner and designated partner in alphabetical order;
- (b) Copies of this LLP agreement, and all amendments hereto;
- (c) Copies of the LLP's income-tax returns and reports, if any, for the three most recent years; and
- (d) Copies of any financial statements of the LLP for the three most recent years.

11.2 Inspection of LLP Records

The accounting books and records, the record of partners shall be open to inspection upon the reasonable request of any partner at any reasonable time during usual business hours, for a purpose reasonably related to such partner's interest as a partner. Such inspection by a partner may be made in person or by agent or attorney, and the right of inspection includes the right to copy and make extracts.

12. Annual Filing

LLP shall prepare and file with the Registrar, a Statement of Account and Solvency, within a period of six months from the end of each financial year and an Annual Return with the Registrar within sixty days of closure of its financial year.

13. Nature of Partnership Interest

- (a) The interests of partners in the LLP constitute their personal estate. In the event of the death or legal disability of any partner, the executor, trustee or administrator of such Partner shall be bound by the provisions of this LLP agreement.
- (b) In the case of a partner, which is not a natural person, the successor of such partner shall be bound by the provisions of this LLP agreement.

14. Sharing of Profits and Losses

The net profits of the business shall be divided between the partners in the proportion of the capital and they shall bear all losses including loss of capital in the same proportion. Proportion for sharing of profits and losses is as follows:

- 1. Madappally David Paulose - 50%
- 2. Peter Madathikudiyil Paravath - 50%

15. Holidays

Each Partner shall be entitled to four weeks holiday in each year and all the partners shall make choice of the holiday alternatively.



16. Meetings

16.1 Meetings of Partners

- (a) General Body meeting of partners shall be held annually.
- (b) Notice of the time and place of meetings shall be delivered by the designated partner of the LLP either personally, or sent by first-class mail or by electronic mail, SMS or facsimile transmission addressed to him or her at his or her address as it appears upon the records of the LLP.
- (c) If an item on the meetings agenda requires a 3/4th majority of the partners, then the partners will be required to be given 14 days clear written notice.
- (d) Written notice of the time and place of meetings shall be delivered by the designated partner of the LLP either personally or sent by first-class mail or by electronic mail or SMS or facsimile transmission addressed to him or her at his or her address as it appears upon the records of the LLP and it shall specify the place, day and hour of the meeting and shall contain an agenda of issues to be discussed.
- (e) The chairman of the meeting shall be the chairman of the LLP to all the meetings.
- (f) The quorum for the meeting of Partners shall be two or thirty percent of the total Partners whichever is higher.
- (g) If a quorum is not present within fifteen minutes of the time for which the meeting is convened, the meeting shall stand adjourned to the same day in the next week, at the same time and place or any convenient day.
- (h) If at the adjourned meeting also, a quorum is not present within fifteen minutes from the appointed time for holding the meeting, not less than 15% of the partners shall be the quorum.
- (i) Sitting fee should be given to the members attended in the first meeting and also to the adjourned meeting.

16.2 Meetings of the Board/Designated Partners

- (a) At least one meeting of Board/Designated Partners shall be held in every quarter.
- (b) The quorum for the meeting of the Board/Designated Partners shall be two or thirty percent of the total board members/Designated Partners whichever is higher.
- (c) If a quorum is not present within thirty minutes of the time for which the meeting is convened, the meeting shall stand adjourned to the same day in the next week, at the same time and place or any convenient day.
- (d) If at the adjourned meeting also, a quorum is not present within fifteen minutes from the appointed time for holding the meeting, not less than 2 persons of the total board members/Designated Partners shall be a quorum.
- (e) Sitting fee should be given to the members attended in the first meeting and also to the adjourned meeting.

17. Voting of Partners

- (a) Voting Power of a partner is equal to the value of shares held by him/her.
- (b) The partners shall have the right to vote and act on the matters and affairs of the LLP as are expressly provided for herein or are required by the LLP Act, 2008 to be voted upon by the partners.
- (c) The matters specified in schedule II of this agreement require 3/4th majority of the partners present in the meeting.
- (d) A partner appoints any one as his proxy in writing to vote on his behalf on a resolution.



To be effective, the proxy form must be given to the Board of Directors not less than 48 Hours before the time for holding the meeting.

(c) In the event of equality of votes, the chairman of the meeting shall have a second or casting vote.

18. Management

18.1 Except as otherwise expressly provided herein, day-to-day operation of the LLP shall be vested exclusively in the Managing Director/Managing Partner appointed by all the partners, who shall have the power on behalf and in the name of the LLP to carry out any and all of the purposes of the LLP and to perform all acts and enter into and perform all contracts and other undertakings that it may deem necessary or advisable or incidental thereto with the approval of Chairman and subject to supervision and control of the Designated Partners/Directors.

18.2 Subject to such terms and conditions, Managing Director/Managing Partner shall be elected for successive Terms of Three Financial Years.

18.3 The election of a Managing Director/ Managing Partner shall be by a majority vote of the Directors/ Designated Partners. A Managing Director/ Managing Partner whose term of office is about to expire shall be eligible for re-election.

18.4 Managing Director/ Managing Partner may be removed and replaced by a majority resolution of the general body meeting of the partners.

18.5 When anyone or anything may be appointed or determined by the Managing Director/Partner or Chairman under this agreement, he or it may alternatively be appointed or determined by a majority resolution of the Partners.

18.6 All the whole time working members of the Board including Chairman, Managing Director/Managing Partner are entitled to receive remuneration as may be decided by the members within the overall remuneration allowable under the provision of Income Tax Act, 1961.

18.7 Subject to such terms and conditions, the Partners shall appoint a Chairman from among the Designated Partners or the board of directors of the LLP who will hold office until his resignation, removal or vacation of his office. It shall be the duty of chairman to preside over the meeting of the Board of Directors of the LLP and in the meeting of partners.

18.8 The partners shall from time to time appoint such of their number not less than 2 and not more than 10 as Designated Partners/ Board Members of the LLP to perform the functions of management of LLP.

18.9 Partners appointed collectively shall be the Designated Partners or the Board of Directors of the LLP.

18.10 Every year at the Annual General Body of Partners Meeting (AGM), not less than 1/3rd of the total retiring Directors/Designated Partners who are longest in the office, retires and are eligible for reappointment.

18.11 If any vacancy of a Director/Designated Partner arises, consequent to death or resignation or removal, the resulting vacancy shall be filled in the next partners meeting.

18.12 A Director/Designated Partner may resign from the office of the Board of Director/ Partners. A Notice of one month period is required.

18.13 A Director/ designated partner shall be paid sitting fee, as may be determined by the partners from time to time and for attending the meeting of the Board of Directors/ Partners or Committee thereof attended by him/her and shall be paid in addition thereto all traveling, total and other expenses incurred by him/her in attending and returning from meetings of the board of partners or any committee thereof or meetings of the LLP or in connection with the business of the LLP to and from any place.

18.14 Except as otherwise provided by this LLP Agreement, Directors/ Designated Partners of the LLP shall have in all matters equal rights and privileges, and be subject to equal obligations and duties in respect of the affairs of the LLP.



19. Obligations of Partners

Each partner shall:

- (1) Be just and faithful to other partners in the transactions relating to LLP business;
- (2) Diligently attend to the business of the LLP and devote his/her full time and attention thereto;
- (3) Pay his separate debts and indemnify the other partners and assets of the LLP against the same and all other proceedings, costs, claims or demands in respect thereof;
- (4) Give full information and truthful explanations of all matters relating to the affairs of the LLP to all the partners at all times;
- (5) Comply with all the provisions of the LLP Act and Regulation, Rules framed or to be framed therein;
- (6) No partner shall without the consent of all other partners:—
 - (i) Engage in same manner of business directly or indirectly;
 - (ii) Lend money or give credit of the goods of the LLP to whom the other partners have previously forbidden him/her to trust;
 - (iii) Mortgage, charge or assign his share in the assets or profits of the LLP;
 - (iv) Draw, accept or endorse any bill of exchange or promissory note on account of the LLP;
 - (v) Engage, remove or dismiss any apprentice, employee of the LLP;
 - (vi) Give any security or promise for the payment of money on account of the LLP except in the ordinary course of business;
 - (vii) Give bail, bond or guarantee or become surety for any person or do or knowingly suffer any thing to be done where the LLP property may be endangered;
 - (viii) Compromise or compound or release or discharge any debt due to the LLP.

20. Forbidden Acts

No partner shall:

- (1) have the right or authority to bind or obligate the LLP to any extent whatsoever with regard to any matter outside the scope of the partnership purpose;
- (2) use the LLP name, credit, or property for other than LLP purposes;
- (3) do any act detrimental to the interests of the LLP or which would make it impossible to carry on the business or affairs of the LLP.

21. Liability of Partners

The liability of the partners shall be limited as provided in the LLP Act, 2008 and as set forth in this LLP agreement. Partners shall not be obliged to restore by way of capital contribution or otherwise any deficits in its capital account or the capital account of any other partner (if such deficits occur).

22. Change in Partners

22.1 Admission of new Partner

A new partner may be introduced with the consent 2/3rd majority of all the partners on such terms and conditions as the partners agree with the person to be introduced as a partner in the LLP.



22.2 *Voluntary Withdrawal of a Partner*

Each partner covenants and agrees that it will not withdraw or resign from the LLP without the prior consent of the other partners (such consent not to be unreasonably withheld or delayed). Written notice shall be deemed to be received as of the first meeting of the LLP at which it is presented. If written notice is received between meetings it will be treated as received at the first following meeting.

On voluntary withdrawal a part or all of the value of his capital account in the LLP and the LLP shall continue as a taxable entity. The LLP shall pay the partner who is withdrawing a portion or all of the value of his capital account in the partnership in accordance with Article herein under the LLP agreement. Upon the withdrawal of a partner from the LLP for any reason, such partner shall cease to have any further right to or interest in LLP.

22.3 *Death of Partner*

On the death of any partner, the LLP shall not be dissolved, the surviving partners shall have the option to purchase the share of the deceased partner, in the business and the property valued as per Article herein under. The partner, purchasing the share of the deceased partner, shall also enter into a covenant to indemnify the personal representatives of the deceased partner from the existing and future debts, obligations and liabilities of the partnership.

22.4 *Terms of payment/purchase of share*

Price of the share of deceased/withdrawing partner shall be the amount at which such share shall stand in the last balance sheet, which shall have been prepared prior to the death of the deceased/ date of withdrawal.

22.5 *Expulsion of Partner and Termination of his partnership*

If any partner shall assign, charge or encumber his/her share in the LLP without the consent of other partners or shall become bankrupt or a lunatic or otherwise permanently incapable of attending to the partnership business or shall absent himself/herself from the partnership business for more than 30 (Thirty) days, in any period of the twelve months except during his/her annual holiday without the consent of the other partners, or commit any breach of any of the provisions of this agreement or commits any criminal offence or do or suffer any act which would be a ground for the dissolution of the partnership by the Court/Tribunal and in any such case it shall be lawful for the other partners by notice in writing to the offending or incapacitated partner or his/her trustee or official assignee to determine the partnership whereupon the partnership so far as concerns such partner shall determine and the other partner shall have the option to purchase his/her share and pay the purchase price to the offending partner or his/her trustee or official assignee in accordance with above Article.

The committing of the following acts can be additional reasons for the expulsion of a partner and termination of his partnership.

- (a) If a partner found distributing Signals other than from LLP.
- (b) If a partner fails to make payments as decided by the Board from time to time, no balance should be maintained by the partners to LLP.
- (c) No partner should extend their network areas to other partners or to other areas without permission.



If a partner retires or becomes insolvent, then the partnership will not be dissolved. The remaining partner shall have the option to purchase the share of such partner and the purchase price shall be calculated as given in the preceding Article.

If a partner commits a breach which justifies expulsion, the other partners do not have to give notice to expel the partner in default. They nonetheless have the right to do so.

23. Restrictive Covenants

Except as otherwise expressly provided in an Agreement:

- (i) Partner, officers, shall not engage or invest in, independently or with others, any business activity of any type or description, including those that might be the same as or similar to the LLP Business;
- (ii) Partner or its designated partner, manager and officers, shall not compete with the LLP in the conduct or winding up of the LLP's activities;
- (iii) neither the LLP nor any Partner of the LLP shall have any right in or to any such business activities or ventures or to receive or share in any income or proceeds derived there from; and
- (iv) to the extent required by applicable law in order to effectuate the purpose of this provision, the LLP shall have no interest or expectancy, and specifically renounces any interest or expectancy, in any such business activities or ventures.

24. Salaries and drawings

24.1 Neither partner shall receive any salary for services rendered to the LLP except reimbursement for expenses on production of appropriate receipts or vouchers. But the Designated Partners shall be entitled for the salary as may be determined by the Board from time to time subject to maximum limit, if any, fixed under the provisions of Income Tax Act 1961.

24.2 Each partner may, from time to time, withdraw the credit balance in his income account. In case if there being insufficient funds in the bank account or where drawings over the course of the year exceed the share of profits to which a partner is entitled, any overdrawn amount must be repaid promptly together with 12 % interest on the overdrawn amount.

25. Meeting of expenses of LLP

- (a) All outgoings and expenses of the partnership and all losses or damages incurred, interest payable for any loans received and taxes, etc. shall be paid first out of the profits, next out of capital and in the case of further deficiency, by the partners in the shares in which they are entitled to the net profits of the LLP business.
- (b) All LLP moneys, bills, notes, cheques and other instruments received by the LLP shall as and when received be paid and deposited in the bank to the credit of the LLP's account, except such sums as are immediately required to meet the current expenses of the LLP.
- (c) All transactions of the LLP shall be done in the name of the LLP and all goods shall be purchased or sold in the LLP name. All the bills, vouchers, delivery notes, receipts, etc. shall be issued in the name of the LLP.



26. Transfer/Assignment of Rights

26.1 Restrictions on Transfer

No partner may sell, assign, transfer or hypothecate (Transfer) all or any part of its partner's interest in the LLP, or any interest therein, except in accordance with the terms and conditions set forth in this Article.

26.2 Consent necessary to Transfer

No partner may transfer all or any part of his interest or any interest therein, without the prior written approval of all of the other partners of the LLP.

26.3 Conditions of Transfer

In the event that the other partners have granted their approval to the proposed transfer, then the manager for and on behalf of the partners shall execute a written consent to such transfer. Upon receipt of such written consent, the transferring partner has a right to transfer to the proposed transferee the partnership interest as to which the approval has been obtained, subject to the following conditions:

- (a) that such transfer is consummated within sixty (60) days from the date of such approval; and
- (b) that such transfer is made strictly in accordance with the terms of the proposed transfer approved by the other partners of the LLP.

26.4 Admission of Substitute Partner

In the event that approval of the transfer is obtained, then the transferee of the partner's partnership interest shall be entitled to be admitted to the LLP as a substitute partner, and this Agreement (and all exhibits hereto) shall be amended to reflect such admission, provided that the following conditions are complied with:

- (a) The transferor and transferee shall have executed and acknowledged such instruments as the LLP may deem necessary or desirable to effect the substitution;
- (b) The transferee acknowledges all of the terms and provisions of this Agreement as the same may have been amended, and agrees in writing to be bound by the same;
- (c) The transferee reimburses the LLP for all reasonable expenses connected with such admission including, but not limited to, legal fees and costs;
- (d) The filing with the LLP of such proof of the investment intent and financial status of the transferee as the LLP's partners may request, and
- (e) The transfer complies with all applicable state laws.

26.5 Effect of Transfer without Approval

Any purported transfer of all or any part of a partner's partnership interest, or any interest therein, which is not in compliance with this Article shall be void and, except as provided for in Article below, shall be of no effect.

26.6 Liability for Transfer of Interest without consent

Notwithstanding anything to the contrary in this Article, any partner purporting to transfer his interest, or any part thereof, in violation of this Article shall be liable to the LLP and the other partners for all liabilities, obligations, damages, losses, costs and expenses (including reasonable attorneys' fees and court costs) arising as a direct or consequential result of such non-complying



transfer, attempted transfer or purported transfer, including specifically, any additional cost or taxes created by non-compliance with any of the requirements and conditions provided for in this Agreement.

26.7 Transfer permitted without consent

Notwithstanding anything to the contrary provided for herein, a partner may transfer all but not less than all of a partner's interest without approval to the surviving entity in an acquisition, merger, reorganization or sale of substantially all the assets of the partner.

27. Breach of Agreement

A material breach of this LLP agreement by a partner (the "Breaching Partner") which breach has not, after notice by the other partner ("Non-Breaching Partner") and a reasonable opportunity for cure (the scope of such cure to be conclusively established by the binding arbitration provisions of this LLP agreement) been cured by such partner within the time provided for by the Arbitrator. If it is determined by the Arbitrator that a material breach did occur and a satisfactory remedy cannot be instituted in the opinion of the Non-Breaching Partner, the Non-Breaching Partner has the right to request dissolution of the LLP pursuant to Article 28.

28. Dissolution

Upon a decision to dissolve the LLP by:

- (i) a written consent of the partners holding at least 2/3rd of all the Percentage Interests of the LLP, or
- (ii) a decision by one Partner to dissolve, the LLP shall be liquidated pursuant to Article 28.1.

28.1 Legislative Dissolution

Notwithstanding anything contained in these presents, LLP shall be deemed to be terminated in the following cases:

- (i) Number of partners falls below two;
- (ii) Partner's non-economic right is transferred to a third party without the approval of the existing partners.

29. Liquidation

- (a) Upon the occurrence of an event of dissolution as defined in the LLP Act or in Article 27 of this Agreement, the LLP shall cease to engage in any further business, except to the extent necessary to perform existing obligations, and shall wind up its affairs and liquidate its assets. The partner or designated partner with the consent of all the partners shall appoint a liquidator (who may, but need not, be a Partner) who shall have sole authority and control over the winding up and liquidation of the LLP's business and affairs and shall diligently pursue the winding up and liquidation of the LLP. As soon as practicable after his appointment, the liquidator shall cause to be filed a statement of intent to dissolve as required by the LLP Act, 2008 and/or Rules thereof.
- (b) During the course of liquidation, the partners shall continue to share profits and losses of LLP but there shall be no cash distributions to the partners until the distribution date as defined in Article herein under.



- (c) Liquidation shall continue until the LLP's affairs are in such condition that there is a final accounting showing that all fixed or liquidated obligations and liabilities of the LLP are satisfied or can be adequately provided for under this Agreement. The assumption or guarantee in good faith by one or more financially responsible persons shall be deemed to be an adequate means of providing for such obligations and liabilities. When the liquidator has determined that there can be a final accounting, the liquidator shall establish a date (not to be later than the end of the taxable year of the liquidation, i.e., the time at which the LLP ceases to be a going concern, or, if later, ninety (90) days after the date of such liquidation) for the distribution of the proceeds of liquidation of the LLP (the "Distribution Date"). The net proceeds of liquidation of the LLP shall be distributed to the partners as provided in Article hereof not later than the Distribution Date.
- (d) Subject to provisions of the LLP Act, 2008 upon the dissolution and liquidation of the LLP, the proceeds of liquidation shall be applied as follows:
- (i) first, to pay all expenses of liquidation and winding up;
 - (ii) second, to pay all debts, obligations and liabilities of the LLP, in the order of priority as provided by law, other than debts owing to the Partners or on account of Partners' contributions;
 - (iii) third, to pay all debts of the LLP owing to a Partner; and
 - (iv) to establish reasonable reserves for any remaining contingent or unforeseen liabilities of the LLP not otherwise provided for, which reserves shall be maintained by the liquidator on behalf of the LLP in a regular interest-bearing trust account for a reasonable period of time as determined by the liquidator. If any excess funds remain in such reserves at the end of such reasonable time, then such remaining funds shall be distributed by the LLP to the Partners pursuant to Article hereinafter.
- (e) Subject to the provisions of the LLP Act, 2008 upon final liquidation of the LLP but not later than the Distribution Date, the net proceeds of liquidation remaining following the settling of accounts in accordance with Article hereof shall be distributed to the Partners in proportion of their respective Percentage Interests.

30. Notices

Any notice to be given under this Agreement shall be in writing and shall be deemed given when received and may be sent by e-mail, express courier or registered post to the registered office address of the LLP.

31. Defaults and Remedies

31.1 Defaults

If a partner materially defaults in the performance of its obligations under the LLP agreement, and such default is not cured within ten (10) days after notice

of such default is given by a partner to the defaulting partner for a default that can be cured by the payment of money, or within thirty (30) days after notice of such default is given by a partner to the defaulting partner for any other default, then the non-defaulting partners shall have the rights and remedies described in Article hereunder in respect of the default.

31.2 Remedies

If a partner fails to perform its obligations under this Agreement, any other partner shall have, in addition to any rights and remedies provided hereunder, all such rights and remedies as are provided at law or in equity.



34. Limitation of Liability/Indemnification

34.1 Limited Liability

Except as expressly provided herein, neither partner will be liable to the other partner or to the LLP with respect to any subject matter of this Agreement under any contract, negligence, strict liability or other legal or equitable theory for (i) any special, indirect, incidental, consequential or punitive damages or lost profits or (ii) cost of procurement of substitute goods or services.

34.2 Indemnification between the Partners

Neither partner shall indemnify the other partner or LLP or its respective officers, directors, employees and its respective successors, heirs and assigns ("Indemnitees") for any loss, claim, damage, liability or action except to the extent resulting from its respective gross negligence or willful wrong doing. This paragraph does not limit either partner's other remedies available to it under the laws.

34.3 Procedure

An indemnity that intends to claim indemnification under this Article 34 shall promptly notify the other partner (the "Indemnitor") in writing of any loss, claim, damage, liability or action in respect of which the Indemnitee intends to claim such indemnification, and the Indemnitor shall have the right to participate in, and, to the extent the Indemnitor so desires, to assume the defense thereof with counsel of its own choice.

34.4 Limitation of Indemnity

The indemnity Clause in this Agreement shall not apply to amounts paid in settlement of any loss, claim, damage, liability or action if such settlement is made without the consent of the Indemnitor, which consent shall not be withheld unreasonably. The failure to deliver written notice to the Indemnitor within a reasonable time after the commencement of any such action, if prejudicial to its ability to defend such action, shall relieve such Indemnitor of any liability to the Indemnitee under this Article.

34.5 Cooperation

At the Indemnitor's request, the Indemnitee under this Article and its employees and agents, shall cooperate fully with the Indemnitor and its legal representatives in the investigation and defense of any action, claim or liability covered by this indemnification and provide full information with respect thereto.

34.6 Proceeding other than by LLP

The LLP will indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative, except an action by or in the right of the LLP, by reason of the fact that he/she is or was a Partner, officer, employee of the LLP, or is or was serving as a manager or LLP against expenses, including attorneys' fees, judgments, fines and amounts paid in settlement actually and reasonably incurred by him/her in connection with the action, suit or proceeding if he/she acted in good faith and in a manner which he/she reasonably believed to be in or not opposed to the best interests of the LLP and, with respect to any criminal action or proceeding, had no reasonable cause to believe his/her conduct was unlawful. The termination of any action,



suit or proceeding by judgment, order, settlement, conviction, or its equivalent, does not, of itself, create a presumption that the person did not act in good faith and in a manner which he/she reasonably believed to be in or not opposed to the best interests of the LLP, and that, with respect to any criminal action or proceeding, he/she had reasonable cause to believe that his conduct was unlawful.

34.7 Proceeding by LLP

The LLP will indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action or suit by or in the right of the LLP to procure a judgment in its favour by reason of the fact that he/she is or was a Partner, officer, employee of the LLP against expenses, including amounts paid in settlement and attorneys' fees actually and reasonably incurred by him/her in connection with the defense or settlement of the action or suit if he/she acted in good faith and in a manner which he/she reasonably believed to be in or not opposed to the best interests of the LLP. Indemnification may not be made for any claim, issue or matter as to which such a person has been adjudged by a court of competent jurisdiction, after exhaustion of all appeals therefrom, to be liable to the LLP or for amounts paid in settlement to the LLP, unless and only to the extent that the court in which the action or suit was brought or other court of competent jurisdiction determines upon application that in view of all the circumstances of the case, the person is fairly and reasonably entitled to indemnity for such expenses as the court deems proper.

34.8 Mandatory Advancement of Expenses

The expenses of partners, designated partner and officers incurred in defending a civil or criminal action, suit or proceeding must be paid by the LLP as they are incurred and in advance of the final disposition of the action, suit or proceeding, upon receipt of an undertaking by or on behalf of the partner, designated partner or officer to repay the amount if it is ultimately determined by a court of competent jurisdiction that he/she is not entitled to be indemnified by the LLP. The provisions of this Article do not affect any rights to advancement of expenses to which personnel of the LLP other than partners, designated partner or officers may be entitled under any contract or otherwise.

34.9 Effect and Continuation

The indemnification and advancement of expenses authorized in or ordered by a court pursuant to above Article, inclusive:

- (a) does not exclude any other rights to which a person seeking indemnification or advancement of expenses may be entitled under the Agreement or otherwise for either an action in his/her official capacity or an action in another capacity while holding his/her office, except that indemnification, unless ordered by a court or for the advancement of expenses made pursuant to Article 34.7, may not be made to or on behalf of any partner, designated partner or officer if a final adjudication establishes that his/her acts or omissions involved intentional misconduct, fraud or a knowing violation of the law and was material to the cause of action.
- (b) Continues for a person who has ceased to be a partner, officer, employee or agent and ensures to the benefit of his/her heirs, executors and administrators.

34.10 Notice of Indemnification and Advancement

Any indemnification of, or advancement of expenses to, a Partner or officer in accordance with this Article, if arising out of a proceeding by or on behalf of the LLP, shall be reported in writing to the Partners.



35. Confidentiality

- (a) Disclosure of a partner's confidential information to any of the officers, employees, consultants or third party shall be made only if and to the extent necessary to carry out rights and responsibilities under this Agreement, shall be limited to the maximum extent possible, consistent with such rights and responsibilities, and shall only be made to persons who are bound to maintain the confidentiality thereof and not to use such confidential information except as expressly permitted by this Agreement.
- (b) Each partner shall use at least the same standard of care, but no less than a reasonable standard of care for this industry, as it uses to protect its own confidential information to ensure that its employees, consultants and other representatives do not disclose or make any unauthorized use of confidential information of another partner. Each partner shall promptly notify the other partner of any unauthorized use or disclosure of confidential information of another partner.
- (c) Within 60 days following termination or expiration of this Agreement, each partner will return to the other partner, or destroy, upon the written request of the concerned partner, all confidential information disclosed to it by the concerned partner pursuant to this Agreement including all copies and extracts of documents.
- (d) Any employee who shall have access to confidential information of another partner are bound by agreements to maintain such information in confidence and not to use such information except as expressly permitted herein. Each partner agrees to enforce confidentiality obligations by which its employees and consultants are bound.

36. Amendments

Subject to any contrary provisions of the Act, this Agreement may be amended only by the affirmative vote of all the partners. Any such amendment shall be in writing, duly executed by all the partners.

37. Repeal or Modification

Any repeal or modification of this Article by the partners of the LLP shall not adversely affect any right of a partner, designated partner or officer of the LLP existing hereunder at the time of such repeal or modification.

38. Enforceability of Agreement

The execution, delivery and performance by it of this Agreement have been duly authorized by all necessary corporate action and do not and will not violate any provision of any law, rule, regulation, order, writ, judgment, injunction, decree, determination or award presently in effect having applicability to it or any provision of its charter documents. This Agreement is a legal, valid and binding obligation of it, enforceable against it in accordance with its terms and conditions.

39. Entire Agreement

- (a) This Agreement and the exhibits and schedules hereto and any side letter agreements entered into by the partners as of the date of this Agreement relating to potential termination of this Agreement, constitute the entire agreement between the partners with respect to the subject matter hereof, and supersede all prior and contemporaneous agreements, representations, and understandings of the parties. No party hereto shall be liable or bound to the other in any manner by any warranties, representations or covenants with respect to the subject matter hereof except as specifically set forth herein.



(b) Nothing in this Agreement, express or implied, is intended to confer upon any party, other than the parties hereto, and their respective successors and permitted assigns, any rights, remedies, obligations or liabilities under or by reason of this Agreement, except as expressly provided herein. In addition, neither partner can assign this Agreement or the rights and obligations thereunder to another party without the prior written consent of the other partner.

40. Governing Law and Jurisdiction

41.1 This agreement and any disputes or claims arising out of or in connection with its subject matter are governed by and construed in accordance with the law of India.

41.2 The partners irrevocably agree that the courts of Calicut have exclusive jurisdiction to settle any disputes or claim that arises out of or in connection with this agreement.

41. Counterparts

This Agreement may be executed in two or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument, and shall become effective when there exist copies hereof which, when taken together, bear the authorized signatures of each of the parties hereto. Only one such counterpart signed by the party against whom enforceability is sought needs to be produced to evidence the existence of this Agreement.

42. Limited Liability Partnership Act prevails.

Unless the context otherwise requires, the general provisions, rules of construction and definitions contained in the LLP Act, 2008 shall govern the construction of this Agreement provided, however, that in the event of any inconsistency between such laws, the provisions of the Act shall prevail.

43. Severability

If one or more provisions of this Agreement are held by a proper court to be unenforceable under applicable law, portions of such provisions, or such provisions in their entirety, to the extent necessary and permitted by law, shall be severed herefrom, and the balance of this Agreement shall be enforceable in accordance with its terms.



Schedule I
List of Partners Subscribing the LLP

No	Name of Partners	Age	Addresses	Signature
1	MADAPPILLY DAVID PAULOSE	57	MADAPPILLY, PEKKATHIPADY, KIZHAKKAMBALAM, ERNAKULAM, KERALA - 685562	
2	PETER MADATHIKKUDIYIL PURAYATH	52	MADATHIKKUDIYIL, KINGINMATTON P.O., ERNAKULAM, KERALA 682311	

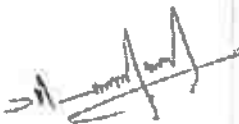




Schedule II

Matters requiring 3/4th majority from Partners

1. Expanding, altering or otherwise changing the nature of the business
2. Removal of a Director from the Board
3. Amending this Agreement
4. Borrowing any sum in excess of Rs. 5,00,000/-
5. Giving a guarantee
6. Increasing the capital of the LLP
7. Introducing to the LLP a new Partner (Whether profit sharing, salaried or otherwise)
8. The expulsion of any partner (for which purpose the vote of the partner whose expulsion is being considered shall not be counted)
9. A change in the name or the adoption of an additional trading name to be used by the LLP.
10. Decision to windup the LLP.

IN WITNESS WHEREOF, the parties hereto have hereunto set and subscribed their respective hands the day and year first hereinabove written.

Sl No	Name of Each Partner	Signature of Designated Partner / Partner / Member of body corporate	Name and address of witness	Signature of witness
1.	MADAPPILLY DAVID PALLOSE		DEEPAK GROUND FLOOR, CORAL REEF CO- OPERATIVE ROAD, CHIMBUKAYU P.O., THIRISSUR, KERALA-680022 (PRACTISING COMPANY SECRETARY)	
2.	PETER MADATHIKKADIYIL PURAYATH			





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L 380212

This Agreement is made and executed at Palakkad on this 15th day of October, 2020

AMONGST

1. Mr. MADAPPILLY DAVID PAULOSE, S/o. DAVID, residing at MADAPPILLY PUKKATTUPADY, KIZHAKKAMBALAM, ERNAKULAM, KERALA - 683562 and
2. MR. PETER MADATHIKUDIYIL PURAVATHI, S/o. PURAVATHI MADATHIKUDIYIL PATHROSE, residing at MADATHIKUDIYIL, KINGINIMATTOM PO, ERNAKULAM, KERALA - 682371 (hereinafter collectively called the Existing Designated Partners) of the one part.

MADAPPILLY DAVID PAULOSE

PETER MADATHIKUDIYIL PURAVATHI

No: 1618-2 VALUE RS: 1000

Svant stem Associates LLP

Palakkad

C. I. VARGHESE
VENDOR No. 34
THE ISSUER

8 OCT 2020





AND

3. Mr. UMMER MUHAMMED, S/o. MUHAMMED, residing at KATTEKATTIL, VARAVATTUR, PALLUR, DESAMANGALAM, THRISSUR-679532.
4. Mr. JOSE M P, S/o. MADATHIKKUDIYIL PATHROSE PURAVATHI, residing at MADATHIKKUDIYIL HOUSE, KINGINIMATTAM P.O., ERNAKULAM-682311 and
5. Mrs. BINSU PAUL, D/o. ABRAHAM KURUVILLA, residing at MADAPPILLY HOUSE, PUKKATTUPADY, KIZHAKKAMBALAM P.O., ERNAKULAM-683562 (hereinafter collectively called the New Partners) of the other part;

WHEREAS the parties to the 1st part of this agreement were carrying on the business of acquisition of land, contract work, construction work, mining, crusher units, purchase and sale of machinery and equipments under the name and style of 'SVART STEN ASSOCIATES LLP' (Registration No AAS-5013) (hereinafter referred as LLP) at 5013/225, Irumhassery Peedikayil(H), Ezhumangad, Arangottukara.P.O, Thirumittakode, Palakkad - 679533 in terms of Limited Liability Partnership Agreement dated 06.06.2020.

Now this Deed witnesseth as follows:

1. This agreement is supplemental to the LLP Agreement dated 06.06.2020 made and executed between the parties to the 1st part of this agreement.
2. From the date thereof, the said New Partners shall be the partners with the Existing Partners subject to the terms and conditions of the above said LLP Agreement except in so far as the same are varied by this agreement.
3. A new partner may be introduced with the consent all partners on such terms and conditions as the partners agree with the person to be introduced as a partner in the LLP. Any amendment to this agreement must be signed by all designated partners to this LLP agreement.
4. The capital of the LLP shall be Rs.3,00,000/- contributed by the parties therein in the manner below mentioned:
 1. Madappilly David Paulose: Rs.73,800/-
 2. Peter Madathikkudiyil Puravath: Rs.73,800/-
 3. Muhammed Ummer Kattekattil : Rs. 4,800/-
 4. Jose M P: Rs. 73,800/-
 5. Binsu Paul : Rs. 73,800/-
5. The partners shall be entitled to share the profits and bear the losses of the LLP in following proportions:
 1. Madappilly David Paulose: 24.60%
 2. Peter Madathikkudiyil Puravath: 24.60%
 3. Muhammed Ummer Kattekattil : 1.60%
 4. Jose M P: 24.60%
 5. Binsu Paul : 24.60%



6. Except as modified by this agreement, the LLP Agreement of date 06.06.2020 shall hereafter be read and construed as if the same had been executed by the Existing Designated Partner, Retiring Designated Partner and New Designated Partners hereto.


In witness whereof the parties hereto have set and subscribed their hands, the day and year first herein above written.

1. MADAPPILLY DAVID PAULOSE 

2. PETER MADATHIKUDIYIL PURAVATH 

1. Witness:

2. Witness:

SHO WR M PARAMBIL SIDDIK S/O Yousuf




Form 9
[See rule 7 and 10(S)]
Consent to act as Designated Partner/Partner

To
SVART STEN ASSOCIATES LLP
 Palakkad.

Subject : Consent to act as Partner

I, **UMMER MUHAMMED** hereby give my consent to act as Designated Partner of the **SVART STEN ASSOCIATES LLP** pursuant to Section 7(3) of the Act.

Particulars

01	Designated Partner Identification Number (DPIN)/PAN number	ACFPU6824R
02	Name	UMMER MUHAMMED
03	Father's/Husband's Name	MUHAMMED
04	Present residential address	KATTEKKATTIL, VARAVATTUR, PALLUR, DESAMANGALAM, THRISSUR-679532
05	e-mail ID	
06	Name of the Partnership Firm OR LLPIN & Name of Limited Liability Partnership OR CIN & Name of the Company OR Name of any other body corporate whose nominee the designated partner is	NA

I hereby state that I satisfy the conditions and requirements for being eligible to be a partner and I have not been disqualified to act as a partner.

Date 15.10.2020

Place THRISSUR

Signature of Partner

UMMER MUHAMMED



Form 9
 [See rule 7 and 10B]
Consent to act as Designated Partner/Partner

To
SVART STEN ASSOCIATES LLP
 Palakkad

Subject : Consent to act as Partner

I, JOSE M P hereby give my consent to act as Designated Partner of the SVART STEN ASSOCIATES LLP pursuant to Section 7(3) of the Act.

Particulars

01	Designated Partner Identification Number (DIPIN/PAN number)	AZQPJ0811P
02	Name	JOSE M P
03	Father's / Husband's Name	MADATHIKKUDIYIL PATHROSE PURAVATHI
04	Present residential address	MADATHIKKUDIYIL HOUSE, KINGINIMATTAM P.O. ERNAKULAM-682511
05	e-mail ID	
06	Name of the Partnership Firm OR LLPIN & Name of Limited Liability Partnership OR CIN & Name of the Company OR Name of any other body corporate whose nominee the designated partner is	NA

I hereby state that I satisfy the conditions and requirements for being eligible to be a partner and I have not been disqualified to act as a partner.

Date: 15.10.2020

Signature of Partner

Place ERNAKULAM

JOSE M P



Form 9
 [See rule 7 and 10(s)]
Consent to act as Designated Partner/Partner

To
SVARTI STEN ASSOCIATES LLP
 Palakkad.

Subject : Consent to act as Partner

I, **BINSU PAUL**, hereby give my consent to act as Designated Partner of the **SVARTI STEN ASSOCIATES LLP** pursuant to Section 7(3) of the Act.

Particulars

01	Designated Partner Identification Number (DIPIN)/PAN number	CUMPP403K
02	Name	BINSU PAUL
03	Father's/Husband's Name	ABRAHAM KURUVILLA
04	Present residential address	MEADAPPELY HOUSE, PUKKATTU PADY, KIZHAKKAMBALAM P.O., ERNAKULAM- 683562
05	e-mail ID	
06	Name of the Partnership Firm OR LLPIN & Name of Limited Liability Partnership OR CIN & Name of the Company OR Name of any other body corporate whose nominee the designated partner is	NA

I hereby state that I satisfy the conditions and requirements for being eligible to be a partner and I have not been disqualified to act as a partner.

Date 15/10/2020

Place ERNAKULAM

Signature of Partner *Binsu*
BINSU PAUL



SVART STEN ASSOCIATES LLP

50(3/225), Irumbakassery Peedikayil(H) Ezhumangad, Arangottokara p. O.

Thirumittakode Palakkad - 679533

LLPIN : AA5-5013

CERTIFIED TRUE COPY OF THE MEETING OF PARTNERS OF THE LLP SVART STEN ASSOCIATES LLP HELD ON 15.10.2020 AT THE REGISTERED OFFICE OF THE LLP

Admission of New Partners


"RESOLVED THAT pursuant to the provisions of Section 25 of the Limited Liability Partnership Act, 2008 read with Rule 10 and 22 of LLP (Incorporation of LLP) Rules, 2009 and other applicable provisions, if any, of the Limited Liability Partnership Act, 2008 and Clause 22.1 of the LLP Agreement dated 06.06.2020 Mr. UMMER MUHAMMED, Mr. JOSE M P and Mrs. HINSU PAUL with the consent of the remaining Designated Partners of the LLP be appointed as Partner as agreed upon by the Designated Partners of the LLP.

"FURTHER RESOLVED THAT the LLP Agreement be amended accordingly in order to give effect to the above resolution."

"FURTHER RESOLVED THAT any designated partner of the LLP be and is hereby authorized to sign necessary documents, forms, do necessary filings with the Registrar of Companies and to do any such acts and deeds that may be necessary in this regard."

//Certified True copy//

For SVART STEN ASSOCIATES LLP


MADAPPILLY DAVID PAULOSE
DIN: 08238452


PETER MADATHKUDIYIL PURAVATH
DIN: 08238453

MINING PLAN APPROVED
By
Assistant Director (I/c)
of Geology & Mining *



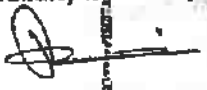
കേരളം കേരल KERALA
Board Resolution


09AA 713231

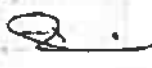
RESOLUTION PASSED AT THE MEETING OF THE PARTNERS OF SVART STEN ASSOCIATES LLP HELD AT THE REGISTERED OFFICE OF THE COMPANY AT ARANGOTTUKARA, THIRUMITTAKODE, PALAKKAD, KERALA, 679532 (PIN) ON 30-11-2020 AT 10.30 AM

RESOLVED THAT one of our partner, Mr. Peter M Puravath is allowed to take licenses from Mining & Geology Department/ MOEF, Tamil Nadu and also allowed to take quarry lease for the land in Araindhaperumal Nadanur village, Sy No: 477/1,2,6, 478/2,3,4, containing 1.24 ha.

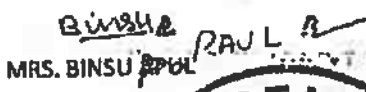
The validity is for 12 years from the date of allowing the quarry lease.


MR. PETER M PURAVATH
DESIGNATED PARTNER


MR. M D PAULOSE
DESIGNATED PARTNER


MR. JOSE MP
PARTNER


MR. UMMER MUHAMMED
PARTNER


MRS. BINSU PAUL
PARTNER

NOTARY
REMADEVI K
Area: Thiruvananthapuram District
Reg. No. 20006
Ekhly Jct: 19-02-2025
Roll No. K/741/199
Wadakkanchery, Thiruvananthapuram Dist.
Kerala State, India 680 582

NOTARY
REMADEVI K
Area: Thiruvananthapuram District
Reg. No. 20006
Ekhly Jct: 19-02-2025
Roll No. K/741/199
Wadakkanchery, Thiruvananthapuram Dist.
Kerala State, India 680 582

ATTEST
15-10-19


S. DHANASEKAR, M Sc., (Geo)
Qualified Person



സംസ്ഥാന സർക്കാർ
GOVERNMENT OF KERALA



പിറ്റർ
Peter

ജനന വർഷം/Year of Birth: 1968
പുരുഷൻ / Male



6512 8279 4417

ആധാർ - സാധാരണക്കാരന്റെ അവകാശം



ഭൂമിശാസ്ത്രവും അന്വേഷണവും
MINISTRY OF GEOLGY & MINING

താമസവിലാസം: S/O. പുരവത്ത്
മാദാതികുടിയിൽ, ചിങ്ങിനാട്ടം പി.ഒ.
കിരീടത്തോട് ഗ്രാമപഞ്ചായത്ത്
കിരീടത്തോട് ഞാർത്ത് ഞാർത്ത്
ചിങ്ങിനാട്ടം, എറണാകുളം, കെ.എസ്. 682311

Address: S/O: Puravath,
Madathikudiyil,
Kinginmatom P.O.,
Alkkaranadu South Village,
Kinginmatom, Kerala,
682311

1000 180 1847 help@cbdtl.gov.in www.cbdtl.gov.in P.O. Box No.1847, Bangalore-500 001

S. Dhanasekar
S.DHANASEKAR, M.Sc., (Geo)
Qualified Person

**ANNEXURE-VI MINING PLAN REPORT &
PLATES**

From

Thiru.T.Vinoth, M.Sc.,
Assistant Director,
Geology and Mining,
Tenkasi.

To

M/s. Svart Sten Associates LLP,
Asum Tower,
Ezhumangad,
Arangottukara Post,
Palakkad District,
Kerala - 679 533.

Rc.No.M2/36809/2020, dated. 11.04.2022

Sir,

Sub: Mines and Minerals - Minor Minerals - Tenkasi - Quarry lease application preferred by M/s. SVART STEN ASSOCIATES LLP for quarrying Roughstone and Gravel - Alangulam Taluk - A.P.Nadanoor Village - SF. Nos. 477/1, 477/2, 477/6, 478/2(P), 478/3(P) & 478/4(P) - over an extent of 1.24.0 hectares of patta lands - precise area communicated - Mining plan submitted - Approval accorded - Reg.

Ref:

1. G.O (Ms) No. 169, Industries (MMC-1) Department dated. 04.08.2020.
2. Quarry lease application preferred by M/s. SVART STEN ASSOCIATES LLP, dated. 08.12.2020.
3. G.O. (Ms). No. 79, Industries (MMC1), Department, dated: 06.04.2015.
4. Precise Area Communication Notice in Rc. No.M2/36809/2020, dated. 24.01.2022.
5. Letter dated. 28.02.2022 received from the applicant company M/s. Svart Sten Associates LLP.

Thiru.Peter, S/o.Puravath, Designated partner of M/s. SVART STEN ASSOCIATES LLP, Asum Tower, Ezhumanged, Arangottukara Post, Palakkad District, Kerala - 679 533 has applied on 08.12.2020 for grant of

quarry lease for quarrying Roughstone and Gravel over an extent of 1.24.0 hectares of patta land in SF. Nos. 477/1 (0.24.5), 477/2 (0.24.0), 477/6 (0.22.5), 478/2(P) (0.18.0), 478/3(P) (0.16.0) & 478/4(P) (0.19.0) of A.P.Nadanoor Village, Alangulam Taluk, Tenkasi District for a period of five years under Rule 19 (1) of Tamil Nadu Minor Mineral Concession Rules, 1959.

2. Based on the recommendations of the Revenue Divisional Officer, Tenkasi and the Assistant Director of Geology and Mining, Tenkasi precise area has been communicated by the Assistant Director of Geology and Mining, Tenkasi vide reference 4th cited to M/s. SVART STEN ASSOCIATES LLP for grant of quarry lease for quarrying and transportation of Roughstone and Gravel over an extent of 1.24.0 hectares of patta land in SF. Nos. 477/1 (0.24.5), 477/2 (0.24.0), 477/6 (0.22.5), 478/2(P) (0.18.0), 478/3(P) (0.16.0) & 478/4(P) (0.19.0) of A.P.Nadanoor Village, Alangulam Taluk, Tenkasi District for a period of 5 years.

3. In response to the precise area communicated, the applicant has submitted three copies of draft Mining Plan duly prepared by a Qualified Person and requested for approval of the same vide reference 5th cited.

4. The draft Mining Plan submitted in respect of the precise area communicated have been verified with reference to field conditions.

All the conditions stipulated in the precise area communicated have been incorporated in the Mining Plan. The required safety distance of 7.5 meters to the adjacent patta lands have been clearly demarcated.

5. In exercise of the powers vested under sub rule (2) and (5) of Rule 41 of Tamil Nadu Minor Mineral Concession Rules, 1959, I hereby approve the mining plan subject to the following conditions:-

- i. The mining plan is approved without prejudice to any other order or direction from any court of contempt jurisdiction.
- ii. The mining plan is approved without prejudice to any other Law applicable to the quarry lease from time to time whether such laws are made by the Central Government, State Government or any other authority.
- iii. The approval of the mining plan does not in any way imply the approval of the Government in terms of any other provisions of the Mines and Minerals (Development and Regulation) Act 1957, or any other connected laws including Forest (Conservation) Act, 1980, Forest Conservation Rules, 1981, Environment Protection Act, 1980, Indian Explosives Act, 1884 (Central Act IV of 1884) and the Rules made there under and the Tamil Nadu Minor Mineral Concession Rules, 1959.
- iv. Quarrying operations should be carried out in accordance with the Approved Mining Plan.
- v. The applicant is entitled for production of 2,16,405 cbm of Roughstone and 22,770 cbm of Gravel upto a depth of 42 meters for a period of 5 years as per the Approved Mining Plan.
- vi. A safety distance of 7.5 meters should be provided to the adjoining patta lands.

- vii. No hindrance shall be caused to the adjacent pattadars, lands and public while carrying out quarrying operations.
- viii. No dimensional blocks with a size of 30c.m x 30c.m x 30c.m suitable for polishing shall be produced.
- ix. Environmental Clearance should be obtained from the State Level Environment Impact Assessment Authority, Chennai.

6. As directed by the Assistant Director of Geology and Mining, Tenkasi in the reference 4th cited, you are hereby requested to produce Environmental Clearance obtained from the State Level Environment Impact Assessment Authority (SEIAA), Chennai as applicable under Rule 42 of Tamil Nadu Minor Mineral Concession Rules, 1959 for grant of quarry lease, in respect of the precise area communicated.

Encl: Approved Mining plan.


**Assistant Director,
Geology and Mining,
Tenkasi.**


4/4/22

From

Thiru.T.Vinoth, M.Sc.,
Assistant Director,
Geology and Mining,
Tenkasi.

To

M/s. Svart Sten Associates LLP,
Asum Tower,
Ezhumangad,
Arangottukara Post,
Palakkad District,
Kerala - 679 533.

Rc. No.M2/36809/2020, dated. 12.04.2022

Sir,

Sub: Mines and Minerals - Minor Minerals - Roughstone and Gravel - Tenkasi District - Alangulam Taluk - A.P.Nadanoor Village - SF. Nos. 477/1, 477/2, 477/6, 478/2(P), 478/3(P) & 478/4(P) - over an extent of 1.24.0 hectares of patta lands - Quarry lease application preferred by M/s. SVART STEN ASSOCIATES LLP - Certain Particulars requested - for obtaining Environmental Clearance - furnished - reg.

- Ref:**
- 1 G.O (Ms) No. 169, Industries (MMC-1) Department dated. 04.08.2020.
 - 2 Quarry lease application preferred by M/s. SVART STEN ASSOCIATES LLP, dated. 08.12.2020.
 - 3 Precise Area Communication Notice in Rc. No.M2/36809/2020, dated. 24.01.2022.
 - 4 Letter dated. 11.04.2022 received from the applicant company M/s. Svart Sten Associates LLP.
 - 5 Mining Plan Approval letter No. M2/36809/2020, dated. 11.04.2022.

Thiru.Peter, S/o.Puravath, Designated partner of M/s. SVART STEN ASSOCIATES LLP, Asum Tower, Ezhumanged, Arangottukara Post, Palakkad District, Kerala - 679 533 has applied on 08.12.2020 for grant of

quarry lease for quarrying Roughstone and Gravel over an extent of 1.24.0 hectares of patta land in SF. Nos. 477/1 (0.24.5), 477/2 (0.24.0), 477/6 (0.22.5), 478/2(P) (0.18.0), 478/3(P) (0.16.0) & 478/4(P) (0.19.0) of A.P.Nadanoor Village, Alangulam Taluk, Tenkasi District for a period of five years under Rule 19 (1) of Tamil Nadu Minor Mineral Concession Rules, 1959 vide reference 1st cited.

2. Based on the recommendations of the Revenue Divisional Officer, Tenkasi and the Assistant Director of Geology and Mining, Tenkasi precise area has been communicated by the Assistant Director of Geology and Mining, Tenkasi vide reference 4th cited to M/s. SVART STEN ASSOCIATES LLP for grant of quarry lease for quarrying and transportation of Roughstone and Gravel over an extent of 1.24.0 hectares of patta land in SF. Nos. 477/1 (0.24.5), 477/2 (0.24.0), 477/6 (0.22.5), 478/2(P) (0.18.0), 478/3(P) (0.16.0) & 478/4(P) (0.19.0) of A.P.Nadanoor Village, Alangulam Taluk, Tenkasi District for a period of 5 years.

3. The Mining Plan submitted by the lessee, M/s. SVART STEN ASSOCIATES LLP for quarrying roughstone has been approved vide this office letter No.M2/36809/2020, dated.11.04.2022 for obtaining Environmental Clearance as per the newly introduced Rule Number 41 and 42 of Mineral Concession Rules 1959.

4. In the reference 4th cited, M/s. SVART STEN ASSOCIATES LLP have requested to furnish certain particulars such as existing / proposed / abandoned mines within a radial distance of 500 meters

from the periphery of the existing mining lease hold area for obtaining environmental clearance from the State Level Environment Impact Assessment Authority, Chennai.

5. The details of quarry leases granted for Roughstone falling within a radial distance of 500 meters from the subject leasehold area are furnished below:-

Sl. No	Name of the Lessee	Village & SF. No.	Extent - Hects	Lease status
1. Abandoned quarries				
-Nil-				
2. Existing quarries				
	Thiru.N.Mohamed Mahaboob, S/o. Nagoor Pitchai, No. 8/143, Main Road, Pottalpurud Village kasp, Ambasamudram Taluk, Tenkasi.	A.P.Nadanoor & SF. Nos. 434/1C, 434/4E, 434/4F, 434/4G, 434/4H, 434/4I, 434/4J, 470/1, 471/2, 471/3, 472/1B & 472/1C	3.74.5	Proceedings No. M1/44736/2016, dt. 20.03.2018 for a period of 5 years from 16.04.2018 to 15.04.2023
3. proposed quarries				
1.	M.Mohammed Ismail, S/o. Mohammed Mahaboob, 8/143, Main Road, Pottal Purud, Tenkasi District.	A.P.Nadanoor Village, SF. Nos. 467/2, 467/3, 468/1, 477/3, 477/4 & 477/5	4.38.0	Proposed Quarry

2.	M/s. Svart Sten Associates LLP, Asum Tower, Ezhumangad, Arangottukara Post, Palakkad District, Kerala - 679 533.	A.P.Nadanoor Village, SF. Nos. 477/1, 477/2, 477/6, 478/2(P), 478/3(P) & 478/4(P)	1.24.0	Proposed Quarry
Total extent of proposed quarries			5.62.0	

6. In view of the above it is recommended that Environmental Clearance may be issued in favour of the applicant subject to the usual terms and conditions.

P. A. / 12/11/22
**Assistant Director,
 Geology and Mining,
 Tenkasi.**

[Signature]
 12/11/22

MINING PLAN



FOR

**GRANT OF ROUGH STONE & GRAVEL QUARRY LEASE IN PATTALAND
PROPOSED PERIOD OF MINING 5 YEARS**

(Prepared Under Rules 41 & 42 as amended in Tamil Nadu Minor Mineral Concession Rules, 1959)

LOCATION OF THE APPLIED AREA

EXTENT : 1.24.0Ha.
**S.F. Nos : 477/1,477/2,477/6,478/2(P),478/3(P) &
478/4(P).**
VILLAGE : A.P.NADANOOR.
TALUK : ALANGULAM.
DISTRICT : TENKASI.
STATE : TAMIL NADU.

APPLICANT

**M/s. SVART STEN ASSOCIATES LLP,
ASUM TOWER,
EZHUMANGAD,
ARANGOTTUKARA POST,
PALAKKAD DISTRICT,
KERALA - 679 533.**

PREPARED BY:

**S. DHANASEKAR, M.Sc.(Geol),M.M.E.A.I.,
QUALIFIED PERSON,
NO. 5/30-7 B, AVVAI NAGAR,
PONKUMAR MINES ROAD,
JAGIR AMMAPALAYAM,
SALEM DISTRICT - 636 302.
Email: geodhana@yahoo.co.in
CELL : 98946-28970 & 73733-74702.**



CONTENTS

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11.0	ENVIRONMENT MANAGEMENT PLAN	25
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ANNEXURES

SL. NO.	DESCRIPTION	ANNEXURE NO.
1.	COPY OF PRECISE AREA COMMUNICATION LETTER	I
2.	COPY OF FMB	II-A & B
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5.	COPY OF LAND CONSENT DOCUMENT	V
6.	COPY OF CERTIFICATE OF REGISTRATION	VI
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8.	COPY OF MANAGING PARTNER ID PROOF	VIII
9.	COPY OF QUALIFICATION CERTIFICATE	IX
10.	COPY OF EXPERIENCE CERTIFICATE	X
11.	COPY OF PROPOSED LEASE AREA PHOTOS	XI



LIST OF PLATES

SL. NO.	DESCRIPTION	PLATE NO.	SCALE
1.	LOCATION PLAN	I	Not to Scale
2.	ROUTE MAP	IA	Not to Scale
3.	TOPOSHEET MAP OF THE LEASE AREA	IB	1:50,000
4.	SATELLITE IMAGE (LEASE AREA)	IC	1:1000
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6.	MINE LEASE PLAN	II	1:1000
7.	SURFACE AND GEOLOGICAL PLAN	III	1:1000
8.	GEOLOGICAL SECTIONS	III-A	HOR - 1:1000 VER - 1:500
9.	YEAR WISE DEVELOPMENT AND PRODUCTION PLAN	IV	1:1000
10.	YEAR WISE DEVELOPMENT AND PRODUCTION SECTIONS	IV- A	HOR - 1:1000 VER - 1:500
11.	MINE LAYOUT , LAND USE PATTERN & AFFORESTATION PLAN	V	1:1000
12.	ENVIRONMENT PLAN	VI	1:5000
13.	CONCEPTUAL/FINAL MINE CLOSURE PLAN	VII	1:1000
14.	CONCEPTUAL/FINAL MINE CLOSURE SECTIONS	VII- A	HOR - 1:1000 VER - 1:500
15.	PROGRESSIVE MINE CLOSURE PLAN	VIII	1:1000

M/s. SVART STEN ASSOCIATES LLP,
ASUM TOWER,
EZHUMANGAD,
ARANGOTTUKARA POST,
PALAKKAD DISTRICT,
KERALA – 679 533.



CONSENT LETTER FROM THE APPLICANT

I hereby give my consent for preparing the Mining Plan in respect of **Rough Stone & Gravel** quarry over an extent of **1.24.0Hectares** of **Patta Land** in **S.F.Nos.477/1, 477/2, 477/6, 478/2(P), 478/3(P) & 478/4(P)** of **A.P.Nadanoor Village, Alangulam Taluk, Tenkasi District, Tamilnadu State** by **Shri. S. Dhanasekar, M.Sc., Qualified Person.**

I request the Assistant Director, Department of Geology and Mining, Tenkasi District to make further correspondence regarding modifications if any in the Mining Plan with the said Qualified Person on this following address.

S.DHANASEKAR, M.Sc.,
Qualified Person
No.5/30-7B, Avvai Nagar,
Ponkumar Mines Road,
Jagirammalayam,
Salem District - 636302.
E-Mail: geodhana@yahoo.co.in
Cell: 98946-28970

I hereby undertake that all modifications so made in the Mining Plan by the Qualified Person may be deemed to have been made with my knowledge and consent and shall be acceptable to me and binding on me in all respects.

For **M/s. Svart Sten Associates LLP,**

A handwritten signature in black ink, appearing to be a stylized name.

Signature of the Applicant

Place: KERALA

Date:

M/s. SVART STEN ASSOCIATES LLP,
ASUM TOWER,
EZHUMANGAD,
ARANGOTTUKARA POST,
PALAKKAD DISTRICT,
KERALA – 679 533.



DECLARATION

I hereby declare that the Mining Plan in respect of **Rough Stone & Gravel** quarry over an extent **1.24.0 Hectares** of Patta Land in S.F. Nos. **477/1, 477/2, 477/6, 478/2(P), 478/3(P) & 478/4(P)** of **A.P.Nadanoor Village, Alangulam Taluk, Tenkasi District and Tamilnadu State** has been prepared with my consultation and I have understood the contents and agree to implement the same in accordance with the Mining Laws.

For **M/s. Svart Sten Associates LLP,**

A handwritten signature in black ink, consisting of a stylized, cursive script.

Signature of the Applicant

Place: **KERALA**

Date:



KRK MEMORIAL MINING SERVICES

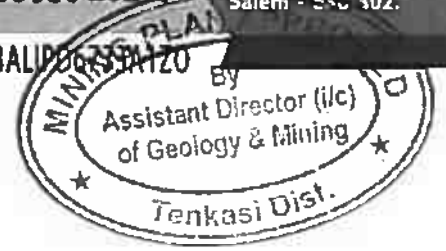
S.DHANASEKAR
M.Sc. (Geo), M.A.E.A.I
Senior Geologist /
Recognized Qualified Person



Off
86680 20217

No.5/30-7B, Avvai Nagar,
Ponkumar Mines Road,
Jagir Ammapalayam,
Salem - SSC 302.

GST: 33ALIP0039A120



CERTIFICATE

This is to certify that, the provisions of Minor Minerals Conservation and Development Rules, 2010 (MMCDR) have been observed in the Mining Plan for the grant of **Rough Stone & Gravel quarry lease** over an extent of **1.24.0 Hectares of Patta Land** in **S.F.Nos. 477/1,477/2, 477/6, 478/2(P), 478/3(P)& 478/4(P)** of **A.P.Nadanoor Village, Alangulam Taluk, Tenkasi District, Tamilnadu State** obtained by **M/s. Svart Sten Associates LLP.**

Wherever specific permission / exemptions / relaxations or approvals are required, the Applicant will approach the concerned authorities of State and Central Governments for obtaining such permissions etc.

Certified

Signature of Qualified Person.

S.DHANASEKAR, M.Sc. (Geo)
Qualified Person

Place: SALEM

Date:

11°41'29.45" N
78°07'13.58" E

98946 28970
73733 74702

krkmemorialminingservices@gmail.com
geodhana@yahoo.co.in

Branch
8/3, Kullappan Street.
Opp. Indian Bank Line,
Omatur, Salem - 636 455.



KRK MEMORIAL MINING SERVICES

S.DHANASEKAR
M.Sc. (Geo) MREAI
Senior Geologist /
Recognized Qualified Person



CERTIFICATE

This is to certify that during preparation of Mining Plan for **Rough Stone & Gravel** quarry over an extent of **1.24.0 Hectares** of **Patta Land** in **S.F.Nos. 477/1, 477/2, 477/6, 478/2(P), 478/3(P) & 478/4(P)** of **A.P.Nadanoor Village, Alangulam Taluk, Tenkasi District, Tamilnadu State** for **M/s. Svart Sten Associates LLP**, covers all the provisions of **Mines Act, Rules, and Regulations** etc made there under and whenever specific permission are required, the Applicant will approach the **Director General of Mines Safety, Chennai**. The standards prescribed by **DGMS** in respect of **Mines Health** will be strictly implemented.

Certified

Signature of Qualified Person.

S.DHANASEKAR, M.Sc. (Geo)
Qualified Person

Place: SALEM

Date:

11°41'29.45" N
78°07'13.58" E

98946 28970
73733 74702

krkmemorialminingservices@gmail.com
geodhana@yahoo.co.in

Branch
8/3, Kullappan Street.
Opp. Indian Bank Line,
Omatur, Salem - 636 455.

MINING PLAN FOR MINOR MINERALS
ROUGH STONE & GRAVEL QUARRY
PROPOSED PERIOD OF MINING 5 YEARS



Over an extent 1.24.0 Hectares of Patta Land in S.F. Nos. 477/1, 477/2, 477/6, 478/2(P), 478/3(P) & 478/4(P) of A.P.NADANOOR Village, ALANGULAM Taluk, TENKASI District and TAMILNADU State.

(Prepared Under Rules 41 & 42 as amended in Tamil Nadu Minor Mineral Concession Rules, 1959)

1.0 INTRODUCTION :

1. M/s. SVART STEN ASSOCIATES LLP, Asum Tower, Ezhumangad, Arangottukara Post, Palakkad District, Kerala- 679 533 has obtained quarry lease for **Rough Stone & Gravel** over an extent of **1.24.0 Hectares of Patta Land** in S.F.Nos. 477/1, 477/2, 477/6, 478/2(P), 478/3(P) & 478/4(P) of A.P.Nadanoor Village, Alangulam Taluk, Tenkasi District of Tamilnadu State for a period of Five Years.
2. The Assistant Director(G&M), Tenkasi in his letter **Roc.No.M2/36809/2020** dated **24.01.2022** has directed the applicant to produce approved Mining Plan and Environmental Clearance certificate from the State Level Environmental Impact Assessment Authority (SEIAA) for the grant of quarry lease for the applied area.
3. Accordingly, Mining Plan is prepared under Rules 41 & 42 as amended in Tamil Nadu Minor Mineral Concession Rules, 1959 by incorporating the conditions imposed in the precise area communication letter and by incorporating all the details proposed in the letter to obtain environment clearance from State Level Environmental Impact Assessment Authority.
4. In the above circumstances M/s. Svart Sten Associates LLP, is hereby preparing the Mining Plan for approval for Fresh Rough Stone & Gravel Quarry. And subsequent submission of Form-I and pre-Feasibility report to obtain environmental clearance from the SEIAA of Tamil Nadu.
5. This Mining Plan is prepared for the Fresh Rough Stone & Gravel Quarry for a period of **Five Years.**


S.DHANASEKAR, M.Sc.,(Geo)
Qualified Person

6. This Mining Plan is prepared by considering the TNMMCR 1959 and as per the EIA Notification 2006 and subsequent amendments and judgments.



7. The Geological Reserves available in the lease period is 48000M³ recoverable Reserves is estimated as 216405M³ of Rough Stone & 22770M³ of Gravel after leaving necessary safety distance from the lease boundary as indicated lease granted proceedings and relevant mining laws in force.

8. The proposed production scheduled for the five years about 216405M³ of Rough Stone and 22770m³ of Gravel. Proposed average annual production is 43281m³ of Rough stone.

9. Environmental parameters,

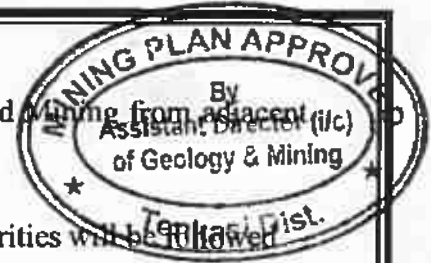
- i) There is no interstate boundary around 10Kms radius.
- ii) There is no wild life animal sanctuary within 10Kms radius form the project site area under the Wildlife (Protection) Act, 1972. Therefore the project seeks clearance only from State Environment Impact Assessment Authority (SEIAA), under B2 Category.

10. Environmental measures already adopted are,

- i) Dust Control at source while drilling and blasting,
- ii) Dust suppression at loading point and transport haul roads,
- iii) Noise Control in blasting, control of fly rock missiles and vibration by doing peak particle velocity with in standard as prescribed by the DGMS and MoEF.
- iv) Unnecessary land degradation should be avoided or damaged land should be reclaimed or rehabilitated.
- v) Uneven rat hole mining is avoided and follow scientific and systematic mining by safe bench system of open cast mining.
- vi) Mining near major fracture zones already avoided to control ground water fluctuation in the adjacent agricultural lands.
- vii) Emission test of vehicles should be in stack maintain minimum emission level of flue gases.
- viii) Noise level should not exceed 80db and the vehicles use only permitted Air Horn while on road near residential areas.

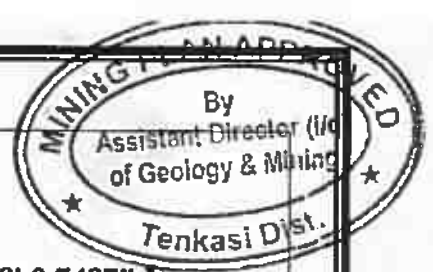
ix) Safety zones as prescribed by the Department of Geology and Mining from adjacent infrastructures should be strictly adhering to.

x) And any other conditions as stipulated by the concerned authorities will be followed to protect the environment.



2.0 EXECUTIVE SUMMARY:

a.	Name of the Village	:	A.P.Nadanoor
b.	Name of the Panchayat / Union	:	A.P.Nadanoor / Alangulam
c.	The proposed total Mineable Reserves	:	216405M ³
d.	The proposed quantity of reserves (level of production) Rough stone and Gravel to be mined is (Recoverable reserves)	:	216405M ³ of Rough Stone 22770M ³ of Gravel
e.	Total extent of the area	:	1.24.0Ha
f.	Proposed Period of mining	:	Five Years
g.	Proposed Depth of mining	:	42m (Gravel 2m + Rough stone 40m).
h.	Existing Pit Dimension	:	Nil
i.	Average Production Per Year	:	43281M ³ of Rough stone 22770M ³ of Gravel
j.	Method of mining / level of mechanization	:	Opencast, Semi-mechanized Mining with a bench height of 5m and bench width of 5m is proposed.
k.	Types of Machineries used in the quarry	:	i) Compressor with jack hammer. ii) Excavator of 0.90Cbm bucket Capacity.
l.	Cost of the Project	:	
	a. Fixed Cost		Rs. 15,70,000/-
	b. Operational Cost		Rs. 30,00,000/-
	c. EMP Cost		Rs. 3,65,000/-



m.	The Applied lease area is bounded by four corners and the coordinates are	:	Toposheet No. 58- H/5
	Latitude	:	8° 48' 11.8373" N to 8° 48' 9.7487" N
	Longitude	:	77° 26' 5.2133" E to 77° 25' 59.9788" E
	North East	:	8° 48' 11.8373" N 77° 26' 5.2133" E
	South East	:	8° 48' 9.6595" N 77° 26' 4.7635" E
	North West	:	8° 48' 13.7672" N 77° 26' 0.8488" E
	South West	:	8° 48' 9.7487" N 77° 25' 59.9788" E

3.0. GENERAL INFORMATION:

3.1	a.	Name of the Applicant	:	M/s. Svart Sten Associates LLP,
	b.	Address of the Applicant with phone No and e-mail id if any	:	M/s. Svart Sten Associates LLP, Asum Tower, Ezhumangad, Arangottukara Post, Palakkad District, Kerala - 679 533.
	c.	Status of the Applicant	:	Partnership Firm
3.2	a.	Mineral Which the Applicant intends to mine	:	Rough Stone & Gravel
	b.	Precise area letter	:	Roc. No.M2/36809/2020 dated 24.01.2022
	c.	Period of permission	:	5 Years
	e.	Name and Address of the Qualified Person preparing Mining Plan	:	S.Dhanasekar, M.Sc., No.5/30-7B, Avvai Nagar, Ponkumar Mines Road, Jagirammalayam, Salem District - 636302. E-Mail: geodhana@yahoo.co.in Cell: 98946-28970 & 73733-74702.

4.0 LOCATION: DETAILS AREA:



STATE	DISTRICT	PANCHAYAT / UNION	TALUK	VILLAGE	S.F. NO.	EXTENT IN HECTARE
Tamilnadu	Tenkasi	A.P.Nadanoor / Alangulam	Alangulam	A.P.Nadanoor	477/1	0.24.5
					477/2	0.24.0
					477/6	0.22.5
					478/2(P)	0.18.0
					478/3(P)	0.16.0
					478/4(P)	0.19.0
TOTAL =						1.24.0Ha

b.	Classification of the Area (Ryotwari / Poramboke / others)	:	It is a Patta Land, which is not fit for vegetation/cultivation.
c.	Ownership / Occupancy of the Applied Lease area (Surface rights)	:	It is a Patta Land in S.F. Nos.477/1, 477/2, 477/6, 478/2(P), 478/3(P) & 478/4(P) registered in the name of Thiru. Peter MP, S/o. Puravath , vide Patta No. 3039 & 3040. The pattadhar had given consent to the applicant firm M/s. Svart Sten Associates LLP for Rough Stone & Gravel quarrying for a period of 12 years from the date of execution of lease deed. Hence applicant firm has surface right over the area.
d.	Toposheet No. with Latitude and Longitude	:	Toposheet No. 58 -H/5 : 8° 48' 11.8373" N to 8° 48' 9.7487" N : 77° 26' 5.2133" E to 77° 25' 59.9788" E
e.	Existence of Public Road / Railway line if any nearby the area and approximate distance	:	Tenkasi – Kadayam = 17.0 kms Kadayam – Pottal Pudur = 3.0 kms Quarry site is located in Eastern side at a distance of 4.5 kms from Pottal Pudur village.

PART - A

5.0 GEOLOGY AND MINERAL RESERVES:

5.1	a.	Topography	:	<ol style="list-style-type: none"> 1. The area is situated on a Plain terrain sloping towards Southern side covered with Gravel & Rough Stone which does not sustain any type of vegetation. 2. No major river is found nearby the fresh area. 3. Water table is noticed at a depth of 53m from below the surface in the adjacent open well and bore well.
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4. Temperature of the area is reported to be 24°C to a maximum of 31°C during summer months.

5. Rainfall of this area is about 800mm to 900 mm during the monsoons in a year.

b. Infrastructures nearby the Applied Lease area.

1. Post Office : Kadayam - 9.6kms

2. Police Station : Kadayam - 10.0kms

3. G.H : Edaikal - 9.0kms

4. Fire service : Alangulam - 15.0kms

5. Railway Station : Ravanasamudram - 7.5kms

6. School : Kavoor - 6.0kms

7. Airport : Tuticorin - 87.0kms

8. Seaport : Tuticorin - 109.0kms

4. Temperature of the area is reported to be 24°C to a maximum of 31°C during summer months.

5. Rainfall of this area is about 800mm to 900 mm during the monsoons in a year.

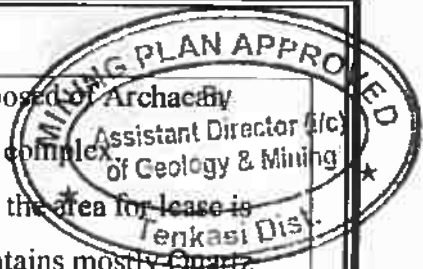
c. Regional Geology

TENKASI District is underlined by the wide range of metamorphic rocks of peninsular gneissic complex. These rocks are extensively weathered and overlain by the recent valley fills and alluvium at places.

The geological formations found in the District are Archaean rocks like Gneisses, Granites, Charnockite basic granulites and calc-gneisses. The younger formations are Quartz veins and pegmatite.

The generalized stratigraphic succession of the geological formations met within this District is as follows.

	Age	Rock Formation
1.	Recent to Sub recent	Soil, Alluvium
2.	Archaean	Granites, basic granulites, Peninsular Gneiss, Calc Gneiss and Charnockites



	<p>d. Geology of the Lease Area</p>	<p>:</p> <ol style="list-style-type: none"> 1. The area is mainly composed of of Archaean crystalline metamorphic complex. 2. The rock type noticed in the area for lease is Gneissic rock which contains mostly Quartz and Feldspar with some ferromagnesian minerals. 3. The Gneissic rock is part of peninsular Gneisses, a high grade metamorphic rock. 4. The general trend of formation is NW – SE and dip towards SW-80°. 5. The general geological succession of the area is given as under. <p>The general geological succession of the area is given under</p> <table border="1"> <thead> <tr> <th></th> <th>Age</th> <th>Rock Formation</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>Recent to Sub recent</td> <td>Soil, Alluvium</td> </tr> <tr> <td>2.</td> <td>Archaean</td> <td>Gneissic Rock</td> </tr> <tr> <td>3.</td> <td>Archaean</td> <td>Peninsular Gneiss, and Calc Gneiss</td> </tr> </tbody> </table>		Age	Rock Formation	1.	Recent to Sub recent	Soil, Alluvium	2.	Archaean	Gneissic Rock	3.	Archaean	Peninsular Gneiss, and Calc Gneiss
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1.	Recent to Sub recent	Soil, Alluvium												
2.	Archaean	Gneissic Rock												
3.	Archaean	Peninsular Gneiss, and Calc Gneiss												
<p>5.2</p>	<p>Details of Exploration already carried out if any</p>	<p>:</p> <p>Since the Rough Stone & Gravel is seen from the Surface itself, No needed to exploration. However, the area was personally examined by the Geologist who prepared the Mining Plan.</p>												
<p>5.3</p>	<p>a. Already excavated in pit dimensions</p>	<p>:</p> <p style="text-align: center;">Nil</p>												



b. Geological Reserves:

Gravel : The Thickness of Gravel in this area is 2.0m and the total volume of Gravel will be **24000m³**.

Rough Stone : The Available Geological Reserve is estimated as **480000m³** respectively. Gravel is calculated upto a depth of 2m & Rough Stone at a depth of 40m. **Total Depth-42m.**

GEOLOGICAL RESERVES							
Section	Bench	L (m)	W (m)	D (m)	Volume In M3	Geological Reserves in m3 @ 100%	Gravel in m3
XY-AB	I	78	99	2			15444
	II	78	99	5	38610	38610	
	III	78	99	5	38610	38610	
	IV	78	99	5	38610	38610	
	V	78	99	5	38610	38610	
	VI	78	99	5	38610	38610	
	VII	78	99	5	38610	38610	
	VIII	78	99	5	38610	38610	
	IX	78	99	5	38610	38610	
TOTAL					308880	308880	15444
XY-CD	I	62	69	2			8556
	II	62	69	5	21390	21390	
	III	62	69	5	21390	21390	
	IV	62	69	5	21390	21390	
	V	62	69	5	21390	21390	
	VI	62	69	5	21390	21390	
	VII	62	69	5	21390	21390	
	VIII	62	69	5	21390	21390	
	IX	62	69	5	21390	21390	
TOTAL					171120	171120	8556
GRAND TOTAL					480000	480000	24000



c. Mineable Reserves:

The Mineable reserves are calculated by deducting 7.5m Safety distance to the Patta Land.

Gravel: The Thickness of Gravel in this area is 2.0m and the total volume of Gravel will be 22770m³.

Rough Stone :

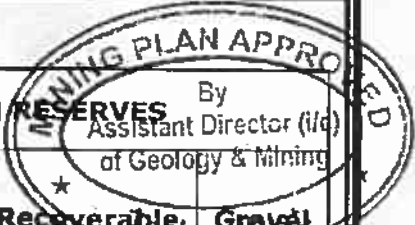
The mineable and the Recoverable Reserves are 216405m³ respectively, at the rate of 100% recovery upto the permissible depth. Total Depth-42m (2m Gravel + 40m Rough Stone).

MINEABLE RESERVES							
Section	Bench	L (m)	W (m)	D (m)	Volume In M3	Mineable Reserves in m3 @ 100%	Gravel in m3
XY-AB	I	99	100	2			19800
	II	97	96	5	46560	46560	
	III	92	86	5	39560	39560	
	IV	87	76	5	33060	33060	
	V	82	66	5	27060	27060	
	VI	77	56	5	21560	21560	
	VII	72	46	5	16560	16560	
	VIII	62	36	5	11160	11160	
	IX	52	26	5	6760	6760	
TOTAL					202280	202280	19800
XY-CD	I	27	55	2			2970
	II	25	51	5	6375	6375	
	III	20	41	5	4100	4100	
	IV	15	31	5	2325	2325	
	V	10	21	5	1050	1050	
	VI	5	11	5	275	275	
TOTAL					14125	14125	2970
GRAND TOTAL					216405	216405	22770

6.0 MINING:



6.1	Method of Mining	: 1. Opencast method of semi mechanized mining is being adopted to extract Rough Stone & Gravel of required size. 2. Machineries like Tractor mounted compressor, Jack hammers is used for drilling and blasting. Excavators are used for quarrying of Rough Stone and Gravel Tippers / Lorries are used for the transportation of Rough Stone & Gravel to the destination.
6.2	Mode of Working	: It is a semi mechanized quarrying operation using shot hole drilling with the help of compressor and jack hammers, smooth blasting. Rough Stone & Gravel are removed using Hydraulic excavator. Rough stone will be loaded directly to the tippers and transported to the needy end users.
6.3	Proposed bench height & Width	: Bench height = 5mts. Bench width = 5mts.
6.4	Details of Gravel / Mineral Production proposed for FIVE YEARS.	: Gravel/ Overburden production details follows: This area is covered 2.0m Gravel in this mine area 22770m ³ . Gravel formation will be removed and hydraulic excavators are used for loading the gravel into the tipper from pit head to needy buyers. This will be done only after obtaining permission and paying necessary seigniorage fees to the Government.
a.	<p>Year wise reserves calculations :</p> <p>Rough stone & Gravel production details as follows:</p> <p>The proposed rate of production of Rough Stone is about 216405m³ & Gravel is about 22770m³ for Five Years.</p> <p>The average proposed rate of production of Rough Stone is about 43281m³ per year at the rate of 100% recovery upto the permissible depth. Total Depth-42m. (2m Gravel + 40m Rough Stone).</p>	



YEARWISE DEVELOPMENT AND PRODUCTION RESERVES								
YEAR	Section	Bench	L (m)	W (m)	D (m)	Volume In M3	Recoverable Reserve in m3 @ 100%	Gravel in m3
I-YEAR	XY-AB	I	99	100	2			19800
		II	97	96	5	46560	46560	
	XY-CD	I	27	55	2			2970
		II	25	51	5	6375	6375	
	TOTAL						52935	52935
II-YEAR	XY-AB	III	92	86	5	39560	39560	
	XY-CD	III	20	41	5	4100	4100	
	TOTAL						43660	43660
III-YEAR	XY-AB	IV	87	76	5	33060	33060	
	XY-CD	IV	15	31	5	2325	2325	
	TOTAL						35385	35385
IV-YEAR	XY-AB	V	82	66	5	27060	27060	
	XY-CD	V	10	21	5	1050	1050	
	TOTAL						28110	28110
V-YEAR	XY-AB	VI	77	56	5	21560	21560	
		VII	72	46	5	16560	16560	
		VIII	62	36	5	11160	11160	
		IX	52	26	5	6760	6760	
	XY-CD	VI	5	11	5	275	275	
	TOTAL						56315	56315
GRAND TOTAL						216405	216405	22770

b. Energy:
 Electricity for mines and lights only at nights (working is restricted on day time only between 8Am to 4Pm). Diesel (HSD) will be used for quarrying machines around **176924 liters** for the entire project life. Diesel will be brought from nearby diesel pumps. No power is required for the project. Lightings on the night is taken from nearby electric poles after obtaining permission from concerned authorities.

For Gravel:
 Per hour excavator will consume = 10 liters / hour
 Per hour excavator will excavate = 60m³ of Gravel
 For 22770m³ = 22770 / 60 = 380 hours
 Diesel consumption 380 working hours = 380 x 10 liters
 Total diesel consumption = **3800 liters of HSD will be utilized for Gravel**



For Rough stone:

Per hour excavator will consume = 16 liters / hour
 Per hour excavator will excavate = 20m³ of rough stone
 For 216405m³ = 216405/ 20 = 10820.25 hours
 Diesel consume 10820.25 working hours = 10820.25 hours x 16 liters
Total diesel consumption = 173124 liters of HSD will be utilized for Rough stone
Total diesel consumption is around = 176924 liters of HSD for the entire period of life.

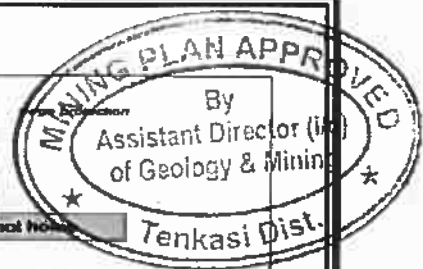
6.5	a.	Mining	: Drilling of shot holes will be carried out using compressor and jack hammer. Depth of holes shall be 1 to 2m bench height and spacing shall be 0.75m and burden shall be 0.60m from the preface. Details of drilling equipments are given below.														
	<table border="1"> <thead> <tr> <th>Type</th> <th>Nos</th> <th>Dia of hole</th> <th>Size / Capacity</th> <th>Make</th> <th>Motive power</th> <th>H.P</th> </tr> </thead> <tbody> <tr> <td>Jack Hammer</td> <td>5</td> <td>25.5 mm</td> <td>Hand held</td> <td>Atlas copco</td> <td>Diesel</td> <td>60</td> </tr> </tbody> </table>			Type	Nos	Dia of hole	Size / Capacity	Make	Motive power	H.P	Jack Hammer	5	25.5 mm	Hand held	Atlas copco	Diesel	60
	Type	Nos	Dia of hole	Size / Capacity	Make	Motive power	H.P										
Jack Hammer	5	25.5 mm	Hand held	Atlas copco	Diesel	60											
b.	Loading	: Loading of waste and rough stone & gravel is being carried out by Excavator into 10 tonne capacity tippers from the working place periodically. Details of loading equipment are given as under.															
<table border="1"> <thead> <tr> <th>Type</th> <th>Nos</th> <th>Bucket Capacity (MT)</th> <th>Make</th> <th>Motive power</th> <th>H.P</th> </tr> </thead> <tbody> <tr> <td>Hydraulic excavator</td> <td>1</td> <td>1.2 M³</td> <td>L&T or Ex200</td> <td>Diesel</td> <td>120</td> </tr> </tbody> </table>			Type	Nos	Bucket Capacity (MT)	Make	Motive power	H.P	Hydraulic excavator	1	1.2 M ³	L&T or Ex200	Diesel	120			
Type	Nos	Bucket Capacity (MT)	Make	Motive power	H.P												
Hydraulic excavator	1	1.2 M ³	L&T or Ex200	Diesel	120												
	c.	Transportation	: Transport of raw materials and waste shall be done by 10 tonnes tipper														
	<table border="1"> <thead> <tr> <th>Type</th> <th>Nos</th> <th>Size / Capacity</th> <th>Make</th> <th>Motive power</th> <th>H.P.</th> </tr> </thead> <tbody> <tr> <td>Tipper</td> <td>2</td> <td>10 M.T</td> <td>Ashok Leyland</td> <td>Diesel</td> <td>110</td> </tr> </tbody> </table>			Type	Nos	Size / Capacity	Make	Motive power	H.P.	Tipper	2	10 M.T	Ashok Leyland	Diesel	110		
	Type	Nos	Size / Capacity	Make	Motive power	H.P.											
Tipper	2	10 M.T	Ashok Leyland	Diesel	110												
6.6		Disposal of Gravel	: The Gravel of the lease area is 22770m ³ . Gravel formation will be removed and transported to the needy end user, only after obtaining permission and paying necessary seigniorage fees to the Government.														



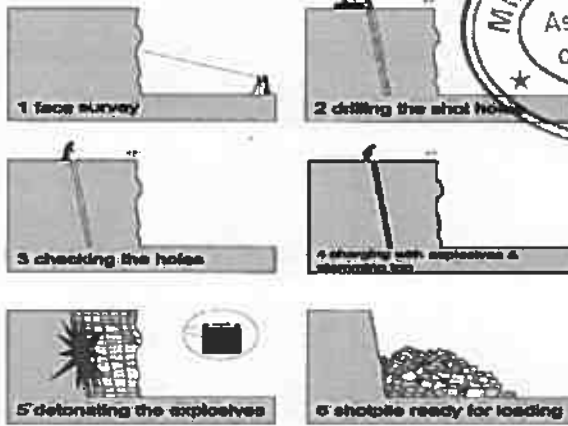
6.7	Brief Note on Conceptual Mining Plan for the entire lease period	<p>Conceptual Mining Plan is prepared with an object of systematic development of bench lay outs, selection of ultimate pit limit, depth of quarrying, ultimate pit slope, etc., Average Ultimate Pit dimension in given as Under,</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td style="text-align: center;">Ultimate Pit Dimension</td> </tr> <tr> <td style="text-align: center;">=126.0m(L)X77.0m(W)AvgX42.0m(D)</td> </tr> </table> <p>Ultimate pit size is designed based on certain practical factors such as the economical depth of mining, safety zones, permissible areas etc. Afforestation has been proposed on the boundary barrier by planting trees. All the baseline information studies like Air Quality monitoring, Noise and Vibration monitoring, Water Analysis studies are being carried out every year as per the MOEF norms.</p>	Ultimate Pit Dimension	=126.0m(L)X77.0m(W)AvgX42.0m(D)
Ultimate Pit Dimension				
=126.0m(L)X77.0m(W)AvgX42.0m(D)				

7.0 BLASTING:

7.1	Proposed Control Blasting Pattern	<p>The massive formation shall be broken into pieces of portable size by drilling and Proposed Control Blasting using jack hammers and shot hole Blasting. Powder factor of explosives for breaking such hard rock shall be in the order of 6 to 7 tonnes per K.g of explosives.</p> <p>Proposed Control Blasting parameters are as follows.</p> <table border="1" style="width: 100%;"> <tr> <td>Diameter of the hole</td> <td>:</td> <td>32-36 mm</td> </tr> <tr> <td>Spacing</td> <td>:</td> <td>60 Cms</td> </tr> <tr> <td>Depth</td> <td>:</td> <td>1 to 1.5m</td> </tr> <tr> <td>Charge / Hole</td> <td>:</td> <td>D.Cord with water or 70 gms of gun powder or Gelatine.</td> </tr> <tr> <td>Pattern of hole</td> <td>:</td> <td>Zig Zag</td> </tr> <tr> <td>Inclination of hole</td> <td>:</td> <td>70⁰ from the horizontal.</td> </tr> <tr> <td>Quantity of rock broken</td> <td>:</td> <td>0.45 MT x 2.6 = 1.17 MT</td> </tr> <tr> <td>Control Blasting efficiency @90%</td> <td>:</td> <td>1.17 x 90% = 1.05MT / hole</td> </tr> <tr> <td>Charge per hole</td> <td>:</td> <td>140 gms of 25mm dia cartridge</td> </tr> <tr> <td>Quantity of rock broken per day</td> <td>:</td> <td>144.27M³.</td> </tr> </table>	Diameter of the hole	:	32-36 mm	Spacing	:	60 Cms	Depth	:	1 to 1.5m	Charge / Hole	:	D.Cord with water or 70 gms of gun powder or Gelatine.	Pattern of hole	:	Zig Zag	Inclination of hole	:	70 ⁰ from the horizontal.	Quantity of rock broken	:	0.45 MT x 2.6 = 1.17 MT	Control Blasting efficiency @90%	:	1.17 x 90% = 1.05MT / hole	Charge per hole	:	140 gms of 25mm dia cartridge	Quantity of rock broken per day	:	144.27M ³ .
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ROCK BLASTING



7.2 Types of Explosives :

Following explosives are recommended for efficient blasting with safe practice.

S. No	Description	Class / Division	Type	Size
1.	Slurry	Class - 3	Nitro Compound	25 x 200
2.	Detonators	Class - 3	Ordinary and elec (OD & ED)	6.5 x 32
3.	Safety fuse	Class - 6	Blue sump fuse coils of 10mts each	

7.3 Measures proposed to minimize ground vibration due to blasting :

The following steps are being adopted to control ground vibration due to blasting.

1. The minimum recommended delay time of 8ms was introduced to minimize ground vibration to avoid constructive interference of blast vibration waves and hence its impact or amplitude is less.
2. Use of Ammonium nitrate fuel oil mixture for shot holes is avoided because which cause high fly of rocks in view critical diameter problem. Only high strength explosives like slurry are used in the form of cartridge.
3. Charge per hole will exceed the powder factor designed for each hole based on the quantum of blasting, strength of rocks, fracture pattern etc.

7.4 Storage of Explosives and safety measures to be taken while blasting. :

1. The Applicant stores the explosives as per the Indian Explosives Act, 1958.
2. The explosives to be used in mines being a small quantity, the District collector may be approached to keep the stocks not exceeding 5kgs at time or any other quantity permitted by the concerned authorities in a portable magazine of S & B types.

		<p>3. An authorized explosive agency is engaged to carry out blasting.</p> <p>4. The blasting time in a day is between 5 PM to 8 PM.</p> <p>5. First Aid Box is kept ready at all the time.</p> <p>6. Necessary precautionary announcement is being carried out before the blasting operation.</p>
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8.0 MINE DRAINAGE:

8.1	Depth of Water table	:	The ground water table is reported as 53m below ground level in nearby open wells and bore wells of this area. Mining depth taken as 42m. Now, proposed quarry depth is above the water table. Hence, quarrying may not affect the ground water.
8.2	Arrangement and Places where the mine water is finally proposed to be discharged	:	The ground water may not rise immediately in this type of mining. However, the rain water percolation and collection of water from the seepage shall be less than 300 lpm and it shall be pumped about periodically by a stand by diesel powered Centrifugal pump motivated with 7.5 H.P. Motor. The quality of water is potable and it is not contaminated with any hazardous things.

9.0 OTHER PERMANENT STRUCTURES:

9.1	Habitations / Village	:	<p>There are no villages within a radius of 500m. The nearest habitations with the population is given as under,</p> <table border="1" style="margin-left: 20px;"> <thead> <tr> <th>Direction</th> <th>Village</th> <th>Distance in kms</th> <th>Population</th> </tr> </thead> <tbody> <tr> <td>North</td> <td>Pandarakulam</td> <td>2.5kms</td> <td>400</td> </tr> <tr> <td>East</td> <td>Nalankattalai</td> <td>2.4km</td> <td>280</td> </tr> <tr> <td>South</td> <td>Sivagnanapuram</td> <td>2.0km</td> <td>340</td> </tr> <tr> <td>West</td> <td>Nelkatjumarai</td> <td>3.0km</td> <td>220</td> </tr> </tbody> </table>	Direction	Village	Distance in kms	Population	North	Pandarakulam	2.5kms	400	East	Nalankattalai	2.4km	280	South	Sivagnanapuram	2.0km	340	West	Nelkatjumarai	3.0km	220
Direction	Village	Distance in kms	Population																				
North	Pandarakulam	2.5kms	400																				
East	Nalankattalai	2.4km	280																				
South	Sivagnanapuram	2.0km	340																				
West	Nelkatjumarai	3.0km	220																				
9.2	Power lines (HT/LT)	:	There is no power line is located in the lease area.																				
9.3	Water bodies (River, Pond, Lake, Odai, Channel etc)	:	There are no other Water bodies (River, Pond, Lake, Channel etc) is located in this area.																				

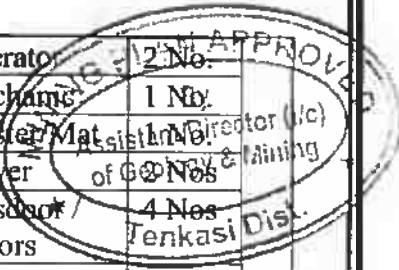


9.4	Archeological / Historical Monuments	:	There are no Archeological / Historical Monuments within a radius of 500m.
9.5	Road (NH, SH, Village Road etc)	:	Tenkasi – Kadayam = 17.0 kms Kadayam – Pottal Pudur = 3.0 kms Quarry site is located in Eastern side at a distance of 4.5 kms from Pottal Pudur village.
9.6	Places of Worship	:	There are no Places of Worship within a radius of 500m.
9.7	Reserved Forest / Forest / Social Forest / Wild Life Sanctuary etc.,	:	There are no Social Forest / Wild Life Sanctuary etc within a radius of 10kms.
9.8	Any Interstate Border, Protected areas under the Wild Life (Protection) Act, 1972, Critically Polluted Areas as Identified by Central Pollution Control Board and Notified Eco sensitive areas	:	There are No inter State border within a radius of 10 kms.
9.9	Any Other Structures	:	Nil.

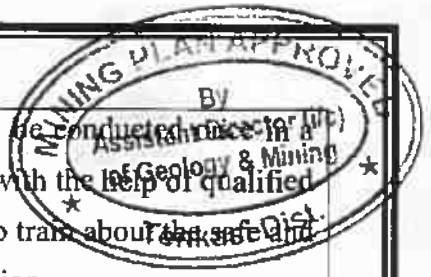
10.0 EMPLOYMENT POTENTIAL & WELFARE MEASURES:

10.1	Employment Potential (Management & Supervisory personal)	:	<ol style="list-style-type: none"> 1. As per Mines safety under the provisions of MMR, 1961 under the Mines Act, 1952, whenever the workers are employed more than 10, it is preferred to have a qualified Mining Mate to keep all the production workers directly under his control and supervision. 2. The following man power is proposed for quarrying Rough Stone & Gravel during the five years period to achieve the proposed production and to comply the provisions of the Government norms.
------	--	---	---

				1. Skilled	Operator	2 Nos.
					Mechanics	1 No.
					Blaster/Master	1 No.
				2. Semi - skilled	Driver	2 Nos.
				3. Unskilled	Musoor / Labors	4 Nos.
					Cleaners	2Nos
					Office Boy	1No
				4. Management & Supervisory staff		2No.
				Total =		15Nos



10.2	Welfare Measures		
a.	Drinking Water	:	Drinking water at the rate of 2Ltrs per person shall be provided as per the Mines Rules, 1960. It is proposed to make a borehole for providing uninterrupted supply of drinking water and other utilities.
b.	Sanitary facilities	:	Semi-permanent latrines & urinals shall be maintained at convenient places for use of labours as per the provisions of Rule (33) of the Mines Rules, 1960 separately for males and females. Washing facilities shall also be arranged as per rule (36) of the Mines Rules, 1960.
c.	First Aid Facility	:	Being a small mine First Aid station as per provisions under Rule (44) of the Mines Rules 1960 is provided with facilities as per the third schedule as prescribed. Qualified First Aid personnel should be appointed or nominated to attend emergency first aid treatment.
d.	Labor Health	:	As per Mines Rule, Periodic medical examination has been arranged for occupational health once in a year in addition to attending medical treatment of occupational injuries under the Rule 45 (A), MR, 1960.
e.	Precautionary safety measures to the Laborers	:	Safety provisions like helmet, goggles, safety shoes, Dust mask, Ear muffs etc have to be provided as per the circulars and amendments made for Mine labours under the guidance of DGMS being a mechanized operation.



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Necessary training will be conducted once in a year to all the employees with the help of qualified and experienced officers to train about the safe and system at quarrying operation.

PART - B

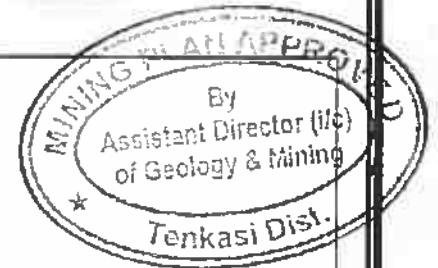
11.0 ENVIRONMENTAL MANAGEMENT PLAN:

11.1	Area Land Use Pattern	:	<p>The applied land use pattern is given as under.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;">SL. NO.</th> <th style="width: 40%;">LAND USE</th> <th style="width: 15%;">PRESENT AREA (HECT)</th> <th style="width: 35%;">AREA IN USE DURING THE QUARRYING PERIOD (HECT)</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1.</td> <td>Area Under Quarrying</td> <td style="text-align: center;">Nil</td> <td style="text-align: center;">0.91.0</td> </tr> <tr> <td style="text-align: center;">2.</td> <td>Infrastructure</td> <td style="text-align: center;">Nil</td> <td style="text-align: center;">0.01.0</td> </tr> <tr> <td style="text-align: center;">3.</td> <td>Roads</td> <td style="text-align: center;">0.01.0</td> <td style="text-align: center;">0.01.0</td> </tr> <tr> <td style="text-align: center;">4.</td> <td>Green Belt</td> <td style="text-align: center;">Nil</td> <td style="text-align: center;">0.18.0</td> </tr> <tr> <td style="text-align: center;">5.</td> <td>Un-Utilized area</td> <td style="text-align: center;">1.23.0</td> <td style="text-align: center;">0.13.0</td> </tr> <tr> <td colspan="2" style="text-align: right;">Total =</td> <td style="text-align: center;">1.24.0Ha</td> <td style="text-align: center;">1.24.0Ha</td> </tr> </tbody> </table>	SL. NO.	LAND USE	PRESENT AREA (HECT)	AREA IN USE DURING THE QUARRYING PERIOD (HECT)	1.	Area Under Quarrying	Nil	0.91.0	2.	Infrastructure	Nil	0.01.0	3.	Roads	0.01.0	0.01.0	4.	Green Belt	Nil	0.18.0	5.	Un-Utilized area	1.23.0	0.13.0	Total =		1.24.0Ha	1.24.0Ha
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5.	Un-Utilized area	1.23.0	0.13.0																												
Total =		1.24.0Ha	1.24.0Ha																												
11.2	Water Regime	:	<p>Water table in this area is noticed at a depth of 53m below the surface ground level and presently, the quarrying of Rough Stone & Gravel is proposed up to a depth of 42m. Hence, it will not affect the ground water depletion of this area.</p>																												
11.3	Flora and Fauna	:	<p>Except acacia bushes, no other valuable trees are noticed in the Applied Lease area. Further, neither flora of botanical interest nor fauna of zoological interest is noticed in this area.</p>																												
11.4	Climatic conditions	:	<p>Generally sub tropical climatic condition prevails throughout the year and this District receives rain both in South west and North east monsoon. The average rainfall is about 800mm to 900mm and the temperature ranges from 18⁰C during winter and to a maximum of 38⁰C during the summer.</p>																												

11.5	Human Settlement	<p>The nearest habitations with the population.</p> <table border="1"> <thead> <tr> <th>Direction</th> <th>Village</th> <th>Distance In Kms</th> <th>Population (if available)</th> </tr> </thead> <tbody> <tr> <td>North</td> <td>Pandarakulam</td> <td>2.5kms</td> <td>400</td> </tr> <tr> <td>East</td> <td>Nalankattalai</td> <td>3.4km</td> <td>280</td> </tr> <tr> <td>South</td> <td>Sivagnanapuram</td> <td>2.0km</td> <td>340</td> </tr> <tr> <td>West</td> <td>Nelkatjumparai</td> <td>3.0km</td> <td>220</td> </tr> </tbody> </table>	Direction	Village	Distance In Kms	Population (if available)	North	Pandarakulam	2.5kms	400	East	Nalankattalai	3.4km	280	South	Sivagnanapuram	2.0km	340	West	Nelkatjumparai	3.0km	220
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11.6	Plan for Air, Dust Suppression	<p>Air or dust expected to be generated from drilling process, hauling roads, places of excavation etc., is being suppressed by periodical wetting of land by water spraying.</p> <p>For the sampling of air, high volume air sampler (Model VFC-PM10) was used (10 meter above and 5 meter away from road) and the particulates were collected on what man GFA glass fiber filters dried in a hot air oven at 105°C for 1hr and weighed. The average flow rate was about 1.1 cubic meters.</p>																				
11.7	Plan for Noise Control	<p>Quarrying of Rough Stone is being carried out by drilling and blasting by using low power explosives, and hence, noise is very minimum. However, periodical noise level monitoring will be carried out to check the noise level in and around the quarry site. In order to assess the extent of noise pollution due to vehicular traffic different zones viz., Silence zone, Residential Zone, Commercial zone, Traffic signals and Industrial zones were identified in urban and suburban areas of Salem. Adequate number of observations were made in all the selected sites by using the sound level meter (LT Lutron SL-4001).</p>																				
11.8	Environmental Impact Assessment Statement Describing Impact on mining on the next Five Years.	<p>Factors to be considered for EIA are,</p> <ol style="list-style-type: none"> 1. Dust generation, 2. Land degradation 3. Stabilization and vegetation of dumps 4. Adverse effect on water regime 5. Socio economic benefits arising out of Mining. 6. Noise and Vibration. 																				

	a. Dust	:	Dust is expected to be generated from drilling, hauling roads; place of excavation etc. and it will be suppressed by periodical wetting of lands.
	b. Land degradation	:	Land degradation is by means of cutting/throwing and removal of fertile soil does not arise. Proposed usage of land for the next five years shall be less than 1.24.0Ha Afforestation will be started during the first year of mining operation itself.
	c. Stabilization and vegetation of dumps	:	The soil will be spread over the non-active dumps along the slope and edges to plant tree saplings to form vegetal cover over the dumps. Such vegetal cover will prevent erosion of dumps during rainy seasons.
	d. Socio economic benefits arising out of mining	:	<ol style="list-style-type: none"> 1. To provide Employment opportunities of the nearby villagers. 2. For the cultural development of the nearby villagers.
	e. Noise and vibration	:	Since, no deep hole blasting is proposed with small dia explosives are used for breaking the hard rock and boulders, the noise and vibration is very minimum and are within the permissible limits.
11.9	Proposal for Waste Management	:	There is no requirement for waste management as there is 100% recovery percentage.
11.10.	Proposal of Reclamation of Land affected during mining activities and at the end of mining.	:	The present mining is proposed to a depth of 42m. The mined out area will be fenced on top of open cast working with S1 fencing. Low lying areas with water logging shall be used for fish culture. No immediate proposals for closure of pit as the rough stone persist still at deeper level.
11.11	Program for Afforestation	:	Trees like tamarind, casuarinas etc were planted along the lease boundary and avenues as well as over non active dumps at a rate 50 trees per year with an interval of 5m. The rate of survival expected to be 70% in this area.

11.12	Proposed Financial Estimate / Budget for (EMP) Environment Management	:	
	Fixed Asset Cost:		
	1. Land Cost	:	Rs.12,50,000/- (Amount for Patta Land)
	2. Labour Shed	:	Rs. 1,50,000/-
	3. Sanitary Facility	:	Rs. 70,000/-
	4. Fencing cost	:	Rs.1,00,000/-
	Total=	:	Rs.15,70,000/-
	Operational Cost:		
	Machinery cost	:	Rs.30,00,000/-
	EMP Cost:		
	1. Drinking water facility	:	Rs. 1,20,000/-
	2. Safety kits	:	Rs. 70,000/-
	3. Water sprinkling	:	Rs. 60,000/-
	4. Afforestation	:	Rs. 25,000/-
	5. Water quality test	:	Rs. 30,000/-
	6. Air quality test	:	Rs. 30,000/-
	7. Noise/vibration test	:	Rs. 30,000/-
	Total=	:	Rs. 3,65,000/-
	Total Project Cost	:	Rs.49,35,000/-



12.0 MINE CLOSURE PLAN:

12.1	Steps proposed for phased restoration, reclamation of already mined out area.	:	The present mining is proposed to a depth of 42m. The mined out area will be fenced on top of open cast working with S1 fencing to arrest the entry of cattle's and public in to the quarry site.
12.2	Measures to be under taken on mine closure as per Act & Rules	:	Measures will be taken as per the Acts and Rules. The quarried pit will be fenced by using Barbed wire fencing. Green belt development at the rate of 50 trees per year will be proposed.
12.3	Mitigation measures to be undertaken for safety and restoration/ reclamation of the already mined out area	:	It is a fresh Rough stone quarry with a depth of 42m for the first five years and hence, no need of mitigation and restoration / reclamation of the applied lease area.

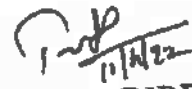
13.0 ANY OTHER DETAILS INTEND TO FURNISH BY THE APPLICANT



- (i) Permission will be obtained from the Director of Mines Safety Rough Stone & Gravel from the Boundary barriers and from slopes.
- (ii) Care and precautionary measures will be taken for the safety of workers as per Rules and Acts.
- (iii) The applicant will endeavor every attempt to quarry the Rough Stone & Gravel economically without any wastage and to improve the environment and ecology.
- (iv) Accordingly, Mining Plan is prepared under Rule 41 & 42 as amended in Tamil Nadu Minor Mineral Concession Rules, 1959 by incorporating the conditions imposed in the precise area communication letter and by incorporating all the details proposed in the letter to obtain environment clearance from State Level Environmental Impact Assessment Authority.
- (v) In the above circumstances M/s. Svart Sten Associates LLP, is hereby submitting the Mining Plan for approval for Rough Stone & Gravel Quarry for a period of Five Years.
- (vi) The proposed production of Rough stone & Gravel for Five Years is 216405M³ & 22770M³. The average production of Rough stone per year is 43281M³.


S.DHANASEKAR, M.Sc. (Geo)
Qualified Person

This Mining Plan is approved Subject to the Conditions / Stipulation indicated in the Mining Plan Approval
Letter Rec.No. ^{Ma} 36809/2020,
Dated . 11.04.2022


ASSISTANT DIRECTOR
Dept. of Geology and Mining
Tenkasi

Rc. No.M2/36809/2020

District Collector's Office
Geology and Mining,
Tenkasi.



Dated. 24.01.2022

Notice

Sub: Mines and Quarries - Minor Minerals - Roughstone and Gravel - Tenkasi District - Alangulam Taluk - A.P.Nadanoor Village - SF. Nos. 477/1, 477/2, 477/6, 478/2(P), 478/3(P) & 478/4(P) - over an extent of 1.24.0 hectares of patta lands - Quarry lease application preferred by M/s. SVART STEN ASSOCIATES LLP - Precise area communicated - Approved Mining Plan and Environmental clearance - Called for - Reg.

- Ref:**
1. G.O (Ms) No. 169, Industries (MMC-1) Department dated. 04.08.2020.
 2. Quarry lease application preferred by M/s. SVART STEN ASSOCIATES LLP, dated. 08.12.2020.
 3. The Revenue Divisional Officer, Tenkasi Letter No. A3/2989/2021, dated. 20.07.2021.
 4. Inspection report of the Assistant Director of Geology and Mining, Tenkasi, dated.02.11.2021.

Thiru.Peter, S/o.Puravath, Designated partner of M/s. SVART STEN ASSOCIATES LLP, Asum Tower, Ezhumanged, Arangoltukara Post, Palakkad District, Kerala - 679 533 has applied on 08.12.2020 for grant of quarry lease for quarrying Roughstone and Gravel over an extent of 1.24.0 hectares of patta land in SF. Nos. 477/1 (0.24.5), 477/2 (0.24.0), 477/6 (0.22.5), 478/2(P) (0.18.0), 478/3(P) (0.16.0) & 478/4(P) (0.19.0) of



4. In view of the above, you are hereby directed to produce the mining plan duly prepared by a Recognized Qualified Person in respect of the precise area communicated for approval to the Assistant Director of Geology and Mining, Tenkasi within a period of 90 days from the date of receipt of this notice as required under rule 41 (5) of Tamil Nadu Minor Mineral Concession Rules, 1959.

5. You are further directed to produce Approved Mining Plan and Environmental Clearance obtained from the State Level Impact Assessment Authority (SEIAA) as required under Rule 42 of Tamil Nadu Minor Mineral Concession Rules, 1959 for grant of quarry lease for quarrying Roughstone and Gravel in respect of the precise area communicated.

mt
24/4/22
Assistant Director,
Geology and Mining,
Tenkasi.

To
M/s. SVART STEN ASSOCIATES LLP,
Asun Tower,
Ezhumangad,
Arangottukara Post,
Palakkad District,
Kerala - 679 533.

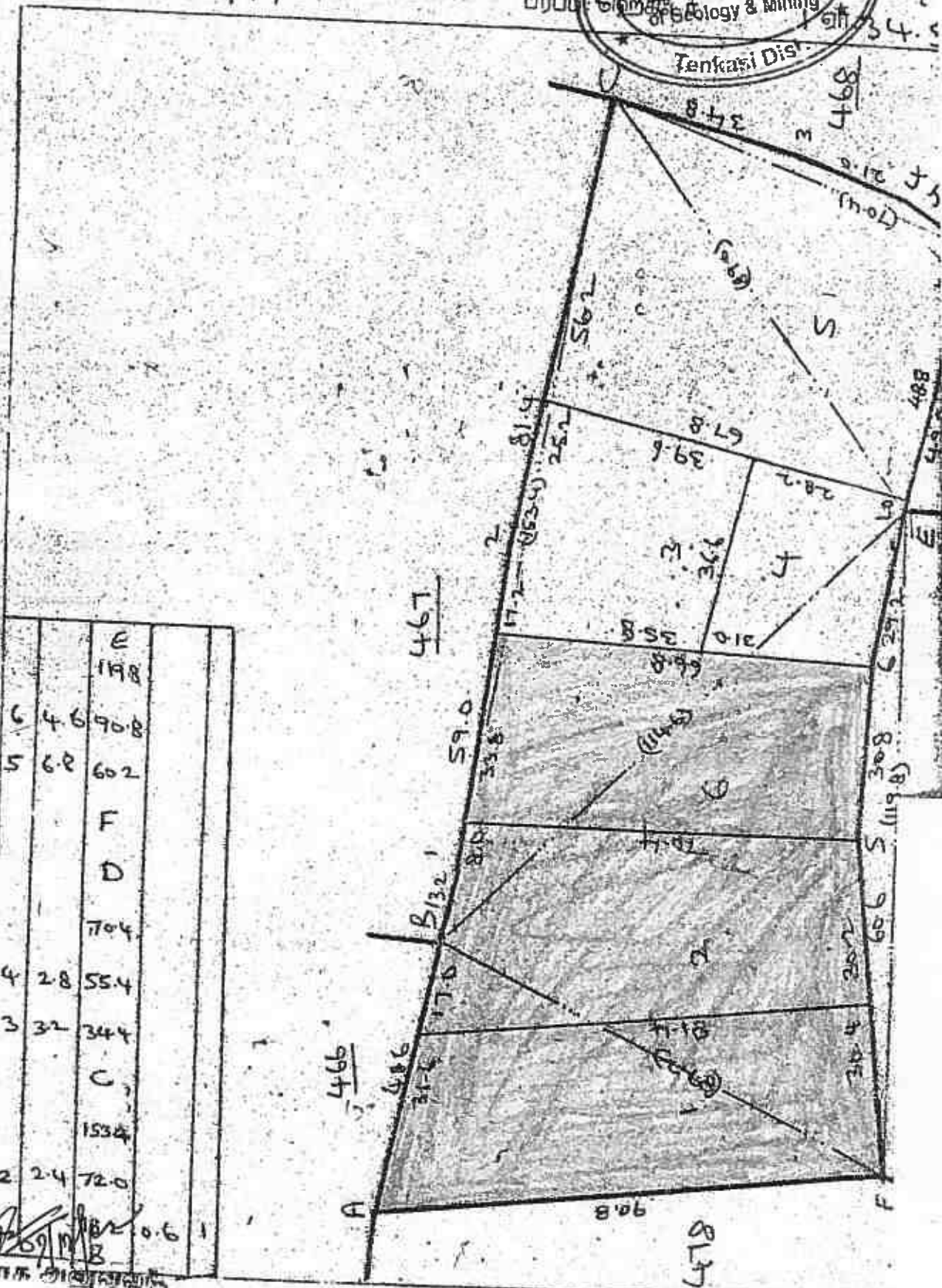
2
24/01/22

S. Dhanasekar
S.DHANASEKAR, M.Sc. (Geo)
Qualified Person

சுற்றுலா, தொழில்நுட்ப அமைச்சு

சுற்றுலா, தொழில்நுட்ப அமைச்சு
 உரிமை எண். 477

ANNEXURE



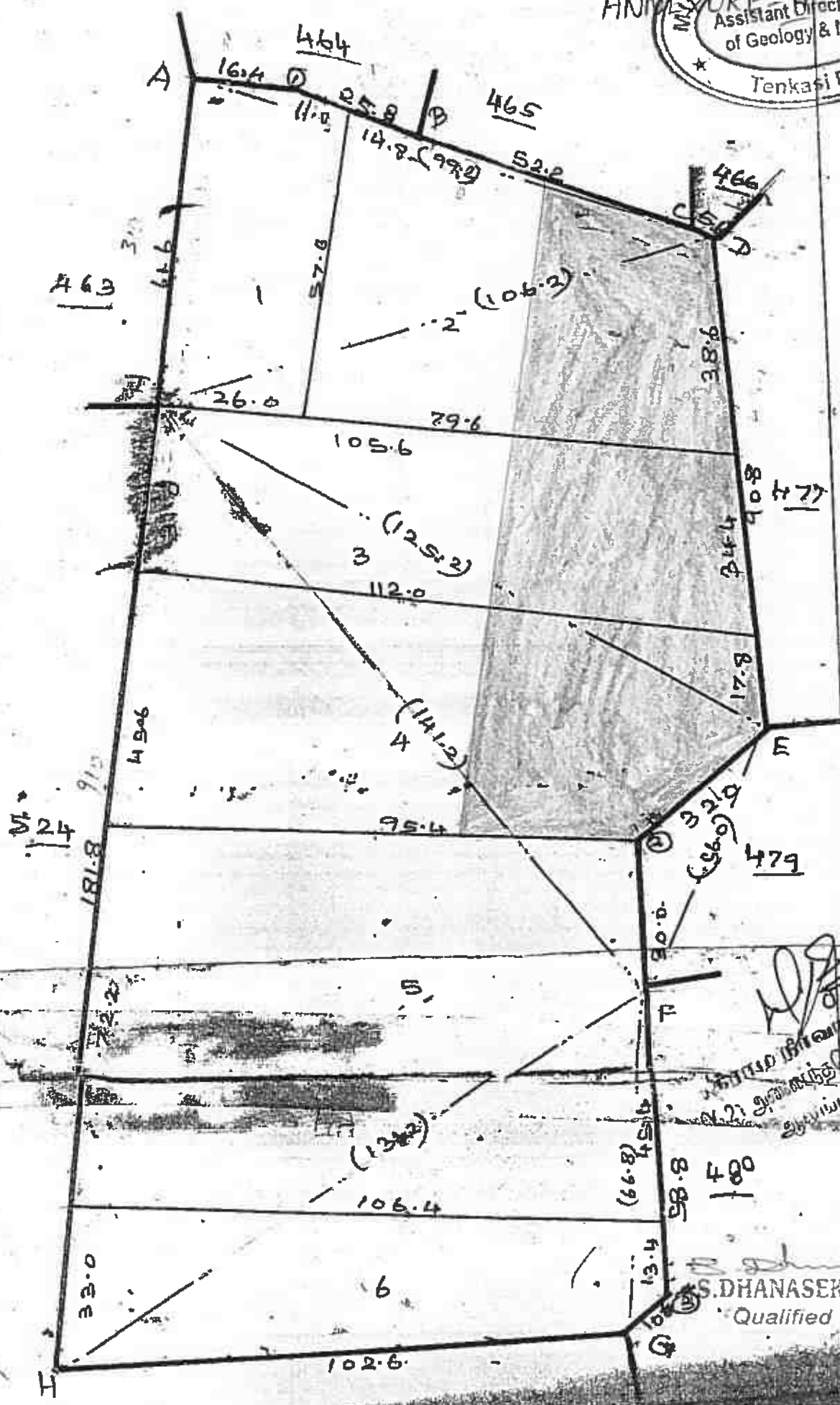
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சுற்றுலா, தொழில்நுட்ப அமைச்சு
 11-11-1966

அளவு. 1:1000

S. DHANASEKAR, II.Sc. (Geo)
 Qualified Person

ANNEXURE 1
 MINING PLAN APPROVED
 Assistant Director (i/c)
 of Geology & Mining
 Tenkasi Dist.

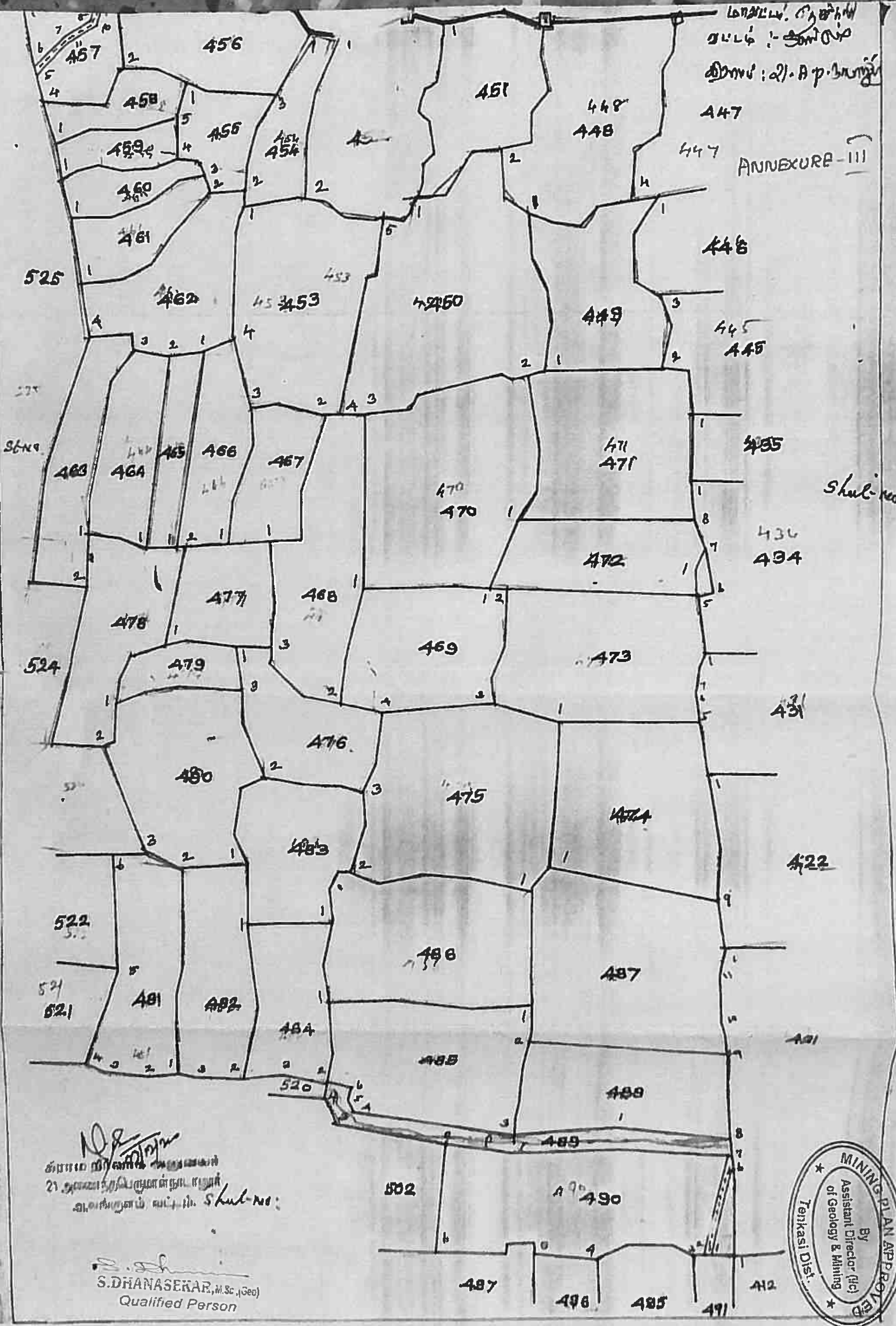


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 திரு. ச. தானசேகர்
 திரு. ச. தானசேகர்
 திரு. ச. தானசேகர்

S. DHANASEKAR, M.Sc. (G)
 Qualified Person

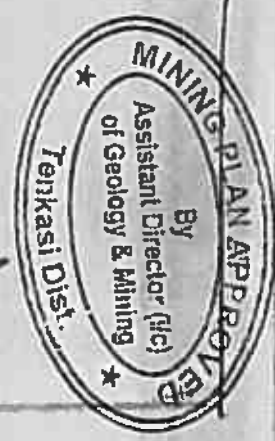
LANDLW. 1/20/1944
SULG :- SONDIA
DNDV : 21. A p. SUNDIA

ANNEXURE - III



சென்னை மாவட்டம்
21 ஆவது சட்டப் பேரவைத் திட்டம்
விவரம்: 21. A ப. சூண்டியா
Shul-No:

S. DHANASEKAR, M.Sc. (Geo)
Qualified Person





தமிழக அரசு

வருவாய்த் துறை

நில உரிமை விபரங்கள் : இ. எண் 10(1) பிரிவு

மாவட்டம் : தென்காசி

வட்டம் : ஆலங்குளம்

வருவாய் கிராமம் : அணைந்தபெருமாள்நாடானூர்
எண் : 3040

பட்டா

உரிமையாளர்கள் பெயர்

X -

1. புரவத் மகன் பீட்டர்

புல எண்	உட்பிரிவு	புன்செய்		நுன்செய்		மற்றவை		குறிப்புரைகள்
		பரப்பு	தீர்வை	பரப்பு	தீர்வை	பரப்பு	தீர்வை	
		ஹெக் - ஏர்	ரூ - பை	ஹெக் - ஏர்	ரூ - பை	ஹெக் - ஏர்	ரூ - பை	
478	1	0 - 15.00	0.26	--	--	--	--	2020/0103/34/225261 --- -- 01-07-2020
478	2	0 - 34.50	0.59	--	--	--	--	2020/0103/34/225261 --- -- 01-07-2020
468	2A	0 - 70.20	1.30	--	--	--	--	2020/0105/34/120066 --- 2020/34/11/000238SD -- 16-10-2020
477	1	0 - 24.50	0.42	--	--	--	--	2020/0103/34/225261 --- -- 01-07-2020
478	3	0 - 36.00	0.61	--	--	--	--	2020/0103/34/225261 --- -- 01-07-2020
478	4	0 - 46.00	0.78	--	--	--	--	2020/0103/34/225261 --- -- 01-07-2020
524	2B	0 - 35.00	0.60	--	--	--	--	2020/0103/34/225261 --- -- 01-07-2020
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குறிப்பு 2 :

- மேற்கண்ட தகவல் / சான்றிதழ் நகல் விவரங்கள் மின் பதிவேட்டிலிருந்து பெறப்பட்டவை. இவற்றை தாங்கள் <https://eservices.tn.gov.in> என்ற இணைய தளத்தில் 34/11/021/03040/40117 என்ற குறிப்பு எண்ணை உள்ளீடு செய்து உறுதி செய்துகொள்ளவும்.
- இத் தகவல்கள் 01-12-2020 அன்று 01:00:18 PM நேரத்தில் அச்சடிக்கப்பட்டது.



தமிழக அரசு

வருவாய்த் துறை

நில உரிமை விபரங்கள் : இ. எண் 10(1) பிரிவு

மாவட்டம் : தென்காசி

வட்டம் : ஆலங்குளம்

வருவாய் கிராமம் : அணைந்தபெருமாள்நாடானூர்
எண் : 3039

பட்டா

உரிமையாளர்கள் பெயர்

1. புரவத் மகன் பீட்டர்

புல எண்	உட்பிரிவு	புன்செய்		நன்செய்		மற்றவை		குறிப்புரைகள்
		பரப்பு	தீர்வை	பரப்பு	தீர்வை	பரப்பு	தீர்வை	
		ஹெக் - ஏர்	ரூ - பை	ஹெக் - ஏர்	ரூ - பை	ஹெக் - ஏர்	ரூ - பை	
477	6	0 - 22.50	0.31	--	--	--	--	2020/0103/34/225269 --- -- 24-06-2020
480	1B	0 - 14.00	0.24	--	--	--	--	2020/0103/34/225269 --- -- 24-06-2020
480	1H	0 - 35.50	0.60	--	--	--	--	2020/0103/34/225269 --- -- 24-06-2020
477	2	0 - 24.00	0.33	--	--	--	--	2020/0103/34/225269 --- -- 24-06-2020
		0 - 96.00	1.48					

குறிப்பு 2 :



- மேற்கண்ட தகவல் / சான்றிதழ் நகல் விவரங்கள் மின் பதிவேட்டிலிருந்து பெறப்பட்டவை. இவற்றை தாங்கள் <https://eservices.tn.gov.in> என்ற இணைய தளத்தில் 34/11/021/03039/40105 என்ற குறிப்பு எண்ணை உள்ளீடு செய்து உறுதி செய்துகொள்ளவும்.
- இத் தகவல்கள் 01-12-2020 அன்று 01:03:46 PM நேரத்தில் அச்சடிக்கப்பட்டது.
- கைப்பேசி கேமராவின் 2D barcode படிப்பான் மூலம் படித்து 3G/GPRS வழி இணையதளத்தில் சரிபார்க்கவும்



1425- ஆம் பசலியில்

தென்காசி

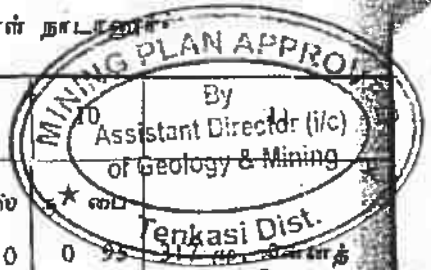
மாவட்டம்

3000

3000

நில வரித் திட்டத்தின்படி புலன்களின் விபரம்.					சாகுபடி யாளரின் பெயர்.	முதல் புலன்கள்						
(1) நில அளவை எண்.	(2) உட்பிரிவு எண்.	(3) பரப்பு.	(4) தரவை.	(5) ஒரு கோடி அல்லது இரண்டு கோடி பெயர்.	(6) கைப்பற்று தாரகுடைய பெயரும் எண்ணும் அல்லது அனுபோக தாரகுடைய பெயர்.	(7) நிலத்தின் எந்த பகுதி பாசலி சாகுபடியாளரால் பயன்பட்டுள்ளது.	(8) எந்த பாசலி நிலம் பயிற் செய்யப்பட்டு எந்த பாசலி நிலம் அழிவை செய்யப்பட்டு.	(9) பயிரின் பெயர்.	(10) பயிராளர் (அறுவை) பாசலி.	(11) உண்டாவான பாசலி ஆகாரம்.	(12) விளைச்சல் அளவு விழுக்காடு.	
477	6	0.225	0.31	3035	4. பூசலி							
480	1B	0.140	0.24	3035	- do -							
480	1H	0.355	0.60	3035	- do -							
477	2	0.24	0.33	3035	- do -							
478	6	0.280	0.48	3033	சு. அமலாசி (2)							
484	2A	0.240	0.41	3033	- do -							
480	1I	0.330	0.46	3033	- do -							
479	2A	0.205	0.35	3033	- do -							
524	2N	1.250	2.13	3033	- do -							
480	1A	0.130	0.22	3033	- do -							
479	2B	0.200	0.34	3033	- do -							
479	1A	0.220	0.37	3033	- do -							
484	2B	0.520	0.88	3033	- do -							
482	2B	0.120	0.20	3033	- do -							
484	2C	0.300	0.53	3033	- do -							

(2 மார்ச் 2017)
 சி. அமலாசி
 சி. அமலாசி அவர்கள்
 சி. அமலாசி அவர்கள் நடைமுறை
 சி. அமலாசி அவர்கள் மாவட்டம்
 தென்காசி மாவட்டம்.



1	2	3	4	5	6	7	8	9	10	11	12	13	14
476	4	476.4	r	ய	...	7-4	5	1 70	0 56.0	0 95	217	தம்பி நாடாளுர்.	
									2 49.5	4 25			
477	1	477-1	r	ய	...	7-4	5	1 70	0 24.5	0 42	1335	ச. நடராஜன் (1), பிச்சக கண்ணு (2), சித்திரைக் கண்ணு (3)	
	2	-2	r	ய	...	7-4	5	1 38	0 24.0	0 33	49	கா. அப்பாத்த துரை நாடாளுர்.	
	3	-3	r	ய	...	7-4	5	1 38	0 15.0	0 21	748	க. முப்பிடாதி	
	4	-4	r	ய	...	7-4	5	1 70	0 10.5	0 18	668	க. நாராயண நாடாளுர்.	
	5	-5	r	ய	...	7-4	5	1 38	0 38.0	0 53	1409	ரா. ராமசாமி நாடாளுர் மற்றும் மூன்று பேர்களும். *	
	6	-6	r	ய	...	7-4	5	1 38	0 22.5	0 31	308	வி. சாத்தனார் குட்டி.	
									1 34.5	1 98			
478	1	478-1	r	ய	...	7-4	5	1 70	0 15.0	0 26	949	ரா. ராமநாதன்	
	2	-2	r	ய	...	7-4	5	1 70	0 34.5	0 59	244	ரா. தங்க நாடாளுர் (1). தமிழ்ச்செல் வன் (2).	
	3	-3	r	ய	...	7-4	5	1 70	0 36.0	0 61	367	க. சுடலைமாட நாடாளுர்.	
	4	-4	r	ய	...	7-4	5	1 70	0 46.0	0 78	65	ரா. ஆறுமுக நயினார்.	
	5	-5	r	ய	...	7-4	5	1 70	0 76.0	1 30	543	ரா. பரமசிவன்.	
	6	-6	r	ய	...	7-4	5	1 70	0 28.0	0 48	1544	ரா. ராம நாதன் மற்றும் ஐந்து பேர்களும். *	
									2 35.5	4 02			

* விவரப்பட்டியலைப் பார்க்கவும்.

S.DHANASEKAR, M.Sc. (Geo)
Qualified Person

கிராம நிர்வாக அலுவலர்
21 ஆணைத்தபெருமார் நாடாளுர்
பாளையம் வட்டம்.



தமிழ்நாடு தமிழ்நாடு TAMIL NADU

11/10/21

M.P. Peter
Kerala

49AB 201677

M.K. கந்தசாமி, பி.எஸ்.ஸி.
முத்திரைத்தான் கிறிபனையாளர்
உரிமம் எண். 20/2008/NMKL
நாமக்கல் (Lவன்), தமிழ்நாடு

குத்தகை ஒப்பந்த பத்திரம்

1. பீட்டர் வயது 54, ஆதார் எண் : (6512 8279 4417) (Managing Patner SVART STEN ASSOCIATES LLP) முகவரி மடத்திக்குடியில், கிங்கினிமட்டம் அஞ்சல், எர்ணாகுளம், கேரளா-682 311.
2. SVART STEN ASSOCIATES LLP நிறுவனம் அசம் டவர் எழுமங்காட், அரங்கொட்டுக்கார அஞ்சல், பாலக்காடு மாவட்டம், கேரளா-679 533.



Before me
T.P. SARAVANAN, M.A., B.L.
ADVOCATE & NOTARY PUBLIC
No. 3, Trichy Road,
(Near SBM School)
NAMAKKAL - 637 001, TamilNad



-2-

மேற்படி (1) ஆகிய நான் எனது அனுபவத்தில் உள்ள புல எண்கள்

477/1 (0.24.5 ha), 477/2 (0.22.5 ha) , 478/2(p) (0.18.0 ha), 478/3 (p) (0.16.0 ha) & 478/4 (p) (0.19.0 ha) ஆக மொத்தம் 1.24.0 ha அணைந்தபெருமாள் நாடானூர் கிராமம், ஆலங்குளம் தாலுகா, தென்காசி மாவட்டம்.

இந்த நிலையில் உள்ள சாதாரண கற்கள் வெட்டியெடுக்க 12 ஆண்டுகளுக்கு மேற்படி (2) ல் கூறிய SVART STEN ASSOCIATES LLP நிறுவனத்திற்கு குத்தகை உரிமம் வழங்க முழு மனதுடன் சம்மதிக்கிறேன்.

Before me



T.P. Saravanan
T.P. SARAVANAN, M.A., B.L.
ADVOCATE & NOTARY PUBLIC
No. 3, Trichy Road,
(Near SBM School)
NAMAKKAL - 637 001, TamilNad

S. Dhanasekar
S.DHANASEKAR, M.Sc. (Geo)
Qualified Person



सत्यमेव जयते

GOVERNMENT OF INDIA
MINISTRY OF CORPORATE AFFAIRS
Central Registration Centre

Form 16

[Refer Rule 11(3) of the Limited Liability Partnership Rules, 2009]
CERTIFICATION OF INCORPORATION

LLP Identification Number: AAS-5013

It is hereby certified that SVART STEN ASSOCIATES LLP is incorporated pursuant to section 12(1) of the Limited Liability Partnership Act, 2008.

Given under my hand at Manesar this Twenty eighth day of May Two thousand twenty.



SHIV PAL SINGH

ASST. REGISTRAR OF COMPANIES

For and on behalf of the Jurisdictional Registrar of Companies

Registrar of Companies

Central Registration Centre

Disclaimer: This certificate only evidences incorporation of the LLP on the basis of documents and declarations of the applicant(s). This certificate is neither a license nor permission to conduct business or solicit deposits or funds from public. Permission of sector regulator is necessary wherever required. Registration status and other details of the LLP can be verified on www.mca.gov.in

Mailing Address as per record available in Registrar Office:

SVART STEN ASSOCIATES LLP

50(3/225), IRUMBAKASSERY PEEDIKAYIL(H), EZHUMANGAD,
ARANGOTTUKARA.P.O., THIRUMITTAKODE, Palakkad, Kerala, 679533, India




S.DHANASEKAR, M.Sc. (Geo)
Qualified Person



കേരളം കേരल KERALA

902390

LIMITED LIABILITY PARTNERSHIP AGREEMENT

SVART STEM ASSOCIATES LLP

THIS LIMITED LIABILITY PARTNERSHIP AGREEMENT ("LLP Agreement") is made and entered into as on the 06th Day of June, 2020 at Palakkad between each of the Partners whose name and address appear in Schedule I of this Agreement.

WITNESSETH

WHEREAS, the parties hereto desire to adopt a Limited Liability Partnership Agreement for new venture (the "LLP") to more particularly provide for their respective rights, powers, duties and obligations as Partners and the management, operations and activities of the LLP.

WHEREAS, as soon as practicable following execution of this Agreement, Incorporation Document for the LLP shall be filed with the Registrar of LLP.

NOW, THEREFORE, the Parties by this Agreement set forth the Limited Liability Partnership Agreement for the LLP under the Limited Liability Partnership Act, 2008 upon the following terms and conditions:

[Handwritten signature]

[Handwritten signature]

No. 5115 VALUE Rs: 5000

C. I. VARGHESE
VENDOR No: 31
| THRISSUR

Svart Stem Associates LLP

6 JUN 2020

Palakkad





1. Definitions

1.1 In this Agreement and the Schedules to it the following terms shall have the following meanings unless the context otherwise requires.

"Accountants" means the initial Accountants, their replacement or any additional accountants appointed by the partners to manage the accounts of the LLP and includes initial accountants, their replacement or any additional accountants appointed by the partners to manage the accounts of LLP.

"Accounts" means the balance sheet and profit and loss account as prepared by the accountants at the end of each financial year.

"Accounts Date" means the 31st March in each year.

"Agreement" means this Limited Liability Partnership Agreement, as originally executed and as amended, modified or supplemented from time to time.

"Board of Directors or Board" Means Board Constituted in accordance with clause 18.8

"Capital" means all the property and all other assets vested in the LLP or held in trust of LLP.

"Capital Accounts" are accounts showing the balances of the capital that belongs to each partner as calculated in accordance with clause 8

"Capital Contributions" means the contributions made by the partners to the LLP pursuant to clause 8 hereof and, in the case of all the partners, the aggregate of all such capital contributions.

"Cessation Date" is a date on which an outgoing partner ceases, or is deemed under this agreement to cease, to be partner.

"Cessation Provisions" are the provisions that shall apply on a Cessation Date.

"Chairman" means a chairman appointed in accordance with clause 18.7

"Continuing Partners" mean the other partners that continue in their role as partners when one or more partner leaves the LLP

"Contribution" means the amounts of money contributed by any partner into the LLP by way of addition to his or her capital accounts or the value of any assets transferred by them to the LLP.

"Defaulting Partner" means a partner who is being expelled from the LLP under clause 22.5.

"Designated Partner" has the meaning set out in section 7 of the Limited Liability Partnerships Act 2008.

"Director or Board Member" mean such partners as are from time to time appointed under clause 18.8 to carry out such functions of management of LLP.

"Financial Year" means the period from the 1st April of a year to 31st day of March of the following year.

"LLP" means the Limited Liability Partnership carried on by the partners under this agreement as varied by any supplemental agreement.

"LLP Funds" are the total sum of the partners' capital accounts and current accounts.

"Managing Director" means the partner occupying the office of Managing Director appointed in accordance with clause 18.1 and includes a Managing Partner.

"Name" is the trading of the LLP or any additional name adopted for the trade of the LLP.

"Ordinary Resolution" means vote casted in favour of a resolution at partners meeting or partners resolution by circulation is more than vote casted against the resolution.

"Outgoing Partner" means a partner who ceases to be a partner of the LLP for any reason.



"Partner" means each party to this Agreement shall be a Partner in the LLP, within the meaning of the LLP Act, 2008 until they cease to be a partner in accordance with the provisions of the LLP Act, 2008 or this Agreement (the "Partners"). The names and addresses of the initial Partners are set forth on Schedule I hereto. Additional Persons may be admitted as Partners on the express terms and conditions expressly set forth herein.

"Partner's Interest" means the ownership interest of a Partner in the LLP, including a partner's right to share in the LLP's items of income, gain, loss, deduction, credits and similar items, and the right to receive distributions from the LLP, as well as a LLP's rights to vote and otherwise participate in the operation or affairs of the LLP as provided for herein and under the LLP Act.

"Person" includes company, LLP and body corporate.

"Premises" means the property or properties to be occupied by the LLP for the purpose of the Business of the LLP.

"Proper Cause" means acting in accordance with the provisions, duties, rights and entitlements that are provided for within the terms of this agreement.

"Property" means the premises and all items used for the purposes of the business (or rights in them as appropriate) including all intellectual property and computers and associated equipment and all office equipment, furniture and other property and equipment.

"Reference to a Partner, Former Partner or Outgoing Partner" (where the context admits) includes a reference to his personal representatives, estate, receiver or trustee in bankruptcy."

"Reference to a statute or statutory provision" includes a reference to that statute or statutory provision as amended, extended or reenacted.

Words denoting the singular number include the plural and vice versa.

"Repayment" means the amount of money repaid to any partners from the bank accounts of the LLP by way of reduction of their Capital Accounts of the Value of any assets transferred to them by the LLP.

"Special Resolution" means vote casted in favour of a resolution at partners meeting or resolution by circulation is three times more than vote casted against the resolution.

"Successing Date" means a date on which a outgoing partner ceases, or is deemed under this agreement to cease, to be a partner.

"The Act" means the Limited Liability Partnership Act, 2008 (6 of 2009).

Words or expressions not defined in this agreement have the meaning as assigned in the Act.

Unless the context otherwise requires, a reference to any clause, sub clause, paragraph or schedule is to a clause, sub clause, paragraph or schedule of or to this agreement.

2. Term

The LLP Agreement shall come into effect from the date of incorporation of LLP by way of its registration with the Registrar and shall continue until dissolved and liquidated in accordance with clauses 28 and 29.

3. Incorporation of the LLP

The incorporated LLP shall be duly organized, validly existing and is in good standing under the laws of the jurisdiction of its incorporation, is qualified to do business and has all requisite powers and authority, corporate or otherwise, to conduct its business as now being conducted, to own, lease and operate its properties and to execute, deliver and perform this Agreement.



The Partners shall complete and deliver such forms as may be required to the Registrar's Office and pay all required fees to incorporate the Limited Liability Partnership in accordance with the Limited Liability Partnership Act, 2008. The LLP certificate of registration shall be kept at the Registered Office.

4. Nature of the Business

The nature or purpose of the business to be conducted or promoted by the LLP is to engage in any lawful act or activity for which a LLP may be formed under the LLP Act. The LLP may engage in any and all activities necessary, desirable or incidental to the accomplishment of the foregoing. Notwithstanding anything herein to the contrary, nothing set forth herein shall be construed as authorizing the partners to possess any purpose or power, or to do any act or thing, forbidden by law to a LLP formed under the LLP Act, 2008.

The partners of this LLP shall carry on the business of,

Acquisition of land, contract work, construction work, mining, crusher units, purchase and sale of machinery and equipments

5. LLP Name

The business of the Partnership shall be conducted under the name of "SVART STEN ASSOCIATES LLP".

The Partners may change the name of the LLP at any time. Such change must be notified to the Registrar Office by the Designated Partners in accordance with the provisions of the Act.

The Registration Number of LLP is: AAS-5013

6. Registered Office

The Registered office of the LLP shall be situated at 50(3/225), Irumbakassery, Peedikayal(H), Erhumangad, Arangottukara, P.O., Thirumittakode, Palakkad-679333 in the State of Kerala and or at such other place, as may be mutually agreed upon. Upon any change in the registered office address of the LLP, it shall be the duty of the designated partner of the LLP to notify it to the Registrar in the prescribed form.

7. Place of Business/LLP Property

7.1 The LLP business shall be carried out at the Premises referred to in this Agreement, which shall remain the property of the LLP at all times. The costs of all rent, rates, repairs, insurance and other outgoings and expenses relating to the Premises and any other premises acquired for the purpose of the LLP business shall be borne by the LLP.

7.2 The legal estate in all freehold or leasehold properties acquired for the purpose of the LLP shall be vested in the Partners upon trust for sale, or in some of the partners as trustees for all the remaining partners. The net proceeds of sale and the rents and profits until sale shall form part of the assets of the LLP. The trustees shall be indemnified by the LLP against the rent and other outgoings in respect of the properties and the costs and expenses of observing the covenants relating to them.



8. Capital Contributions

A single Capital Account shall be maintained for each Partner. The capital of the LLP shall be Rs. 1,00,000.00 (Rupees One Lakh Only) which shall be contributed by the partners by equity unit in such a manner as they would like to contribute. Each partner's contribution to, or capital withdrawal from, the partnership shall be credited, or debited, respectively, to that partner's capital account.

Except as otherwise specifically provided in this Agreement, the Capital Commitment of a Partner (i) shall represent the maximum aggregate amount of cash and property that such Partner shall be required to contribute to the capital of the LLP and (ii) without such Partner's consent, shall not be changed during the term of the LLP.

The percentage of capital contribution by the partners to the total capital of LLP is:

1. Madappilly David Paulose - 50%
2. Peter Madathikudiyil Puravath - 50%

8.1 Additional contribution

The partners hereto have also agreed to subscribe additional capital in the ratio as per requirement whenever it is required to do so for the efficiency of the business. At the time of increase of the capital, the additional capital of the partner(s) may be adjusted against the increased capital.

8.2 Withdrawal or Reduction of Capital Contributions

Except as expressly provided in this Agreement, no Partner shall have the right to withdraw from the LLP all or any part of its capital contribution.

A partner, irrespective of the nature of its capital contribution, shall only have the right to demand and receive cash in return for its capital contribution, unless the partners shall have unanimously agreed that such partner may receive a distribution in kind.

8.3 Interest on Capital Contributions.

Interest shall be payable on or with respect to the capital contributions or capital accounts of partners. Interest rate shall be fixed by the designated partners in their meeting.

9. Banking

Bank account of the LLP should be opened by Designated Partners and any one Designated Partner can operate the bank account singly, and one of such Designated Partner should be the Managing Director/Managing Partner, if anyone has been appointed so.

10. Accounts

- (a) The accounts of the LLP shall be maintained according to the financial year, from 1st April to 31st March and general account shall be taken of all the capital assets and liabilities to the time being of the LLP as on 31st March in each year and a balance sheet and profit and loss account shall be prepared by any Chartered Accountant to be agreed upon by the partners.
- (b) The LLP shall maintain usual account and other books at the registered office of the LLP and they shall be kept properly posted up-to-date and shall not be removed from the registered office without the consent of all the partners.



- (c) The accounts of the LLP shall be approved by all the partners of LLP which shall be binding on all the partners and a copy thereof shall be distributed to each of partners
- (d) Complete books and records of the LLP shall be maintained accurately reflecting the accounts, business and transactions of the LLP on a financial year basis and on accrual basis and according to the double entry system of accounting.

11. Inspection of Company Records, Annual and Other Reports

11.1 Records to be kept

The LLP shall keep at its registered office:

- (a) A current list of the full name and last known business, residence or mailing address of each Partner and designated partner in alphabetical order;
- (b) Copies of this LLP agreement, and all amendments hereto;
- (c) Copies of the LLP's income-tax returns and reports, if any, for the three most recent years; and
- (d) Copies of any financial statements of the LLP for the three most recent years.

11.2 Inspection of LLP Records

The accounting books and records, the record of partners shall be open to inspection upon the reasonable request of any partner at any reasonable time during usual business hours, for a purpose reasonably related to such partner's interest as a partner. Such inspection by a partner may be made in person or by agent or attorney, and the right of inspection includes the right to copy and make extracts.

12. Annual Filing

LLP shall prepare and file with the Registrar, a Statement of Account and Solvency, within a period of six months from the end of each financial year and an Annual Return with the Registrar within sixty days of closure of its financial year.

13. Nature of Partnership Interest

- (a) The interests of partners in the LLP constitute their personal estate. In the event of the death or legal disability of any partner, the executor, trustee or administrator of such Partner shall be bound by the provisions of this LLP agreement.
- (b) In the case of a partner, which is not a natural person, the successor of such partner shall be bound by the provisions of this LLP agreement.

14. Sharing of Profits and Losses

The net profits of the business shall be divided between the partners in the proportion of the capital and they shall bear all losses including loss of capital in the same proportion. Proportion for sharing of profits and losses is as follows:

- 1. Madappally David Paulose - 50%
- 2. Peter Madathikudiyil Paravath - 50%

15. Holidays

Each Partner shall be entitled to four weeks holiday in each year and all the partners shall make choice of the holiday alternatively.



16. Meetings

16.1 Meetings of Partners

- (a) General Body meeting of partners shall be held annually.
- (b) Notice of the time and place of meetings shall be delivered by the designated partner of the LLP either personally, or sent by first-class mail or by electronic mail, SMS or facsimile transmission addressed to him or her at his or her address as it appears upon the records of the LLP.
- (c) If an item on the meetings agenda requires a 3/4th majority of the partners, then the partners will be required to be given 14 days clear written notice.
- (d) Written notice of the time and place of meetings shall be delivered by the designated partner of the LLP either personally or sent by first-class mail or by electronic mail or SMS or facsimile transmission addressed to him or her at his or her address as it appears upon the records of the LLP and it shall specify the place, day and hour of the meeting and shall contain an agenda of issues to be discussed.
- (e) The chairman of the meeting shall be the chairman of the LLP to all the meetings.
- (f) The quorum for the meeting of Partners shall be two or thirty percent of the total Partners whichever is higher.
- (g) If a quorum is not present within fifteen minutes of the time for which the meeting is convened, the meeting shall stand adjourned to the same day in the next week, at the same time and place or any convenient day.
- (h) If at the adjourned meeting also, a quorum is not present within fifteen minutes from the appointed time for holding the meeting, not less than 15% of the partners shall be the quorum.
- (i) Sitting fee should be given to the members attended in the first meeting and also to the adjourned meeting.

16.2 Meetings of the Board/Designated Partners

- (a) At least one meeting of Board/Designated Partners shall be held in every quarter.
- (b) The quorum for the meeting of the Board/Designated Partners shall be two or thirty percent of the total board members/Designated Partners whichever is higher.
- (c) If a quorum is not present within thirty minutes of the time for which the meeting is convened, the meeting shall stand adjourned to the same day in the next week, at the same time and place or any convenient day.
- (d) If at the adjourned meeting also, a quorum is not present within fifteen minutes from the appointed time for holding the meeting, not less than 2 persons of the total board members/Designated Partners shall be a quorum.
- (e) Sitting fee should be given to the members attended in the first meeting and also to the adjourned meeting.

17. Voting of Partners

- (a) Voting Power of a partner is equal to the value of shares held by him/her.
- (b) The partners shall have the right to vote and act on the matters and affairs of the LLP as are expressly provided for herein or are required by the LLP Act, 2008 to be voted upon by the partners.
- (c) The matters specified in schedule II of this agreement require 3/4th majority of the partners present in the meeting.
- (d) A partner appoints any one as his proxy in writing to vote on his behalf on a resolution.



To be effective, the proxy form must be given to the Board of Directors not less than 48 Hours before the time for holding the meeting.

(c) In the event of equality of votes, the chairman of the meeting shall have a second or casting vote.

18. Management

18.1 Except as otherwise expressly provided herein, day-to-day operation of the LLP shall be vested exclusively in the Managing Director/Managing Partner appointed by all the partners, who shall have the power on behalf and in the name of the LLP to carry out any and all of the purposes of the LLP and to perform all acts and enter into and perform all contracts and other undertakings that it may deem necessary or advisable or incidental thereto with the approval of Chairman and subject to supervision and control of the Designated Partners/Directors.

18.2 Subject to such terms and conditions, Managing Director/Managing Partner shall be elected for successive Terms of Three Financial Years.

18.3 The election of a Managing Director/ Managing Partner shall be by a majority vote of the Directors/ Designated Partners. A Managing Director/ Managing Partner whose term of office is about to expire shall be eligible for re-election.

18.4 Managing Director/ Managing Partner may be removed and replaced by a majority resolution of the general body meeting of the partners.

18.5 When anyone or anything may be appointed or determined by the Managing Director/Partner or Chairman under this agreement, he or it may alternatively be appointed or determined by a majority resolution of the Partners.

18.6 All the whole time working members of the Board including Chairman, Managing Director/Managing Partner are entitled to receive remuneration as may be decided by the members within the overall remuneration allowable under the provision of Income Tax Act, 1961.

18.7 Subject to such terms and conditions, the Partners shall appoint a Chairman from among the Designated Partners or the board of directors of the LLP who will hold office until his resignation, removal or vacation of his office. It shall be the duty of chairman to preside over the meeting of the Board of Directors of the LLP and in the meeting of partners.

18.8 The partners shall from time to time appoint such of their number not less than 2 and not more than 10 as Designated Partners/ Board Members of the LLP to perform the functions of management of LLP.

18.9 Partners appointed collectively shall be the Designated Partners or the Board of Directors of the LLP.

18.10 Every year at the Annual General Body of Partners Meeting (AGM), not less than 1/3rd of the total retiring Directors/Designated Partners who are longest in the office, retires and are eligible for reappointment.

18.11 If any vacancy of a Director/Designated Partner arises, consequent to death or resignation or removal, the resulting vacancy shall be filled in the next partners meeting.

18.12 A Director/Designated Partner may resign from the office of the Board of Director/ Partners. A Notice of one month period is required.

18.13 A Director/ designated partner shall be paid sitting fee, as may be determined by the partners from time to time and for attending the meeting of the Board of Directors/ Partners or Committee thereof attended by him/her and shall be paid in addition thereto all traveling, total and other expenses incurred by him/her in attending and returning from meetings of the board of partners or any committee thereof or meetings of the LLP or in connection with the business of the LLP to and from any place.

18.14 Except as otherwise provided by this LLP Agreement, Directors/ Designated Partners of the LLP shall have in all matters equal rights and privileges, and be subject to equal obligations and duties in respect of the affairs of the LLP.



19. Obligations of Partners

Each partner shall:

- (1) Be just and faithful to other partners in the transactions relating to LLP business;
- (2) Diligently attend to the business of the LLP and devote his/her full time and attention thereto;
- (3) Pay his separate debts and indemnify the other partners and assets of the LLP against the same and all other proceedings, costs, claims or demands in respect thereof;
- (4) Give full information and truthful explanations of all matters relating to the affairs of the LLP to all the partners at all times;
- (5) Comply with all the provisions of the LLP Act and Regulation, Rules framed or to be framed therein;
- (6) No partner shall without the consent of all other partners: –
 - (i) Engage in same manner of business directly or indirectly;
 - (ii) Lend money or give credit of the goods of the LLP to whom the other partners have previously forbidden him/her to trust;
 - (iii) Mortgage, charge or assign his share in the assets or profits of the LLP;
 - (iv) Draw, accept or endorse any bill of exchange or promissory note on account of the LLP;
 - (v) Engage, remove or dismiss any apprentice, employee of the LLP;
 - (vi) Give any security or promise for the payment of money on account of the LLP except in the ordinary course of business;
 - (vii) Give bail, bond or guarantee or become surety for any person or do or knowingly suffer any thing to be done where the LLP property may be endangered;
 - (viii) Compromise or compound or release or discharge any debt due to the LLP.

20. Forbidden Acts

No partner shall:

- (1) have the right or authority to bind or obligate the LLP to any extent whatsoever with regard to any matter outside the scope of the partnership purpose;
- (2) use the LLP name, credit, or property for other than LLP purposes;
- (3) do any act detrimental to the interests of the LLP or which would make it impossible to carry on the business or affairs of the LLP.

21. Liability of Partners

The liability of the partners shall be limited as provided in the LLP Act, 2008 and as set forth in this LLP agreement. Partners shall not be obliged to restore by way of capital contribution or otherwise any deficits in its capital account or the capital account of any other partner (if such deficits occur).

22. Change in Partners

22.1 Admission of new Partner

A new partner may be introduced with the consent 2/3rd majority of all the partners on such terms and conditions as the partners agree with the person to be introduced as a partner in the LLP.



22.2 *Voluntary Withdrawal of a Partner*

Each partner covenants and agrees that it will not withdraw or resign from the LLP without the prior consent of the other partners (such consent not to be unreasonably withheld or delayed). Written notice shall be deemed to be received as of the first meeting of the LLP at which it is presented. If written notice is received between meetings it will be treated as received at the first following meeting.

On voluntary withdrawal a part or all of the value of his capital account in the LLP and the LLP shall continue as a taxable entity. The LLP shall pay the partner who is withdrawing a portion or all of the value of his capital account in the partnership in accordance with Article herein under the LLP agreement. Upon the withdrawal of a partner from the LLP for any reason, such partner shall cease to have any further right to or interest in LLP.

22.3 *Death of Partner*

On the death of any partner, the LLP shall not be dissolved, the surviving partners shall have the option to purchase the share of the deceased partner, in the business and the property valued as per Article herein under. The partner, purchasing the share of the deceased partner, shall also enter into a covenant to indemnify the personal representatives of the deceased partner from the existing and future debts, obligations and liabilities of the partnership.

22.4 *Terms of payment/purchase of share*

Price of the share of deceased/withdrawing partner shall be the amount at which such share shall stand in the last balance sheet, which shall have been prepared prior to the death of the deceased/ date of withdrawal.

22.5 *Expulsion of Partner and Termination of his partnership*

If any partner shall assign, charge or encumber his/her share in the LLP without the consent of other partners or shall become bankrupt or a lunatic or otherwise permanently incapable of attending to the partnership business or shall absent himself/herself from the partnership business for more than 30 (Thirty) days, in any period of the twelve months except during his/her annual holiday without the consent of the other partners, or commit any breach of any of the provisions of this agreement or commits any criminal offence or do or suffer any act which would be a ground for the dissolution of the partnership by the Court/Tribunal and in any such case it shall be lawful for the other partners by notice in writing to the offending or incapacitated partner or his/her trustee or official assignee to determine the partnership whereupon the partnership so far as concerns such partner shall determine and the other partner shall have the option to purchase his/her share and pay the purchase price to the offending partner or his/her trustee or official assignee in accordance with above Article.

The committing of the following acts can be additional reasons for the expulsion of a partner and termination of his partnership.

- (a) If a partner found distributing Signals other than from LLP.
- (b) If a partner fails to make payments as decided by the Board from time to time, no balance should be maintained by the partners to LLP.
- (c) No partner should extend their network areas to other partners or to other areas without permission.



If a partner retires or becomes insolvent, then the partnership will not be dissolved. The remaining partner shall have the option to purchase the share of such partner and the purchase price shall be calculated as given in the preceding Article.

If a partner commits a breach which justifies expulsion, the other partners do not have to give notice to expel the partner in default. They nonetheless have the right to do so.

23. Restrictive Covenants

Except as otherwise expressly provided in an Agreement:

- (i) Partner, officers, shall not engage or invest in, independently or with others, any business activity of any type or description, including those that might be the same as or similar to the LLP Business;
- (ii) Partner or its designated partner, manager and officers, shall not compete with the LLP in the conduct or winding up of the LLP's activities;
- (iii) neither the LLP nor any Partner of the LLP shall have any right in or to any such business activities or ventures or to receive or share in any income or proceeds derived there from; and
- (iv) to the extent required by applicable law in order to effectuate the purpose of this provision, the LLP shall have no interest or expectancy, and specifically renounces any interest or expectancy, in any such business activities or ventures.

24. Salaries and drawings

24.1 Neither partner shall receive any salary for services rendered to the LLP except reimbursement for expenses on production of appropriate receipts or vouchers. But the Designated Partners shall be entitled for the salary as may be determined by the Board from time to time subject to maximum limit, if any, fixed under the provisions of Income Tax Act 1961.

24.2 Each partner may, from time to time, withdraw the credit balance in his income account. In case if there being insufficient funds in the bank account or where drawings over the course of the year exceed the share of profits to which a partner is entitled, any overdrawn amount must be repaid promptly together with 12 % interest on the overdrawn amount.

25. Meeting of expenses of LLP

- (a) All outgoings and expenses of the partnership and all losses or damages incurred, interest payable for any loans received and taxes, etc. shall be paid first out of the profits, next out of capital and in the case of further deficiency, by the partners in the shares in which they are entitled to the net profits of the LLP business.
- (b) All LLP moneys, bills, notes, cheques and other instruments received by the LLP shall as and when received be paid and deposited in the bank to the credit of the LLP's account, except such sums as are immediately required to meet the current expenses of the LLP.
- (c) All transactions of the LLP shall be done in the name of the LLP and all goods shall be purchased or sold in the LLP name. All the bills, vouchers, delivery notes, receipts, etc. shall be issued in the name of the LLP.



26. Transfer/Assignment of Rights

26.1 Restrictions on Transfer

No partner may sell, assign, transfer or hypothecate (Transfer) all or any part of its partner's interest in the LLP, or any interest therein, except in accordance with the terms and conditions set forth in this Article.

26.2 Consent necessary to Transfer

No partner may transfer all or any part of his interest or any interest therein, without the prior written approval of all of the other partners of the LLP.

26.3 Conditions of Transfer

In the event that the other partners have granted their approval to the proposed transfer, then the manager for and on behalf of the partners shall execute a written consent to such transfer. Upon receipt of such written consent, the transferring partner has a right to transfer to the proposed transferee the partnership interest as to which the approval has been obtained, subject to the following conditions:

- (a) that such transfer is consummated within sixty (60) days from the date of such approval; and
- (b) that such transfer is made strictly in accordance with the terms of the proposed transfer approved by the other partners of the LLP.

26.4 Admission of Substitute Partner

In the event that approval of the transfer is obtained, then the transferee of the partner's partnership interest shall be entitled to be admitted to the LLP as a substitute partner, and this Agreement (and all exhibits hereto) shall be amended to reflect such admission, provided that the following conditions are complied with:

- (a) The transferor and transferee shall have executed and acknowledged such instruments as the LLP may deem necessary or desirable to effect the substitution;
- (b) The transferee acknowledges all of the terms and provisions of this Agreement as the same may have been amended, and agrees in writing to be bound by the same;
- (c) The transferee reimburses the LLP for all reasonable expenses connected with such admission including, but not limited to, legal fees and costs;
- (d) The filing with the LLP of such proof of the investment intent and financial status of the transferee as the LLP's partners may request, and
- (e) The transfer complies with all applicable state laws.

26.5 Effect of Transfer without Approval

Any purported transfer of all or any part of a partner's partnership interest, or any interest therein, which is not in compliance with this Article shall be void and, except as provided for in Article below, shall be of no effect.

26.6 Liability for Transfer of Interest without consent

Notwithstanding anything to the contrary in this Article, any partner purporting to transfer his interest, or any part thereof, in violation of this Article shall be liable to the LLP and the other partners for all liabilities, obligations, damages, losses, costs and expenses (including reasonable attorneys' fees and court costs) arising as a direct or consequential result of such non-complying



transfer, attempted transfer or purported transfer, including specifically, any additional cost or taxes created by non-compliance with any of the requirements and conditions provided for in this Agreement.

26.7 Transfer permitted without consent

Notwithstanding anything to the contrary provided for herein, a partner may transfer all but not less than all of a partner's interest without approval to the surviving entity in an acquisition, merger, reorganization or sale of substantially all the assets of the partner.

27. Breach of Agreement

A material breach of this LLP agreement by a partner (the "Breaching Partner") which breach has not, after notice by the other partner ("Non-Breaching Partner") and a reasonable opportunity for cure (the scope of such cure to be conclusively established by the binding arbitration provisions of this LLP agreement) been cured by such partner within the time provided for by the Arbitrator. If it is determined by the Arbitrator that a material breach did occur and a satisfactory remedy cannot be instituted in the opinion of the Non-Breaching Partner, the Non-Breaching Partner has the right to request dissolution of the LLP pursuant to Article 28.

28. Dissolution

Upon a decision to dissolve the LLP by:

- (i) a written consent of the partners holding at least 2/3rd of all the Percentage Interests of the LLP, or
- (ii) a decision by one Partner to dissolve, the LLP shall be liquidated pursuant to Article 28.1.

28.1 Legislative Dissolution

Notwithstanding anything contained in these presents, LLP shall be deemed to be terminated in the following cases:

- (i) Number of partners falls below two;
- (ii) Partner's non-economic right is transferred to a third party without the approval of the existing partners.

29. Liquidation

- (a) Upon the occurrence of an event of dissolution as defined in the LLP Act or in Article 27 of this Agreement, the LLP shall cease to engage in any further business, except to the extent necessary to perform existing obligations, and shall wind up its affairs and liquidate its assets. The partner or designated partner with the consent of all the partners shall appoint a liquidator (who may, but need not, be a Partner) who shall have sole authority and control over the winding up and liquidation of the LLP's business and affairs and shall diligently pursue the winding up and liquidation of the LLP. As soon as practicable after his appointment, the liquidator shall cause to be filed a statement of intent to dissolve as required by the LLP Act, 2008 and/or Rules thereof.
- (b) During the course of liquidation, the partners shall continue to share profits and losses of LLP but there shall be no cash distributions to the partners until the distribution date as defined in Article herein under.



- (c) Liquidation shall continue until the LLP's affairs are in such condition that there is a final accounting showing that all fixed or liquidated obligations and liabilities of the LLP are satisfied or can be adequately provided for under this Agreement. The assumption or guarantee in good faith by one or more financially responsible persons shall be deemed to be an adequate means of providing for such obligations and liabilities. When the liquidator has determined that there can be a final accounting, the liquidator shall establish a date (not to be later than the end of the taxable year of the liquidation, i.e., the time at which the LLP ceases to be a going concern, or, if later, ninety (90) days after the date of such liquidation) for the distribution of the proceeds of liquidation of the LLP (the "Distribution Date"). The net proceeds of liquidation of the LLP shall be distributed to the partners as provided in Article hereof not later than the Distribution Date.
- (d) Subject to provisions of the LLP Act, 2008 upon the dissolution and liquidation of the LLP, the proceeds of liquidation shall be applied as follows:
- (i) first, to pay all expenses of liquidation and winding up;
 - (ii) second, to pay all debts, obligations and liabilities of the LLP, in the order of priority as provided by law, other than debts owing to the Partners or on account of Partners' contributions;
 - (iii) third, to pay all debts of the LLP owing to a Partner; and
 - (iv) to establish reasonable reserves for any remaining contingent or unforeseen liabilities of the LLP not otherwise provided for, which reserves shall be maintained by the liquidator on behalf of the LLP in a regular interest-bearing trust account for a reasonable period of time as determined by the liquidator. If any excess funds remain in such reserves at the end of such reasonable time, then such remaining funds shall be distributed by the LLP to the Partners pursuant to Article hereinafter.
- (e) Subject to the provisions of the LLP Act, 2008 upon final liquidation of the LLP but not later than the Distribution Date, the net proceeds of liquidation remaining following the settling of accounts in accordance with Article hereof shall be distributed to the Partners in proportion of their respective Percentage Interests.

30. Notices

Any notice to be given under this Agreement shall be in writing and shall be deemed given when received and may be sent by e-mail, express courier or registered post to the registered office address of the LLP.

31. Defaults and Remedies

31.1 Defaults

If a partner materially defaults in the performance of its obligations under the LLP agreement, and such default is not cured within ten (10) days after notice of such default is given by a partner to the defaulting partner for a default that can be cured by the payment of money, or within thirty (30) days after notice of such default is given by a partner to the defaulting partner for any other default, then the non-defaulting partners shall have the rights and remedies described in Article hereunder in respect of the default.

31.2 Remedies

If a partner fails to perform its obligations under this Agreement, any other partner shall have, in addition to any rights and remedies provided hereunder, all such rights and remedies as are provided at law or in equity.



34. Limitation of Liability/Indemnification

34.1 Limited Liability

Except as expressly provided herein, neither partner will be liable to the other partner or to the LLP with respect to any subject matter of this Agreement under any contract, negligence, strict liability or other legal or equitable theory for (i) any special, indirect, incidental, consequential or punitive damages or lost profits or (ii) cost of procurement of substitute goods or services.

34.2 Indemnification between the Partners

Neither partner shall indemnify the other partner or LLP or its respective officers, directors, employees and its respective successors, heirs and assigns ("Indemnitees") for any loss, claim, damage, liability or action except to the extent resulting from its respective gross negligence or willful wrong doing. This paragraph does not limit either partner's other remedies available to it under the laws.

34.3 Procedure

An indemnity that intends to claim indemnification under this Article 34 shall promptly notify the other partner (the "Indemnitor") in writing of any loss, claim, damage, liability or action in respect of which the Indemnitee intends to claim such indemnification, and the Indemnitor shall have the right to participate in, and, to the extent the Indemnitor so desires, to assume the defense thereof with counsel of its own choice.

34.4 Limitation of Indemnity

The indemnity Clause in this Agreement shall not apply to amounts paid in settlement of any loss, claim, damage, liability or action if such settlement is made without the consent of the Indemnitor, which consent shall not be withheld unreasonably. The failure to deliver written notice to the Indemnitor within a reasonable time after the commencement of any such action, if prejudicial to its ability to defend such action, shall relieve such Indemnitor of any liability to the Indemnitee under this Article.

34.5 Cooperation

At the Indemnitor's request, the Indemnitee under this Article and its employees and agents, shall cooperate fully with the Indemnitor and its legal representatives in the investigation and defense of any action, claim or liability covered by this indemnification and provide full information with respect thereto.

34.6 Proceeding other than by LLP

The LLP will indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative, except an action by or in the right of the LLP, by reason of the fact that he/she is or was a Partner, officer, employee of the LLP, or is or was serving as a manager or LLP against expenses, including attorneys' fees, judgments, fines and amounts paid in settlement actually and reasonably incurred by him/her in connection with the action, suit or proceeding if he/she acted in good faith and in a manner which he/she reasonably believed to be in or not opposed to the best interests of the LLP, and, with respect to any criminal action or proceeding, had no reasonable cause to believe his/her conduct was unlawful. The termination of any action,



suit or proceeding by judgment, order, settlement, conviction, or its equivalent, does not, of itself, create a presumption that the person did not act in good faith and in a manner which he/she reasonably believed to be in or not opposed to the best interests of the LLP, and that, with respect to any criminal action or proceeding, he/she had reasonable cause to believe that his conduct was unlawful.

34.7 Proceeding by LLP

The LLP will indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action or suit by or in the right of the LLP to procure a judgment in its favour by reason of the fact that he/she is or was a Partner, officer, employee of the LLP against expenses, including amounts paid in settlement and attorneys' fees actually and reasonably incurred by him/her in connection with the defense or settlement of the action or suit if he/she acted in good faith and in a manner which he/she reasonably believed to be in or not opposed to the best interests of the LLP. Indemnification may not be made for any claim, issue or matter as to which such a person has been adjudged by a court of competent jurisdiction, after exhaustion of all appeals there from, to be liable to the LLP or for amounts paid in settlement to the LLP, unless and only to the extent that the court in which the action or suit was brought or other court of competent jurisdiction determines upon application that in view of all the circumstances of the case, the person is fairly and reasonably entitled to indemnity for such expenses as the court deems proper.

34.8 Mandatory Advancement of Expenses

The expenses of partners, designated partner and officers incurred in defending a civil or criminal action, suit or proceeding must be paid by the LLP as they are incurred and in advance of the final disposition of the action, suit or proceeding, upon receipt of an undertaking by or on behalf of the partner, designated partner or officer to repay the amount if it is ultimately determined by a court of competent jurisdiction that he/she is not entitled to be indemnified by the LLP. The provisions of this Article do not affect any rights to advancement of expenses to which personnel of the LLP other than partners, designated partner or officers may be entitled under any contract or otherwise.

34.9 Effect and Continuation

The indemnification and advancement of expenses authorized in or ordered by a court pursuant to above Article, inclusive:

- (a) does not exclude any other rights to which a person seeking indemnification or advancement of expenses may be entitled under the Agreement or otherwise for either an action in his/her official capacity or an action in another capacity while holding his/her office, except that indemnification, unless ordered by a court or for the advancement of expenses made pursuant to Article 34.7, may not be made to or on behalf of any partner, designated partner or officer if a final adjudication establishes that his/her acts or omissions involved intentional misconduct, fraud or a knowing violation of the law and was material to the cause of action.
- (b) Continues for a person who has ceased to be a partner, officer, employee or agent and ensures to the benefit of his/her heirs, executors and administrators.

34.10 Notice of Indemnification and Advancement

Any indemnification of, or advancement of expenses to, a Partner or officer in accordance with this Article, if arising out of a proceeding by or on behalf of the LLP, shall be reported in writing to the Partners.



35. Confidentiality

- (a) Disclosure of a partner's confidential information to any of the officers, employees, consultants or third party shall be made only if and to the extent necessary to carry out rights and responsibilities under this Agreement, shall be limited to the maximum extent possible, consistent with such rights and responsibilities, and shall only be made to persons who are bound to maintain the confidentiality thereof and not to use such confidential information except as expressly permitted by this Agreement.
- (b) Each partner shall use at least the same standard of care, but no less than a reasonable standard of care for this industry, as it uses to protect its own confidential information to ensure that its employees, consultants and other representatives do not disclose or make any unauthorized use of confidential information of another partner. Each partner shall promptly notify the other partner of any unauthorized use or disclosure of confidential information of another partner.
- (c) Within 60 days following termination or expiration of this Agreement, each partner will return to the other partner, or destroy, upon the written request of the concerned partner, all confidential information disclosed to it by the concerned partner pursuant to this Agreement including all copies and extracts of documents.
- (d) Any employee who shall have access to confidential information of another partner are bound by agreements to maintain such information in confidence and not to use such information except as expressly permitted herein. Each partner agrees to enforce confidentiality obligations by which its employees and consultants are bound.

36. Amendments

Subject to any contrary provisions of the Act, this Agreement may be amended only by the affirmative vote of all the partners. Any such amendment shall be in writing, duly executed by all the partners.

37. Repeal or Modification

Any repeal or modification of this Article by the partners of the LLP shall not adversely affect any right of a partner, designated partner or officer of the LLP existing hereunder at the time of such repeal or modification.

38. Enforceability of Agreement

The execution, delivery and performance by it of this Agreement have been duly authorized by all necessary corporate action and do not and will not violate any provision of any law, rule, regulation, order, writ, judgment, injunction, decree, determination or award presently in effect having applicability to it or any provision of its charter documents. This Agreement is a legal, valid and binding obligation of it, enforceable against it in accordance with its terms and conditions.

39. Entire Agreement

- (a) This Agreement and the exhibits and schedules hereto and any side letter agreements entered into by the partners as of the date of this Agreement relating to potential termination of this Agreement, constitute the entire agreement between the partners with respect to the subject matter hereof, and supersede all prior and contemporaneous agreements, representations, and understandings of the parties. No party hereto shall be liable or bound to the other in any manner by any warranties, representations or covenants with respect to the subject matter hereof except as specifically set forth herein.



(b) Nothing in this Agreement, express or implied, is intended to confer upon any party, other than the parties hereto, and their respective successors and permitted assigns, any rights, remedies, obligations or liabilities under or by reason of this Agreement, except as expressly provided herein. In addition, neither partner can assign this Agreement or the rights and obligations thereunder to another party without the prior written consent of the other partner.

40. Governing Law and Jurisdiction

41.1 This agreement and any disputes or claims arising out of or in connection with its subject matter are governed by and construed in accordance with the law of India.

41.2 The partners irrevocably agree that the courts of Calicut have exclusive jurisdiction to settle any disputes or claim that arises out of or in connection with this agreement.

41. Counterparts

This Agreement may be executed in two or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument, and shall become effective when there exist copies hereof which, when taken together, bear the authorized signatures of each of the parties hereto. Only one such counterpart signed by the party against whom enforceability is sought needs to be produced to evidence the existence of this Agreement.

42. Limited Liability Partnership Act prevails.

Unless the context otherwise requires, the general provisions, rules of construction and definitions contained in the LLP Act, 2008 shall govern the construction of this Agreement provided, however, that in the event of any inconsistency between such laws, the provisions of the Act shall prevail.

43. Severability

If one or more provisions of this Agreement are held by a proper court to be unenforceable under applicable law, portions of such provisions, or such provisions in their entirety, to the extent necessary and permitted by law, shall be severed herefrom, and the balance of this Agreement shall be enforceable in accordance with its terms.



Schedule I
List of Partners Subscribing the LLP

No	Name of Partners	Age	Addresses	Signature
1	MADAPPILLY DAVID PAULOSE	57	MADAPPILLY, PILKATHI PADY, KIZHAKKAMBALAM, ERNAKULAM KERALA - 685562	
2	PETER MADATHIKKUDIYIL PURAYATH	52	MADATHIKKUDIYIL, KINGINMATTON P.O., ERNAKULAM KERALA 682311	







Schedule II

Matters requiring 3/4th majority from Partners

1. Expanding, altering or otherwise changing the nature of the business
2. Removal of a Director from the Board
3. Amending this Agreement
4. Borrowing any sum in excess of Rs. 5,00,000/-
5. Giving a guarantee
6. Increasing the capital of the LLP
7. Introducing to the LLP a new Partner (Whether profit sharing, salaried or otherwise)
8. The expulsion of any partner (for which purpose the vote of the partner whose expulsion is being considered shall not be counted)
9. A change in the name or the adoption of an additional trading name to be used by the LLP.
10. Decision to windup the LLP.

IN WITNESS WHEREOF, the parties hereto have hereunto set and subscribed their respective hands the day and year first hereinabove written.

Sl No	Name of Each Partner	Signature of Designated Partner / Partner / Member of body corporate	Name and address of witness	Signature of witness
1.	MADAPPILLY DAVID PALLOSE		DEEPAK GROUND FLOOR, CORAL REEF CO- OPERATIVE ROAD, CHIMBUKAYU P.O., THIRISSUR, KERALA-680022 (PRACTISING COMPANY SECRETARY)	
2.	PETER MADATHIKKADIYIL PURAYATH			



കേരളം കേരള KERALA

L 380212

This Agreement is made and executed at Palakkad on this 15th day of October, 2020

AMONGST

1. Mr. MADAPPILLY DAVID PAULOSE, S/o. DAVID, residing at MADAPPILLY PUKKATTUPADY, KIZHAKKAMBALAM, ERNAKULAM, KERALA - 683562 and
2. MR. PETER MADATHIKUDIYIL PURAVATHI, S/o. PURAVATHI MADATHIKUDIYIL PATHROSE, residing at MADATHIKUDIYIL, KINGINIMATTOM PO, ERNAKULAM, KERALA - 682371 (hereinafter collectively called the Existing Designated Partners) of the one part.

MADAPPILLY DAVID PAULOSE

PETER MADATHIKUDIYIL PURAVATHI

No: 1618-2 VALUE RS: 1000

Svant stem Associates LLP

Palakkad

C. I. VARGHESE
VENDOR No. 34
THE ISSUER

8 OCT 2020





AND

3. Mr. UMMER MUHAMMED, S/o. MUHAMMED, residing at KATTEKATTIL, VARAVATTUR, PALLUR, DESAMANGALAM, THRISSUR-679532.
4. Mr. JOSE M P, S/o. MADATHIKKUDIYIL PATHROSE PURAVATHI, residing at MADATHIKKUDIYIL HOUSE, KINGINIMATTAM P.O., ERNAKULAM-682311 and
5. Mrs. BINSU PAUL, D/o. ABRAHAM KURUVILLA, residing at MADAPPILLY HOUSE, PUKKATTUPADY, KIZHAKKAMBALAM P.O., ERNAKULAM-683562 (hereinafter collectively called the New Partners) of the other part;

WHEREAS the parties to the 1st part of this agreement were carrying on the business of acquisition of land, contract work, construction work, mining, crusher units, purchase and sale of machinery and equipments under the name and style of 'SVART STEN ASSOCIATES LLP' (Registration No AAS-5013) (hereinafter referred as LLP) at 5013/225, Irumbakassery Peedikayil(H), Ezhumangad, Arangottukara.P.O, Thirumittakode, Palakkad - 679533 in terms of Limited Liability Partnership Agreement dated 06.06.2020.

Now this Deed witnesseth as follows:

1. This agreement is supplemental to the LLP Agreement dated 06.06.2020 made and executed between the parties to the 1st part of this agreement.
2. From the date thereof, the said New Partners shall be the partners with the Existing Partners subject to the terms and conditions of the above said LLP Agreement except in so far as the same are varied by this agreement.
3. A new partner may be introduced with the consent all partners on such terms and conditions as the partners agree with the person to be introduced as a partner in the LLP. Any amendment to this agreement must be signed by all designated partners to this LLP agreement.
4. The capital of the LLP shall be Rs.3,00,000/- contributed by the parties therein in the manner below mentioned:
 1. Madappilly David Paulose: Rs.73,800/-
 2. Peter Madathikkudiyil Puravath: Rs.73,800/-
 3. Muhammed Ummer Kattekattil : Rs. 4,800/-
 4. Jose M P: Rs. 73,800/-
 5. Binsu Paul : Rs. 73,800/-
5. The partners shall be entitled to share the profits and bear the losses of the LLP in following proportions:
 1. Madappilly David Paulose: 24.60%
 2. Peter Madathikkudiyil Puravath: 24.60%
 3. Muhammed Ummer Kattekattil : 1.60%
 4. Jose M P: 24.60%
 5. Binsu Paul : 24.60%



6. Except as modified by this agreement, the LLP Agreement of date 06.06.2020 shall hereafter be read and construed as if the same had been executed by the Existing Designated Partner, Retiring Designated Partner and New Designated Partners hereto.


In witness whereof the parties hereto have set and subscribed their hands, the day and year first herein above written.

1. MADAPPILLY DAVID PAULOSE 

2. PETER MADATHIKUDIYIL PURAVATHI 

1. Witness:

2. Witness:

SHO WR M PARAMBIL SIDDIK S/O Yousuf




Form 9
[See rule 7 and 10(S)]
Consent to act as Designated Partner/Partner

To
SVART STEN ASSOCIATES LLP
 Palakkad.

Subject : Consent to act as Partner

I, **UMMER MUHAMMED** hereby give my consent to act as Designated Partner of the **SVART STEN ASSOCIATES LLP** pursuant to Section 7(3) of the Act.

Particulars

01	Designated Partner Identification Number (DPIN)/PAN number	ACFPU6824R
02	Name	UMMER MUHAMMED
03	Father's/Husband's Name	MUHAMMED
04	Present residential address	KATTUKKATHIL, VARAVATTUR, PALLUR, DESAMANGALAM, THRISSUR-679532
05	e-mail ID	
06	Name of the Partnership Firm OR LLPIN & Name of Limited Liability Partnership OR CIN & Name of the Company OR Name of any other body corporate whose nominee the designated partner is	NA

I hereby state that I satisfy the conditions and requirements for being eligible to be a partner and I have not been disqualified to act as a partner.

Date 15.10.2020

Place THRISSUR

Signature of Partner

UMMER MUHAMMED



Form 9
 [See rule 7 and 10B]
Consent to act as Designated Partner/Partner

To
SVART STEN ASSOCIATES LLP
 Palakkad

Subject : Consent to act as Partner

I, JOSE M P hereby give my consent to act as Designated Partner of the SVART STEN ASSOCIATES LLP pursuant to Section 7(3) of the Act.

Particulars

01	Designated Partner Identification Number (DIPIN/PAN number)	AZQPJ0811P
02	Name	JOSE M P
03	Father's / Husband's Name	MADATHIKKUDIYIL PATHROSE PURAVATHI
04	Present residential address	MADATHIKKUDIYIL HOUSE, KINGINIMATTAM P.O. ERNAKULAM-682511
05	e-mail ID	
06	Name of the Partnership Firm OR LLPIN & Name of Limited Liability Partnership OR CIN & Name of the Company OR Name of any other body corporate whose nominee the designated partner is	NA

I hereby state that I satisfy the conditions and requirements for being eligible to be a partner and I have not been disqualified to act as a partner.

Date: 15.10.2020

Signature of Partner

Place ERNAKULAM

JOSE M P



Form 9
[See rule 7 and 10(s)]
Consent to act as Designated Partner/Partner

To
SVARTI STEN ASSOCIATES LLP
 Palakkad.

Subject : Consent to act as Partner

I, **BINSU PAUL**, hereby give my consent to act as Designated Partner of the **SVARTI STEN ASSOCIATES LLP** pursuant to Section 7(3) of the Act.

Particulars

01	Designated Partner Identification Number (DIPIN)/PAN number	CUMPP1403K
02	Name	BINSU PAUL
03	Father's/Husband's Name	ABRAHAM KURUVILLA
04	Present residential address	MEADAPPELY HOUSE, PUKKATTU PADY, KIZHAKKAMBALAM P.O., ERNAKULAM- 683562
05	e-mail ID	
06	Name of the Partnership Firm OR LLPIN & Name of Limited Liability Partnership OR CIN & Name of the Company OR Name of any other body corporate whose nominee the designated partner is	NA

I hereby state that I satisfy the conditions and requirements for being eligible to be a partner and I have not been disqualified to act as a partner.

Date 15/10/2020

Signature of Partner *Binsu*

Place ERNAKULAM

BINSU PAUL



SVART STEN ASSOCIATES LLP

50(3/225), Irumbakassery Peedikayil(H) Ezhumangad, Arangottokara p.o., Tenkasi Dist.

Thirumittakode Palakkad - 679533

LLPIN : AA5-5013

CERTIFIED TRUE COPY OF THE MEETING OF PARTNERS OF THE LLP SVART STEN ASSOCIATES LLP HELD ON 15.10.2020 AT THE REGISTERED OFFICE OF THE LLP

Admission of New Partners


"RESOLVED THAT pursuant to the provisions of Section 25 of the Limited Liability Partnership Act, 2008 read with Rule 10 and 22 of LLP (Incorporation of LLP) Rules, 2009 and other applicable provisions, if any, of the Limited Liability Partnership Act, 2008 and Clause 22.1 of the LLP Agreement dated 06.06.2020 Mr. UMMER MUHAMMED, Mr. JOSE M P and Mrs. HINSU PAUL with the consent of the remaining Designated Partners of the LLP be appointed as Partner as agreed upon by the Designated Partners of the LLP.

"FURTHER RESOLVED THAT the LLP Agreement be amended accordingly in order to give effect to the above resolution."

"FURTHER RESOLVED THAT any designated partner of the LLP be and is hereby authorized to sign necessary documents, forms, do necessary filings with the Registrar of Companies and to do any such acts and deeds that may be necessary in this regard."

//Certified True copy//

For SVART STEN ASSOCIATES LLP


MADAPPILLY DAVID PAULOSE
DIN: 08238452


PETER MADATHKUDIYIL PURAVATH
DIN: 08238453

MINING PLAN APPROVED
By
Assistant Director (Ifc)
of Geology & Mining *



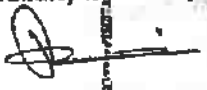
കേരളം KERALA
Board Resolution


09AA 713231

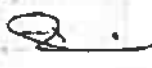
RESOLUTION PASSED AT THE MEETING OF THE PARTNERS OF SVART STEN ASSOCIATES LLP HELD AT THE REGISTERED OFFICE OF THE COMPANY AT ARANGOTTUKARA, THIRUMITTAKODE, PALAKKAD, KERALA, 679532 (PIN) ON 30-11-2020 AT 10.30 AM

RESOLVED THAT one of our partner, Mr. Peter M Puravath is allowed to take licenses from Mining & Geology Department/ MOEF, Tamil Nadu and also allowed to take quarry lease for the land in Araindhaperumal Nadanur village, Sy No: 477/1,2,6, 478/2,3,4, containing 1.24 ha.

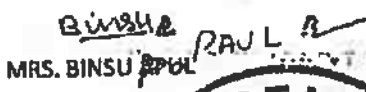
The validity is for 12 years from the date of allowing the quarry lease.


MR. PETER M PURAVATH
DESIGNATED PARTNER


MR. M D PAULOSE
DESIGNATED PARTNER


MR. JOSE MP
PARTNER


MR. UMMER MUHAMMED
PARTNER


MRS. BINSU PAUL
PARTNER

NOTARY
REMADEVI K
Area: Thiruvananthapuram District
Reg. No. 20006
Roll No. K/741/199
Wadakkanchery, Thiruvananthapuram Dist.
Kerala State, India 680 582

NOTARY
REMADEVI K
Area: Thiruvananthapuram District
Reg. No. 20006
Roll No. K/741/199
Wadakkanchery, Thiruvananthapuram Dist.
Kerala State, India 680 582

15-10-19


S. DHANASEKAR, M Sc., (Geo)
Qualified Person



സംസ്ഥാന സർക്കാർ
GOVERNMENT OF KERALA



കേരള ഭൂമിശാസ്ത്ര പഠന സെക്ഷൻ
DEPARTMENT OF GEOLGY & MINING



പിറ്റർ
Peter

ജനന വർഷം/Year of Birth: 1968
പുരുഷൻ / Male



6512 8279 4417

താമസവിലാസം: S/O. പുരവത്ത്
മാദാതികുടിയിൽ, ചിങ്ങിനീറ്റം പി ത
കിങ്ങിനീറ്റം സൗത്ത് വില്ലേജ്
കിങ്ങിനീറ്റം, എറണാകുളം ജില്ല, കെ.എ. 682311

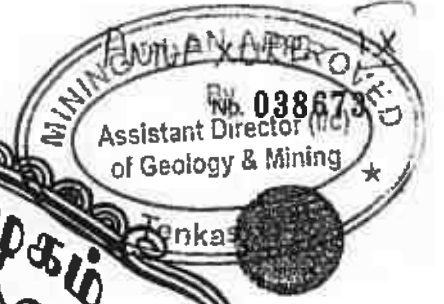
Address: S/O: Puravath,
Madathikudiyil,
Kinginimattom P.O.,
Alkkaranadu South Village,
Kinginimattom, Kerala,
682311

ആധാർ - സാധാരണക്കാരന്റെ അവകാശം

1000 180 1847 help@cidat.gov.in www.cidat.gov.in P.O. Box No.1847, Bangalore-500 001

S.DHANASEKAR, M.Sc., (Geo)
Qualified Person

Reg. No 01BBB1005
Col Code 106 / 106



அறிவியல் புலம்

FACULTY OF SCIENCE

பெரியார் பல்கலைக்கழக ஆட்சிக்குழு 2003 ஆம் ஆண்டு ஏப்ரல் மாதம்
நடந்த பயன்பாட்டு புவியமைப்பியல் தேர்வில்
S தனசேகர் என்பவர்
முதல் வகுப்பில் தேர்ச்சி பெற்றார் என்று தக்க தேர்வாளர்கள்
சான்றளித்தபடி அறிவியல் நிறைஞர் என்னும்
பட்டத்தை அவருக்குப் பல்கலைக்கழக இலச்சினையுடன் வழங்குகிறது.

*The Syndicate of the Periyar University hereby makes known
that DHANASEKAR S has been
admitted to the DEGREE OF MASTER OF SCIENCE in
APPLIED GEOLOGY*

*he/she having been certified by duly appointed Examiners to be qualified
to receive the same and was placed in the FIRST CLASS at the
Examination held in APRIL 2003*



Given under the seal of this University

நாள்
Dated 15-09-2004
சேலம் 636011, தமிழ்நாடு, இந்தியா.
Salem 636011, TamilNadu, India.

பதிவாளர்
Registrar

துணைவேந்தர்
Vice-Chancellor

S. DHANASEKAR, M.Sc. (Geol.)
Qualified Person

PRITHVI MINERALS,



PRODUCTION X
MINING PLAN X
04288 - 262489
Assistant Director (i/c)
of Geology
VARANALLAMPALAYAM,
ALATHUR POST - 637 303.
SANKARI Tk, Salem Dt, Tamil Nadu

Date :27.12.08.

TO WHOMSOEVER IT MAY CONCERN

This is to certify that SHRI S. DHANASEKAR, S/o. Shri A. Sundaram residing at No.8/3, Kullappan Street, Omalur Taluk, Salem District - 636 455 is working in our mines for the date of 15.10.2003 to till date as Geologist. During the above tenure of service his execution of the assigned work is exemplary and worth mentioning. We wish him success in his future endeavours.

For PRITHVI MINERALS,


(T.P. THANGAVEL.)
Partner



S.DHANASEKAR, M.Sc. (Geol.)
Qualified Person

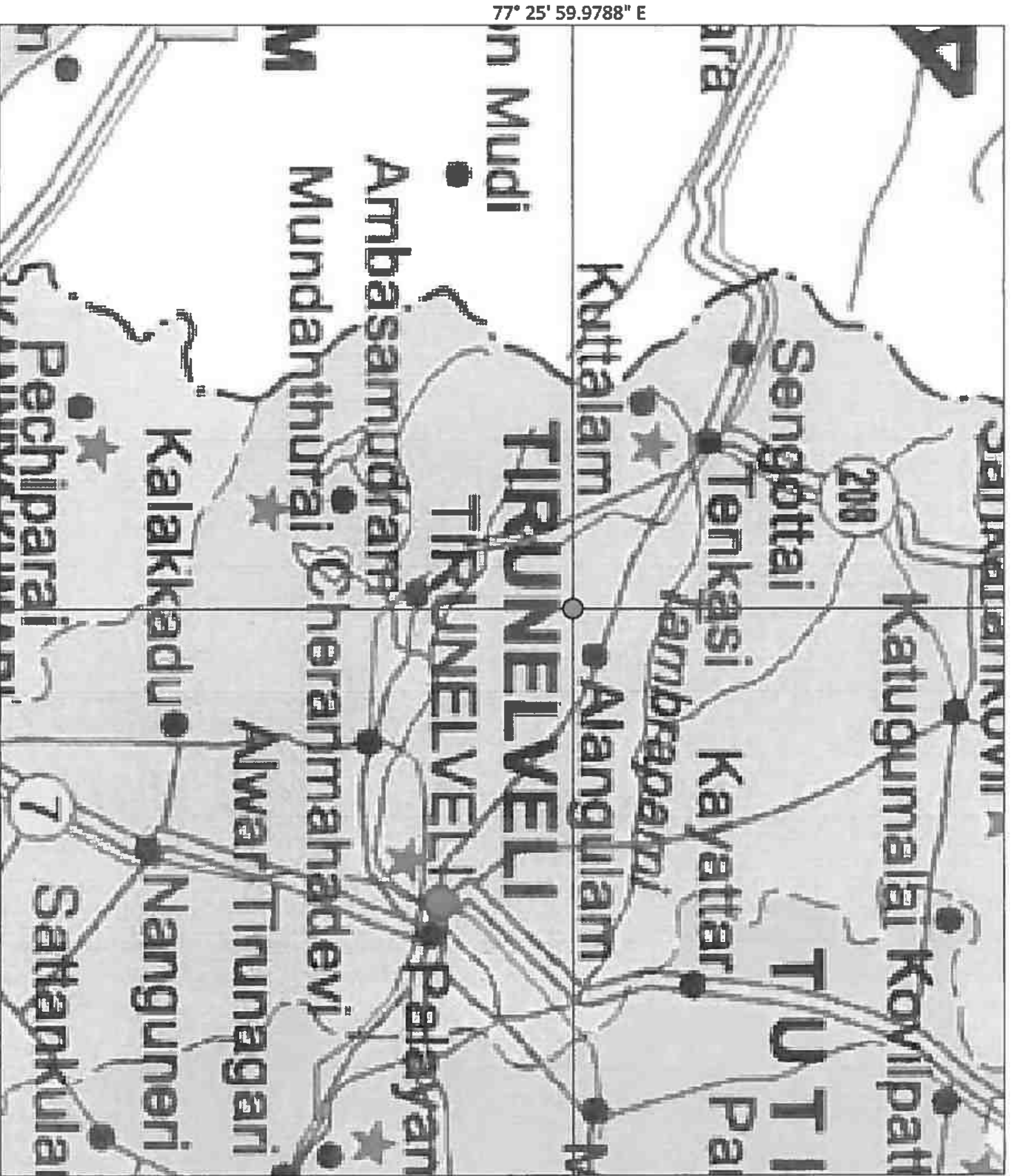
PHOTO SHOWN PROPOSED APPLIED LEASE AREA VIEW-1



PHOTO SHOWN PROPOSED APPLIED LEASE AREA VIEW-2




S. DHANASEKAR, M.Sc. (Gen)
Qualified Person



8° 48' 11.8373" N

77° 25' 59.9788" E

77° 26' 5.2133" E

8° 48' 9.7487" N

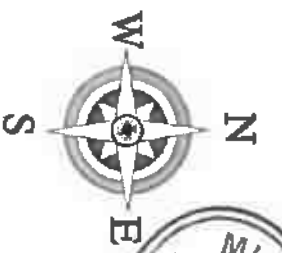


PLATE NO-I

DATE OF SURVEY: 25-01-2022

APPLICANT ADDRESS:

M/S. SVART STEN ASSOCIATES LLP,
ASUM TOWER,
EZHUMANGAD,
ARANGOTTUKARA POST,
PALAKKAD DISTRICT,
KERALA - 679 533.

INDEX

QUARRY LEASE AREA :

TOPO SHEET NO. : 58- H/5,

LATITUDE : 8° 48' 11.8373" N to 8° 48' 9.7487" N

LONGITUDE : 77° 26' 5.2133" E to 77° 25' 59.9788" E

LOCATION OF QUARRY:

EXTENT : 1.24 Hects.
S.F.Nos : 477/1,477/2, 477/6 ,478/2(P),
478/3(P) & 478/4(P),
VILLAGE : A.P.NADANOOR
TALUK : ALANGULAM
DISTRICT : TENKASI
STATE : TAMILNADU

LOCATION PLAN

NOT TO SCALE

Prepared By:

I DO HEREBY CERTIFY THAT THE PLATE HAS BEEN CHECKED BY ME AND IS CORRECT TO THE BEST OF MY KNOWLEDGE

S. Dhana Sekar
S.DHANASEKAR,M.Sc.,

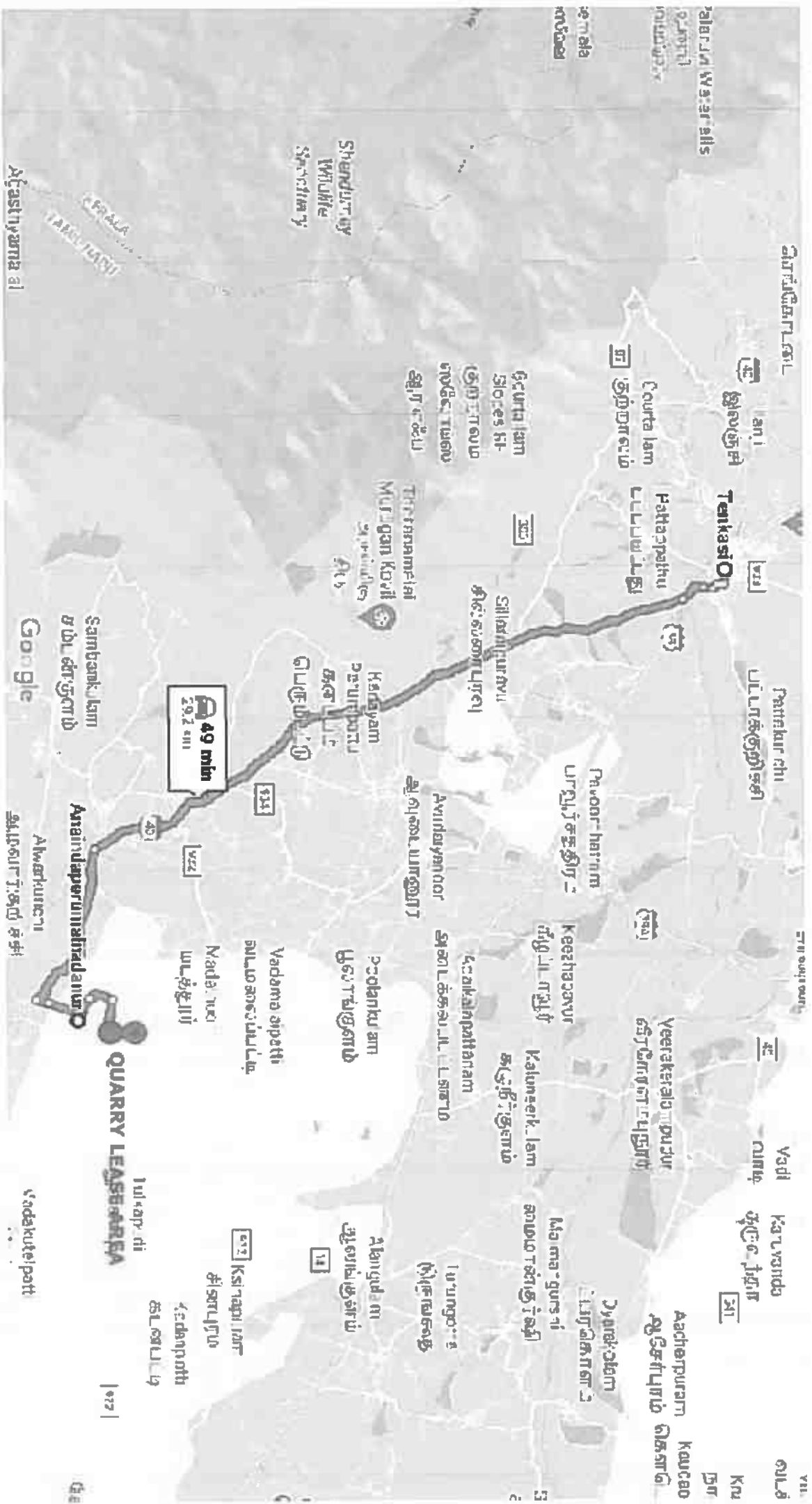
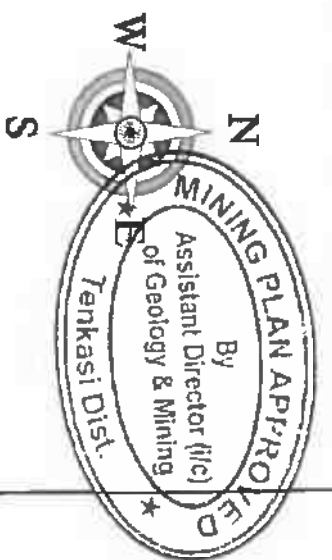


PLATE NO-1A

DATE OF SURVEY: 25-01-2022

APPLICANT ADDRESS:

M/S. SVART STEN ASSOCIATES LLP,
ASUM TOWER,
EZHUMANGAD,
ARANGOTTUKARA POST,
PALAKKAD DISTRICT,
KERALA - 679 533.

INDEX

QUARRY LEASE AREA	
ROAD	

LOCATION OF QUARRY:

EXTENT : 1.24.0hects.
S.F.NOS : 477/1,477/2, 477/6,478/2(P),
478/3(P) & 478/4(P),
VILLAGE : A.P.NADANDOR
TALUK : ALANGULAM
DISTRICT : TENKASI
STATE : TAMILNADU

KEY MAP

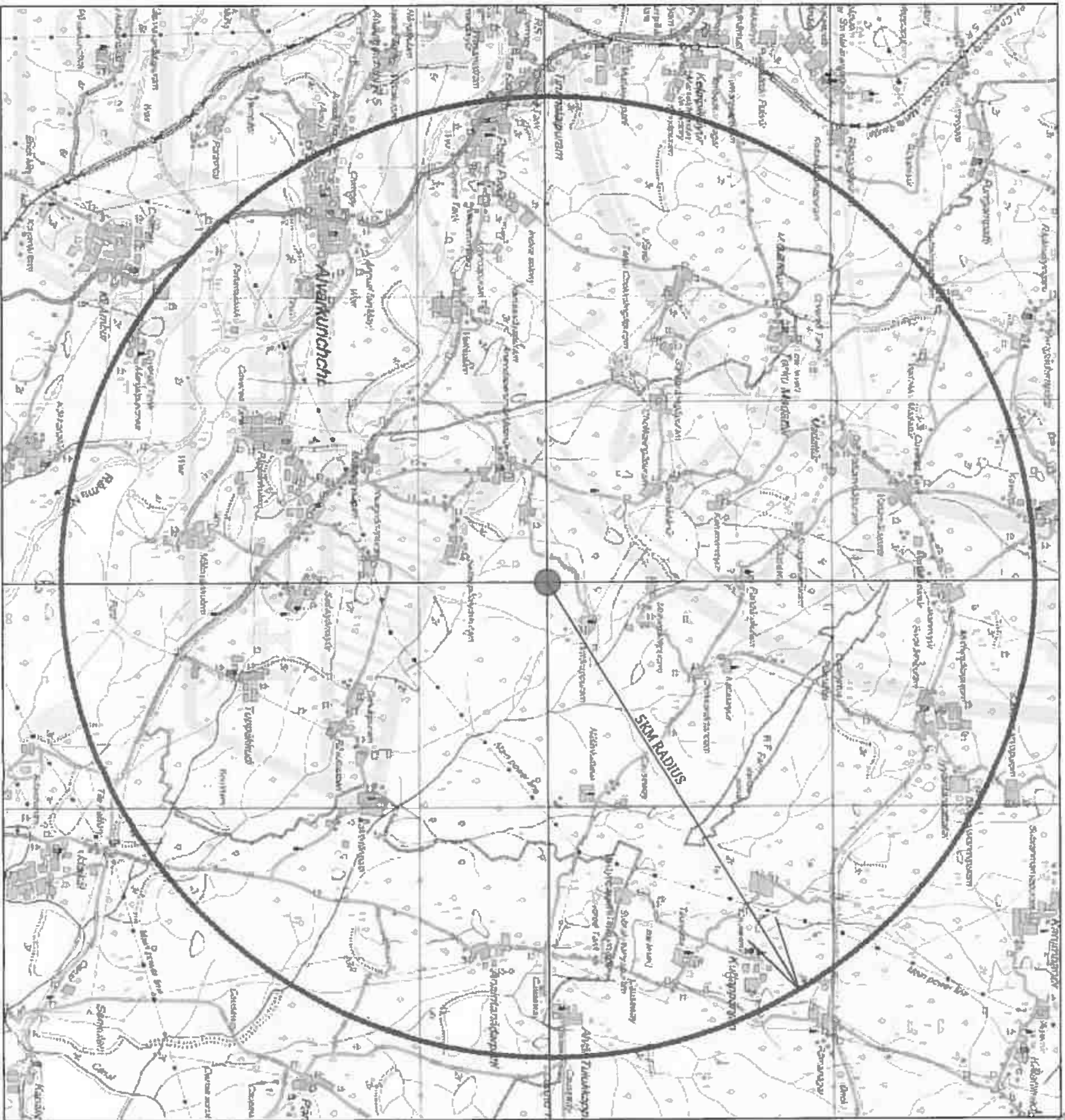
Not to Scale

Prepared By:

I DO HEREBY CERTIFY THAT THE PLATE
HAS BEEN CHECKED BY ME AND IS CORRECT
TO THE BEST OF MY KNOWLEDGE

S.DHANASEKAR,M.Sc.,
Geologist

77° 25' 59.9788" E



8° 48' 11.8373" N



77° 26' 5.2133" E

PLATE NO:IB

DATE OF SURVEY: 25-04-2022

By Assistant Director (I/c) of Geology & Mining

APPLICANT ADDRESS:

M/S. SVART STEN ASSOCIATES LLP
ASUM TOWER,
EZHUMANGAD,
ARANGOTTUKARA POST,
PALAKKAD DISTRICT,
KERALA - 679 533.

INDEX

QUARRY LEASE AREA:



5KM RADIUS

TOPO SHEET NO.: 58 - H/5,

LATITUDE : 8° 48' 11.8373" N to 8° 48' 9.7487" N

LONGITUDE : 77° 26' 5.2133" E to 77° 25' 59.9788" E

Symbol	Description
(Solid black circle)	Quarry Lease Area
(Circle with dot)	5KM Radius
(Dashed line)	Water
(Thin solid line)	Other

LOCATION OF QUARRY

EXTENT : 1.24.0hects.
S.F. Nos : 477/1,477/2, 477/6, 478/2(P),
478/3(P) & 478/4(P),
VILLAGE : A.P.NADANOOR
TALUK : ALANGULAM
DISTRICT : TENKASI
STATE : TAMILNADU

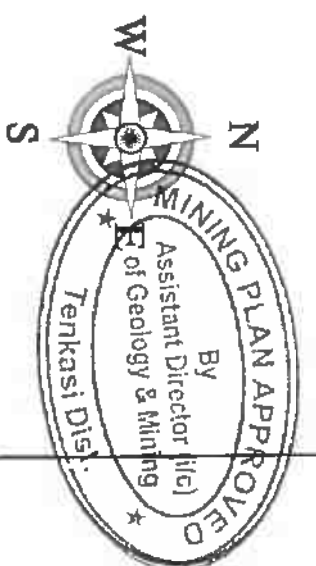
TOPO SHEET MAP OF
THE LEASE AREA
SCALE: 1:50,000

PREPARED BY:

I DO HEREBY CERTIFY THAT THE PLATE
HAS BEEN CHECKED BY ME AND IS CORRECT
TO THE BEST OF MY KNOWLEDGE

S. DHANASEKAR, M.Sc.,
ATTY & TERRAIN ENGINEER





PILLAR NO	LATITUDE	LONGITUDE
1	8° 48' 9.6595" N	77° 26' 4.7635" E
2	8° 48' 9.9086" N	77° 26' 3.7865" E
3	8° 48' 10.0710" N	77° 26' 1.8297" E
4	8° 48' 9.5345" N	77° 26' 0.9339" E
5	8° 48' 9.7487" N	77° 25' 59.9788" E
6	8° 48' 13.7672" N	77° 26' 0.8488" E
7	8° 48' 13.2081" N	77° 26' 1.8853" E
8	8° 48' 11.8373" N	77° 26' 5.2133" E
9	8° 48' 10.6828" N	77° 26' 4.9539" E

PLATE NO-IC

DATE OF SURVEY : 25-01-2022

APPLICANT ADDRESS:

M/S. SVART STEN ASSOCIATES LLP,
ASUM TOWER,
EZHUMANGAD,
ARANGOTTUKARA POST,
PALAKKAD DISTRICT,
KERALA - 679 533.

INDEX

QUARRY LEASE AREA



LOCATION OF QUARRY:

EXTENT : 1.24,0Hects.
S.F.Nos : 477/1,477/2, 477/6 ,478/2(P),
478/3(P) & 478/4(P),
VILLAGE : A.P.NADANNOOR
TALUK : ALANGULAM
DISTRICT : TENKASI
STATE : TAMILNADU

SATELLITE IMAGE

(LEASE AREA)

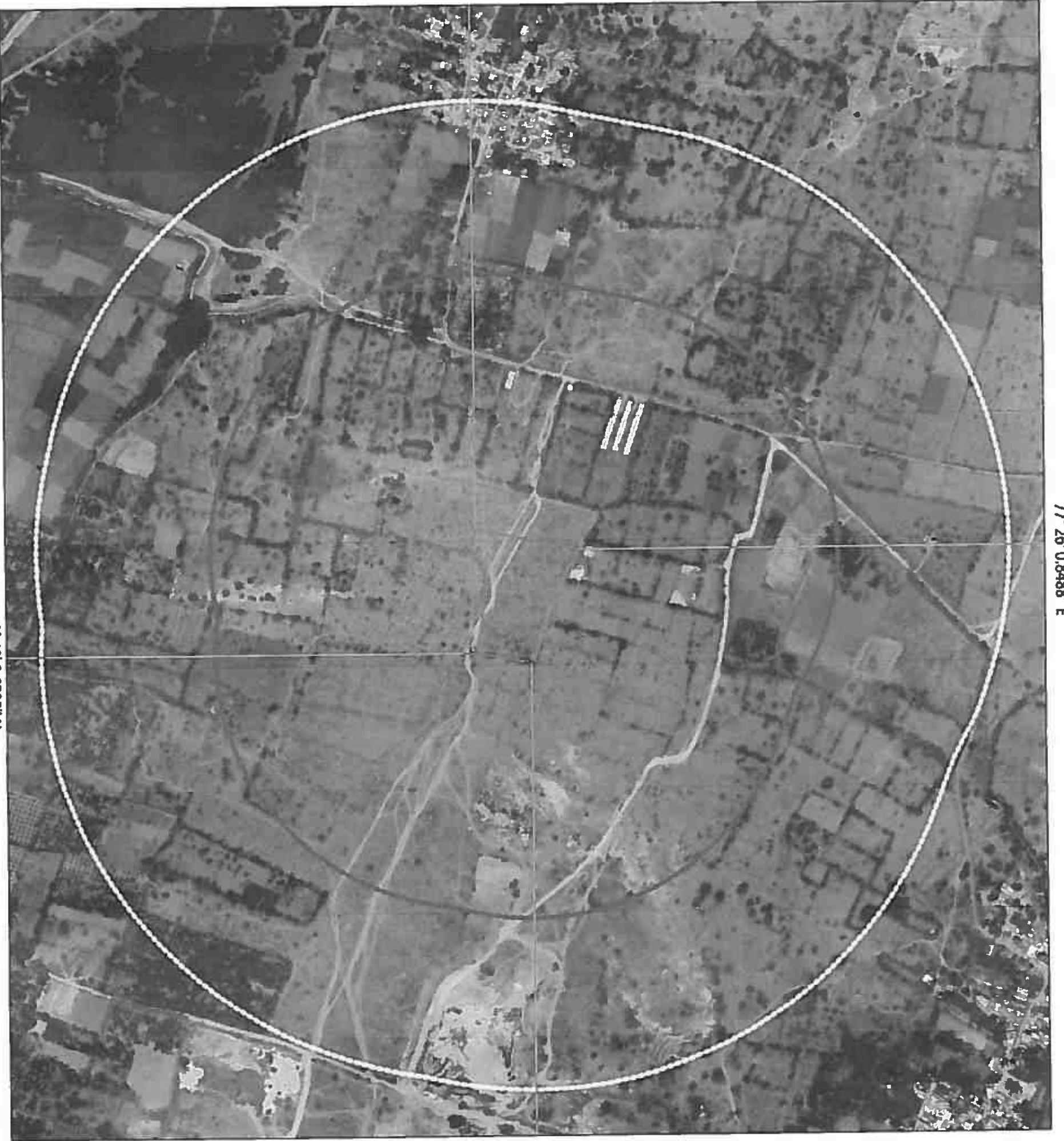
SCALE: 1:1000

Prepared By:

I DO HEREBY CERTIFY THAT THE PLATE
HAS BEEN CHECKED BY ME AND IS CORRECT
TO THE BEST OF MY KNOWLEDGE

S.DHANASEKAR,M.Sc.,

8° 48' 13.7672" N
77° 26' 0.8488" E



8° 48' 9.7487" N
77° 25' 59.9788" E

8° 48' 9.6595" N
77° 26' 4.7635" E

8° 48' 11.8373" N
77° 26' 5.2133" E

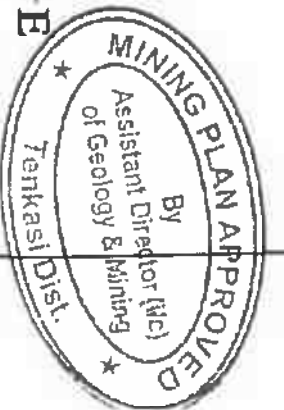
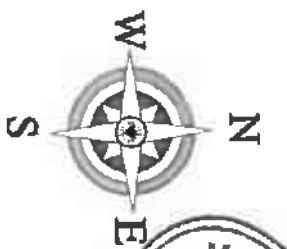





PLATE NO-ID

DATE OF SURVEY: 25-01-2022

APPLICANT ADDRESS:

M/S. SVART STEN ASSOCIATES LLP,
ASUM TOWER,
EZHUMANGAD,
ARANGOTTUKARA POST,
PALAKKAD DISTRICT,
KERALA - 679 533.

INDEX

- QUARRY LEASE AREA 
- 500m RADIUS 
- 300M RADIUS 

LOCATION OF QUARRY:

EXTENT : 1.24.0Hects.
S. F. Nos : 477/1,477/2, 477/6, 478/2(P),
478/3(P) & 478/4(P),
VILLAGE : A.P. NADANOOR
TALUK : ALANGULAM
DISTRICT : TENKASI
STATE : TAMILNADU

SATELLITE IMAGE

(500m RADIUS)

SCALE 1 : 5000

Prepared By:

I DO HEREBY CERTIFY THAT THE PLATE
HAS BEEN CHECKED BY ME AND IS CORRECT
TO THE BEST OF MY KNOWLEDGE


S. DHANASEKAR, M.Sc.,
QUALIFIED PERSON



PLATE NO: II

DATE OF SURVEY: 25-01-2022

APPLICANT ADDRESS:

M/S. SVART STEN ASSOCIATES LLP,
 ASUM TOWER,
 EZHUMANGAD,
 ARANGOTTUKARA POST,
 PALAKKAD DISTRICT,
 KERALA - 679 533.

INDEX

- QUARRY LEASE BOUNDARY
- 7.5M SAFETY DISTANCE
- BOUNDARY PILLARS
- TEMPORARY BENCH MARK
- APPROACH ROAD

LOCATION OF QUARRY

EXTENT : 1.24.0Hects.
 S.F.Nos : 477/1,477/2, 477/6 ,478/2(P),
 478/3(P) & 478/4(P),
 VILLAGE : A.P.NADANDOOR
 TALUK : ALANGULAM
 DISTRICT : TENKASI
 STATE : TAMILNADU

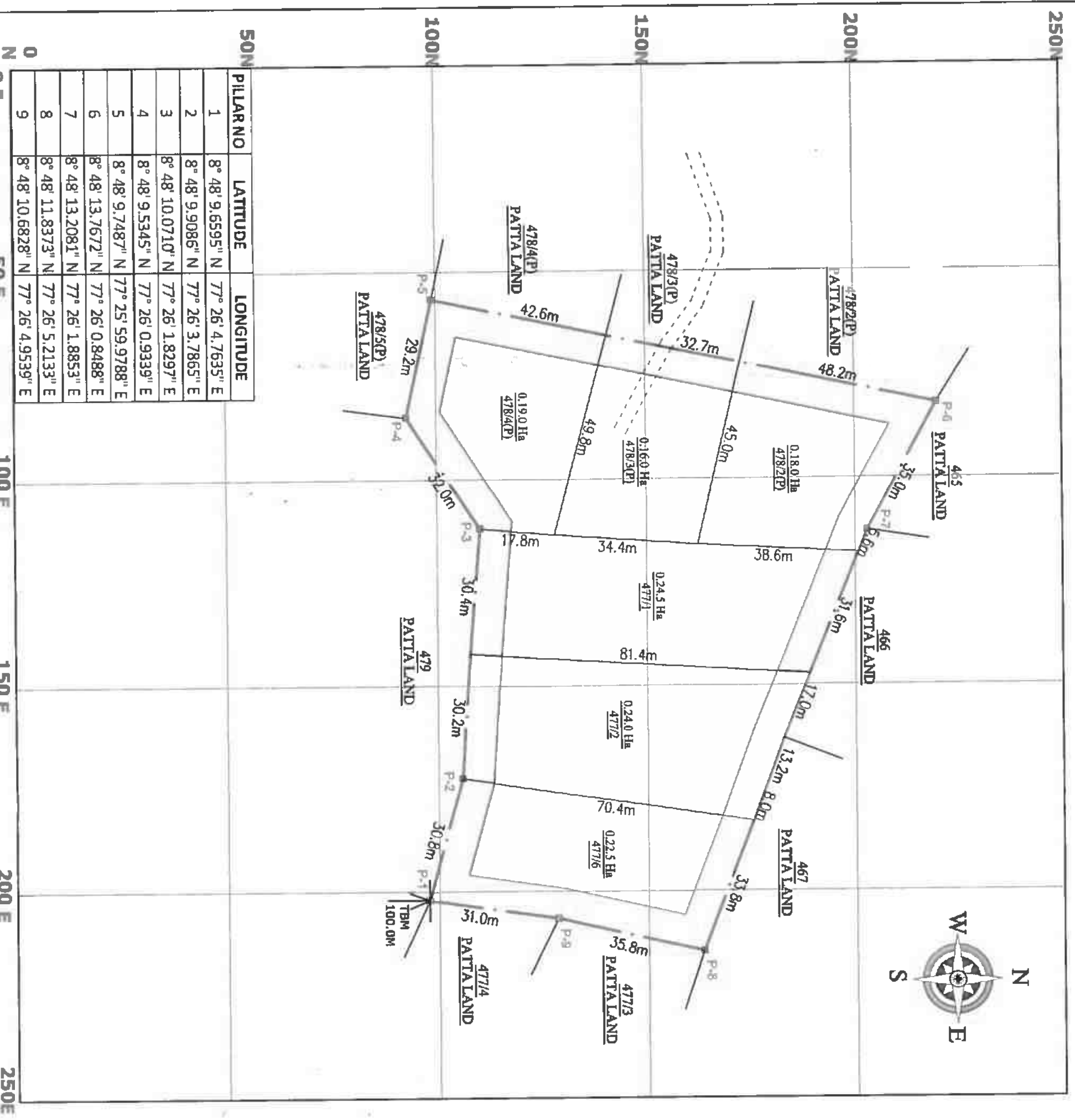
MINE LEASE PLAN

SCALE: 1:1000

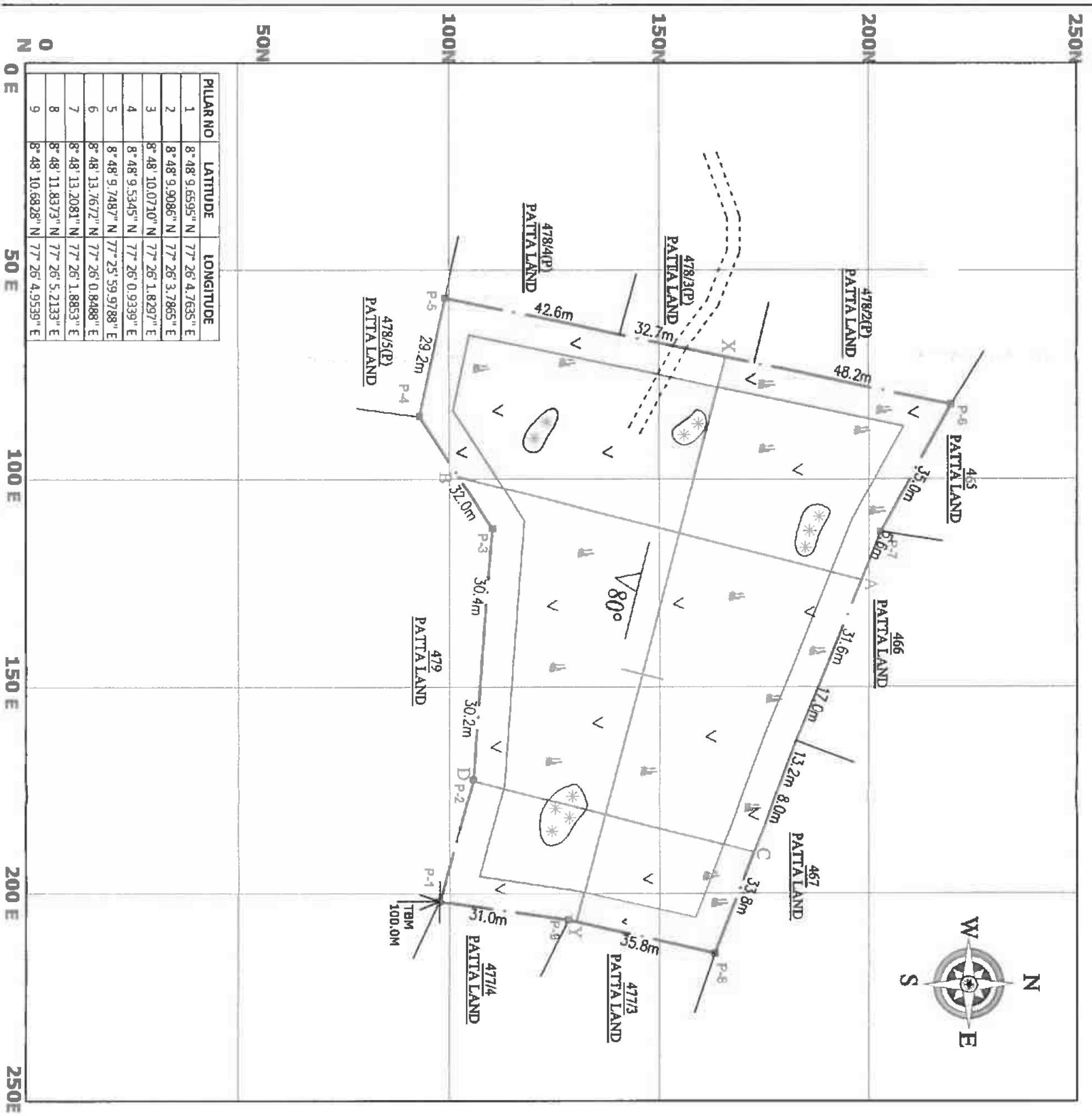
PREPARED BY:

I DO HEREBY CERTIFY THAT THE PLATE
 HAS BEEN CHECKED BY ME AND IS CORRECT
 TO THE BEST OF MY KNOWLEDGE

S.DHANASEKAR,M.Sc.,
 QUALIFIED PERSON



PILLAR NO	LATITUDE	LONGITUDE
1	8° 48' 9.5345" N	77° 26' 4.7635" E
2	8° 48' 9.9086" N	77° 26' 3.7865" E
3	8° 48' 10.0710" N	77° 26' 1.8297" E
4	8° 48' 9.5345" N	77° 26' 0.9339" E
5	8° 48' 9.7487" N	77° 25' 59.9788" E
6	8° 48' 13.7672" N	77° 26' 0.8488" E
7	8° 48' 13.2081" N	77° 26' 1.8853" E
8	8° 48' 11.8373" N	77° 26' 5.2133" E
9	8° 48' 10.6828" N	77° 26' 4.9539" E



PILLAR NO	LATITUDE	LONGITUDE
1	8° 48' 9.6595" N	77° 26' 4.7635" E
2	8° 48' 9.9086" N	77° 26' 3.7865" E
3	8° 48' 10.0710" N	77° 26' 1.8297" E
4	8° 48' 9.5345" N	77° 26' 0.9339" E
5	8° 48' 9.7487" N	77° 25' 59.9788" E
6	8° 48' 13.7672" N	77° 26' 0.8488" E
7	8° 48' 13.2081" N	77° 26' 1.8853" E
8	8° 48' 11.8373" N	77° 26' 5.2133" E
9	8° 48' 10.6828" N	77° 26' 4.9539" E

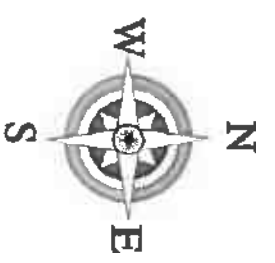
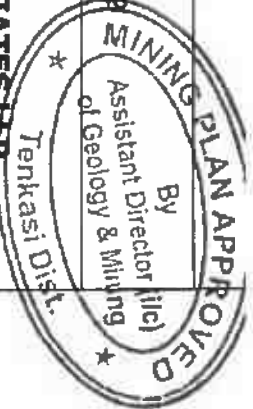


PLATE NO: III
 DATE OF SURVEY: 25-01-2028
 APPLICANT ADDRESS:
M/S. SVART STEN ASSOCIATES EPP
 ASUM TOWER,
 EZHUMANGAD,
 ARANGOTTUKARA POST,
 PALAKKAD DISTRICT,
 KERALA - 679 533.



- INDEX**
- QUARRY LEASE BOUNDARY
 - 7.5M SAFETY DISTANCE
 - BOUNDARY PILLARS
 - TEMPORARY BENCH MARK
 - GRAVEL
 - ROUGH STONE
 - STRIKE & DIP
 - SHRUB
 - QUARRY ROAD

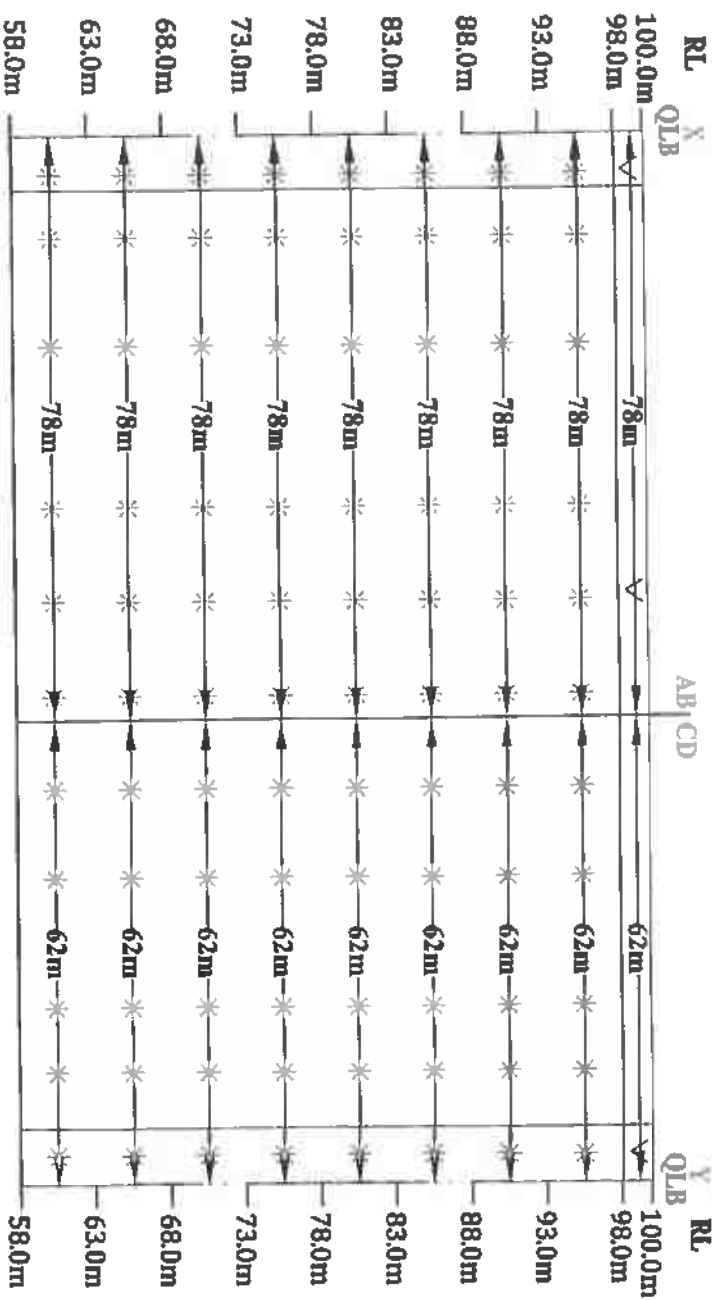
LOCATION OF QUARRY
 EXTENT : 1.24.0Hects.
 S.F. Nos : 477/1, 477/2, 477/6, 478/2(P), 478/3(P) & 478/4(P),
 VILLAGE : A.P. NADANOOR
 TALUK : ALANGULAM
 DISTRICT : TENKASI
 STATE : TAMILNADU

SURFACE & GEOLOGICAL PLAN
 SCALE: 1:1000

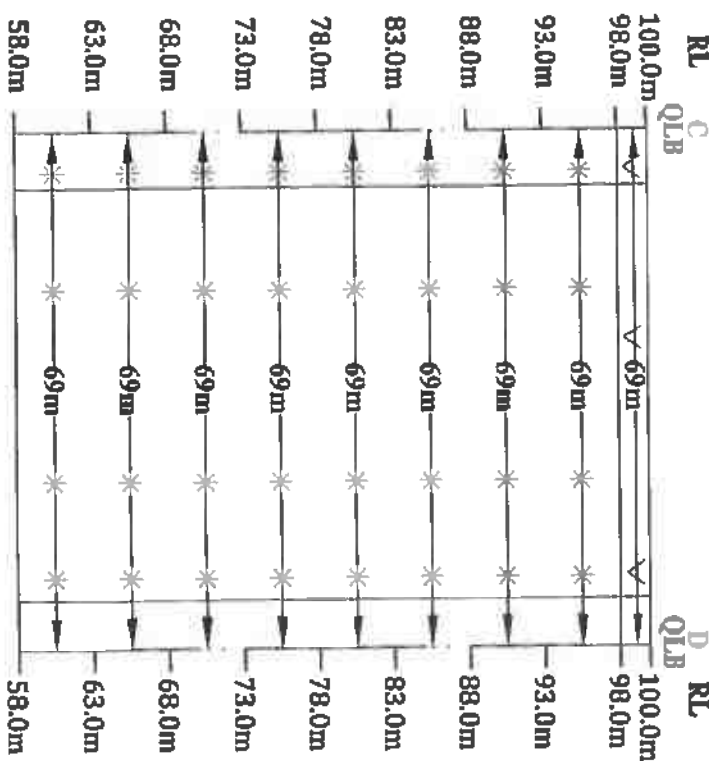
PREPARED BY:
 I DO HEREBY CERTIFY THAT THE PLATE HAS BEEN CHECKED BY ME AND IS CORRECT TO THE BEST OF MY KNOWLEDGE

S. DHANASEKAR, M.Sc.,
 QUALIFIED PERSON

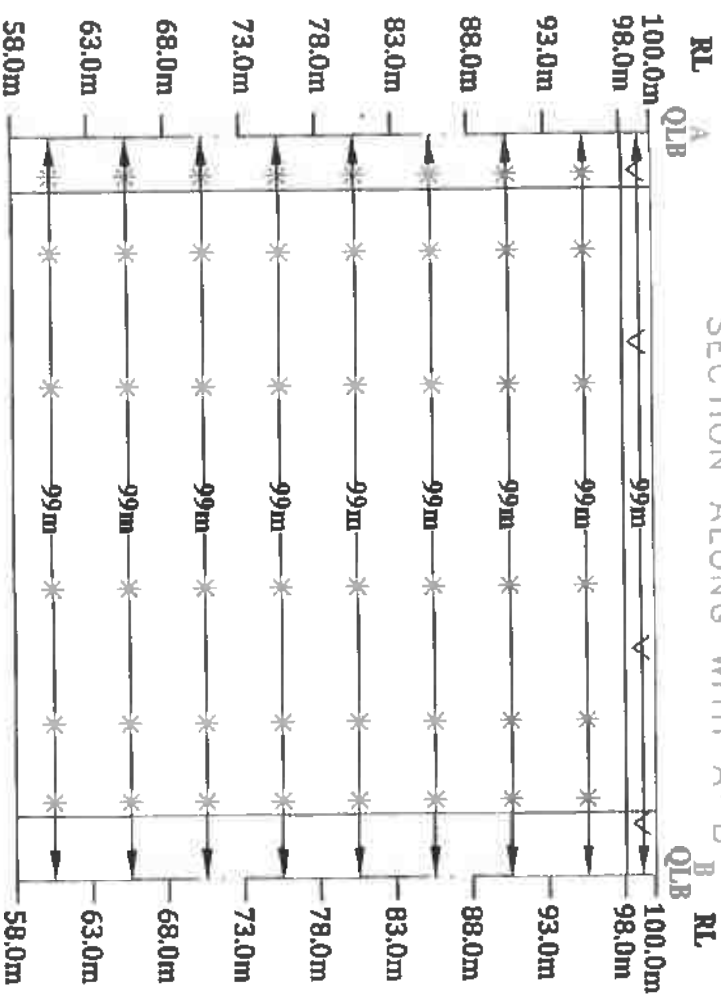
SECTION ALONG WITH X-Y



SECTION ALONG WITH C-D



SECTION ALONG WITH A-B



GEOLOGICAL RESERVES

Section	Bench	Length in (m)	Width in (m)	Depth in (m)	Volume In M3	Geological Reserves in m3 @ 100%	Gravel In m3
XY-AB	I	78	99	2	38610	38610	15444
	II	78	99	5	38610	38610	
	III	78	99	5	38610	38610	
	IV	78	99	5	38610	38610	
	V	78	99	5	38610	38610	
	VI	78	99	5	38610	38610	
	VII	78	99	5	38610	38610	
	VIII	78	99	5	38610	38610	
XY-CD	TOTAL				308880	308880	15444
	I	62	69	2	21390	21390	8556
	II	62	69	5	21390	21390	
	III	62	69	5	21390	21390	
	IV	62	69	5	21390	21390	
	V	62	69	5	21390	21390	
	VI	62	69	5	21390	21390	
	VII	62	69	5	21390	21390	
TOTAL				171120	171120	8556	
GRAND TOTAL				480000	480000	24000	

TOTAL DEPTH = 42m

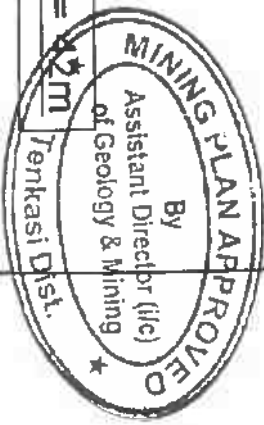


PLATE NO: III-A

DATE OF SURVEY: 25-01-2022

APPLICANT ADDRESS:

M/S. SVART STEN ASSOCIATES LLP,
ASUM TOWER,
EZHUMANGAD,
ARANGOTTUKARA POST,
PALAKKAD DISTRICT,
KERALA - 679 533.

INDEX

- QUARRY LEASE BOUNDARY
- 7.5m SAFETY DISTANCE
- GRAVEL
- ROUGH STONE

LOCATION OF QUARRY

EXTENT : 1.24.0Hects.
S.F.Nos : 477/1,477/2, 477/6, 478/2(P),
478/3(P) & 478/4(P),
VILLAGE : A.P.NADANOOR
TALUK : ALANGULAM
DISTRICT : TENKASI
STATE : TAMILNADU

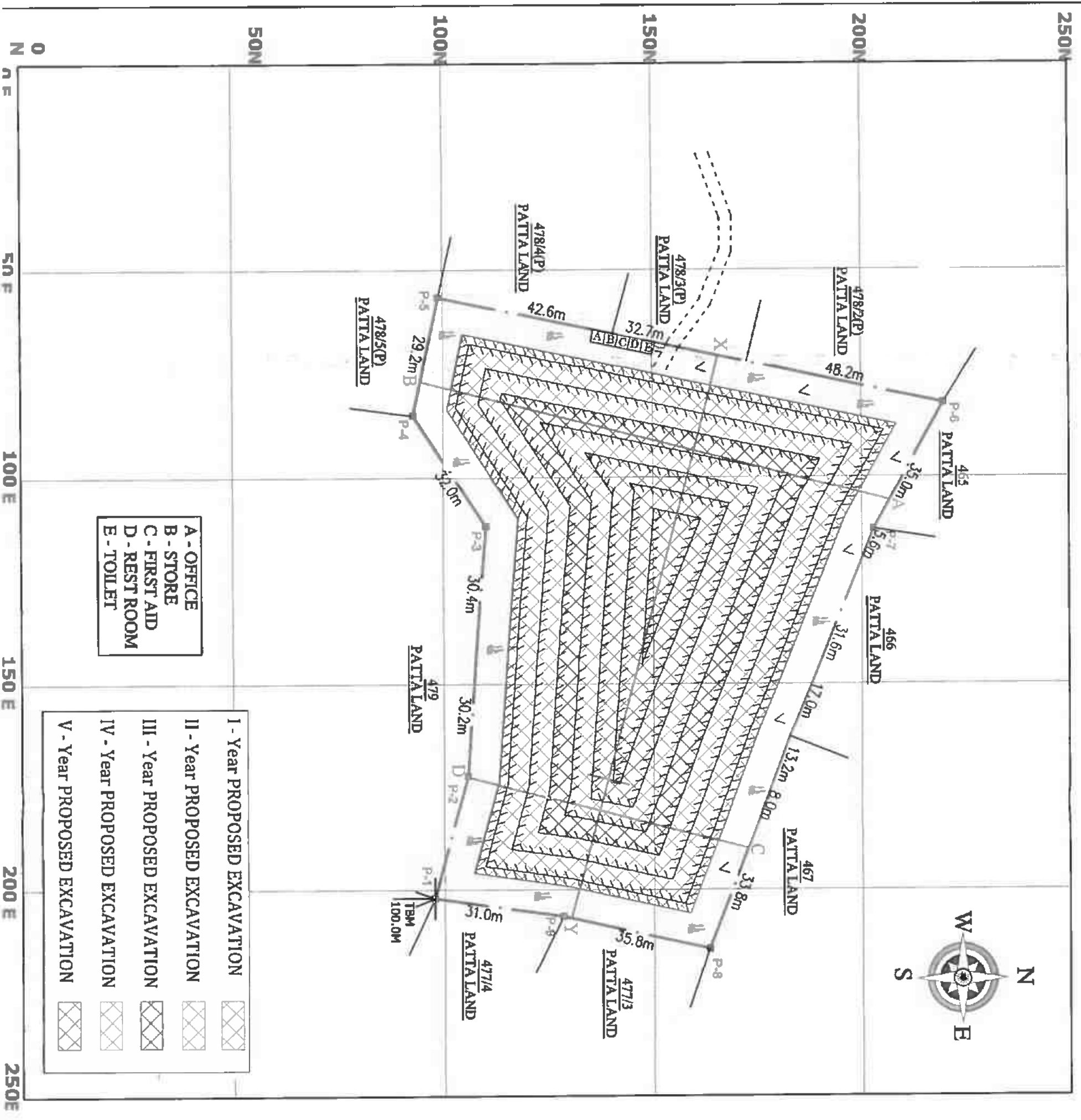
GEOLOGICAL SECTIONS

SCALE: HOR-1:1000
VER-1:500

PREPARED BY:

I DO HEREBY CERTIFY THAT THE PLATE
HAS BEEN CHECKED BY ME AND IS CORRECT
TO THE BEST OF MY KNOWLEDGE

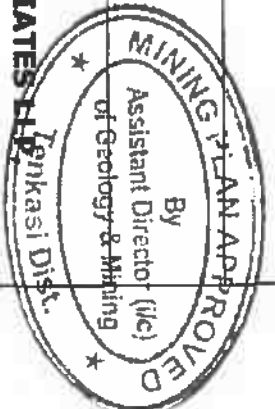
S.DHANASEKAR, M.Sc.,
QUALIFIED PERSON



- A - OFFICE
- B - STORE
- C - FIRST AID
- D - REST ROOM
- E - TOILET

- I - Year PROPOSED EXCAVATION
- II - Year PROPOSED EXCAVATION
- III - Year PROPOSED EXCAVATION
- IV - Year PROPOSED EXCAVATION
- V - Year PROPOSED EXCAVATION

PLATE NO: IV
 DATE OF SURVEY: 25-01-2022
APPLICANT ADDRESS:
 M/S. SVART STEN ASSOCIATES LLP
 ASUM TOWER,
 EZHUMANGAD,
 ARANGOTTUKARA POST,
 PALAKKAD DISTRICT,
 KERALA - 679 533.



- INDEX**
- QUARRY LEASE BOUNDARY
 - 7.5M SAFETY DISTANCE
 - BOUNDARY PILLARS
 - TEMPORARY BENCH MARK
 - GRAVEL
 - ROUGH STONE
 - SHRUB
 - QUARRY ROAD

LOCATION OF QUARRY

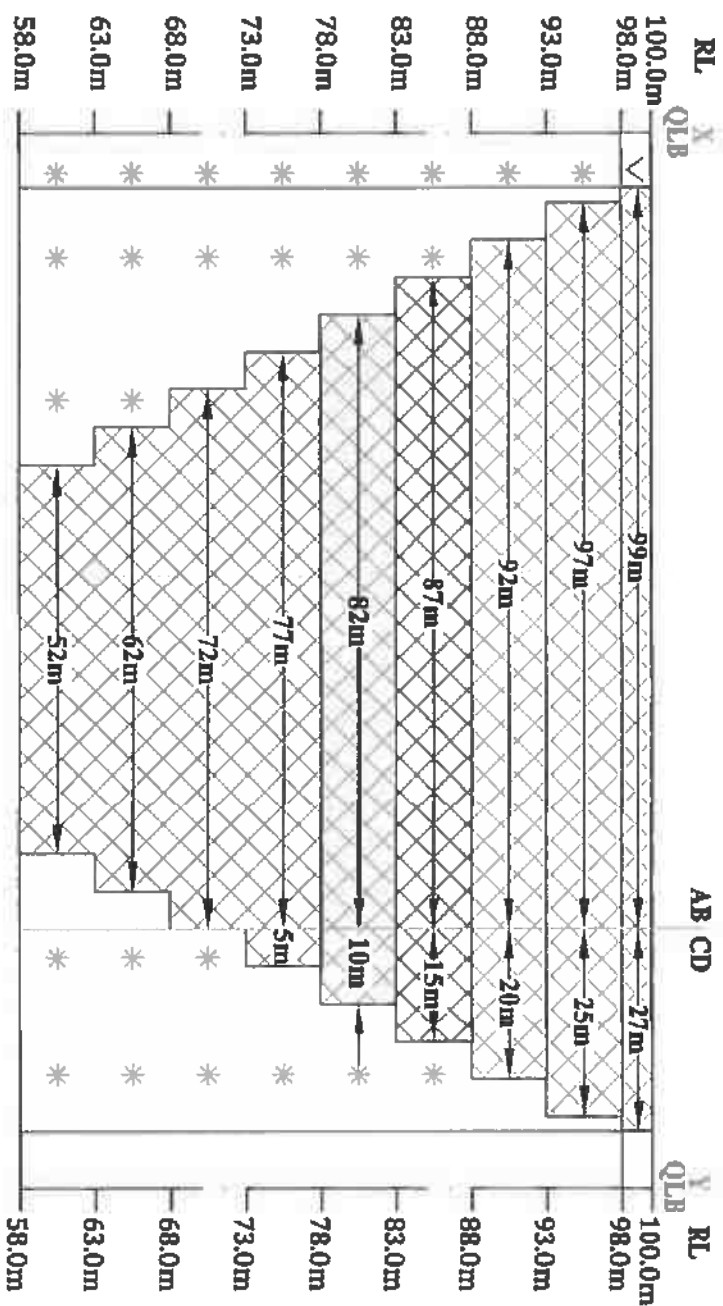
EXTENT : 1.24.0hects.
 S.F.Nos : 477/1,477/2, 477/6, 478/2(P),
 478/3(P) & 478/4(P),
 VILLAGE : A.P.NADANOOR
 TALUK : ALANGULAM
 DISTRICT : TENKASI
 STATE : TAMILNADU

YEARWISE DEVELOPMENT & PRODUCTION PLAN
 SCALE: 1:1000

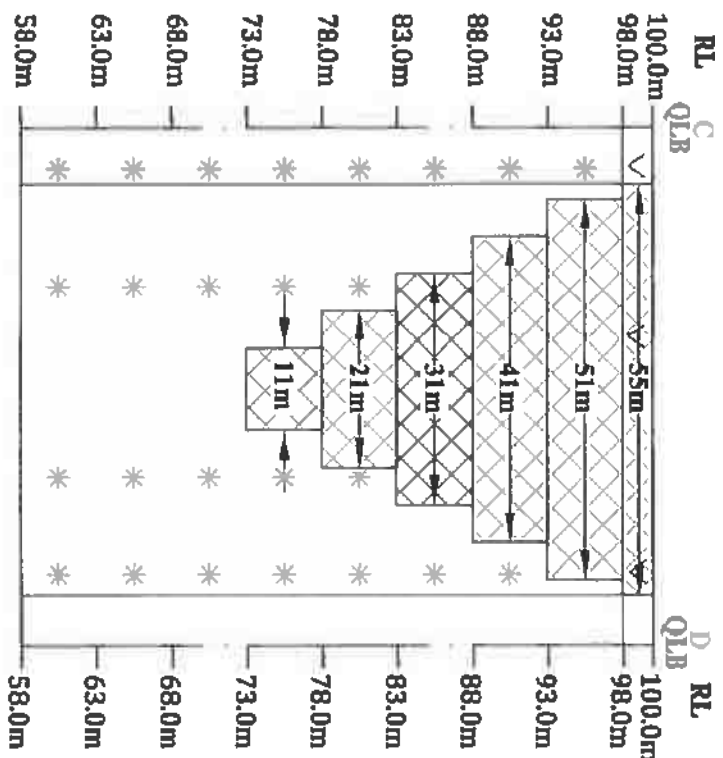
PREPARED BY:
 I DO HEREBY CERTIFY THAT THE PLATE HAS BEEN CHECKED BY ME AND IS CORRECT TO THE BEST OF MY KNOWLEDGE

S.DHANASEKAR,M.Sc.,
 QUALIFIED PERSON

SECTION ALONG WITH X-Y



SECTION ALONG WITH C-D



TOTAL DEPTH = 42m

I - Year PROPOSED EXCAVATION
 II - Year PROPOSED EXCAVATION
 III - Year PROPOSED EXCAVATION
 IV - Year PROPOSED EXCAVATION
 V - Year PROPOSED EXCAVATION

By **AN APPROVED**
 Director
 of Geology & Mining
 Tenkasi Dist.

PLATE NO: IV-A

DATE OF SURVEY: 25-01-2022

APPLICANT ADDRESS:

M/S. SVART STEN ASSOCIATES LLP,
ASUM TOWER,
EZHUMANGAD,
ARANGOTTUKARA POST,
PALAKKAD DISTRICT,
KERALA - 679 533.

INDEX

- QUARRY LEASE BOUNDARY
- 7.5m SAFETY DISTANCE
- GRAVEL
- ROUGH STONE

LOCATION OF QUARRY

EXTENT : 1.24.0Hects.
 S.F.Nos : 477/1,477/2, 477/6, 478/2(P),
 478/3(P) & 478/4(P),
 VILLAGE : A.P.NADANOOR
 TALUK : ALANGULAM
 DISTRICT : TENKASI
 STATE : TAMILNADU

YEARWISE DEVELOPMENT & PRODUCTION SECTIONS

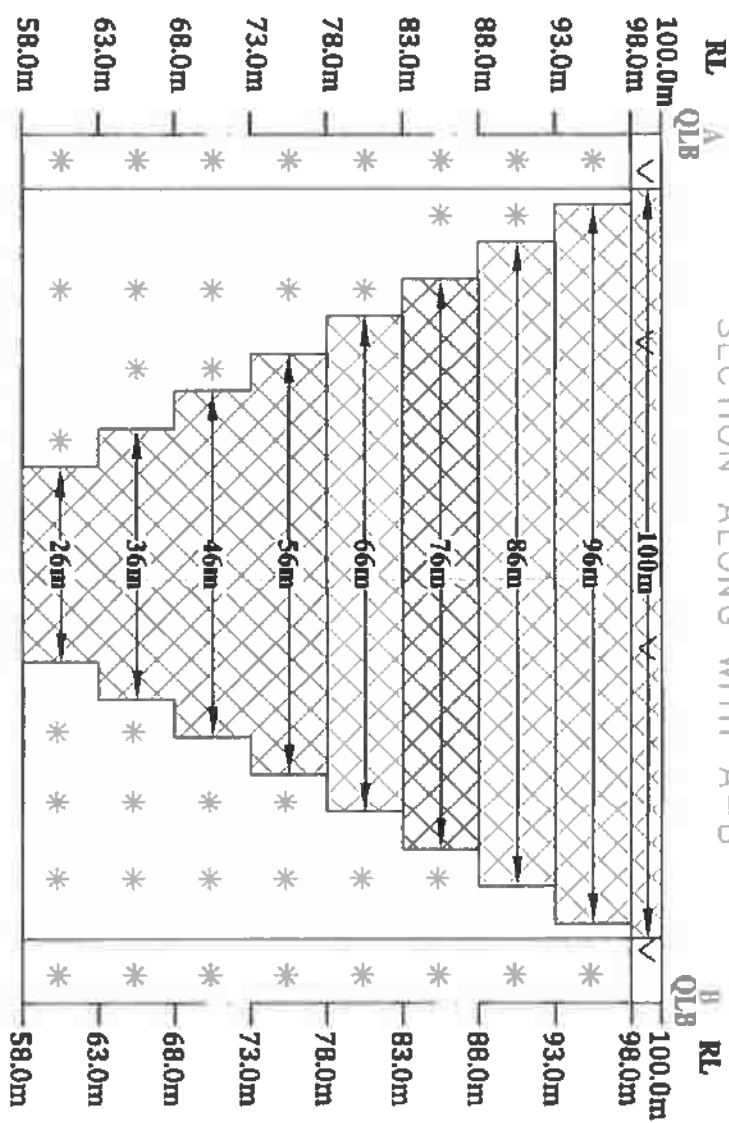
SCALE: HOR-1:1000
 VER-1:500

PREPARED BY:

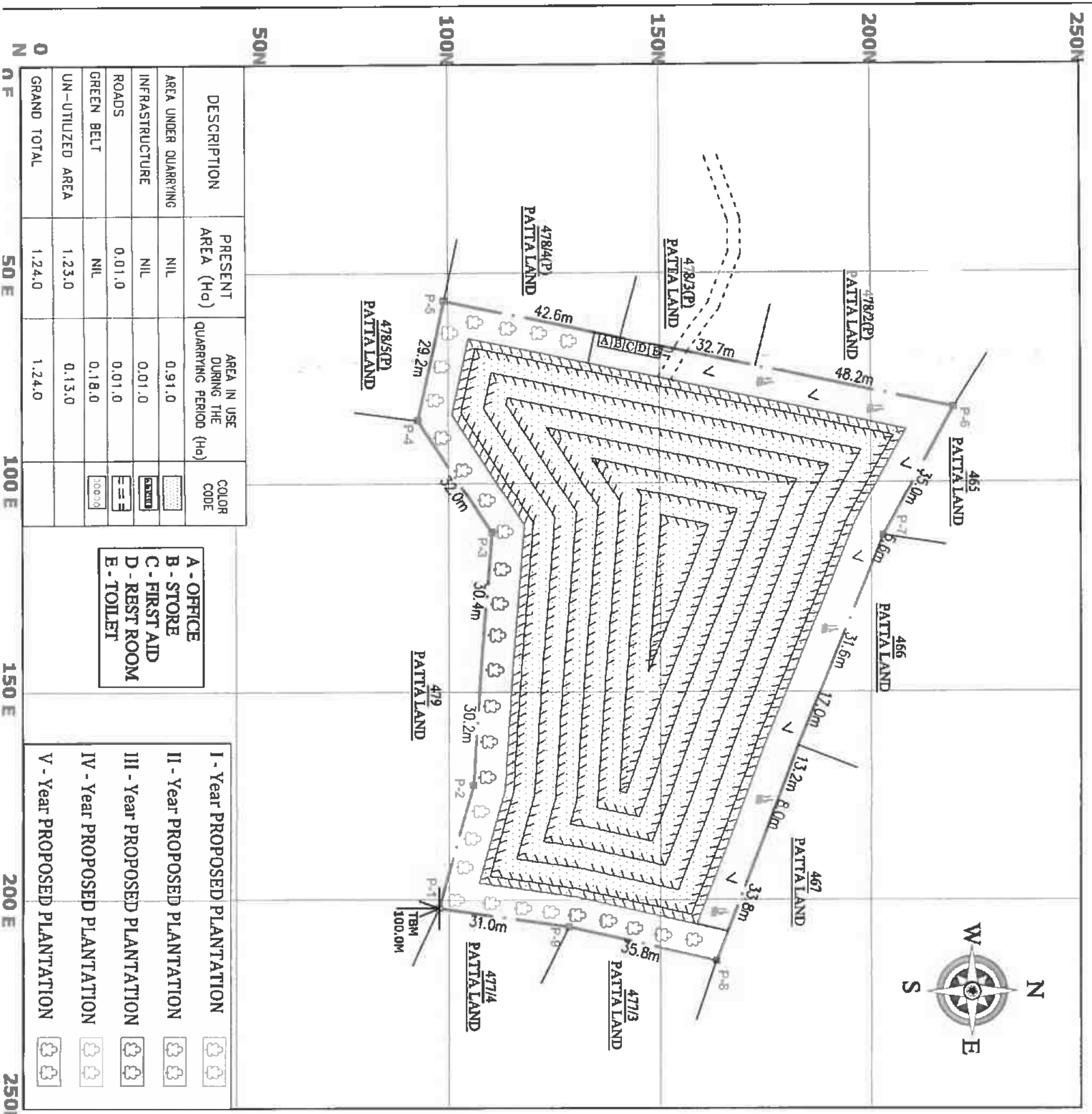
I DO HEREBY CERTIFY THAT THE PLATE
 HAS BEEN CHECKED BY ME AND IS CORRECT
 TO THE BEST OF MY KNOWLEDGE

S.DHANASEKAR,M.Sc.,
 QUALIFIED PERSON

SECTION ALONG WITH A-B



YEARWISE DEVELOPMENT AND PRODUCTION RESERVES										
YEAR	Section	Bendi	Length In (m)	Width In (m)	Depth In (m)	Volume In M3	Recoverable In m3 @ 100%	Gravel In m3		
I-YEAR	XY-AB	I	99	100	2			19800		
		II	97	96	5	46560	46560			
		XY-CD	I	27	55	2	6375	6375	2970	
		II	25	51	5	6375	6375			
		TOTAL				52935	52935	22770		
II-YEAR	XY-AB	III	92	86	5	39560	39560			
		XY-CD	III	20	41	5	4100	4100		
		TOTAL				43660	43660			
III-YEAR	XY-AB	IV	87	76	5	33060	33060			
		XY-CD	IV	15	31	5	2325	2325		
		TOTAL				35385	35385			
IV-YEAR	XY-AB	V	82	66	5	27060	27060			
		XY-CD	V	10	21	5	1050	1050		
		TOTAL				28110	28110			
V-YEAR	XY-AB	VI	77	56	5	21560	21560			
		VII	72	46	5	16560	16560			
		VIII	62	36	5	11160	11160			
IX	XY-AB	IX	52	26	5	6760	6760			
		X	5	11	5	275	275			
		TOTAL				56315	56315			
		GRAND TOTAL				216405	216405	22770		

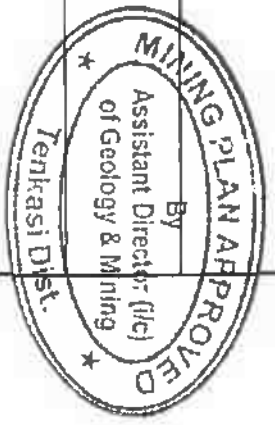


DESCRIPTION	PRESENT AREA (Ha)	AREA IN USE DURING THE QUARRING PERIOD (Ha)	COLOR CODE
AREA UNDER QUARRING	NIL	0.91.0	[Pattern]
INFRASTRUCTURE	NIL	0.01.0	[Pattern]
ROADS	0.01.0	0.01.0	[Pattern]
GREEN BELT	NIL	0.18.0	[Pattern]
UN-UTILIZED AREA	1.23.0	0.13.0	[Pattern]
GRAND TOTAL	1.24.0	1.24.0	

- A - OFFICE
- B - STORE
- C - FIRST AID
- D - REST ROOM
- E - TOILET

- I - Year PROPOSED PLANTATION
- II - Year PROPOSED PLANTATION
- III - Year PROPOSED PLANTATION
- IV - Year PROPOSED PLANTATION
- V - Year PROPOSED PLANTATION

PLATE NO: V
 DATE OF SURVEY: 25-01-2022
APPLICANT ADDRESS:
 M/S. SVART STEN ASSOCIATES LLP,
 ASUM TOWER,
 EZHUMANGAD,
 ARANGOTTUKARA POST,
 PALAKKAD DISTRICT,
 KERALA - 679 533.



- INDEX**
- QUARRY LEASE BOUNDARY
 - 7.5M SAFETY DISTANCE
 - BOUNDARY PILLARS
 - TEMPORARY BENCH MARK
 - GRAVEL
 - ROUGH STONE
 - SHRUB
 - QUARRY ROAD
 - MINE LAYOUT

LOCATION OF QUARRY
 EXTENT : 1.24.0hects.
 S.F.Nos : 477/1,477/2, 477/6,478/2(P), 478/3(P) & 478/4(P),
 VILLAGE : A.P.NADANOOR
 TALUK : ALANGULAM
 DISTRICT : TENKASI
 STATE : TAMILNADU

MINE LAYOUT, LAND USE PATTERN & AFFORESTATION PLAN
 SCALE: 1:1000

PREPARED BY:
 I DO HEREBY CERTIFY THAT THE PLATE HAS BEEN CHECKED BY ME AND IS CORRECT TO THE BEST OF MY KNOWLEDGE

S.DHANASEKAR, M.Sc.,
 QUALIFIED PERSON

OCTOBER TO DECEMBER

JULY TO SEPTEMBER

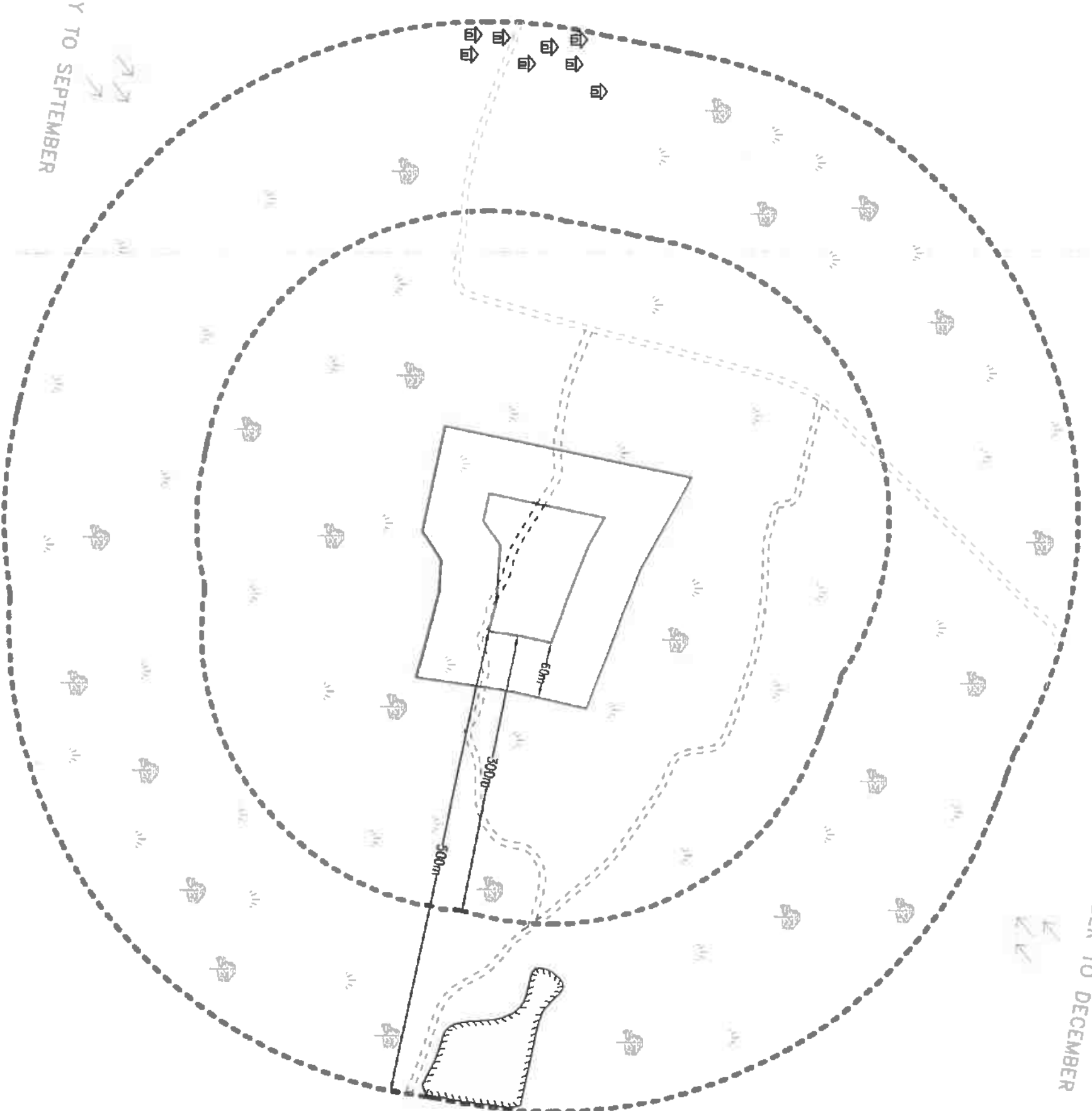
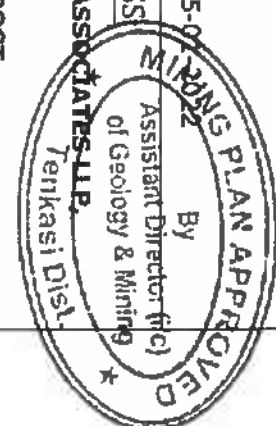


PLATE NO: VI
 DATE OF SURVEY: 25-07-2012
 By
 Assistant Director (I/c)
 of Geology & Mining
 M/S. SVART STEN ASSOCIATES LLP,
 ASUM TOWER,
 EZHUMANGAD,
 ARANGOTTUKARA POST,
 PALAKKAD DISTRICT,
 KERALA - 679 533.



INDEX

Q.L. BOUNDARY	
500M RADIUS	
300M RADIUS	
60M RADIUS	
VILLAGE ROAD	
CART TRACK	
QUARRY ROAD	
TREES	
INFRASTRUCTURES	
DRY AGRICULTURAL LAND	
WIND DIRECTION	
ADJACENT QUARRY	

LOCATION OF QUARRY:

EXTENT : 1.24.0Hects.
 S.F.Nos : 477/1, 477/2, 477/6, 478/2(P),
 478/3(P) & 478/4(P),
 VILLAGE : A.P. NADANOOR
 TALUK : ALANGULAM
 DISTRICT : TENKASI
 STATE : TAMILNADU

ENVIRONMENT PLAN

SCALE: 1:5000

PREPARED BY:

I DO HEREBY CERTIFY THAT THE PLATE HAS BEEN CHECKED BY ME AND IS CORRECT TO THE BEST OF MY KNOWLEDGE

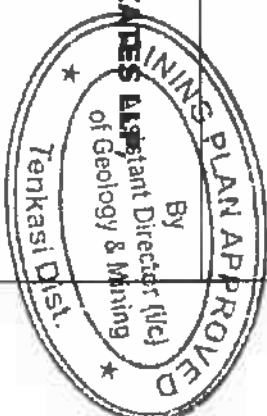
S. DHANASEKAR, M.Sc.,
 ASSISTANT DIRECTOR (I/C)

PLATE NO: VII

DATE OF SURVEY: 25-01-2022

APPLICANT ADDRESS:

M/S. SVART STEN ASSOCIATES
ASUM TOWER,
EZHUMANGAD,
ARANGOTTUKARA POST,
PALAKKAD DISTRICT,
KERALA - 679 533.



By
Assistant Director (I/c)
of Geology & Mining

INDEX

- QUARRY LEASE BOUNDARY
- 7.5M SAFETY DISTANCE
- BOUNDARY PILLARS
- TEMPORARY BENCH MARK
- QUARRY ROAD
- GRAVEL
- ROUGH STONE
- FENCING
- PARAPET WALL
- PROPOSED WATER STORAGE
- ULTIMATE PIT SLOPE

LOCATION OF QUARRY

EXTENT : 1.24.0hects.
 S.F.Nos : 477/1,477/2, 477/6, 478/2(P),
 478/3(P) & 478/4(P),
 VILLAGE : A.P.MADANOR
 TALUK : ALANGULAM
 DISTRICT : TENKASI
 STATE : TAMILNADU

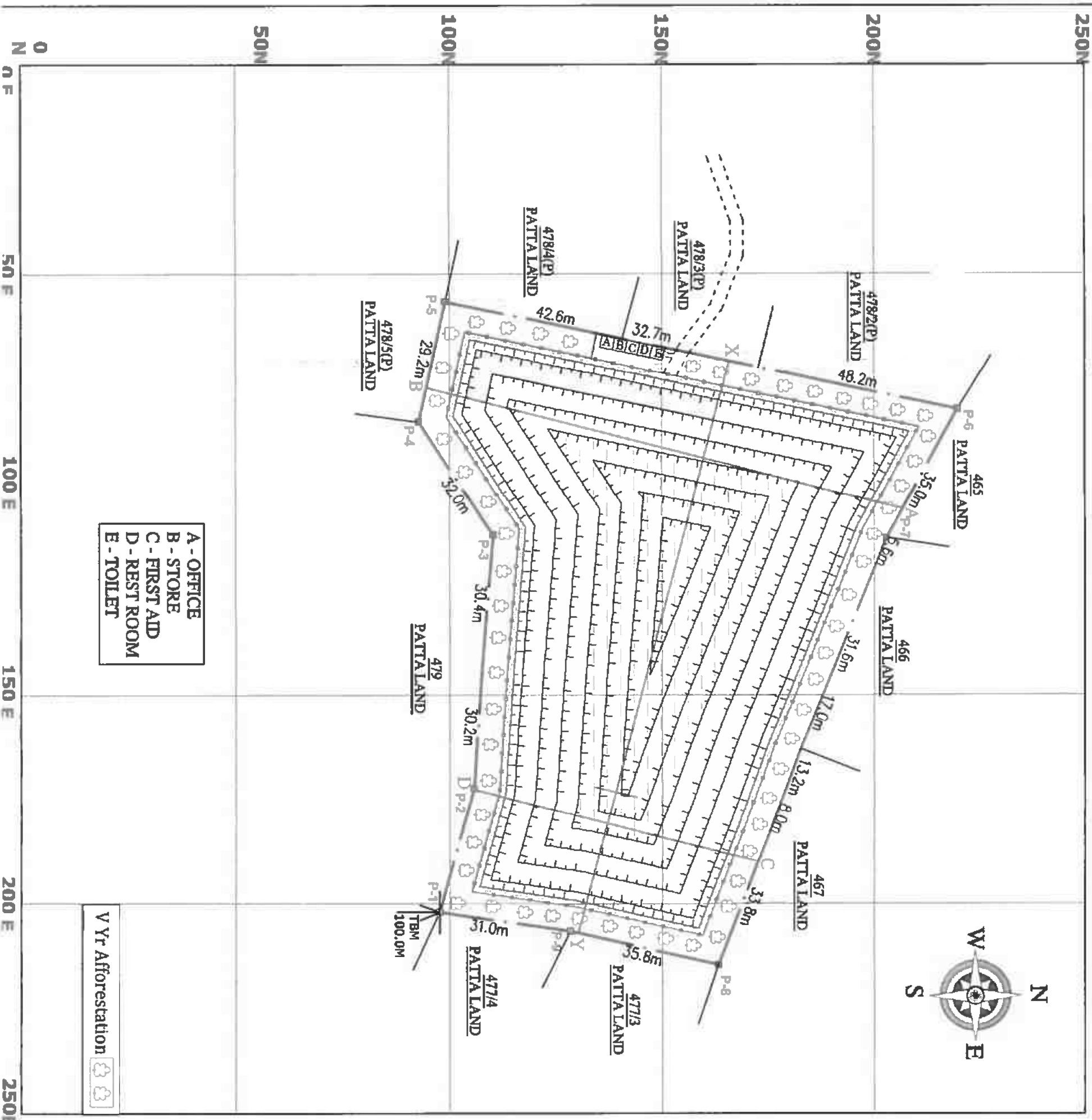
CONCEPTUAL / FINAL MINE
CLOSURE PLAN

SCALE: 1:1000

PREPARED BY:

I DO HEREBY CERTIFY THAT THE PLATE
HAS BEEN CHECKED BY ME AND IS CORRECT
TO THE BEST OF MY KNOWLEDGE

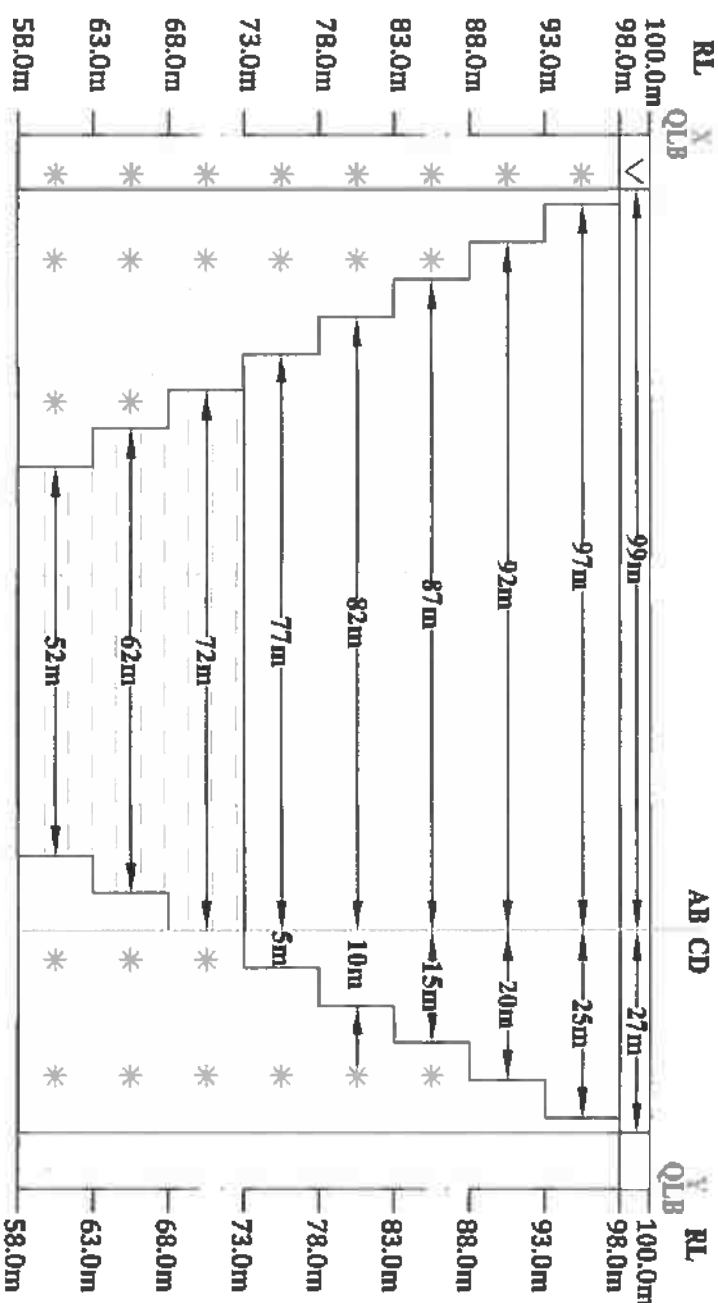
S.DHANASEKAR.M.Sc.,
CHIEF FIELD PERSON



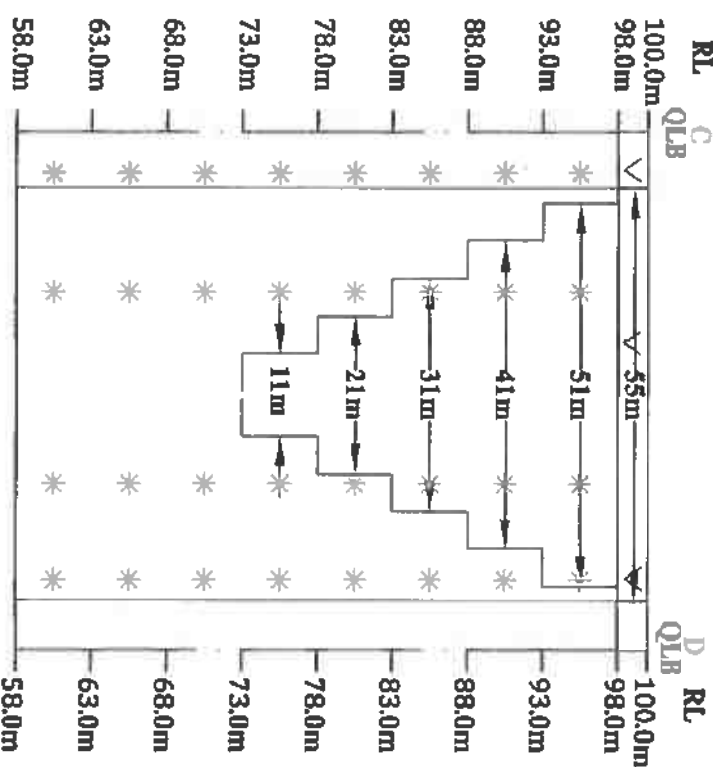
- A - OFFICE
- B - STORE
- C - FIRST AID
- D - REST ROOM
- E - TOILET

V Yr Afforestation

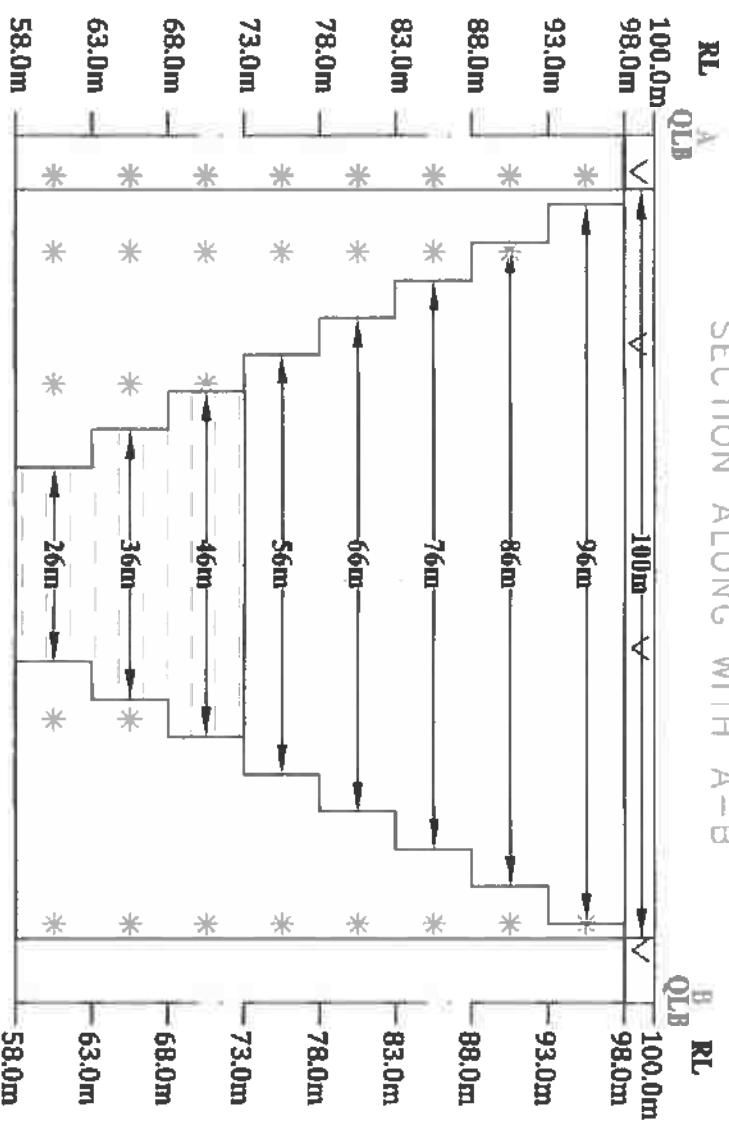
SECTION ALONG WITH X-Y



SECTION ALONG WITH C-D



SECTION ALONG WITH A-B



MINEABLE RESERVES						
Section	Bench	Length In (m)	Width In (m)	Depth In (m)	Volume In M ³	Mineable Reserves In m ³ @ 100%
XY-AB	I	99	100	2	46560	46560
	II	97	96	5	39560	39560
	III	92	86	5	33060	33060
	IV	87	76	5	27060	27060
	V	82	66	5	21560	21560
	VI	77	56	5	16560	16560
	VII	72	46	5	11160	11160
	VIII	62	36	5	6760	6760
	IX	52	26	5	202280	202280
TOTAL		27	55	2	6375	6375
XY-CD	II	25	51	5	4100	4100
	III	20	41	5	2325	2325
	IV	15	31	5	1050	1050
	V	10	21	5	275	275
	VI	5	11	5	14125	14125
	TOTAL				216405	216405
GRAND TOTAL					216405	216405

ULTIMATE PTT DIMENSION
= 126.0m(L) X 77.0m(W) Avg X 42.0m(D)

TOTAL DEPTH

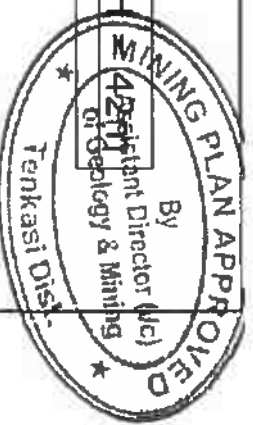


PLATE NO: VII-A

DATE OF SURVEY: 25-01-2022

APPLICANT ADDRESS:

M/S. SVART STEN ASSOCIATES LLP,
ASUM TOWER,
EZHUMANGAD,
ARANGOTTUKARA POST,
PALAKKAD DISTRICT,
KERALA - 679 533.

INDEX

- QUARRY LEASE BOUNDARY
- 7.5m SAFETY DISTANCE
- GRAVEL
- ROUGH STONE
- ULTIMATE PTT SLOPE
- PROPOSED WATER STORAGE

LOCATION OF QUARRY

EXTENT : 1.24.0Hects.
S.F.Nos : 477/1,477/2, 477/6, 478/2(P),
478/3(P) & 478/4(P),
VILLAGE : A.P.NADANOOR
TALUK : ALANGULAM
DISTRICT : TENKASI
STATE : TAMILNADU

CONCEPTUAL / FINAL
MINE CLOSURE SECTIONS

SCALE: HOR-1:1000
VER-1:500

PREPARED BY:

I DO HEREBY CERTIFY THAT THE PLATE
HAS BEEN CHECKED BY ME AND IS CORRECT
TO THE BEST OF MY KNOWLEDGE

S. DHANASEKAR.M.Sc.,
QUALIFIED PERSON

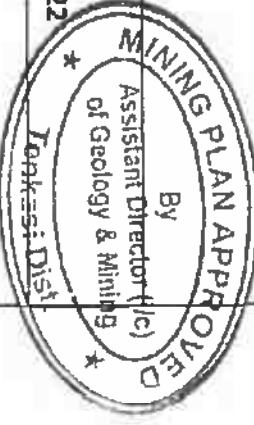


PLATE NO: VIII
 DATE OF SURVEY: 25-01-2022
APPLICANT ADDRESS:
M/S. SVART STEN ASSOCIATES LLP,
ASUM TOWER,
EZHUMANGAD,
ARANGOTTUKARA POST,
PALAKKAD DISTRICT,
KERALA - 679 533.

INDEX

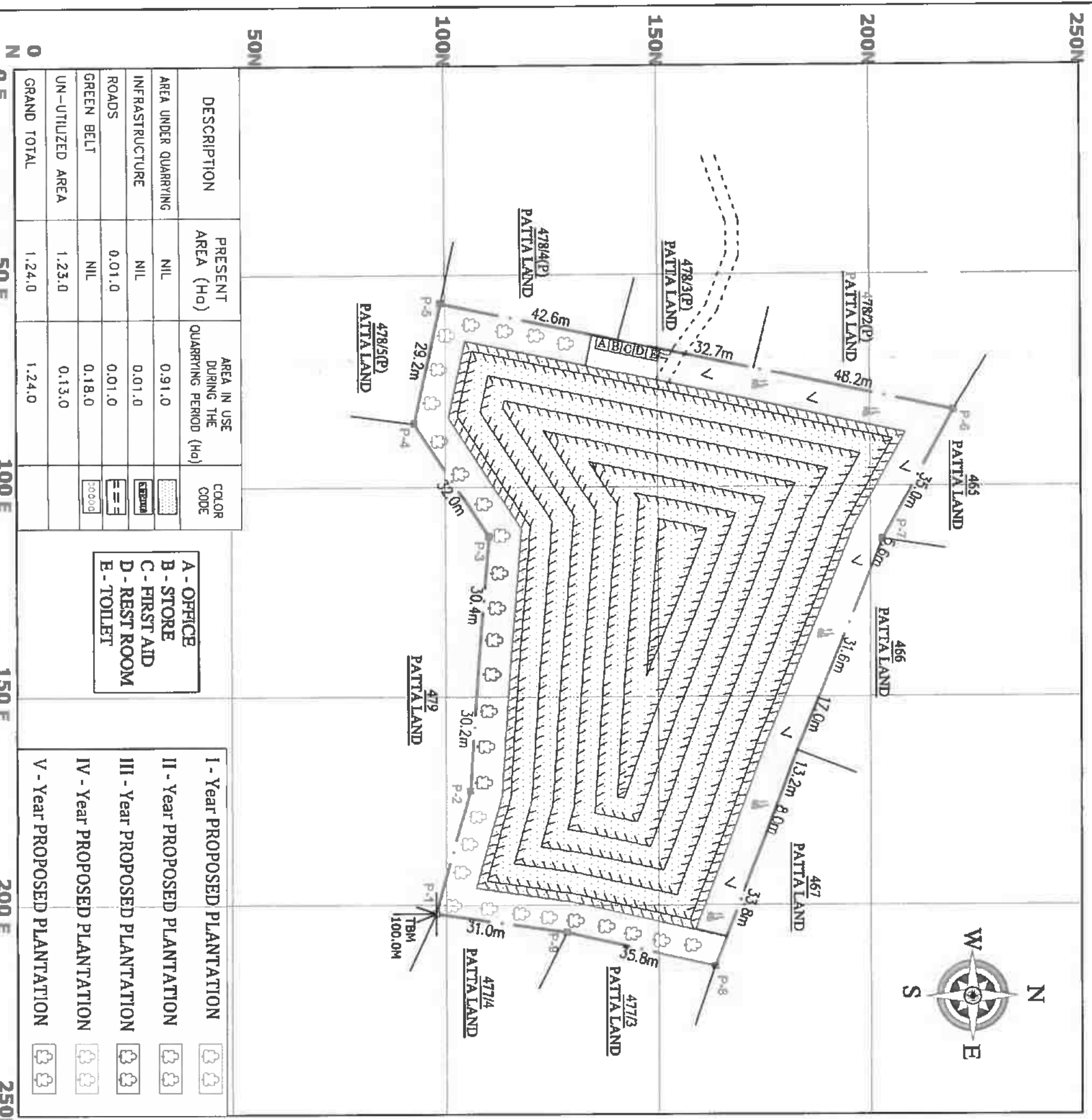
QUARRY LEASE BOUNDARY	
7.5M SAFETY DISTANCE	
BOUNDARY PILLARS	
TEMPORARY BENCH MARK	
GRAVEL	
ROUGH STONE	
SHRUB	
QUARRY ROAD	
MINE LAYOUT	

LOCATION OF QUARRY
 EXTENT : 1.24.0 Hects.,
 S.F.Nos : 477/1, 477/2, 477/6, 478/2(P),
 478/3(P) & 478/4(P),
 VILLAGE : A.P. NADANOOR
 TALUK : ALANGULAM
 DISTRICT : TENKASI
 STATE : TAMILNADU

PROGRESSIVE MINE CLOSURE PLAN
 SCALE: 1:1000

PREPARED BY:
 I DO HEREBY CERTIFY THAT THE PLATE HAS BEEN CHECKED BY ME AND IS CORRECT TO THE BEST OF MY KNOWLEDGE

S. DHANASEKAR, M.Sc.,
 QUALIFIED PERSON



DESCRIPTION	PRESENT AREA (Ha)	AREA IN USE DURING THE QUARRYING PERIOD (Ha)	COLOR CODE	
AREA UNDER QUARRYING	NIL	0.91.0		A - OFFICE
INFRASTRUCTURE	NIL	0.01.0		B - STORE
ROADS	0.01.0	0.01.0		C - FIRST AID
GREEN BELT	NIL	0.18.0		D - REST ROOM
UN-UTILIZED AREA	1.23.0	0.13.0		E - TOILET
GRAND TOTAL	1.24.0	1.24.0		I - Year PROPOSED PLANTATION
				II - Year PROPOSED PLANTATION
				III - Year PROPOSED PLANTATION
				IV - Year PROPOSED PLANTATION
				V - Year PROPOSED PLANTATION

ANNEXURE-VII
VAO CERTIFICATE

M/s. SVART STEN ASSOCIATES LLP, Rough stone & Gravel quarry in the S.F.Nos. 477/1, 477/2, 477/6, 478/2(P), 478/3(P) & 478/4(P) over an extent of 1.24.0ha. in A.P.Nadanoor Village, Alangulam Taluk, Tenkasi District.

GENERAL VIEW OF THE APPLIED LEASE AREA



For M/s. SVART STEN ASSOCIATES LLP,

(Deponent)

P. W. 23-6-2022
கிராம நிருவாக அலுவலர்
21. அனைத்தவருமான் நூடானூர்
ஆலங்குளம் வட்டம்
தென்காசி மாவட்டம்.

சுற்று

அறிவிக்கப்பட்டிருக்கும் கிராம நிர்வாக அலுவலர்
 A.P. நாகையன் கிராம சி.ய.சு. சி 477/1
 477/2, 477/6, 478/2(பகுதி) 478/3(பகுதி)
 478/4(பகுதி) ஆக உள்ளது 1.24.0 ஏக்கர்
 பட்டி அளவில் யுத்த கிராம நிர்வாகம்
 300 ஏக்கர் கிராமம் அங்குள்ள
 கிராம நிர்வாக அலுவலர் அலுவலகம்
 கிராமநிலம், கிராமநிலம், கிராமநிலம்,
 கிராமநிலம் ஆகிய இடங்களில், யுத்த
 கிராம நிர்வாகம் யுத்த கிராம, கிராம நிர்வாக
 கிராம நிர்வாக அலுவலர் அலுவலகம்

dt 23-08-2022

23-08-2022
 கிராம நிர்வாக அலுவலர்
 21.அணைந்தவருமான் நாடாளுர்
 ஆலங்குளம் வட்டம்
 தென்காசி மாவட்டம்.

ANNEXURE-VIII BLASTING AGREEMENT



தமிழ்நாடு தமில்நாடு TAMIL NADU

96AB 656970

P. சுவாமிநாதன்
தமிழ்நாடு 627423
27.6.2022

M. Ramasamy
Stamp Vendor
ALANKULAM.
L.No. 11/93.

DEED OF AGREEMENT

This agreement entered into at Palakad on this 12th day of **AUGUST 2022** between M/S Svart sten associates LLP Asum Tower Ezhumangad Arangottukara post Palakad District Kerala 679533 Hereinafter referred to as part of the **FIRST PART** and

P.SOUNDER RAJ S/O PAULRAJ 7/464, UTHUMALAI MAIN ROAD, VENKATESWARAPURAM-627854, ALANGULAM TALUK, TIRUNELVELI DISTRICT, herein after referred to as a party of the **SECOND PART**.

The party of the first part is operating M/s SVART STEN ASSOCIATES LLP and is mining A.P.Nadanoor Village Alangulam Taluk Tenkasi District 627423 in the area of over an extent of **1.24.0ha** in survey Nos. **477/1, 477/2, 477/6, 478/2(p), 478/3(p) & 478/4(p)**

1


(PETER. M.P)

2 

Whereas the party of the First part wants blasting to be done at quarry to excavate the M/s SVART STEN ASSOCIATES LLP. The blasting work is so intensive and large that the party of the first part has decided to entrust the work involved to the party of the second part of contract basis is follows:

The party of the first part will allot the blasting operations in the above said areas to the party of the second part who is responsible for blasting rocks and also making his own arrangements for the explosives and exploding equipments required for the work. The entire blasting in the above quarry and the possession of the blasting equipments will be handed by the party of the second part apply the explosives license the Chief Controller of explosives South Circle, Chennai and he hereby undertake the responsibility for the work entrusted.

Payment will be made periodically by the party of the first part for the quantity used, explosives consumed and hours and time to the exploding equipments put into use. Calculations will be made and settlements will be arrived at every month. The rates for the items of work will as mutually agreed as marginal cost which includes cost of explosives, transportation cost and other charges for blasting work. This agreement is made for all blasting done in the said area.

This agreement is valid form the date of execution till validity of quarrying leases granted by the State Government to the party of the first part or terminable earlier by mutual consent with a month's notice.

1 
(PETER. M.P.)

2 

PLACE: Alangulam,

DATE: 12-08-2022 .



GOVERNMENT OF INDIA
MINISTRY OF COMMERCE & INDUSTRY
PETROLEUM AND EXPLOSIVES SAFETY ORGANISATION (PESO)
(Formerly Department of Explosives)
A & D - Wing, Block I-S, 11th Floor, Shastri Bhavan
26 Hukhlous Road, Nungambakkam Chennai 600016
Tele- 28281023 Fax: 28264848
Email: j.c.c.chennai@explosives.gov.in

REGISTRATION NO: TN/25/1529(E118661)

Dated: 06.05.2019

To: **Sd/- S. Raju, Paul Raji,**
Vidhi Nagar, Vennarasapuram Post, Kaduganur,
Kaduganur
C/NELVELL State 1 and Nadu, Pincode-627854

Subject: **Road Van for the carriage of Explosives - Registration No TN-76/AK-3247 Licence No: E/SC/TN/25/1529(E118661) granted in Para. 1.E-7 under Explosives Rules, 2008 -Endorsement regarding -Endorsement of Licence.**

Reference: Memo No: E/SC/TN/25/1529(E118661) Dated 06/05/2019 from Joint Chief Controller of Explosives, South Circle, Chennai and the subject premises by an officer of this organization on 05.05.2019.

For: Licence No. E/SC/TN/25/1529(E118661) valid upto 31st March 2024 duly endorsed is forwarded herewith.


For: Renewal of Licence, please submit following documents so as to reach the Dy. Chief Controller of Explosives, Sivakasi on or before 03.05.2019.

- 1. Application Form E1-1 duly filled in and signed.
- 2. Licence fee for one year in the form of demand draft drawn on any Nationalized Bank in favour of Jt. Chief Controller of Explosives, Chennai payable as per form.
- 3. Original licence with approved plan.
- 4. In this connection, please also refer to rule 112 of Explosives Rules, 2008.

Following conditions strictly:

- 1. Records of explosives transported by the licensed Roadvan shall be maintained in the proforma KH-6 under Part 5 of schedule V of Explosives Rules 2008.
- 2. Use of any other persons whose antecedents verified by the local Police shall only be employed with the licensed explosive driven compressor mounted truck as drivers or cleaners. List of such drivers and cleaner's alongwith the personal particulars shall be made available to the local police in advance. The re-verification of such staff shall also be made at least once in a year in compliance to Rule 61(3) of Explosives Rules 2008.
- 3. In case of inter district transportation of explosives, the Roadvan shall always be attended to by two armed guards. If the consignment of explosives is to pass through sensitive areas notified by Ministry of Home Affairs, it should be escorted by armed police escort provided by District Police Administration as required in Rule 67(?) of Explosives Rules 2008.

Yours faithfully,


S. V. VENKATESH
Dy. Controller of Explosives
For Joint Chief Controller of Explosives,
South Circle, Chennai.

Copies enclosed to:

1. District Magistrate, Thiruvalluvar, Tamil Nadu with reference to his Noe No: R.Dis. D.L. 13290/2009 Dated: 02/11/2009.

Jt. Joint Chief Controller of Explosives,
South Circle, Chennai

For more information regarding status, fees and other details please visit our web site <http://explosives.gov.in/>

Explosives Rules, 2008
 AR, D. Control of Explosives, Chennai on 12/04/2019

अनुमति प्रारूप एनई - 7 LICENCE FORM LE-7
 (विस्फोटक नियम 2008 की अनुसूची 1 के भाग 1 का अनुच्छेद 7 देखें)
 (See article no 7 of Part 1 of Schedule IV of Explosives Rules, 2008)

अनुमति : सड़क वैन में विस्फोटकों के परिवहन के लिए
 Licence to transport explosives in a road van

अनुमति संख्या Licence No. : E/SC/TN/25/1529(E118661)
 वार्षिक फीस / Annual Fee Rs. 2500/-



- 1. अनुमति प्राप्तद्वारा जारी की जाती है
 Licence is hereby granted to : **Shri P. Soundar Raj S/o. Paul Raj (Occupier : Shri P. Soundar Raj S/o. Paul Raj 7/3-11, Gandhi Nagar, Venkatesapuram Post, Kadanganeri, District-THIRUNELVELI, State-Tamil Nadu, Pincode-627854**
- 2. अनुमतिधारी की प्रस्थिति : Status of licensee : Individual
- 3. सड़क वैन की विशेषताएँ : Particulars of the road van:

पंजीकरण संख्या / Registration No.	TN-76/AK-8247
वाहन का मॉडल एवं मॉडल / Make and model of vehicle	Mahindra Mahindra (Mahindra) Max
वाहन वजन / Vehicle weight	1470 Kgs(s)
वाहन सहित अधिकतम वजन / Maximum laden weight	2670 Kgs(s)
परिवहन के लिए अनुमति विस्फोटकों की अधिकतम मात्रा / Maximum quantity of explosives permitted for transport	1200 Kgs(s)
इंजन संख्या / Engine No.	TB14E80310
चैसिस संख्या / Chassis No.	MA1ZP2FBKJ2E77646
अन्य फिटिंग्स का विवरण / Description of other fittings	As per approved plan attached.
वाहन के लिए अनुमति विस्फोटकों की मात्रा / Quantity of Explosives permitted to carry	1200 Kgs(s)

- 4. अनुमति परिसर निम्नलिखित आरेखण (आरेखण) के अनुरूप होना चाहिए / The licensed premises shall conform to the following drawings:
 आरेखण संख्या / Drawing No : E/SC/TN/25/1529(E118661) दिनांक / dated : 25/04/2019
- 5. अनुमति प्राप्त पर यथा संशोधित विस्फोटक अधिनियम, 1884 और उसके अधीन बनाए गए विस्फोटक नियम, 2008 के उपबन्धों और शर्तों एवं निम्नलिखित अनुमति प्राप्त के अधीन अनुमति प्रदान की जाती है।
 The licence is granted subject to the provision of Explosives Act 1884 as amended from time to time and the Explosives Rules, 2008 framed thereunder and the conditions and the following annexures...
 (क) उपरोक्त क्रम संख्या 4 में यथाकथित सड़क वैन का आरेखण (a) Drawings of the road van as stated in serial no.4 above.
 (ख) अनुमति प्राधिकारी द्वारा हस्ताक्षरित शर्तें (b) Conditions signed by the licensing authority.
- 6. यह अनुमति तारीख 31 मार्च 2024 तक विधिमान्य रहेगी / This licence shall remain valid till 31st day of March 2024

यह अनुमति अधिनियम या उसके अधीन विरचित नियमों या इस अनुमति की शर्तों के उल्लंघन, अनुसूची 5 के भाग 4 में सन्दर्भित, जहाँ भी लागू हो या यदि अनुमति परिसर आरेखण या उसके संलग्न उपायकों में दर्शाए गए विवरण के अनुरूप नहीं पाए जाने पर निलम्बित या प्रतिरहित की जा सकती है।
 This licence is liable to be suspended or revoked for any violation of the Act or rules framed there under or the conditions of this licence as set forth under, wherever applicable, referred to in Part 4 of Schedule V or if the licensed premises are not found conforming to the description shown in the plans and annexure attached hereto.

दिनांक / Date: 28/04/2019

संयुक्त मुख्य विस्फोटक नियंत्रक / Joint Chief Commissioner of Explosives
 दक्षिण घाटल, चेन्नई / South Circle, Chennai

अनुमति के नवीनीकरण हेतु भूभाकन / Endorsement for renewal of licence

नवीनीकरण की तिथि / Date of Renewal	देयता समाप्ति की तिथि / Date of Expiry	अनुमति प्राधिकारी के हस्ताक्षर / Signature of licensing authority
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वैधानिक चेतावनी : विस्फोटकों का लापरवाही से प्रयोग या दुरुपयोग, विधि के अधीन गम्भीर दण्डित अपराध होगा।
 Mismanagement or misuse of explosives shall constitute serious criminal offence under the law.



GOVERNMENT OF INDIA
MINISTRY OF COMMERCE & INDUSTRY
PETROLEUM AND EXPLOSIVES SAFETY ORGANISATION (PESO)
(Formerly Department of Explosives)
A & D - Wing, Block 1-8, IInd Floor, Shastri Bhavan
26 Haddow Road, Nungambakkam Chennai 600006
Tele: 28281023 Fax: 28284848
Email: jtcc@explosives.gov.in

No : E/SC/TN/30/2159(E112968)

Dated : 29/08/2018

30 AUG 2018

To : **S.VAIRAMUTHU S/O.SAPPANI,**
 7/464 Oothumalai Main road Venkatesapuram Post Alangulam Taluk 627854
 Dist. THIRUNELVELL, State. Tamil Nadu, Pincode-627854

Subject: **Shotfirer's Certificate No. E/SC/TN/30/2159(E112968) issued to S.VAIRAMUTHU S/O.SAPPANI, 7/464 Oothumalai Main road Venkatesapuram Post Alangulam Taluk 627854 granted in Form LE-10 of Explosives Rules, 2008 - Issue of Certificate regarding.**

Sir(s),

Please refer to your letter No. xx dated 28/08/2018 and the subsequent examination held on 30/07/2018. Please find enclosed herewith Shotfirer's Certificate No. E/SC/TN/30/2159(E112968) valid upto 29/08/2023 for the purpose of Class : (B), Category : General aboveground, All phases of aboveground blasting operation as per the provisions of Rule 107 of Explosives Rules, 2008.

Conditions:

1) Blasting work in connection with well Sinking/Road Construction/Agricultural work etc.

It may please be noted that no explosives should be purchased on the strength of the above certificate. You are advised to strictly follow Rules 89 to 98 of Explosives Rules 2008 while undertaking blasting operations.

In case of validity of the certificate to be extended, application with following documents shall be submitted :

- a. Application in Form AE-10.
- b. Original Shot firer's Certificate in Form LE-10.
- c. Security fee of revalidation Rs. 400/- DD shall be drawn in favour of Jt. Chief Controller of Explosives, Chennai payable at Chennai.
- d. Five copies of holder's colour passport size photographs duly signed 'in front' by 'black color indelible ink'.
- e. A physical fitness certificate from Registered medical practitioner.
- f. A consent letter from the present employer holding Licence in Form LE-3 and intending to hire the services of Certificate holder.
- g. The shot firer certificate holder has to present himself physically before reviewing/revalidating Authority.
- h. This certificate is liable to be cancelled/withdrawn on contravention of provisions of Explosive Rules, 2008 committed during blasting operations, resulting in loss of human life.

An amount of Rs. 100/- balance is in your credit, which may be utilized for future transaction by quoting this reference.

Enclosures :

Yours faithfully,

(Signature)
 Deputy Chief Controller of Explosives
 For Joint Chief Controller of Explosives
 South Circle, Chennai

Copy Forwarded to:

1. Superintendent of Police, ALANGULAM SUBDIVISION, THIRUNELVELL, Tamil Nadu with reference to his Noe No: XX
 Dated: 11/04/2018

For Joint Chief Controller of Explosives
 South Circle, Chennai

[For more information regarding status, fees and other details, please visit our web site <http://peso.gov.in>]

अनुमति प्रत्येक एल.ई. -10 | Form LE-10
शॉट फायर का प्रमाण-पत्र | Shot Firing Certificate
(अनुसूची IV के भाग I का अनुच्छेद 10 के अंतर्गत | See article 10 of Part I of Schedule IV)
(एक्सप्लोजिव्स नियम, 2008 का नियम 107(5) के अंतर्गत | see rule 107(5) of Explosives Rules, 2008)

(कार्य अनुमतिपत्र, 1952 के अधीन न आने वाले क्षेत्र में विस्फोट करने के लिए सक्षमता प्रमाणपत्र)
(Certificate of competency to carry out blasting of explosives in area not coming under the



संख्या | No.: E/SC/TN30/199(E11206)

प्रमाणित किया जाता है कि श्री **S. VAIRAMUTHU S/O. SAPPANI**,
जन्मदिनांक 11/03/1993 कोषावास, नंबर 7464 Gouthumalai Main road Venkateswaram Post Abangulam Taluk 627854, THIRUNELVELI, Tamil Nadu - 627854 के निवासी हैं जो इस विस्फोट नियंत्रण, चेन्नई का शॉट फायर परीक्षा 30/07/2018 को अवधिमान शॉट फायर की परीक्षा में 30/07/2018 अधीन भाग लेने में सक्षमता प्रमाणपत्र, 1952 और अन्य संबंधित विधियों के उपबंधों के अधीन शॉट फायर अनुमतिपत्र, 1952 की शर्तों के अधीन अनेकवर्षे कार्य में अत्यंत क्षेत्र में नई तथा अतिरिक्त विस्फोटकों का उपयोग करने हुए विस्फोट प्रमाणपत्र प्राप्त करने में सक्षमता प्रमाणित हैं।

This is to certify that **Shri S. VAIRAMUTHU S/O. SAPPANI**,
born on 11/03/1993 resident of 7464 Gouthumalai Main road Venkateswaram Post Abangulam Taluk 627854, THIRUNELVELI, Tamil Nadu - 627854 passed the shotfiring's examination held on 30/07/2018 conducted by Dy. Controller of Explosives, Chennai and is authorised to conduct blasting operations as mentioned below using explosives in areas other than mines coming under the purview of the Mines Act 1952, subject to the provisions of the Explosives Act, 1984 and the rules framed thereunder.

नियंत्रण-कम, अधिनियम का अन्तर्गत अधिनियम विधियों के अन्तर्गत यह प्रमाण-पत्र शॉट फायर की शर्तों के अधीन अनेकवर्षे कार्य में नई तथा अतिरिक्त विस्फोटकों का उपयोग करने के लिए सक्षमता प्रमाणित हैं।

भाषा: (क), श्रेणी: सामान्य सतहों के कार्य, शॉटिंग के अन्तर्गत अधिनियम

Authorised class, category and type of blasting :
Class : (B), Category : General aboveground, All phases of aboveground blasting operation

(रूल 107 के अन्तर्गत (5) का अन्तर्गत में) | See explanation of sub-rule (5) of rule 107

यह प्रमाणपत्र 29/08/2023 (पांच वर्षों की अवधि से कम नहीं) तक विधिवतमान होगा।
This certificate shall remain valid till 29/08/2023 (five years from the date of issue)

यह प्रमाण-पत्र, अधिनियम या उसके अधीन विधियों के अन्तर्गत यह प्रमाण-पत्र शॉट फायर की शर्तों के अधीन अनेकवर्षे कार्य में नई तथा अतिरिक्त विस्फोटकों का उपयोग करने के लिए सक्षमता प्रमाणित हैं।
अतिरिक्त यह विधियों के अन्तर्गत:

This certificate is liable to be suspended or revoked for any violation of the Act or rules framed thereunder or the conditions of this certificate or if there is any discrepancy or deviation in the information or suppression of facts furnished by the applicant in his application form.

भाषा | Place : चेन्नई | Chennai
दिनांक | Date : 29/08/2018

संयुक्त मुख्य विस्फोटक नियंत्रण | Joint Chief Controller of Explosives
चेन्नई, तमिल नाडु | South Circle, Chennai

पुनर्विधित-व्यवस्थापन के लिए प्राधिकरण
Empowerment for revalidation

पुनर्विधित-व्यवस्थापन की तिथि
Date of Revalidation

समाप्ति की तिथि
Date of Expiry

अनुमतिपत्र जारी करने वाले अधिकारी का हस्ताक्षर
Signature of licensing authority

सावधानी चेतावनी: विस्फोटकों को गलत ढंग से प्रयोग करने से निवारण के लिए सतर्कता के साथ सावधानी से कार्य करना आवश्यक है।
Statutory Warning : Mis-handling and misuse of explosives shall constitute serious offence under the law.

शर्तें | CONDITIONS

संख्या | No.: E/SC/TN/30/2159(E112968)

1. यह परमिट, परमिट धारक को ब्लास्टिंग करने के लिए तब तक अधिकृत करता है जब तक कि वह विस्फोटक नियम, 2008 के अंतर्गत फॉर्म एलई-3 में दिए अनुसार धारक (अनुमति संख्या: E/HQ/TN/22/231(E48849)), **Shri P. Soundar Raj S/o. Paul Raj** के नीचे/अनुबंध के अधिन काम कर रहा है।
This permit authorizes the permit holder to conduct blasting so long as he is working under the employment/contract of **Shri P. Soundar Raj S/o. Paul Raj** holding valid licence (Licence No. E/HQ/TN/22/231(E48849)) in Form LE-3 of Explosives Rules, 2008.
2. विस्फोटक सामग्री प्राप्त करने, उसके स्वामित्व परिवहन, उठाई भंडार और उपयोग करने के लिए सभी स्थानीय विनियमों और विनियमों का अनुसरण किया जाएगा।
All local laws and regulations applicable for obtaining, owning, transporting, storing, handling and using explosive materials shall be followed.
3. विस्फोटक सामग्री को अनाधिकृत कब्जे से संरक्षित किया जाएगा तथा उसे परित्यक्त नहीं किया जाएगा।
Explosive materials shall be protected from unauthorised possession and shall not be abandoned.
4. विस्फोटक सामग्री का उपयोग केवल ऐसे अनुभवी व्यक्तियों द्वारा किया जाएगा जो अपने अंतर्गत परिसर को जानते हों और जिनके पास आवश्यक अनुमति हों।
Explosive materials shall be used only by experienced persons who are familiar with the hazards involved and who hold all required permits.
5. शार्प और फायरिंग या उसका पर्यवेक्षण केवल ऐसे व्यक्ति द्वारा किया जाएगा जिसके पास संपुक्ति शॉट फायरकटा प्रमाणपत्र और विस्फोट के लिए अनुमति हों।
Loading and firing shall be performed or supervised only by a person possessing an appropriate shot firer certificate and permit to blast.
6. प्रशिक्षण सहायक और अन्य व्यक्ति, जिनके पास आवश्यक शॉट फायरकटा प्रमाणपत्र या अनुमति नहीं है, केवल ऐसे अनुमति धारक करने वाले व्यक्तियों के पर्यवेक्षण के अधीन काम करेंगे।
Trainees helpers and other persons who do not hold the required shot firer certificate or permits shall work only under the supervision of persons holding such permits.
7. ऐसे स्थान पर कोई विस्फोटक सामग्री अनावृत या अवरुद्ध नहीं की जाएगी जहाँ अत्यधिक गर्मी या उसके प्रभाव से उनका विस्फोट हो सकता है।
No explosive materials shall be located or stored where they may be exposed to flame excessive heat sparks or impact.
8. ऐसे स्थान के 15 मीटर के भीतर धूम्रपान करने की अनुमति नहीं दी जाएगी जहाँ विस्फोटकों को बना किया गया है या उनका उपयोग किया गया है।
No smoking shall be permitted within 15 metre of any location where explosive are being handled or used.
9. कोई व्यक्ति ऐसे स्थान के 15 मीटर के भीतर कोई व्यक्ति, सिविली या अन्य प्रकार की अग्नि या ज्वाला नहीं चलाएगा, जहाँ विस्फोटकों को बना किए गए हैं या उनका उपयोग किया जा रहा है। तथापि इस अपेक्षा से सुरक्षित फ्यूज चलाने के लिए उचित युक्तियों को बूट प्राप्त होंगे।
No person with in 15 metres of any location where explosive are being handled or used shall carry any matches open light or other fire or flame. However, suitable devices for lighting safety fuse are exempted from this requirement.
10. धारक, सहायक, स्वयंसेवक या अन्य व्यक्तियों से प्रभावित किसी व्यक्ति को विस्फोटक सामग्री के उपयोग की अनुमति नहीं होगी।
No person under the influence of intoxicating liquors narcotics or other dangerous drugs shall be allowed to handle explosive materials.
11. परिवहन के दौरान और विस्फोट स्थान के बीच परिवहन के दौरान विस्फोटक सामग्री को अनुमति प्राप्त या पैकेज में रखा जाएगा।
Explosive materials shall be kept in close approved containers or packages while being transported between the storage magazine and the blasting site.
12. विस्फोट करने का शॉट फायरकटा प्रमाणपत्र और अनुमति धारक द्वारा प्राप्त की गई और फायर की गई या फलने बिना गई सभी विस्फोटक सामग्री का दैनिक अभिलेख रखा जाएगा।
A holder of a shot firer certificate and Permit to Blast shall keep a daily record of all explosive materials received and fired or otherwise disposed of by the permit holder. Such records shall be retained for five years.
13. शॉट फायरकटा और कर्मचारी आपातकाल के दौरान सभी जानेमाली प्रक्रिया से अवगत होंगे।
The shot firer and the employee shall be conversant with procedure to be taken during the emergency.
14. शॉट फायरकटा प्रमाण-पत्र का धारक को सुरक्षा के हित में विवेक द्वारा समय-समय पर दिए गए उन सभी या कितनी दिशेषों का पालन करना होगा।
The holder of the shot firer certificate shall comply with all or any of the directions as may be given by the Controller from time to time in the interest of safety.
15. अग्नि या विस्फोट के कारण होने वाली चुराई और विस्फोटकों की हानि, चोरी या चोरी के बारे में निकटतम पुलिस स्टेशन और अनुमान प्रधिकारी तथा अनुमान प्रधिकारी के स्थानीय कार्यालय में तुरंत रिपोर्ट की जाएगी।
Accidents by fire or explosion and losses, shortage or theft of explosives shall be immediately reported to the nearest police station and the Controller of Explosives having jurisdiction over the area.

संयुक्त मुख्य विस्फोटक नियंत्रक | Joint Chief Controller of Explosives
दक्षिण वृत्त, चेन्नई | South Circle, Chennai



भारत सरकार | Government of India
 वाणिज्य और उद्योग मंत्रालय | Ministry of Commerce & Industry
 पेट्रोलियम तथा विस्फोटक सुरक्षा संगठन (पेसो) | Petroleum & Explosives Safety Organisation (PESO)
 पूर्व नाम- विस्फोटक विभाग | Formerly- Department of Explosives
 A और D- विंग, ब्लॉक 1-8, दूसरा तल, शास्त्री भवन | A & D - Wing, Block 1-8, IInd Floor, Shastri Bhavan
 26 हड्डोडस रोड, नुंगम्बक्कम चेन्नाई | 26 Haddous Road, Nungambakkam Chennai 600006
 फोन (Phone):- 28281023 | फैक्स (Fax):- 28284848
 ई-मेल (Email):- peso@explosives.gov.in

संख्या (No.): E/HQ/TN/22/231(E48849)

सेवा में | To

17 MAR 2019

Shri P. Soundar Raj S/o. Paul Raj,
 7-46A, Oothumalai Main road, Venkatesapuram Post, Alangulam Taluk, Dist. Tirunelveli (Tamil Nadu), Town Village - Muthammapuram
 District-THIRUNELVELI, State-Tamil Nadu, Pincode -

विषय | Survey No(s).S.F. No. 264, ग्राम Muthammapuram Village, Veerakeralampuram Taluk, जिला THIRUNELVELI राज्य Tamil Nadu में विस्फोटक के भंडारण के उपयोग के लिए कक्षा हेतु विस्फोटक नियम, 2008 के अंतर्गत LE-3 में जारी अनुमति सं E/HQ/TN/22/231(E48849) के नवीनीकरण के लिए

Subject: Possession for Use of of Explosives from magazine situated at Survey No(s)..S.F. No. 264, Muthammapuram Village, Veerakeralampuram Taluk, Dist THIRUNELVELI, Tamil Nadu -Licence No.: E/HQ/TN/22/231(E48849) granted in Form LE-3 of Explosives Rules, 2008 - Renewal regarding

महोदय | Sr.

आपका उपर्युक्त विषय पर पत्र संख्या NH दिनांक 07/03/2019 का संदर्भ ग्रहण करें। विस्फोटक नियम, 2008 के अंतर्गत प्रारूप LE-3 में जारी अनुमति दिनांक 31/3/2024 तक नवीनीकृत कर इस पत्र के साथ भेजी जा रही है।

Reference to your letter No.: NH dated: 07/03/2019, the subject licence duly renewed upto 31/3/2024 and issued in Form LE-3 of Explosives Rules, 2008 is forwarded herewith.

अनुमति के अद्यतन नवीकरण हेतु कृपया निम्नलिखित दस्तावेज दिनांक 31/03/2024 से पहले उप मुख्य विस्फोटक नियंत्रक सिकन्दरी को भेजे जाएं।

For further renewal of licence, please submit the following documents so as to reach The Dy. Chief Controller of Explosives, Sivakasi on or before 31/3/2024.

- प्रारूप आरई-1 में विधिवत पूर्ण एवं हस्ताक्षरित आवेदन।
Application in Form RE-1 duly filled in and signed.
- एक से पाँच वर्ष के अनुमति शुल्क का बैंक ड्राफ्ट बैंक ड्राफ्ट विधि से राष्ट्रीयकृत बैंक के नाम अर्पित, संयुक्त मुख्य विस्फोटक नियंत्रक सिकन्दरी के पत्र में संलग्न में देय हों।
Licence fees for one to five years in the form of demand draft drawn on any Nationalized Bank in favour of Jt. Chief Controller of Explosives, Chennai payable at Chennai.
- अनुमोदित प्लान के साथ मूल अनुमति।
Original licence with approved plan.
- कृपया इस संबंध में विस्फोटक नियम, 2008 के नियम 112 का भी संदर्भ ग्रहण करें।
In this connection, please also refer to Rule 112 of Explosives Rules, 2008.
- विस्फोटक का क्रय हेतु आरई-11 में सांगपत्र (इंडेंट) आपूर्तिकर्ता को दिया जाए और उसी की एक प्रतिलिपि इस कार्यालय को भेजी जाए (अतिरिक्त गैर-आवृत्त के लिए लागू नहीं)।
indent for purchase of explosives shall be placed in RE-11 with the supplier and copy of the same shall be sent to this office. (Not applicable for fireworks store house)
- कृपया विस्फोटक की त्रैमासिक विवरणी हर तिमाही के अंत में आरई-7 में प्रस्तुत की जाए। विवरणी उप मुख्य विस्फोटक नियंत्रक सिकन्दरी के कार्यालय में आगामी तिमाही के 10 तारीख से पहले पहुंच जानी चाहिए (अतिरिक्त गैर-आवृत्त के लिए लागू नहीं)। Please submit quarterly returns of explosives in RE-7 at the end of every quarter so as to reach The Dy. Chief Controller of Explosives, Sivakasi by 10th of the succeeding quarter. (Not applicable for fireworks store house)
- सभी ब्लास्टिंग ऑपरेशन एक क्वालिफाइड ब्लास्टर की जांच के तहत एक वैध शॉट फायरिंग परमिट प्राप्त होना चाहिए। हालांकि, ब्लास्टिंग ऑपरेशन के अंतर्गत आने वाले खानों में ब्लास्टिंग ऑपरेशन करने वाले ब्लास्टर की योग्यता उसी अधिनियम से निर्धारित है।
All blasting operations shall be carried out by a competent person holding a valid shot firer's permit granted under above rules. However, blasting operations in mines coming under the purview of the Mines Act 1952, the blaster shall have qualifications prescribed in the regulations framed under the said Act.

आपके खाते में ₹ 6000 की राशि क्रेडिट है जो इस संदर्भ को उद्देश्य के लिए भविष्य के संव्यवहार में समायोजित की जा सकती है।

An amount of Rs. 6000/- balance is in your credit which may be utilized for future transaction by quoting this reference.

भवदीय | Your's faithfully

(D.C. PANDY)

विस्फोटक नियंत्रक | Controller of Explosives

कृते संयुक्त मुख्य विस्फोटक नियंत्रक | For Joint Chief Controller of Explosives

दक्षिणार्चल, चेन्नाई | South Circle, Chennai

प्रतिनिधि प्रेषित | Copy Forwarded to:

1 जिला मजिस्ट्रेट (District Magistrate), THIRUNELVELI (Tamil Nadu)- सूचना के लिए (for information.)

कृते संयुक्त मुख्य विस्फोटक नियंत्रक | For Joint Chief Controller of Explosives

दक्षिणार्चल, चेन्नाई | South Circle, Chennai

अनुमति प्रपत्र फॉर्म ई-3 | LICENCE FORM LE-3

(विस्फोटक नियम, 2008 की अनुसूची 4 के भाग 1 के अनुच्छेद 3(क) से (घ) देखिए।)
(See article 3(a) to (d) of Part 1 of Schedule IV of Explosives Rules, 2008)

(ग) उपबन्धों के लिए एक समय पर वर्ग 1, 2, 3, 4, 5 या वर्ग 7 के विस्फोटक या किसी मैगजीन में वर्ग 6 के विस्फोटक रखने
Licence to possess : (c) for use, explosives of class 1, 2, 3, 4, 5, 6 or 7 in a magazine

अनुमति सं. (Licence No.): E/HQ/TN/22/231(E48849)
वार्षिक फीस रूप (Annual Fee Rs): 6800/-



1. Licence is hereby granted to

Shri P. Soundar Raj S/o. Poo Raj (अधिकारी / Occupier : Shri P. Soundar Raj), 7/464, Oothumalai Main road, Venkatesapuram Post, Alangulam Taluk, Dist. Tirunelveli (Tamil Nadu), Town/Village - Muthammalpuram, District-THIRUNELVELI, State-Tamil Nadu, Pincode -

को अनुमति अनुदत्त की जाती है।

2. अनुमतिधारी की प्रास्थिति (Status of licensee : Individual)

3. अनुमति निम्नलिखित प्रयोजनों के लिए विधिवान्वय है।

Licence is valid only for the following purpose.

possess for use of Nitrate Mixture, Safety Fuse, Detonating Fuse, Electric and/or Ordinary Detonators, - के उपयोग के लिए

4. अनुमति विस्फोटकों के निम्नलिखित किस्मों, प्रकार और मात्रा के लिए विधिवान्वय है।

Licence is valid for the following kinds and quantity of explosives: -- (क) (a)

क्र. सं. Sr. No.	नाम और विवरण Name and Description	वर्ग और प्रभाग Class & Division	उप-प्रभाग Sub-division	मात्रा किसी एक समय में Quantity at any one time
1.	Nitrate Mixture	2.0	0	2250 Kg.
2.	Safety Fuse	6.1	0	10000 Mtrs
3.	Detonating Fuse	6.2	0	10000 Mtrs
4.	Explosive and/or Ordinary Detonators	6.3	0	10000 Nos.

(ख) किसी एक कालखंड मास में खरीदे जाने वाले विस्फोटक की मात्रा (अनुच्छेद 3(क) और (ग) के अधीन अनुमति के अन्तर्गत)

(b) Quantity of explosives to be purchased in a calendar month (applicable for license under article 3(b) and (c)) :

15 times as above.

5. निम्नलिखित रेखाचित्र (रेखाचित्रों) से अनुमति परिसर की पुष्टि होती है।

The licensed premises shall conform to the following drawing(s) :

रेखाचित्र क्र. (Drawing No.) E/HQ/TN/22/231(248849)
दिनांक (Dated) 10/02/2011

6. अनुमति परिसर निम्नलिखित पते पर स्थित है। The licensed premises are situated at following address:

Survey No(s), S.F. No. 284, ग्राम (Town/Village), Muthammalpuram Village, Yarakovilalapuram Taluk
जिला (District) THIRUNELVELI राज्य (State) Tamil Nadu
दूरभाष (Phone) ई. मेल (E-Mail)

पुलिस स्टेशन (Police Station) : Oothumalai
पिनकोड (Pincode):
फैक्स (Fax)

7. अनुमति परिसर में निम्नलिखित सुविधाएं अंतर्भूत हैं।

The licensed premises consist of following facilities.

: a main high explosives storage room, a lobby and a detonators storage room

8. अनुमति समय - समय पर ब्याससोपेक्षित विस्फोटक अधिनियम, 1884 और उनके अधीन विरचित विस्फोटक नियम, 2004 के उपबंधों, शर्तों और अतिरिक्त शर्तों और निम्नलिखित उपबंधों के अधीन रहते हुए अनुदत्त की जाती है।

The licence is granted subject to the provision of Explosives Act 1884 as amended from time to time and the Explosives Rules, 2008 framed there under and the conditions, additional conditions and the following Annexures.

1. उपर्युक्त अनु सं. 5 में ब्याससोपेक्षित रेखाचित्र (स्थान, संरचनात्मक संबंधी और अन्य विवरण दर्शाते) कर्तरी हूँ।
Drawings (showing site, constructional and other details) as stated in serial No. 5 above.
2. अनुमति प्राधिकारी द्वारा हस्ताक्षरित इस अनुमति की शर्तों और अतिरिक्त शर्तों।
Conditions and Additional Conditions of this licence signed by the licensing authority.
3. दूरी प्रपत्र DE-2 | Distance Form DE-2.

9. यह अनुमति तारीख 31 मार्च 2015 तक विधिवान्वय होगी। This licence shall remain valid till 31st day of March 2015.

यह अनुमति अधिनियम या उसके अधीन विरचित नियमों या अनुसूची V के भाग 4 के प्रति निर्दिष्ट श्रेष्ठ-पत्र के अधीन तथा उपस्थित इस अनुमति की शर्तों का अधिनियम करने का यदि अनुमति परिसर योजना या उसके संलग्न उपबंध में दर्शाते विवरण के अनुरूप नहीं पाए जाने पर निलंबित या प्रतिरहित की जा सकती है, जहां वह लागू हो।

This licence is liable to be suspended or revoked for any violation of the Act or Rules framed there under or the conditions of this licence as set forth under Set VIII, wherever applicable, referred to in Part 4 of Schedule V or if the licensed premises are not found conforming to the description shown in the plans and Annexures attached hereto.

दिनांक (Date) - 10/02/2011

मुख्य नियंत्रक, विस्फोटक | Chief Controller of Explosives

अनुमतिधारी के द्वारा:

- Amendment in Drawings/Facilities/Premises dated : 14/03/2013
- Amendment of Quantity of Explosives/Monthly Purchase Limit dated : 26/08/2014

नवीनीकरण के पृष्ठानक के लिए स्थान
Space for Endorsement of Renewal

नवीनीकरण की तारीख Date of Renewal	अनुमति की तारीख Date of Expiry	अनुमति प्राधिकारी के हस्ताक्षर और स्थान Signature of licensing authority and stamp
07/03/2019	31/03/2024	Jt. Chief Controller of Explosives, South Circle, Chennai

नवीनीकरण के लिए: विस्फोटकों को रखने वाले स्थानों का अन्तर्गत अनुमतिधारी के द्वारा नवीनीकरण प्रपत्रों के अंतर्गत अंतर्भूत किया गया।

Form DE-1
(See rule 113 of the Explosives Rules, 2008)
(Distance Form to be attached to the licence)

Safety distances required to be kept clear around magazine for high explosives or fire works or factory licence number E/HQ/TN/22/231(E48849) in form LE-3 granted to Shri P. Soundar Raj S/o. Paul Raj, 7/464, Oothumalai Main road, Venkatesapuram Post, Alangulam Taluk, Distt. Tirunelveli (Tamil Nadu), Tamil Nadu.

Type of Structure(s)	Safety distances meters	
	M	UM
Inside Safety Distances(ISD)		
1 Room or Workshop used in Connection with the Magazine	33	49
2 Any other Explosives Magazine or store House or Factory of the Applicant		
3 Magazine Office		
Middle Safety Distances(MSD)		
4 Magazine Keeper's or Chowkidar's Dwelling house		
5 Railway including Minerals and Private Railways		
6 Canal (in active use) or other navigable water		
7 Dock or Pier or Jetty		
8 Public Highway or Public Road		129
9 Private Road which is PRINCIPAL means of access to a Temple, Mosque, Church, Gurudwara or other places of worships, Hospital, College, School or Factory		
10 River Embankment or Sea Embankment or Public Well		
11 Reservoir or Bounded tank/rope way		
12 Windmill or Solar panel for Power Generation		
Outside Safety Distances(OSD)		
13 Dwelling House		
14 Govt. and Public Building		
15 Temple, Mosque, Church or Gurudwara or other Places of Worships		
16 Shops, Market place, Public recreation and Sports Ground, College, School, Hospital, Theater, Cinema or other Building where the public are accustomed to assemble		
17 Factory		
18 Buildings or Works used for the Storage in Bulk of Petroleum, Spirit, gas, or other inflammable or hazardous substances		257
19 Building or Works used for Storage and Manufacture of Explosives or of articles which contain Explosives		
20 Aerodrome		
21 Furnace, Kiln or Chimney		
22 Quarry or mine pit head		
23 Power House or Electric Substation		
24 Wireless Station		
25 Warehouse or other Storage Building		
26 Any other Protected works		
Overhead Electric lines		
27 Electric Power over head Transmission Lines above 440V		90
28 Electric Power over head Transmission Lines upto 440V		15

The Date : 10/02/2011

For Chief Controller of Explosives

Amendments :

- Amendment in Drawings/Facilities/Premises dated : 14/03/2013

शेड VIII (A) YRD


शेड VIII में वर्ग 1, 2, 3, 4, 5, 6 और 7 के विस्फोटकों को किसी वा प्रयोग हेतु रखने के लिए प्रत्येक एन.ई.-3 [अनुच्छेद 3 (ब) से (ग)] में मुख्य विस्फोटक निबंधक या विस्फोटक निबंधक द्वारा प्रदान किए जाने वाले अनुमति सं. E/HQ/TN/22/231 (E-48849) की शर्तें निम्नलिखित हैं ।
The following are the conditions of licence number E/HQ/TN/22/231 (E-48849) for purposes for sale or use, explosives of Class 1, 2, 3, 4, 5, 6 and 7 in a magazine in Form LE-3 (articles 3 (b) to (c)) granted by Chief controller of Explosives or Controller of Explosives.

- परिसर में किसी भी समय विस्फोटकों की मात्रा अनुमति धारण सामर्थ्य से अधिक नहीं होगी ।
The quantity of explosives on the premises at any one time shall not exceed the licensable capacity.
- विस्फोटकों के भंडारण के लिए प्रयुक्त होने वाली मैगजीन अनुसूची III और अनुसंधान में विनिर्दिष्ट सुरक्षा दूरी बनाए रखना होगा ।
The magazine used for storage of explosives shall maintain safety distance specified in Schedule III and annexure to the licence.
- मैगजीन का प्रयोग उन सभी विस्फोटकों के जो इस अनुमति में विनिर्दिष्ट हैं, रखे जाने के लिए और ऐसे रखे जाने से संबंधित आधान या अधिकार या उपकरणों के रखे जाने के लिए ही किया जाएगा अन्यथा नहीं ।
The magazine shall be used only for keeping all explosives specified in this licence and of receptacles for, or tools or implements for work connected with the keeping of such explosives.
- पैकजों को वजनन कर कार्टों और विस्फोटकों को तौलने तथा पैक करने का कार्य मैगजीन में नहीं किया जाएगा ।
The weighing of packages and the weighing and packing of explosives shall not be carried on in the magazine.
- दो वा दो से अधिक वर्णन के विस्फोटकों को, सिद्धे मैगजीन में रखे जाने की अनुमति दी जा सकती है, मैगजीन में तभी रखे जाएंगे जब उनमें से प्रत्येक को, ऐसे पदार्थ वा द्रव्य वा कोई मध्यवर्ती विभाजक लगाकर या उनके बीच ऐसा मध्यवर्ती स्थान छोड़कर, परस्पर पृथक कर दिया जाए कि किसी कजह से विस्फोटक में समाने वाली भाग या होने वाला विस्फोटक किसी अन्य वर्णन के विस्फोटक तक न पहुंच सके ; परंतु -
(a) 2 (नाइट्रेट मिश्रण), वर्ग 3 (नाइट्रो योजिक) के विभिन्न विस्फोटक, वर्ग 6 प्रभाग प्रभाग के अंतर्गत आने वाले सुरक्षा पत्रों और वर्ग 6 प्रभाग 2 के अंतर्गत आनेवाले विस्फोटक प्रेरक पत्रों, जिनमें कोई बुझा लेंद्र वा इस्पात नहीं है, एक दूसरे के साथ किन्ना किसी मध्यवर्ती विभाजक वा द्रव्यन के रखे जा सकते हैं ।
(b) वर्ग 3 के अंतर्गत आने वाले बास्ट को अलग रखा जाएगा ।
(c) दो वा दो से अधिक वर्णन के विस्फोटक जो एक ही वर्णन के अंतर्गत आते हैं, एक ही वर्णन के अंतर्गत रखे जा सकते हैं ।
(d) दो वा दो से अधिक वर्णन के विस्फोटक जो एक ही वर्णन के अंतर्गत आते हैं, एक ही वर्णन के अंतर्गत रखे जा सकते हैं ।
(e) Detonators belonging to Class 6 Division 1 and detonating fuses belonging to Class 6 Division 2 as do not contain any exposed *initiator* stick, may be kept with each other without any intervening partition or space ;
(f) Gun powder belonging to Class 1 shall be kept separately.
- वर्ग 3 (नाइट्रो योजिक) के विस्फोटकों को, उनके निर्माण की तारीख से एक वर्ष और उनके प्रयोग निबंधक आदेशपत्र अधिकारी की विशेष मंजूरी के अंतर्गत ही रखा जाएगा ।
Explosives of Class 3 (nitro compound) shall not be kept in the magazine after the expiration of one year from the date of their manufacture except with the special sanction of licensing authority.
- वर्ग 3 (नाइट्रो योजिक) के विस्फोटकों को, उनके निर्माण की तारीख से एक वर्ष और उनके प्रयोग निबंधक आदेशपत्र अधिकारी की विशेष मंजूरी के अंतर्गत ही रखा जाएगा ।
(a) जब ऐसी मंजूरी दे दी गई हो तो प्रत्येक निरीक्षण पर किसी विस्फोटक निबंधक से ऐसा लिखित प्रमाणपत्र अनिवार्य रूप से प्राप्त किया जाएगा कि विस्फोटक अथवा दस्तावेज की मंजूरी दे दी गई हो ।
(b) जब कोई विस्फोटक अथवा दस्तावेज का न रह जाने के कारण वा दृष्टीकरण वा नाइट्रो योजिक अथवा दो वा दो से अधिक वर्णन के विस्फोटक निबंधक द्वारा मंजूरी दे दी गई हो तो अनुमतिधारी अपने ही खर्च पर ऐसे विस्फोटक के निर्यात के लिए ऐसे निदेशक वा अनुमतिपत्र को मंजूरी दे देगा ।
Explosives of Class 3 (nitro compound) shall not be kept in the magazine after the expiration of one year from the date of their manufacture except with the special sanction of the Controller of Explosives.
(i) When such sanction has been given, a written certificate showing the period covered by the sanction shall be obtained from the Controller of Explosives at each inspection, and shall be kept by the licensee and produced on demand.
(ii) When an explosive owing to its being no longer of standard purity or owing to signs of liquefaction or of exuded nitro-glycerin or liquid nitro-glycerin or liquid nitrocompound is no longer fit for storage in the magazine or store house the licensee shall comply, at his own expense, with such directions as to its disposal as the Chief Controller or Controller of Explosives may issue.
- मैगजीन के भीतरी भाग वा उसमें लगी दीवारें, शेल्फ और उसकी फिटिंग्स वा इस प्रकार संरक्षण किया जाएगा वा उन्हें इस प्रकार संरक्षित किया जाएगा कि विस्फोटक वा किसी भी प्रकार के द्रव्यन के साथ संपर्क न हो सके । भीतरी भाग में लगी दीवारें, शेल्फ और फिटिंग्स यथासंभव चिह्न से मुक्त एवं स्वच्छ रखे जाएंगे तथा ऐसे विस्फोटक को ताल से सुरक्षित रखने में प्रभावित हो सकते हैं, इस संबंध में अधिक जानकारी के लिए निदेशक से संपर्क किया जाएगा ।
The interior of the magazine and the benches, shelves and fittings thereon shall be so constructed or so lined or covered as to prevent the exposure of any iron or steel contact with the explosives. Such interior, benches, shelves and fittings shall be as far as is reasonably practicable, be kept free from grit and shall otherwise be clean; and in the case of any explosives liable to be dangerously affected by water, due precautions shall be taken to exclude water there from; Provided that so much of this condition as relates to precautions against the exposure of any iron or steel shall not be obligatory in a building in which no explosive other than explosive of the 1st Division 6th (Ammunition) Class is kept.
- यदि तड़ित चालक का परीक्षण विस्फोटक निबंधक करता है तो अनुमतिधारी ऐसे परीक्षण के लिए विहित फीस का संदाय करेगा यदि परीक्षण असमाधानकारी साबित होता है तो उसमें ही फीस अनुमतिधारी द्वारा परधारावर्ती प्रत्येक परीक्षण के लिए तब तक दी जाती रहेगी जब तक कि परीक्षण अधिकारी तड़ित चालक को समाधानकारक साबित नहीं कर देता परंतु किसी एक परीक्षण के लिए देय फीस किसी एक दिन के दौरान किसी चालक के लिए नए सभी परीक्षणों के लिए प्रत्यक्ष होगा ।
If the lightning conductor is tested by the Controller of Explosives, the licensee shall pay the fees prescribed for test, in the event of the test proving unsatisfactory, the same fees shall be payable by the licensee for each subsequent test until the lightning conductor is passed by the testing officer as satisfactory. Provided that the fees payable for a single test shall be charged for all tests made on a conductor during any one day :
Provided further that where two or more lightning conductors are attached to one and the same magazine, the fee for the testing of all such conductors shall not exceed the fee prescribed in this condition for testing a single lightning conductor.
- उपरोक्त ताल से उचित संरक्षण बर्तनी - उपरोक्त शर्तों के अंतर्गत तब तक ताल से उचित संरक्षण वा अन्यथा उचित रूप से किसी ताल से उचित संरक्षण बर्तनी द्वारा उचित संरक्षण प्रदान किया जाएगा कि फेसदी परिसर में आग, विस्फोटक अथवा ऐसी कोई वस्तुएं वा पदार्थ जिससे विस्फोट हो सकता है वा आग का कारण बन सकते हैं, सिन्धु इस ताल के कारण ऐसी संरक्षण बर्तनी वा इस्पात वा ताल से उचित संरक्षण बर्तनी वा इस्पात के अथवा अन्य वा आग होना है, ऐसे किसी भवन के संबंध में बाध्य नहीं होगा जिससे निम्न कोई विस्फोटक नहीं रखा गया है ।
Due provisions shall be made, by the use of suitable working clothes without pockets, suitable shoes and by searching or otherwise or by such means, for preventing the introduction into danger area of the factory premises of fire, Lucifer matches or any substance or article likely to cause explosion or fire, but this condition shall not prevent the introduction of an artificial light of such construction, position or character as not to cause any danger of fire or explosion: Provided that so much of this condition as applies to the exclusion of iron or steel, shall not be obligatory in a building in which no explosive other than an explosive of the 1st Division of the 6th (Ammunition) Class is kept.
- अनुमतिधारी प्रत्येक एन.ई.-3 और एन.ई.-4 वा एन.ई.-5 की स्थिति में, सभी विस्फोटकों वा अभिलेख और लेखा रखेगा और विस्फोटक निबंधक, 2008 के अधीन प्राधिकृत किसी भी अधिकारी के समक्ष उनके द्वारा ऐसा करने की मांग की जाने पर स्टॉक पुस्तक और अभिलेख प्रस्तुत करेगा । स्टॉक पुस्तक विहित प्रारूपों में वृष्ट संरक्षित होगी ।
The licensee shall keep records and accounts of all explosives in Forms RE-3 and RE-4 or RE-5, as the case may be, and exhibit the stock books and records to any of the officers authorised under the Explosives Rules, 2008 whenever such officer may call upon him to do so. The stock books in the prescribed proforma shall be page numbered.
- परिसर में कोई परिवर्तन वा तदवीनी अनुमति प्राधिकारी के पूर्वानुमोदन बिना नहीं की जाएगी और अनुमतिधारी ऐसी किसी शर्त वा अनुमतिपत्र को मंजूरी दे देगा जो इस लिखित अनुमतिपत्र प्राधिकारी विनिर्दिष्ट करे ।
No changes or alterations shall be carried out to the premises without prior approval of the licensing authority and the licensee shall comply with any condition that may be specified by the licensing authority in this behalf.

- 13 मैगजीन सभी समयों पर अच्छी मरम्मत की स्थिति में बनाई रखी जाएगी (या अच्छी हालत में बनाई रखी जाएगी)। यदि किसी कारणवश किसी विस्फोटक के भण्डारण के मैगजीन अनुपयुक्त हो जाती हैं तो अनुज्ञापिका को इस बात की सूचना अनुज्ञापन प्राधिकारी से तुरंत देना।
Magazine shall at all times be kept in state of good repair (or maintained in good condition). The licensee shall report to licensing authority forthwith, if the magazine becomes unfit for storage of any explosives for any reason whatsoever.
The licensee of the magazine shall submit quarterly return as per sub-rules (3) and (4) of rule 24 of these rules.
- 14 यदि सुरक्षा दूरी का कोई अधिग्रहण होता है तो उसकी सूचना अनुज्ञापन प्राधिकारी को आवश्यक तत्पश्चात् और कार्यवाही के लिए तुरंत दी जाएगी।
Any encroachment of the safety distance shall be immediately communicated to the licensing authority for necessary advice and action.
- 15 यदि कोई विस्फोटक विनष्ट हुआ अथवा अनुपयोगी जाया जाता है तो उसकी सूचना अनुज्ञापन प्राधिकारी को, तत्पश्चात् कर्मचारी के लिए, तुरंत दी जाएगी।
The licensing authority shall be immediately informed for advice if any explosive is found deteriorated or unserviceable.
- 16 विस्फोटकों के पैकेटों के चढ़े हुए प्रकार समझे जाएंगे कि कम से कम एक इयूनिट अथवा किए गए सभी पैकेटों की हालत की जांच करने और प्रत्येक पैकेज की डिग्रीजिंग प्रक्रियाओं को पढ़ने के लिए उनके बीच से होकर आ जा सके।
The explosive packages shall be stacked in such a way so as to allow movement of at least one person to check the condition of all packages stored and to read the manufacture particulars of each package.
The resistance of the lightning conductor to earth shall be as low as possible and in no case be more than 10 ohms.
- 17 मैगजीन के चारों ओर 15 मीटर की दूरी के अंदर कोई शुष्क घास या झाड़ी या ज्वलनशील सामग्री नहीं रहनी चाहिए।
A distance of 15 meters surrounding the magazine or store house shall be kept clear of dried grass or bush or flammable materials.
- 18 विस्फोटकों के प्रत्येक पैकेट की, जब उसे मैगजीन के भीतर लिया जा रहा हो, ठीक दस्ता जखाने के लिए परीक्षा की जाएगी।
Every package of explosive at the time of bringing inside the magazine shall be examined for its sound condition.
- 19 किसी मैगजीन / भंडारगृह में किसी एक समय में चार व्यक्तियों से अधिक को नहीं रहने दिया जाएगा।
Not more than 4 persons shall be allowed inside the magazine or store house at any one time.
- 20 विस्फोटकों के खाली पैकेटों को क्षैप्रतिक्षीय ढंग से हटा दिया जाएगा और नष्ट कर दिया जाएगा।
Empty packages of the explosives shall be removed at the earliest and destroyed.
- 21 अनुज्ञापिका और कर्मचारी को परिसर के भीतर आपदाकाल के दौरान की जाने वाली प्रक्रियाओं से अवगत होना चाहिए।
The licensee and the employee shall be conversant with procedure to be taken during the emergency within the premises.
- 22 निरीक्षण या समूचा अधिष्ठाता को सभी बुकितकृत समयों पर अनुज्ञापन परिसर में अथवा कब से पहुंचने दिया जाएगा और वह सुनिश्चित करने के लिए कि अधिष्ठाता को निर्यातों के उपबन्धों और सुरक्षा स्थिति की सम्बन्धित अनुज्ञापन किया जा रहा है, अधिष्ठाता को प्रत्येक सुविधा प्रदान की जाएगी।
Free access to the licensed premises shall be given at all reasonable times to any inspecting or sampling officer and every facility shall be afforded to the officer for ascertaining that the provisions of the Act and these rules and the safety conditions are fully observed.
- 23 यदि अनुज्ञापन प्राधिकारी या विस्फोटक निषेधक अनुज्ञापिका को अनुज्ञापन परिसरों या भण्डारों, दूरी या उपकरणों में ऐसी कोई मरम्मत या परिवर्तन या परिवर्तन करने या निष्कारणों को लागू करने को सिद्धित रूप में सूचित करना है जो परिसर के अंदर से बाहर से आने वाली सुरक्षा के लिए आवश्यक है, अनुज्ञापिका को लिखित रूप में सूचित करना चाहिए।
If the licensing authority or a Controller of Explosives informs in writing, the holder of the license to examine any repairs or to make any additions or alterations to the licensed premises or machinery, tools or apparatus or carry out recommendations, which are in the opinion of such authority may pose unacceptable risk and so necessary for the safety of other persons or off-site of the premises or persons, the holder of the license shall associate the recommendations and report compliance within the period specified by such authority.
- 24 अनुज्ञापिका मैगजीन में रखने और बिजली के लिए प्राधिकृत विस्फोटक सूची में उल्लिखित अनुज्ञापन केन्द्रों या भण्डारों से प्राधिकृत विस्फोटक / आतिशबाजी या सुरक्षा पदार्थों को खरीदना।
The licensee shall purchase authorised explosives/ fireworks or safety fuse as mentioned in the list authorised explosives from a licensed factory or company for possession and sale from the magazine.
- 25 निम्न से अधिक ध्वनि स्तर उत्पादित करने वाले आतिशबाजी पदार्थों की बिजली और रखने के लिए -
(क) जो फटने की जगह से चार मीटर की दूरी पर है, 125 डी.बी. (ए) या 145 डी.बी. (सी) के प्रतिबंधित होंगे,
(ख) बृहत् (जुड़े हुए पदार्थ) को गठन करने वाले व्यक्तिगत पदार्थों के लिए उपर्युक्त उल्लिखित सीमा 5 से.म. 10 (एन) डी.बी. (सी) के प्रतिबंधित होंगे।
The possession and sale of fire-crackers generating noise level exceeding:
a) 125 dB(A) or 145 dB(C) at 4 meters distance from the point of bursting shall be prohibited;
b) For individual fire-cracker constituting the series (joined fire-crackers), the above mentioned limit be reduced by 5 log₁₀ (N) dB, where N = number of crackers joined together.
- 26 जल या विस्फोट द्वारा घुसटान या नुकसान पड़ने की कमी आ धरे, तुरंत घटने के बुकित घाने और अनुज्ञापन प्राधिकारी और अनुज्ञापन प्राधिकारी के स्थायी कार्यक्षेत्र को रिपोर्ट की जाएगी।
Accidents by fire or explosion and losses, shortage or theft of explosives shall be immediately reported to the nearest police station and the licensing authority and local office of the licensing authority.

अतिरिक्त शर्तें / Additional Conditions :

1. अनुज्ञापिका विदेशी मूल के आतिशबाजी को न प्रदर्शित करेगा, न रखेगा और न ही उसको बेचेगा। The licensee shall not exhibit, possess and sell fireworks of foreign origin.


 For Chief Controller of Explosives

**ANNEXURE-IX AFFIDAVIT AND CER
DETAILS**



தமிழ்நாடு தமில்நாடு TAMILNADU 15 SEP 2022

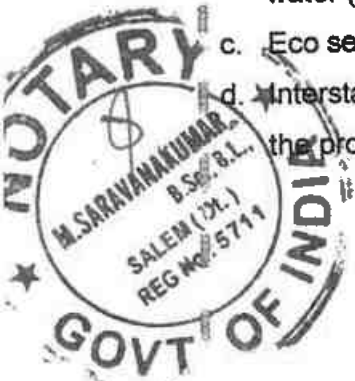
M/S SVART STEN ASSOCIATES LLP KERALA

BD 279550
R. RAJAN
STAMP VENDOR
L.No: 6424-5/97.1
SURAMANGALAM, SALEM-5
TAMILNADU.

AFFIDAVIT TO SEIAA, TAMIL NADU

We, M/s. SVART STEN ASSOCIATES LLP office at Asum Tower, Ezhumangad, Arangottukara Post, Palakkad District, Kerala -679 533, do hereby solemnly declare and sincerely affirm that, We have applied for getting environment clearance to SEIAA, Tamil Nadu for quarry lease for Rough Stone & Gravel quarry over an extent of 1.24.0 Ha with Survey No. 477/1, 477/2, 477/6, 478/2(P), 478/3(P) & 478/4(P) in A.P. Nadanoor village, Alangulam Taluk, Tenkasi District, Tamil Nadu.

1. We swear to state and confirm that none of the following is situated within 10km radius of the quarry site for which, We have applied for environmental clearance,
- Notified Protected areas under the wild life (Protection) Act, 1972 (NBWL).
 - Critically polluted areas as notified by the central pollution control board constituted under water (Prevention and control of Pollution) Act 1974.
 - Eco sensitive area as notified.
 - Interstate boundaries and international boundaries within 10km radius from the boundary of the proposed quarry site.



2. The following Corporate Environment Responsibility (CER) activities will be completed before commencement of the quarrying activities.

CER Activity	Project cost (Rs)	CER cost (Rs)
Carrying out various developmental works in the nearby region based on the need of the locals.	Rs.49,35,000/-	Rs.3,00,000/-
Total cost Allocation	Rs.49,35,000/-	Rs.3,00,000/-

3. Details of quarry within 500m radius from the applied area:

a. Existing Quarries					
S.No	Name and address of the lessee	Village & Taluk	SF.No.	Extent in Hectare	Lease Status
1	Thiru. N. Mohamed mahaboob, S/o. Nagoor Pitchai, No.8/143, Main Road, Pottalpur village, Kaspa, Ambasamudram Taluk, Tenkasi.	A.P. Nadanoor village Alangulam Taluk	434/1C, 434/4E, 434/4F, 434/4G, 434/4H, 434/4I, 434/4J, 470/1, 471/2, 471/3, 472/1B & 472/1C	3.74.5 Ha.	Proceeding No. M1/44736/2016, Dt.20.03.2018 for a period of 5 years from 16.04.2018 To 15.04.2023

b. Details of abandoned / Old Quarries					
S.No	Name and address of the lessee	Village & Taluk	SF.No.	Extent in Hectare	Lease Period
-Nil-					

c. Details of Proposed Quarries					
S.No	Name and address of the lessee	Village & Taluk	SF.No.	Extent in Hectare	Lease Period
1	M.Mohammed Ismail, S/o.Mohammed Mahaboob, 8/143, Main Road, Pottal Purur, Tenkasi District.	A.P. Nadanoor village Alangulam Taluk	467/2, 467/3, 468/1, 477/3, 477/4 & 477/5	4.38.0 Ha.	Proposed Quarry



(Handwritten Signature)

2	M/s. Svart Sten Associates LLP, Asum Tower, Ezhumangad, Arangottukara Post, Palakad District, Kerala-679 533.	A.P. Nadanoor village Alangulam Taluk	47711, 47712, 47716, 47812(P), 47813(P) & 47814(P)	1.24.0	Proposed Quarry
Total extent of Proposed quarries				5.62.0 Ha	

4. There will not be hindrance or disturbance to the people living on enrooted/ nearby our quarry site while transporting the mineral and due to quarrying activities.
5. There is no approved habitation within 300m radius from the periphery of our applied quarry.
6. We swear that afforestation will be carried out during the course of quarrying operation and maintained.
7. Insurance coverage will be arranged for the laborers working in our quarry site.
8. The existing road from the main road to quarry is in good condition and the same will be maintained and utilized for Transportation of Rough Stone & Gravel.
9. We will not engage any child labor in our quarry site and we aware that engaging child labor is punishable under the law.
10. All types of safety / protective equipment will be provided and used by all the laborers working in our quarry.
11. No permanent structures, temple etc., are located within 500m radius from the periphery of our quarry.

We ensure to do the social and Environment commitment as mentioned in the Mining plan to the best of our knowledge.

For M/s. Savrt Sten Associates LLP,



17/9/2024

Cell:(0)9443286345

M.SARAVANAKUMAR.B.SC.,B.L.,
ADVOCATE & NOTARY,
(GOVT. OF INDIA)
NO:11,A.V.Mansion,
1st Gate, Near Sona College,
Junction Main Road, SALEM-636 005.



ANNEXURE-X NABET CERTIFICATE



National Accreditation Board for Education and Training



Certificate of Accreditation

Eco Tech Labs Pvt Ltd.,

48, 2nd Main Road, Ram Nagar South Extension, Pallikaranai, Chennai- 600100, T.N.

The organization is accredited as **Category-A** under the QCI-NABET Scheme for Accreditation of EIA Consultant Organization, Version 3: for preparing EIA-EMP reports in the following Sectors –

S. No	Sector Description	Sector (as per)		Cat.
		NABET	MoEFCC	
1	Mining of minerals - including Open cast only	1	1 (a) (i)	B
2	Thermal power plants	4	1(d)	A
3	Coal washeries	6	2 (a)	B
4	Metallurgical industries - Ferrous only	8	3 (a)	B
5	Synthetic organic chemicals industry (dyes & dye intermediates; bulk drugs and intermediates excluding drug formulations; synthetic rubbers; basic organic chemicals, other synthetic organic chemicals and chemical intermediates)	21	5 (f)	A
6	Airports	29	7 (a)	A
7	Industrial estates/ parks/ complexes/areas, export processing Zones (EPZs), Special Economic Zones (SEZs), Biotech Parks, Leather Complexes	31	7 (c)	A
8	Building and construction projects	38	8 (a)	B
9	Townships and Area development projects	39	8 (b)	B

Note: Names of approved EIA Coordinators and Functional Area Experts are mentioned in SAAC minutes dated Apr. 20, 2021 and supplementary minutes dated Oct.19, 2021 posted on QCI-NABET website

The Accreditation shall remain in force subject to continued compliance to the terms and conditions mentioned in QCI-NABET's letter of accreditation bearing no. QCI/NABET/ENV/ACO/22/2217 dated Jan. 19, 2022. The accreditation needs to be renewed before the expiry date by Eco Tech Labs Pvt. Ltd., Chennai following due process of assessment.



Sr. Director, NABET
Dated: Jan. 19, 2022

Certificate No.
NABET/EIA/2124/SA 0147

Valid up to
Sep. 15, 2023

For the updated List of Accredited EIA Consultant Organizations with approved Sectors please refer to QCI-NABET website.