

# EXECUTIVE SUMMARY

“B1” CATEGORY/ MINOR MINERAL / NON-FOREST LAND/ PATTI LAND-CLUSTER

\* **CLUSTER EXTENT = 30.33.3 ha**  
(8 Proposed + 6 Existing Quarries)

\* Cluster Calculated as per MoEF & CC Notification – S.O. 2269(E) Dated: 01.07.2016

## KODANGIPALAYAM & ICHIPATTI ROUGH STONE & GRAVEL QUARRIES

Kodangipalayam & Ichipatti Village, Palladam Taluk,

Tiruppur District

Terms of Reference Number

P1-File No.:11107 ToR Identification No.: TO24B0108TN5247671N, Dated: 21.09.2024

P2-File No.:11125 ToR Identification No.: TO24B0108TN5206217N, Dated: 21.09.2024.

P3-File No.: 10817 ToR Identification No.: TO24B0108TN5248192N, Dated: 09.10.2024

P4-File No.: 11193 ToR Identification No.: TO24B0108TN5149533N, Dated: 09.10.2024

P5-File No.: 11192 ToR Identification No.: TO24B0108TN5833655N, Dated: 09.10.2024

P6-File No.: 11255 ToR Identification No.: TO24B0108TN5137309N, Dated: 22.10.2024

P7-File No.: 11343 ToR Identification No.: TO24B0108TN5550982N, Dated: 04.12.2024

## PROJECT PROPONENTS

Sl. No.	Name	35/2B and 35/2C	Extent of Mining Applied
1	Thiru. R.Gunasekar	27/2A	2.44.40 Ha
2	Thiru.V.Prakash	63/3A(Part), 54/1(Part) and 55/1A1(P	0.87.50 Ha
3	Tmt. G.Jagadeeswari	38/3	2.18.00 Ha
4	Thiru.A.Venkatachalam	39/1	0.88.0 Ha
5	Thiru.A.Venkatachalam	26/1, 26/2, 26/3, 26/4, 26/5A, 26/5B & 1	2.19.0 Ha
6	Thiru.K.Sivakumar	150/2A, 150/2C, 150/2D and 150/2	4.09.50 Ha
7	Tvl.Shri Praveen and company	35/2B and 35/2C	1.23.00 Ha

“Environmental Consultant

## GEO EXPLORATION AND MINING SOLUTIONS



Old No. 260-B, New No. 17,  
Advaitha Ashram Road, Alagapuram,  
Salem – 636 004, Tamil Nadu, India

Accredited for sector 1 Category ‘A’, 31 & 38 Category ‘B’

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Baseline Monitoring Period - OCT 2024-DEC 2024

Laboratory

## GLOBAL LAB AND CONSULTANCY SERVICES

S.F.NO:92/3A2, Geetha Nagar, Alagapuram Pudur,

Salem – 636 016, Tamil Nadu, India.

## 1. INTRODUCTION

Rough Stone and Gravel are the major requirements for construction industry. This EIA report is prepared by considering Cumulative load of all proposed & existing quarries of Kodangipalayam & Ichipatti Rough Stone and Gravel Quarries consisting of Eight Proposed and Six Existing Quarries with total an extent of Cluster of **30.33.3 Ha** in Kodangipalayam & Ichipatti Village, Palladam Taluk, Tiruppur District and Tamil Nadu State, cluster area calculated as per MoEF & CC Notification S.O. 2269(E) Dated 1st July 2016.

The proponent has obtained necessary statutory clearances from the Department of Geology and Mining, Tiruppur District, Tamil Nadu (Statutory Clearance Documents are enclosed along with Mining plan as Annexure No III). The total Extent of the quarries within the radius of 500m from this proposal is > 5Ha, hence the proposal falls under “B1” Category project as per the EIA notification, 2006 (As amended timely).

Proponent applied for Environmental Clearance to SEIAA, Tamil Nadu and obtained

<b>PROPOSED QUARRIES</b>				
<b>CODE</b>	<b>Name of the Owner</b>	<b>S.F. Nos</b>	<b>Extent</b>	<b>Status</b>
P1	Thiru. R.Gunasekar	35/2B and 35/2C	2.44.40 Ha	File No.:11107 ToR Identification No.: TO24B0108TN5247671N, Dated: 21.09.2024
P2	Thiru.V.Prakash	27/2A	0.87.50 Ha	File No.:11125 ToR Identification No.: TO24B0108TN5206217N, Dated: 21.09.2024
P3	Tmt. G.Jagadeeswari	63/3A(Part), 54/1(Part) and 55/1A1(Part)	2.18.00 Ha	File No.: 10817 ToR Identification No.: TO24B0108TN5248192N, Dated: 09.10.2024
P4	Thiru.A.Venkatachalam	38/3	0.88.0 Ha	File No.: 11193 ToR Identification No.: TO24B0108TN5149533N, Dated: 09.10.2024
P5	Thiru.A.Venkatachalam	39/1	2.19.0 Ha	File No.: 11192 ToR Identification No.: TO24B0108TN5833655N, Dated: 09.10.2024
P6	Thiru.K.Sivakumar	26/1, 26/2, 26/3, 26/4, 26/5A, 26/5B & 11/2A	4.09.50 Ha	File No.: 11255 ToR Identification No.: TO24B0108TN5137309N, Dated: 22.10.2024
P7	Tvl.Shri Praveen and company	150/2A, 150/2C, 150/2D and 150/2E	1.23.00 Ha	File No.: 11343 ToR Identification No.: TO24B0108TN5550982N, Dated: 04.12.2024
<b>PROPOSED NEARBY QUARRIES</b>				
<b>CODE</b>	<b>Name of the Owner</b>	<b>S.F. Nos</b>	<b>Extent</b>	<b>Status</b>

P8	P.Gopal	27/2B(P)	1.68.50 Ha	Draft EIA submitted for Public Hearing to TNPCB, Tiruppur South
<b>TOTAL</b>			<b>15.57.90 ha</b>	
<b>EXISTING QUARRIES</b>				
<b>CODE</b>	<b>Name of the Owner</b>	<b>S.F. No</b>	<b>Extent</b>	<b>Status</b>
E1	K.S.Rajendran	35/1	2.36.5 Ha	14.12.2021 to 13.12.2026
E2	K.S.Shanmugam	27/1&10/8	2.28.5 Ha	28.02.2022 to 27.02.2027
E3	S.Kavitha	27/2D & 27/2B	2.65.0 Ha	06.07.2023 to 05.07.2028
E4	S.G.Blue Metals	25/1A,1B&1D	1.81.0 Ha	24.03.2022 to 23.03.2027
E5	A.Venkatachalam	38/2(P)&38/4(P)	2.05.50 Ha	26.08.2022 to 25.08.2027
E6	R.Ramakrishnan	55/2A(P),55/2B,56/1A(P), 56/1B,56/2A(P), 56/2B(P)	3.58.90 Ha	02.12.2021 to 01.12.2026
<b>TOTAL</b>			<b>14.75.4 ha</b>	
<b>CODE</b>	<b>Name of the Owner</b>	<b>S.F. No</b>	<b>Extent</b>	<b>Status</b>
EX-1	A.Venkatachalam	37/1,2& 38/4(P)	4.79.50 Ha	01.10.2018 to 30.09.2023
EX-2	S.A. Ganesan	554/1,55/1A,1B1& 1C1	4.06.50 Ha	24.10.2011 to 23.10.2016
EX-3	Govt Quarry	155/8	-	-
EX-4	Palanisamy	155/10	-	-
EX-5	Sanmugam	155/9	-	-
<b>TOTAL</b>			<b>8.86.0 ha</b>	
<b>TOTAL CLUSTER EXTENT</b>			<b>30.33.3 ha</b>	

for carrying out EIA and EMP studies for the rough stone and gravel quarry.

To carry out the EIA studies and to prepare EIA/ EMP studies the proposed & existing quarries of Thiru.M.R. Govindan Rough Stone and Gravel Cluster Quarries have engaged a consultant M/s. Geo Exploration and Mining Solutions, Salem, Tamil Nadu. The Baseline Monitoring study has been carried out during post monsoon season (March 2023 to May 2023) considering the provisions of MoEF & CC Office Memorandum Dated: 29.08.2017 and MoEF & CC Notification S.O. 996 (E) Dated: 10.04.2015.

**“Draft EIA report prepared on the basis of ToR Issued for carrying out public hearing for the grant of Environmental Clearance from SEIAA, Tamil Nadu”**

**1.1 DETAILS OF PROJECT PROPONENT**

<b>PROPOSAL – P1</b>	
Name of the Project	Thiru.R.Gunasekar Rough Stone and Gravel quarry
S.F. No.	35/2B and 35/2C
Extent	2.44.40 ha
Land Type	Patta Land
Village Taluk and District	Kodangipalayam Village, Palladam Taluk, Tiruppur District

<b>PROPOSAL – P2</b>	
Name of the Project	Thiru. V. Prakash Rough Stone and Gravel quarry
S.F. No.	27/2A
Extent	0.87.50Ha
Land Type	Patta Land
Village Taluk and District	Kodangipalayam Village, Palladam Taluk, Tiruppur District
<b>PROPOSAL – P3</b>	
Name of the Project	Tmt.G.Jagadeeswari Rough Stone and Gravel quarry
S.F. No.	63/3A(Part), 54/1(Part) and 55/1A1(Part)
Extent	2.18.0 ha
Land Type	Patta Land
Village Taluk and District	Kodangipalayam Village, Palladam Taluk, Tiruppur District
<b>PROPOSAL – P4</b>	
Name of the Project	Thiru. A. Venkatachalam Rough Stone and Gravel quarry
S.F. No.	38/3
Extent	0.88.0 ha
Land Type	Patta Land
Village Taluk and District	Kodangipalayam Village, Palladam Taluk, Tiruppur District
<b>PROPOSAL – P5</b>	
Name of the Project	Thiru. A. Venkatachalam Rough Stone and Gravel quarry
S.F. No.	39/1
Extent	2.19.0 Ha
Land Type	Patta Land
Village Taluk and District	Kodangipalayam Village, Palladam Taluk, Tiruppur District
<b>PROPOSAL – P6</b>	
Name of the Project	Thiru.K.Sivakumar Rough Stone and Gravel quarry
S.F. No.	26/1, 26/2, 26/3, 26/4, 26/5A, 26/5B & 11/2A
Extent	4.09.5 Ha
Land Type	Patta Land
Village Taluk and District	Kodangipalayam Village, Palladam Taluk, Tiruppur District
<b>PROPOSAL – P7</b>	
Name of the Project	M/s. Shri Praveen and Company
S.F. No.	150/2A, 150/2C, 150/2D and 150/2E
Extent	1.23.0 Ha
Land Type	Patta Land
Village Taluk and District	Ichipatti Village, Palladam Taluk, Tiruppur District

## 1.2 QUARRY DETAILS WITHIN 500 M RADIUS

<b>PROPOSED QUARRIES</b>				
<b>CODE</b>	<b>Name of the Owner</b>	<b>S.F. Nos</b>	<b>Extent</b>	<b>Status</b>
P1	Thiru. R.Gunasekar	35/2B and 35/2C	2.44.40 Ha	File No.:11107 ToR Identification No.: TO24B0108TN5247671N, Dated: 21.09.2024
P2	Thiru.V.Prakash	27/2A	0.87.50 Ha	File No.:11125 ToR Identification No.: TO24B0108TN5206217N, Dated: 21.09.2024

P3	Tmt. G.Jagadeeswari	63/3A(Part), 54/1(Part) and 55/1A1(Part)	2.18.00 Ha	File No.: 10817 ToR Identification No.: TO24B0108TN5248192N, Dated: 09.10.2024
P4	Thiru.A.Venkatachalam	38/3	0.88.0 Ha	File No.: 11193 ToR Identification No.: TO24B0108TN5149533N, Dated: 09.10.2024
P5	Thiru.A.Venkatachalam	39/1	2.19.0 Ha	File No.: 11192 ToR Identification No.: TO24B0108TN5833655N, Dated: 09.10.2024
P6	Thiru.K.Sivakumar	26/1, 26/2, 26/3, 26/4, 26/5A, 26/5B & 11/2A	4.09.50 Ha	File No.: 11255 ToR Identification No.: TO24B0108TN5137309N, Dated: 22.10.2024
P7	Tvl.Shri Praveen and company	150/2A, 150/2C, 150/2D and 150/2E	1.23.00 Ha	File No.: 11343 ToR Identification No.: TO24B0108TN5550982N, Dated: 04.12.2024

**PROPOSED NEARBY QUARRIES**

CODE	Name of the Owner	S.F. Nos	Extent	Status
P8	P.Gopal	27/2B(P)	1.68.50 Ha	Draft EIA submitted for Public Hearing to TNPCB, Tiruppur South
<b>TOTAL</b>			<b>15.57.90 ha</b>	

**EXISTING QUARRIES**

CODE	Name of the Owner	S.F. No	Extent	Status
E1	K.S.Rajendran	35/1	2.36.5 Ha	14.12.2021 to 13.12.2026
E2	K.S.Shanmugam	27/1&10/8	2.28.5 Ha	28.02.2022 to 27.02.2027
E3	S.Kavitha	27/2D & 27/2B	2.65.0 Ha	06.07.2023 to 05.07.2028
E4	S.G.Blue Metals	25/1A,1B&1D	1.81.0 Ha	24.03.2022 to 23.03.2027
E5	A.Venkatachalam	38/2(P)&38/4(P)	2.05.50 Ha	26.08.2022 to 25.08.2027
E6	R.Ramakrishnan	55/2A(P),55/2B,56/1A(P), 56/1B,56/2A(P), 56/2B(P)	3.58.90 Ha	02.12.2021 to 01.12.2026
<b>TOTAL</b>			<b>14.75.4 ha</b>	

CODE	Name of the Owner	S.F. No	Extent	Status
EX-1	A.Venkatachalam	37/1,2& 38/4(P)	4.79.50 Ha	01.10.2018 to 30.09.2023
EX-2	S.A. Ganesan	554/1,55/1A,1B1& 1C1	4.06.50 Ha	24.10.2011 to 23.10.2016
EX-3	Govt Quarry	155/8	-	-

EX-4	Palanisamy	155/10	-	-
EX-5	Sanmugam	155/9	-	-
<b>TOTAL</b>			<b>8.86.0 ha</b>	
<b>TOTAL CLUSTER EXTENT</b>			<b>30.33.3 ha</b>	

**TABLE 1.1: BRIEF DESCRIPTION OF THE PROJECT - P1**

Name of the Quarry	Thiru.R.Gunasekar Rough Stone and Gravel Quarry		
Proposal Type	Fresh Lease		
Toposheet No	58-E/04		
Latitude between	11°01'49.83"N to 11°01'55.86"N		
Longitude between	77°13'01.78"E to 77°13'08.33"E		
Highest Elevation	393 m AMSL		
Proposed Depth of Mining	47 m bgl (2m Gravel + 45m Rough Stone)		
Geological Resources	Rough Stone in m <sup>3</sup>	Gravel m <sup>3</sup>	
	10,91,070	48,492	
Mineable Reserves	Rough Stone in m <sup>3</sup>	Gravel m <sup>3</sup>	
	3,87,120	36,756	
Proposed Ultimate Pit Dimension	166 m (L)* 126 m (W)*47 m (D)		
Water Level in the surrounds area	58 – 62 m bgl		
Method of Mining	Opencast Mechanized Mining Method involving drilling and blasting		
Topography	The lease applied area is exhibits plain terrain. The area has gentle sloping towards northern side. The altitude of the area is 393 m (max) above mean sea level. The area is covered by 2 m thickness of Gravel Formation. Massive Charnockite is found after 2 m (Gravel Formation) which is clearly inferred from the existing quarry pit.		
Machinery proposed	Jack Hammer	5 Nos	
	Compressor	2 Nos	
	Hydraulic Excavator	1 Nos	
	Tipper	3 Nos	
Blasting Method	Controlled Blasting Method by shot hole drilling and small dia of 25mm slurry explosive are proposed to be used for shattering and heaving effect for removal and winning of Rough Stone. No deep hole drilling is proposed.		
Proposed Manpower Deployment	33 Nos		
Project Cost	Rs. 1,91,56,000/-		
CER Cost @ 2% of Project Cost	Rs. 3,84,000/-		
Nearby Water Bodies	Odai	1.15km – SW	
	Samalapuram Lake	4.8km – NW	
	Perumpali Lake	4.5km – SE	
	Noyyal River	5.4 km NW	
	Sulur Lake	9.5 km West	
Greenbelt Development Plan	Proposed to plant 1250 trees in the 7.5 m Safety Zone		
Proposed Water Requirement	2.0 KLD		
Nearest Habitation	1km - SW		

**TABLE 1.2: BRIEF DESCRIPTION OF THE PROJECT - P2**

Name of the Quarry	V.Prakash Rough Stone & Gravel Quarry	
Proposal Type	Existing Quarry-Fresh Lease	
Existing Pit Dimension	90 m (L)* 64 m (W)*18 m (D)	
Toposheet No	58-E/04	
Latitude between	11°01'47.07"N to 11°01'50.97"N	
Longitude between	77°13'06.83"E to 77°13'10.38"E	
Highest Elevation	381 m AMSL	
Proposed Depth of Mining	47 m bgl	
Geological Resources	Rough Stone in m <sup>3</sup>	Gravel m <sup>3</sup>
	3,26,484	6,648
Mineable Reserves	Rough Stone in m <sup>3</sup>	Gravel m <sup>3</sup>
	1,00,363	4,494
Ultimate Pit Dimension	120 m (L) * 67 m (W) * 47 m (D)	
Water Level in the surrounds area	58-63 m bgl	
Method of Mining	Opencast Mechanized Mining Method involving drilling and blasting	
Topography	The lease applied area is exhibits plain terrain. The area has gentle sloping towards north eastern side. The altitude of the area is 381 m (max) above mean sea level. The area is covered by 2 m thickness of Gravel Formation. Massive Charnockite is found after 2 m (Gravel Formation) which is clearly inferred from the existing quarrying pit.	
Machinery proposed	Jack Hammer	3 Nos
	Compressor	1 Nos
	Hydraulic Excavator	1 Nos
	Tipper	2 Nos
Blasting Method	Controlled Blasting Method by shot hole drilling and small dia of 25mm slurry explosive are proposed to be used for shattering and heaving effect for removal and winning of Rough Stone. No deep hole drilling is proposed.	
Proposed Manpower Deployment	21 Nos	
Project Cost	Rs. 63,45,000/-	
CER Cost @ 2% of Project Cost	Rs. 1,26,900/-	
Nearby Water Bodies	Channel	1.7km-E
	Samalapuram Lake	5.0 km NW
	Noyyal River	6.0 km NW
	Channel	7.5 km- SE
Greenbelt Development Plan	Proposed to plant 440 trees	
Proposed Water Requirement	1.5 KLD	
Nearest Habitation	850 m SE	

**TABLE 1.3: BRIEF DESCRIPTION OF THE PROJECT - P3**

Name of the Quarry	Tmt.G.Jagadeeswari Rough Stone & Gravel Quarry
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Proposal Type	Existing Quarry – Fresh Lease	
Existing Pit Dimension	190 m (L)* 67 m (W)*6 m (D)	
Toposheet No	58-E/04	
Latitude between	11° 01' 48.75"N to 11° 01' 51.05"N	
Longitude between	77°12'31.57"E to 77° 12' 42.75"E	
Highest Elevation	378 m AMSL	
Proposed Depth of Mining	27 m bgl	
Geological Resources	Rough Stone in m <sup>3</sup>	Gravel m <sup>3</sup>
	5,17,183	21,089
Mineable Reserves	Rough Stone in m <sup>3</sup>	Gravel m <sup>3</sup>
	1,95,935	14,820
Ultimate Pit Dimension	309 m (L) * 67 m (W) * 27 m (D)	
Water Level in the surrounds area	58-62 m bgl	
Method of Mining	Opencast Mechanized Mining Method involving drilling and blasting	
Topography	The lease applied area is exhibits plain terrain. The area has gentle sloping towards northern side. The altitude of the area is 378 m (max) above mean sea level. The area is covered by 2 m thickness of Gravel Formation. Massive Charnockite is found after 2 m (Gravel Formation) which is clearly inferred from the existing quarrying pit.	
Machinery proposed	Jack Hammer	6 Nos
	Compressor	2 Nos
	Hydraulic Excavator	1 Nos
	Tippers	3 Nos
Blasting Method	Controlled Blasting Method by shot hole drilling and small dia of 25mm slurry explosive are proposed to be used for shattering and heaving effect for removal and winning of Rough Stone. No deep hole drilling is proposed.	
Proposed Manpower Deployment	27 Nos	
Project Cost	Rs. 1,54,08,000 /-	
CER Cost @ 2% of Project Cost	Rs. 3,08,160/-	
Nearby Water Bodies	Canal	2km – N
	Odai	930m – W
	Samalapuram Lake	4.7 km NW
	Noyyal River	5 km NW
	Sulur Lake	8.5 km NW
	Perumpali Lake	5km – SE
Greenbelt Development Plan	Proposed to plant 1090 trees	
Proposed Water Requirement	2.0 KLD	
Nearest Habitation	460 m SW	

Source: Approved Mining Plan



**TABLE 1.4: BRIEF DESCRIPTION OF THE PROJECT - P4**

Name of the Quarry	Thiru.A.Venkatachalam Rough Stone & Gravel Quarry	
Proposal Type	Fresh Lease	
Toposheet No	58-E/04	
Latitude between	11°01'56.3165"N to 11°01'58.5573"N	
Longitude between	77°12'52.4098"E to 77°12'56.9326"E	
Highest Elevation	397 m AMSL	
Proposed Depth of Mining	22 m bgl	
Geological Resources	Rough Stone in m <sup>3</sup>	Gravel m <sup>3</sup>
	1,76,000	17,600
Mineable Reserves	Rough Stone in m <sup>3</sup>	Gravel m <sup>3</sup>
	58,180	11,700
Ultimate Pit Dimension	125 m (L) * 50 m (W) * 22 m (D)	
Water Level in the surrounds area	58-63 m bgl	
Method of Mining	Opencast Mechanized Mining Method involving drilling and blasting	
Topography	The lease applied area is exhibits plain terrain. The area has gentle sloping towards north east side. The altitude of the area is 397 m (max) above mean sea level. The area is covered by 2 m thickness of Gravel Formation. Massive Charnockite is found after 2 m (Gravel Formation) which is clearly inferred from the existing quarrying pit.	
Machinery proposed	Jack Hammer	2 Nos
	Compressor	1 Nos
	Hydraulic Excavator	1 Nos
	Tippers	1 Nos
Blasting Method	Controlled Blasting Method by shot hole drilling and small dia of 25mm slurry explosive are proposed to be used for shattering and heaving effect for removal and winning of Rough Stone. No deep hole drilling is proposed.	
Proposed Manpower Deployment	15 Nos	
Project Cost	Rs. 92,72,000/-	
CER Cost @ 2% of Project Cost	Rs. 1,85,440/-	
Nearby Water Bodies	Odai	2.1km – East
	Odai	1.0km - SW
	Samalapuram Lake	4.5 km North
	Noyyal River	5.1 km NW
	Sulur Lake	9.1 km West
Greenbelt Development Plan	Proposed to plant 440 trees	
Proposed Water Requirement	1.5 KLD	
Nearest Habitation	1.1k m SE	

Source: Approved Mining Plan

**TABLE 1.5: BRIEF DESCRIPTION OF THE PROJECT - P5**

Name of the Quarry	Thiru.A.Venkatachalam Rough Stone & Gravel Quarry	
Proposal Type	Fresh Lease	
Toposheet No	58-E/04	

Latitude between	11°01'48.40"N to 11°01'52.46"N	
Longitude between	77°12'49.11"E to 77°12'56.05"E	
Highest Elevation	397 m AMSL	
Proposed Depth of Mining	47 m bgl	
Restricted Depth	42m bgl	
Geological Resources	Rough Stone in m <sup>3</sup>	Gravel m <sup>3</sup>
	9,85,500	43,800
Mineable Reserves	Rough Stone in m <sup>3</sup>	Gravel m <sup>3</sup>
	2,88,270	33,436
Ultimate Pit Dimension	116 m (L) * 83 m (W) * 32 m (D) 83 m (L) * 98 m (W) * 47 m (D)	
Water Level in the surrounds area	58-63 m bgl	
Method of Mining	Opencast Mechanized Mining Method involving drilling and blasting	
Topography	The lease applied area is exhibits plain terrain. The area has gentle sloping towards north east side. The altitude of the area is 397 m (max) above mean sea level. The area is covered by 2 m thickness of Gravel Formation. Massive Charnockite is found after 2 m (Gravel Formation) which is clearly inferred from the existing quarrying pit.	
Machinery proposed	Jack Hammer	6 Nos
	Compressor	2 Nos
	Hydraulic Excavator	2 Nos
	Tippers	3 Nos
Blasting Method	Controlled Blasting Method by shot hole drilling and small dia of 25mm slurry explosive are proposed to be used for shattering and heaving effect for removal and winning of Rough Stone. No deep hole drilling is proposed.	
Proposed Manpower Deployment	15 Nos	
Project Cost	Rs. 92,72,000/-	
CER Cost @ 2% of Project Cost	Rs. 1,85,440/-	
Nearby Water Bodies	Odai	750m - SW
	Odai	2.0km – East
	Samalapuram Lake	4.8 km North
	Noyyal River	5.5 km NW
	Sulur Lake	9.0 km NW
Greenbelt Development Plan	Proposed to plant 1100 trees	
Proposed Water Requirement	2.5 KLD	
Nearest Habitation	880m-SW	

Source: Approved Mining Plan

**TABLE 1.6: BRIEF DESCRIPTION OF THE PROJECT - P6**

Name of the Quarry	Thiru.K.Sivakumar Rough Stone & Gravel Quarry
Proposal Type	Fresh Lease
Toposheet No	58-E/04
Latitude between	11°01'38.3953"N to 11°01'44.6267"N
Longitude between	77°13'05.1521"E to 77°13'16.9315"E

Highest Elevation	400 m AMSL	
Proposed Depth of Mining	49 m bgl	
Geological Resources	Rough Stone in m <sup>3</sup>	Gravel m <sup>3</sup>
	19,24,650	81,900
Mineable Reserves	Rough Stone in m <sup>3</sup>	Gravel m <sup>3</sup>
	6,99,426	61,464
Water Level in the surrounds area	58-63 m bgl	
Method of Mining	Opencast Mechanized Mining Method involving drilling and blasting	
Topography	The lease applied area is exhibits plain terrain. The area has gentle sloping towards north east side. The altitude of the area is 400 m (max) above mean sea level. The area is covered by 2 m thickness of Gravel Formation. Massive Charnockite is found after 2 m (Gravel Formation) which is clearly inferred from the existing quarrying pit.	
Machinery proposed	Jack Hammer	12 Nos
	Compressor	3 Nos
	Hydraulic Excavator	3 Nos
	Tippers	5 Nos
Blasting Method	Controlled Blasting Method by shot hole drilling and small dia of 25mm slurry explosive are proposed to be used for shattering and heaving effect for removal and winning of Rough Stone. No deep hole drilling is proposed.	
Proposed Manpower Deployment	49 Nos	
Project Cost	Rs. 2,89,16,000/-	
CER Cost @ 2% of Project Cost	Rs. 5,78,320/-	
Nearby Water Bodies	Odai	1.1km - SW
	Samalapuram Lake	5.2 km Northwest
	Noyyal River	6.2 km NW
	Sulur Lake	9.5 km W
Greenbelt Development Plan	Proposed to plant 2050 trees	
Proposed Water Requirement	3.0 KLD	
Nearest Habitation	600 m NorthEast	

Source: Approved Mining Plan

**TABLE 1.7: BRIEF DESCRIPTION OF THE PROJECT - P7**

Name of the Quarry	Tvl. Shri Praveen and Company Rough Stone & Gravel Quarry	
Proposal Type	Fresh Lease	
Toposheet No	58-E/04	
Latitude between	11°02'06.94"N to 11°02'12.07"N	
Longitude between	77°12'47.60"E to 77°12'50.76"E	
Highest Elevation	392 m AMSL	
Proposed Depth of Mining	32 m bgl	
Geological Resources	Rough Stone in m <sup>3</sup>	Gravel m <sup>3</sup>
	3,69,000	24,600
Mineable Reserves	Rough Stone in m <sup>3</sup>	Gravel m <sup>3</sup>
	1,20,575	16,606

Ultimate Pit Dimension	61 m (L) * 73 m (W) * 32 m (D) 70 m (L) * 55 m (W) * 27 m (D)	
Water Level in the surrounds area	58-63 m bgl	
Method of Mining	Opencast Mechanized Mining Method involving drilling and blasting	
Topography	The lease applied area is exhibits plain terrain. The area has gentle sloping towards north east side. The altitude of the area is 392 m (max) above mean sea level. The area is covered by 2 m thickness of Gravel Formation. Massive Charnockite is found after 2 m (Gravel Formation) which is clearly inferred from the existing quarrying pit.	
Machinery proposed	Jack Hammer	4 Nos
	Compressor	1 Nos
	Hydraulic Excavator	1 Nos
	Tippers	2 Nos
Blasting Method	Controlled Blasting Method by shot hole drilling and small dia of 25mm slurry explosive are proposed to be used for shattering and heaving effect for removal and winning of Rough Stone. No deep hole drilling is proposed.	
Proposed Manpower Deployment	23 Nos	
Project Cost	Rs. 71,16,000/-	
CER Cost @ 2% of Project Cost	Rs. 1,42,320/-	
Nearby Water Bodies	Odai	1.2km-SW
	Odai	2.3km-E
	Samalapuram Lake	4.2 km N
	Noyyal River	5.2 km NW
	Sulur Lake	9.0 km W
Greenbelt Development Plan	Proposed to plant 615 trees	
Proposed Water Requirement	2.4 KLD	
Nearest Habitation	850 m North	

Source: Approved Mining Plan

### 1.3 STATUTORY DETAILS

#### Screening

#### PROPOSAL – P1

- The proponent applied for Rough Stone and Gravel Quarry Lease Dated: 21.09.2023.
- Precise Area Communication Letter was issued by the District Collector, Tiruppur Rc.No.664/Mines/2023, Dated: 06.03.2024.
- The Mining Plan was prepared by Recognized Qualified Person and approved by Assistant Director, Geology and Mining, Tiruppur District, vide R.C. No. 664/Mines/2023 Dated :11.06.2024.
- The proposed project falls under “B1” Category as per Order Dated: 04.09.2018 & 13.09.2018 passed by Hon'ble National Green tribunal, New Delhi in O.A. No. 173 of 2018 & O.A. No, 186 of 2016 and MoEF & CC Office Memorandum F. No. L-11011/175/2018-IA-II (M) Dated: 12.12.2018.
- Proponent applied for ToR for Environmental Clearance vides online Proposal No. SIA/TN/MIN/485627/2024, Dated:08.07.2024.

#### PROPOSAL – P2

- The proponent applied for Rough Stone and Gravel Quarry Lease Dated: 21.09.2023.

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- Precise Area Communication Letter was issued by the District Collector, Tiruppur R.C.No.667/Mines/2023 Dated :24.06.2023
  - The Mining Plan was prepared by Recognized Qualified Person and approved by Assistant Director, Geology and Mining, Tiruppur District, vide R.C.No.667/2023/Mines Dated :05.07.2024.
  - The proposed project falls under “B1” Category as per Order Dated: 04.09.2018 & 13.09.2018 passed by Hon'ble National Green tribunal, New Delhi in O.A. No. 173 of 2018 & O.A. No, 186 of 2016 and MoEF & CC Office Memorandum F. No. L-11011/175/2018-IA-II (M) Dated: 12.12.2018.
  - Proponent applied for ToR for Environmental Clearance vides online Proposal No. SIA/TN/MIN/488793/2024, dated: 20.07.2024.

#### **PROPOSAL – P3**

- The proponent applied for Rough Stone and Gravel Quarry Lease Dated: 02.02.2023.
- Precise Area Communication Letter was issued by the District Collector, Tiruppur R.C. No:30/Mines/2023 Dated :12.02.2024.
- The Mining Plan was prepared by Recognized Qualified Person and approved by Assistant Director, Geology and Mining, Tiruppur District, vide R.C. No:30/2023/Mines Dated :05.03.2024.
- The proposed project falls under “B1” Category as per Order Dated: 04.09.2018 & 13.09.2018 passed by Hon'ble National Green tribunal, New Delhi in O.A. No. 173 of 2018 & O.A. No, 186 of 2016 and MoEF & CC Office Memorandum F. No. L-11011/175/2018-IA-II (M) Dated: 12.12.2018.
- Proponent applied for ToR for Environmental Clearance vides online Proposal No. SIA/TN/MIN/468602/2024, Dated: 06.04.2024.

#### **PROPOSAL – P4**

- The proponent applied for Rough Stone and Gravel Quarry Lease Dated: 12.12.2023.
- Precise Area Communication Letter was issued by the District Collector, Tiruppur Rc.No.780/Mines/2023, Dated: 13.06.2024.
- The Mining Plan was prepared by Recognized Qualified Person and approved by Assistant Director, Geology and Mining, Tiruppur District, vide R.C. No. 780/2023/Mines Dated :04.07.2024.
- The proposed project falls under “B1” Category as per Order Dated: 04.09.2018 & 13.09.2018 passed by Hon'ble National Green tribunal, New Delhi in O.A. No. 173 of 2018 & O.A. No, 186 of 2016 and MoEF & CC Office Memorandum F. No. L-11011/175/2018-IA-II (M) Dated: 12.12.2018.
- Proponent applied for ToR for Environmental Clearance vides online Proposal No. SIA/TN/MIN/492831/2024, dated: 16.08.2024.

#### **PROPOSAL – P5**

- The proponent applied for Rough Stone and Gravel Quarry Lease Dated: 12.12.2023
- Precise Area Communication Letter was issued by the District Collector, Tiruppur Rc.No.781/Mines/2023, Dated: 13.06.2024.
- The Mining Plan was prepared by Recognized Qualified Person and approved by Assistant Director, Geology and Mining, Tiruppur District, vide R.C. No. 781/2023/Mines Dated :04.07.2024.
- The proposed project falls under “B1” Category as per Order Dated: 04.09.2018 & 13.09.2018 passed by Hon'ble National Green tribunal, New Delhi in O.A. No. 173 of 2018 & O.A. No, 186 of 2016 and MoEF & CC Office Memorandum F. No. L-11011/175/2018-IA-II (M) Dated: 12.12.2018.
- Proponent applied for ToR for Environmental Clearance vides online Proposal No. SIA/TN/MIN/493158/2024, dated: 17.08.2024

#### **PROPOSAL – P6**

- The proponent applied for Rough Stone and Gravel Quarry Lease Dated: 24.06.2024
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- Precise Area Communication Letter was issued by the District Collector, Tiruppur Rc.No.385/Mines/2024, Dated: 28.08.2024.
  - The Mining Plan was prepared by Recognized Qualified Person and approved by Assistant Director, Geology and Mining, Tiruppur District, vide R.C. No. 385/2024/Mines Dated :03.09.2024.
  - The proposed project falls under “B1” Category as per Order Dated: 04.09.2018 & 13.09.2018 passed by Hon'ble National Green tribunal, New Delhi in O.A. No. 173 of 2018 & O.A. No, 186 of 2016 and MoEF & CC Office Memorandum F. No. L-11011/175/2018-IA-II (M) Dated: 12.12.2018.
  - Proponent applied for ToR for Environmental Clearance vides online Proposal No. SIA/TN/MIN/496298/2024, dt: 12.09.2024.

#### **PROPOSAL – P7**

- The proponent applied for Rough Stone and Gravel Quarry Lease Dated: 06.08.2024
- Precise Area Communication Letter was issued by the District Collector, Tiruppur Rc.No.569/Mines/2024, Dated: 18.09.2024.
- The Mining Plan was prepared by Recognized Qualified Person and approved by Assistant Director, Geology and Mining, Tiruppur District, vide R.C. No. 569/2024/Mines Dated :25.09.2024.
- The proposed project falls under “B1” Category as per Order Dated: 04.09.2018 & 13.09.2018 passed by Hon'ble National Green tribunal, New Delhi in O.A. No. 173 of 2018 & O.A. No, 186 of 2016 and MoEF & CC Office Memorandum F. No. L-11011/175/2018-IA-II (M) Dated: 12.12.2018.
- Proponent applied for ToR for Environmental Clearance vides online Proposal No. SIA/TN/MIN/500172/2024, Dated: 08.10.2024.

#### **Scoping**

##### **PROPOSAL – P1**

- The proposal was placed in 492<sup>nd</sup> SEAC meeting held on 29.08.2024 and the committee recommended for issue of ToR.

The proposal was considered in 753<sup>rd</sup> SEIAA meeting held on 10.09.2024 and issued ToR vide File No. 11107 TOR Identification No. TO24B0108TN5247671N Dated: 21.09.2024

##### **PROPOSAL – P2**

- The proposal was placed in 492<sup>nd</sup> SEAC meeting held on 29.08.2024 and the committee recommended for issue of ToR.
- The proposal was considered in 753<sup>rd</sup> SEIAA meeting held on 10.09.2024&11.09.2024 and issued ToR vide File No. 11125 TOR Identification No. TO24B0108TN5206217N Dated:21.09.2024

##### **PROPOSAL – P3**

- The proposal was placed in 464<sup>th</sup> & 497<sup>th</sup> SEAC meetings held on 03.05.2024 & 13.09.2024 and the committee recommended for issue of ToR.
- The proposal was considered in 723<sup>rd</sup> & 760<sup>th</sup> SEIAA meeting held on 24.05.2024 & 01.10.2024 and issued ToR vide File No. 10817 TOR Identification No. TO24B0108TN5248192N Dated:09.10.2024

##### **PROPOSAL – P4**

- The proposal was placed in 496<sup>th</sup> SEAC meeting held on 12.09.2024 and the committee recommended for issue of ToR.
  - The proposal was considered in 759<sup>th</sup> SEIAA meeting held on 30.09.2024 and issued ToR vide File No.11193 TOR Identification No TO24B0108TN5149533N Dated :09.10.2024
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- **PROPOSAL – P5**

- The proposal was placed in 496<sup>th</sup> SEAC meeting held on 12.09.2024 and the committee recommended for issue of ToR.
- The proposal was considered in 759<sup>th</sup> SEIAA meeting held on 30.09.2024 and issued ToR vide File No.11192 TOR Identification No TO24B0108TN5833655N Dated :09.10.2024

- **PROPOSAL – P6**

- The proposal was placed in 502<sup>nd</sup> SEAC meeting held on 03.10.2024 and the committee recommended for issue of ToR.
- The proposal was considered in 765<sup>th</sup> SEIAA meeting held on 17.10.2024 and issued ToR vide File No.11255 TOR Identification No TO24B0108TN5137309N Dated :22.10.2024

- **PROPOSAL – P7**

- The proposal was placed in 509<sup>th</sup> SEAC meeting held on 08.11.2024 and the committee recommended for issue of ToR.
- The proposal was considered in 773<sup>rd</sup> SEIAA meeting held on 25.11.2024& 26.11.2024 and issued ToR vide File No.11343 TOR Identification No TO24B0108TN5550982N Dated :04.12.2024

## 1.4 PROJECT DESCRIPTION

The proposed project is site specific and there is no additional area required for this project. There is no effluent generation/discharge from the proposed quarries. Rough Stone is proposed to be excavated by opencast mechanized method involving splitting of rock mass of considerable volume from the parent rock mass by jackhammer drilling and blasting, hydraulic excavators are used for loading the Rough Stone from pithead to the needy crushers and rock breakers to avoid secondary blasting.

### 2.1 SITE CONNECTIVITY TO THE PROJECT AREA

<b>Nearest Roadway</b>	The Nearest National Highway (NH- 67) Coimbatore – Karur – 1.0km - southern side The State Highway (SH-165) Annur – Kamaiaickenpalayam Road – 1.0km - Western side.
<b>Nearest Village</b>	Kodangipalayam – 1.5 km-East
<b>Nearest Town</b>	Sulur – 7.0 km – West
<b>Nearest Railway</b>	Somanur – 7.0 km – North West Side
<b>Nearest Airport</b>	Coimbatore –28.0 km – Western side
<b>Seaport</b>	Kochi- 160 km – South West

### 2.2 LAND USE PATTERN OF THE PROPOSED PROJECTS

<b>PROPOSAL – P1</b>		
<b>DESCRIPTION</b>	<b>PRESENT AREA IN (HA)</b>	<b>AREA AT THE END OF LIFE OF QUARRY (HA)</b>
Area under quarry	Nil	1.89.67
Infrastructure	Nil	0.01.00
Roads	Nil	0.02.00
Green Belt	Nil	0.47.08
Un – utilized area	2.44.40	0.04.65
<b>TOTAL</b>	<b>2.44.40</b>	<b>2.44.40</b>
<b>PROPOSAL – P2</b>		
<b>DESCRIPTION</b>	<b>PRESENT AREA IN (HA)</b>	<b>AREA AT THE END OF LIFE OF QUARRY (HA)</b>
Area under quarry	0.51.5	0.74.5
Infrastructure	Nil	0.01.0
Roads	0.02.0	0.02.0

Green Belt	Nil	0.09.0
Un – utilized area	0.34.0	0.01.0
<b>TOTAL</b>	<b>0.87.5</b>	<b>0.87.5</b>
<b>PROPOSAL – P3</b>		
<b>DESCRIPTION</b>	<b>PRESENT AREA IN (HA)</b>	<b>AREA AT THE END OF LIFE OF QUARRY (HA)</b>
Area under quarry	1.25.06	1.89.20
Infrastructure	Nil	0.01.00
Roads	0.01.00	0.01.00
Green Belt	Nil	0.24.00
Un – utilized area	0.91.94	0.02.00
<b>TOTAL</b>	<b>2.18.00</b>	<b>2.18.00</b>
<b>PROPOSAL – P4</b>		
<b>DESCRIPTION</b>	<b>PRESENT AREA IN (HA)</b>	<b>AREA AT THE END OF LIFE OF QUARRY (HA)</b>
Area under quarry	Nil	0.60.30
Infrastructure	Nil	0.01.00
Roads	Nil	0.02.00
Green Belt	Nil	0.15.00
Un – utilized area	0.88.0	0.09.70
<b>TOTAL</b>	<b>0.88.0</b>	<b>0.88.00</b>
<b>PROPOSAL – P5</b>		
<b>DESCRIPTION</b>	<b>PRESENT AREA IN (HA)</b>	<b>AREA AT THE END OF LIFE OF QUARRY (HA)</b>
Area under quarry	Nil	1.70.0
Infrastructure	Nil	0.01.0
Roads	Nil	0.02.0
Green Belt	Nil	0.30.0
Un – utilized area	2.19.0	0.16.0
<b>TOTAL</b>	<b>2.19.0</b>	<b>2.19.0</b>
<b>PROPOSAL – P6</b>		
<b>DESCRIPTION</b>	<b>PRESENT AREA IN (HA)</b>	<b>AREA AT THE END OF LIFE OF QUARRY (HA)</b>
Area under quarry	Nil	3.37.40
Infrastructure	Nil	0.01.00
Roads	Nil	0.02.00
Green Belt	Nil	0.62.40
Un – utilized area	4.09.50	0.06.70
<b>TOTAL</b>	<b>4.09.50</b>	<b>4.09.50</b>
<b>PROPOSAL – P7</b>		
<b>DESCRIPTION</b>	<b>PRESENT AREA IN (HA)</b>	<b>AREA AT THE END OF LIFE OF QUARRY (HA)</b>
Area under quarry	Nil	0.86.40
Infrastructure	Nil	0.02.00
Roads	Nil	0.02.00
Green Belt	Nil	0.30.35
Un – utilized area	1.23.00	0.02.25
<b>TOTAL</b>	<b>1.23.00</b>	<b>1.23.00</b>

### 2.3 OPERATIONAL DETAILS OF LEASE APPLIED AREA-P1

<b>PROPOSAL – P1</b>		
<b>PARTICULARS</b>	<b>DETAILS</b>	
	<b>Rough Stone (5Year Plan period)</b>	<b>Gravel (3 Years Plan period)</b>
Geological Resources in m <sup>3</sup>	10,91,070	48,492
Mineable Reserves in m <sup>3</sup>	3,87,120	36,756
Mining Plan Period	5 Years	
Number of Working Days	300 Days	
Production per day in m <sup>3</sup>	<b>258</b>	<b>25</b>
No of Lorry loads (12m <sup>3</sup> per load)	<b>22</b>	<b>2</b>



Total Depth of Mining	47 m bgl (2m Gravel + 45m Rough Stone)	
<b>PROPOSAL – P2</b>		
<b>PARTICULARS</b>	<b>DETAILS</b>	
	<b>Rough Stone (5Year Plan period)</b>	<b>Gravel (3 Years Plan period)</b>
Geological Resources in m <sup>3</sup>	3,26,484	6,648
Mineable Reserves in m <sup>3</sup>	1,00,363	4,494
Mining Plan Period	5 Years	
Number of Working Days	300 Days	
Production per day in m <sup>3</sup>	<b>67</b>	<b>3</b>
No of Lorry loads (12 m <sup>3</sup> per load)	<b>6</b>	<b>2</b>
Total Depth of Mining	47 m bgl	
<b>PROPOSAL – P3</b>		
<b>PARTICULARS</b>	<b>DETAILS</b>	
	<b>Rough Stone (5Year Plan period)</b>	<b>Gravel (3 Years Plan period)</b>
Geological Resources in m <sup>3</sup>	5,17,183	21089
Mineable Reserves in m <sup>3</sup>	1,95,935	14,820
Mining Plan Period	5 Years	
Number of Working Days	300 Days	
Production per day in m <sup>3</sup>	<b>131</b>	<b>10</b>
No of Lorry loads (12m <sup>3</sup> per load)	<b>11</b>	<b>1</b>
Total Depth of Mining	27 m bgl (2 m Gravel + 25 m Rough Stone)	
<b>PROPOSAL – P4</b>		
<b>PARTICULARS</b>	<b>DETAILS</b>	
	<b>Rough Stone (5Year Plan period)</b>	<b>Gravel (3 Years Plan period)</b>
Geological Resources in m <sup>3</sup>	1,76,000	17,600
Mineable Reserves in m <sup>3</sup>	58,180	11,700
Mining Plan Period	5 Years	
Number of Working Days	300 Days	
Production per day in m <sup>3</sup>	<b>39</b>	<b>8</b>
No of Lorry loads (12m <sup>3</sup> per load)	<b>3</b>	<b>1</b>
Total Depth of Mining	22 m bgl	
<b>PROPOSAL – P5</b>		
<b>PARTICULARS</b>	<b>DETAILS</b>	
	<b>Rough Stone (5Year Plan period)</b>	<b>Rough Stone (5Year Plan period)</b>
Geological Resources in m <sup>3</sup>	9,85,500	43,800
Mineable Reserves in m <sup>3</sup>	2,88,270	33,436
Mining Plan Period	5 Years	
Number of Working Days	300 Days	
Production per day in m <sup>3</sup>	<b>192</b>	<b>22</b>
No of Lorry loads (12m <sup>3</sup> per load)	<b>16</b>	<b>2</b>
Total Depth of Mining	47m	
<b>PROPOSAL – P6</b>		
<b>PARTICULARS</b>	<b>DETAILS</b>	
	<b>Rough Stone (5Year Plan period)</b>	<b>Rough Stone (5Year Plan period)</b>
Geological Resources in m <sup>3</sup>	19,24,650	81,900
Mineable Reserves in m <sup>3</sup>	6,99,426	61,464
Mining Plan Period	5 Years	
Number of Working Days	300 Days	
Production per day in m <sup>3</sup>	<b>466</b>	<b>41</b>
No of Lorry loads (12m <sup>3</sup> per load)	<b>39</b>	<b>3</b>

Total Depth of Mining	49 m	
<b>PROPOSAL – P7</b>		
<b>PARTICULARS</b>	<b>DETAILS</b>	
	<b>Rough Stone (5Year Plan period)</b>	<b>Rough Stone (5Year Plan period)</b>
Geological Resources in m <sup>3</sup>	369000	24600
Mineable Reserves in m <sup>3</sup>	120575	16606
Mining Plan Period	5 Years	
Number of Working Days	300 Days	
Production per day in m <sup>3</sup>	<b>80</b>	<b>11</b>
No of Lorry loads (12m <sup>3</sup> per load)	<b>7</b>	<b>1</b>
Total Depth of Mining	32m	

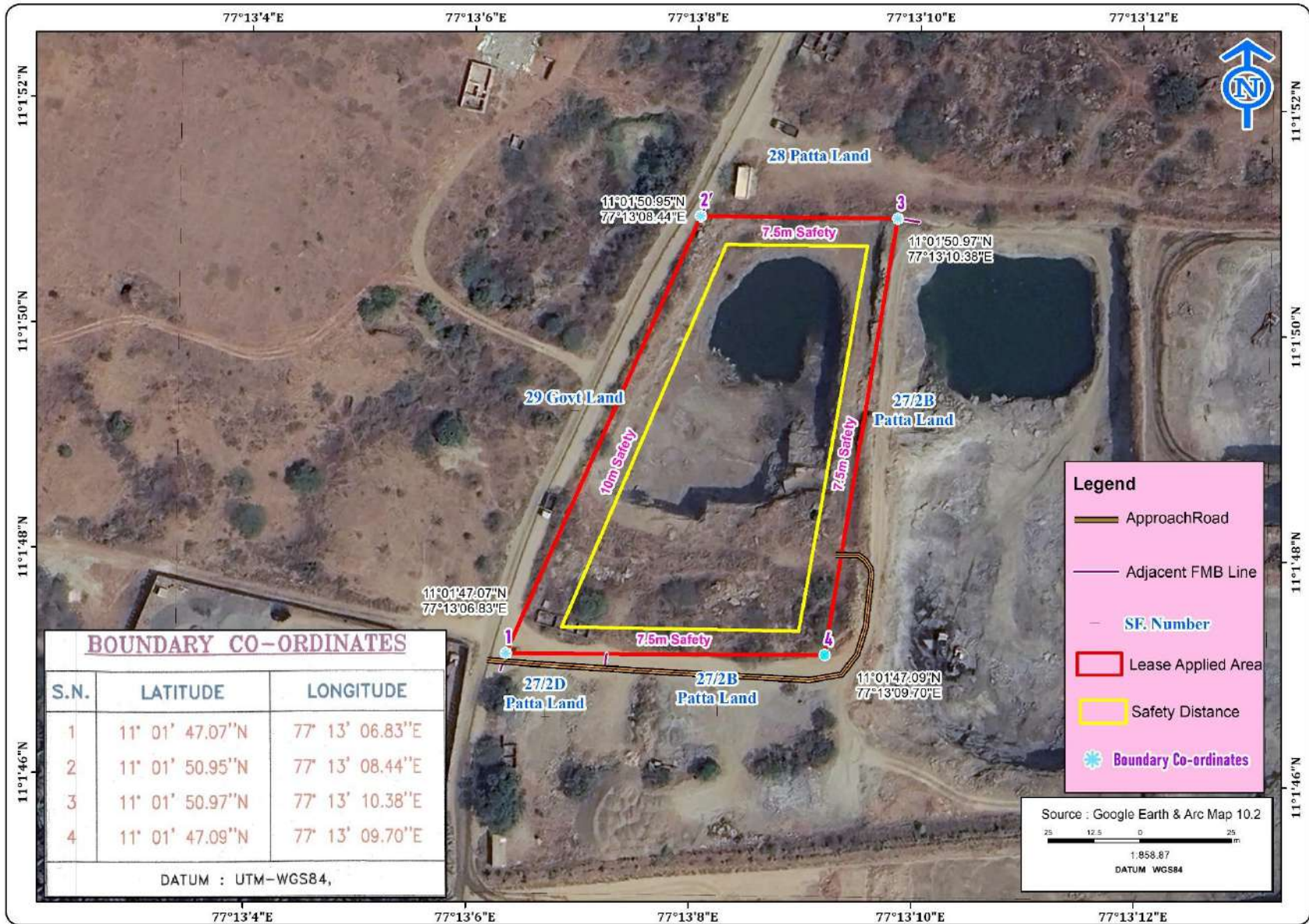
FIGURE 2.1: GOOGLE IMAGE OF THE PROJECT AREA – P1



Source: Superimposed on Google Earth Imagery



FIGURE 2.2: GOOGLE IMAGE OF THE PROJECT AREA – P2



Source: Superimposed on Google Earth Imagery



FIGURE 2.3: GOOGLE IMAGE OF THE PROJECT AREA – P3





FIGURE 2.4: GOOGLE IMAGE OF THE PROJECT AREA – P4

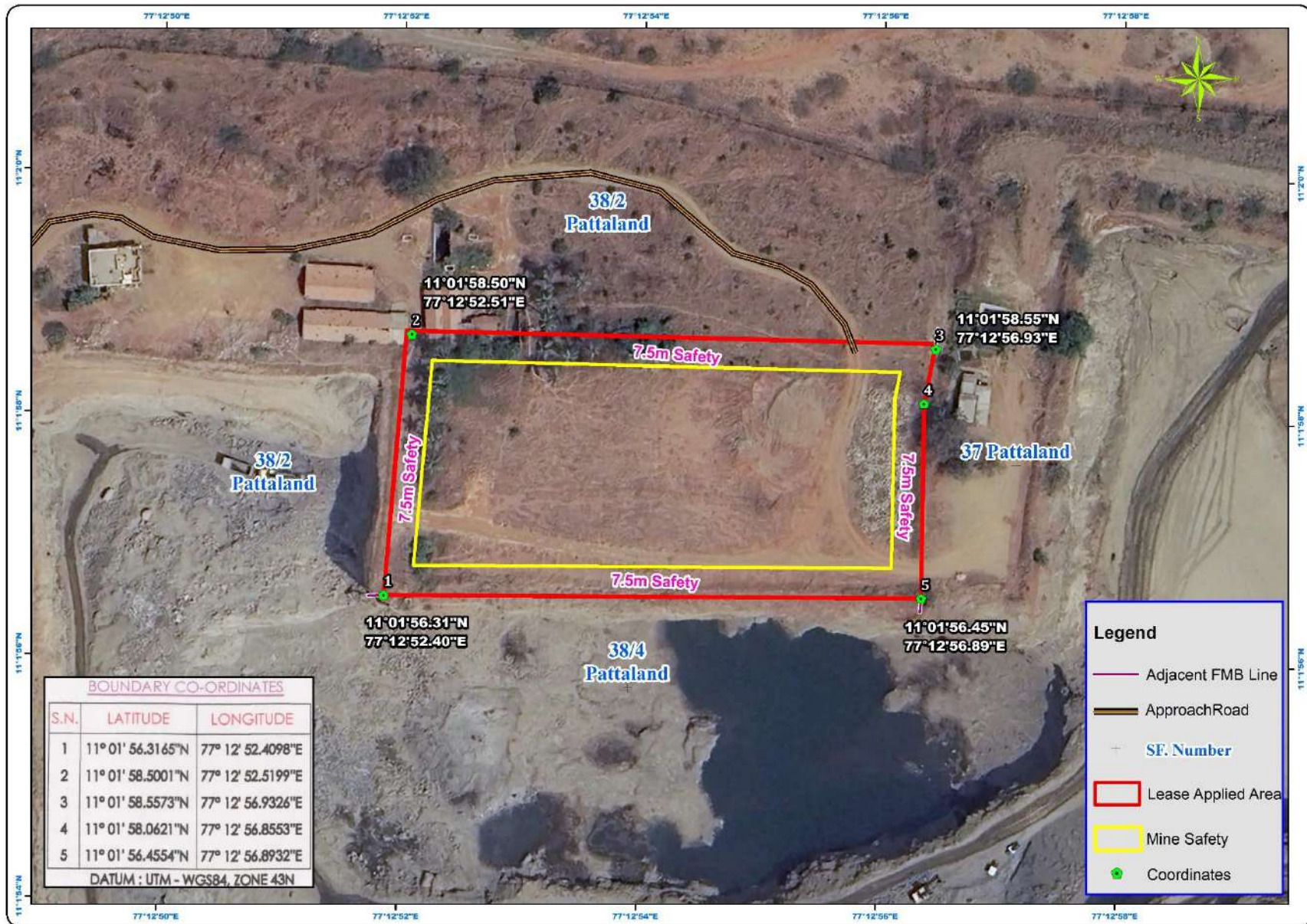




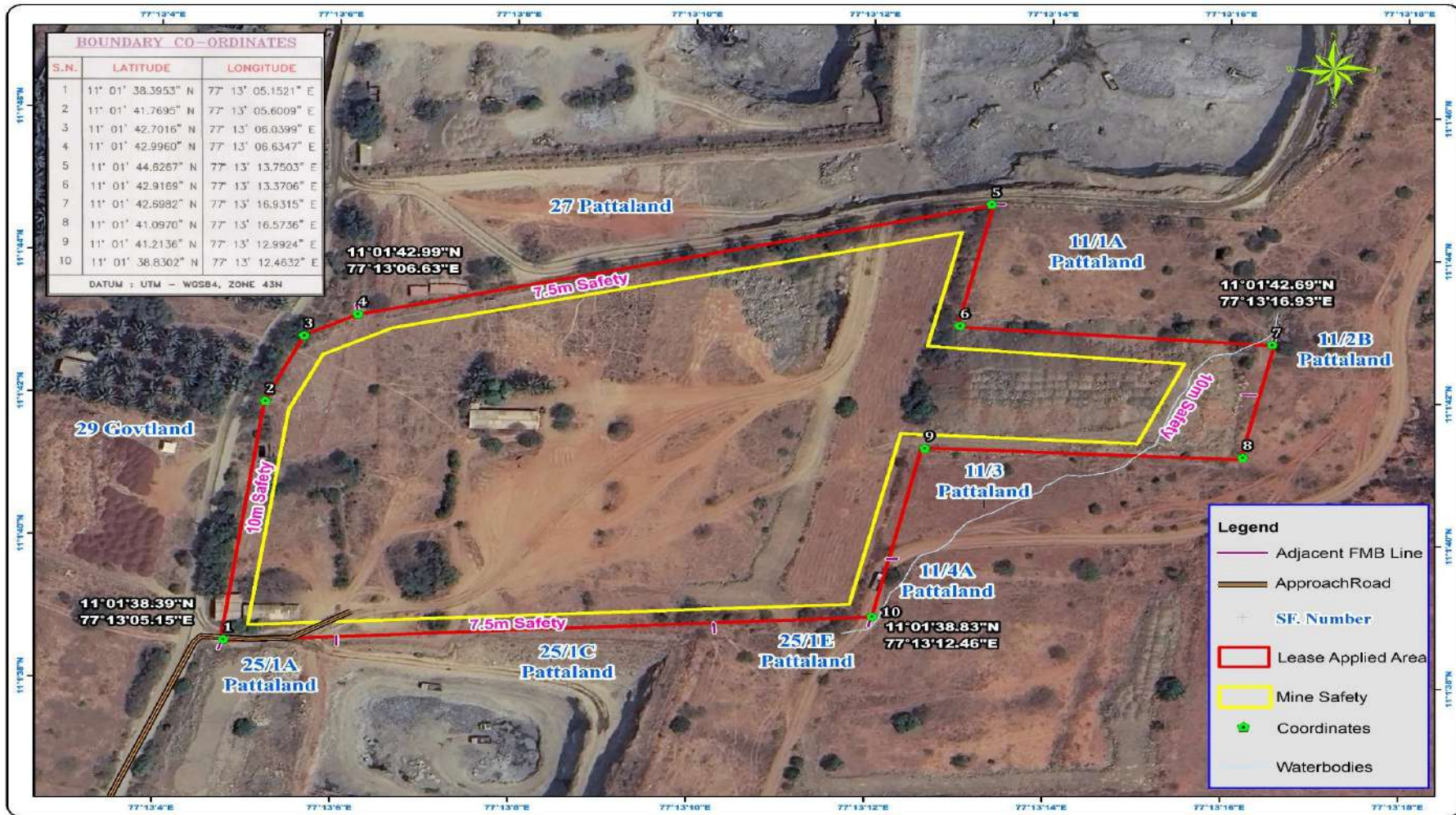
FIGURE 2.5: GOOGLE IMAGE OF THE PROJECT AREA – P5



Source: Superimposed on Google Earth Imagery



FIGURE 2.6: GOOGLE IMAGE OF THE PROJECT AREA – P6



Source: Superimposed on Google Earth Imagery



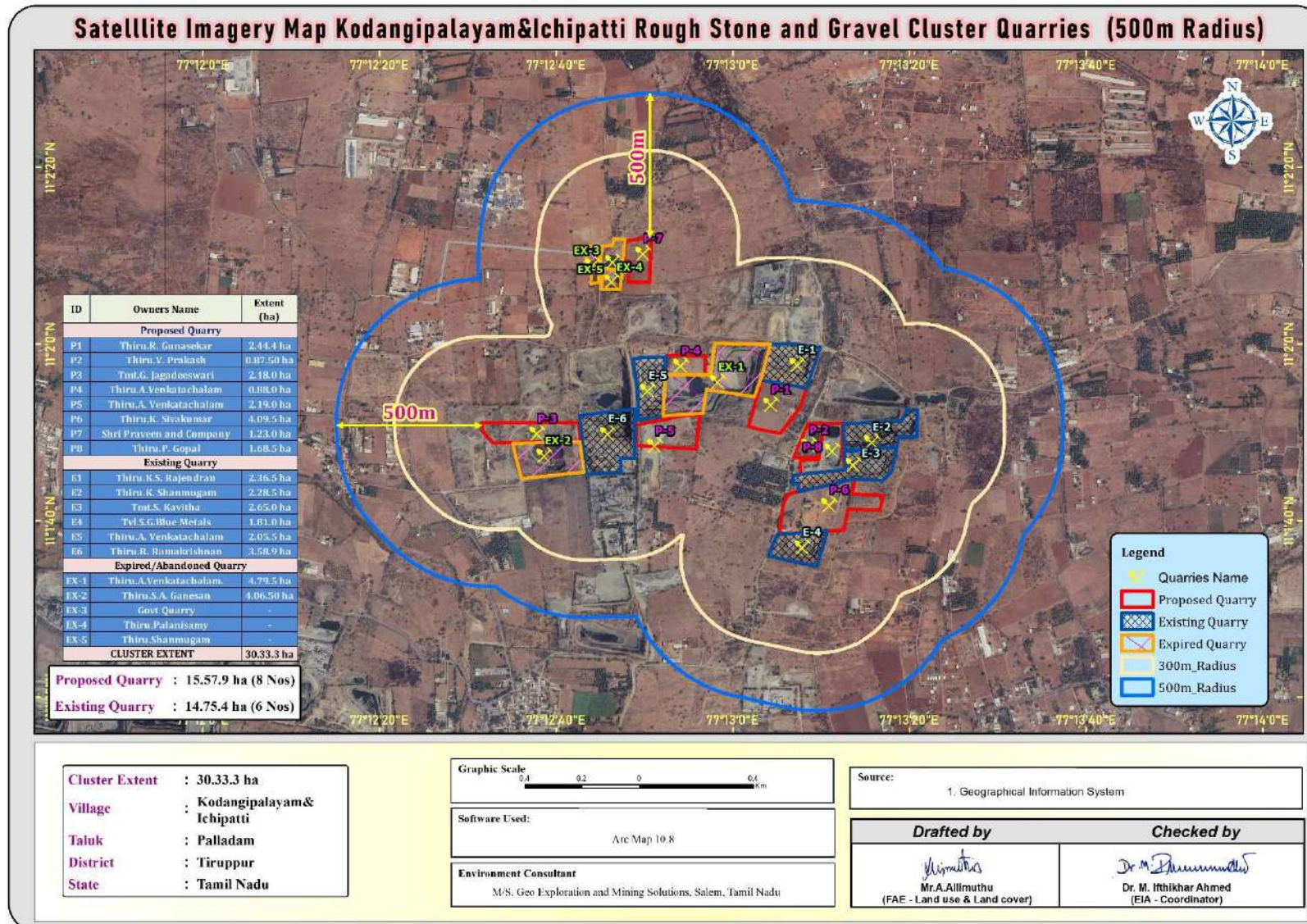
FIGURE 2.7: GOOGLE IMAGE OF THE PROJECT AREA – P7



Source: Superimposed on Google Earth Imagery

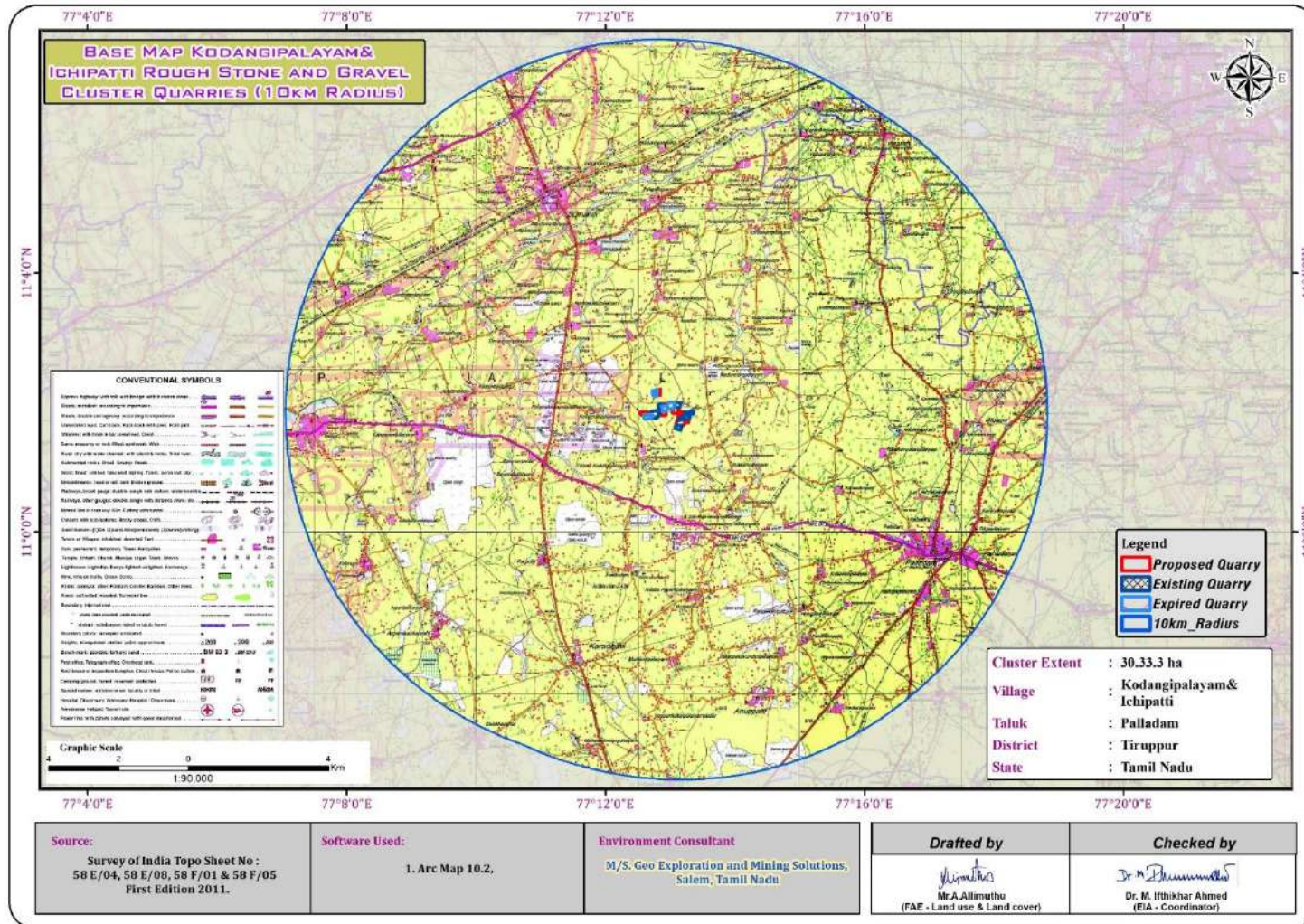


**FIGURE – 2.8: GOOGLE IMAGE SHOWING CLUSTER (500 m QUARRIES)**





**FIGURE – 2.9: TOPOSHEET MAP COVERING 10 KM RADIUS**



**FIGURE 2.10: QUARRY LEASE PLAN / SURFACE PLAN – P1**

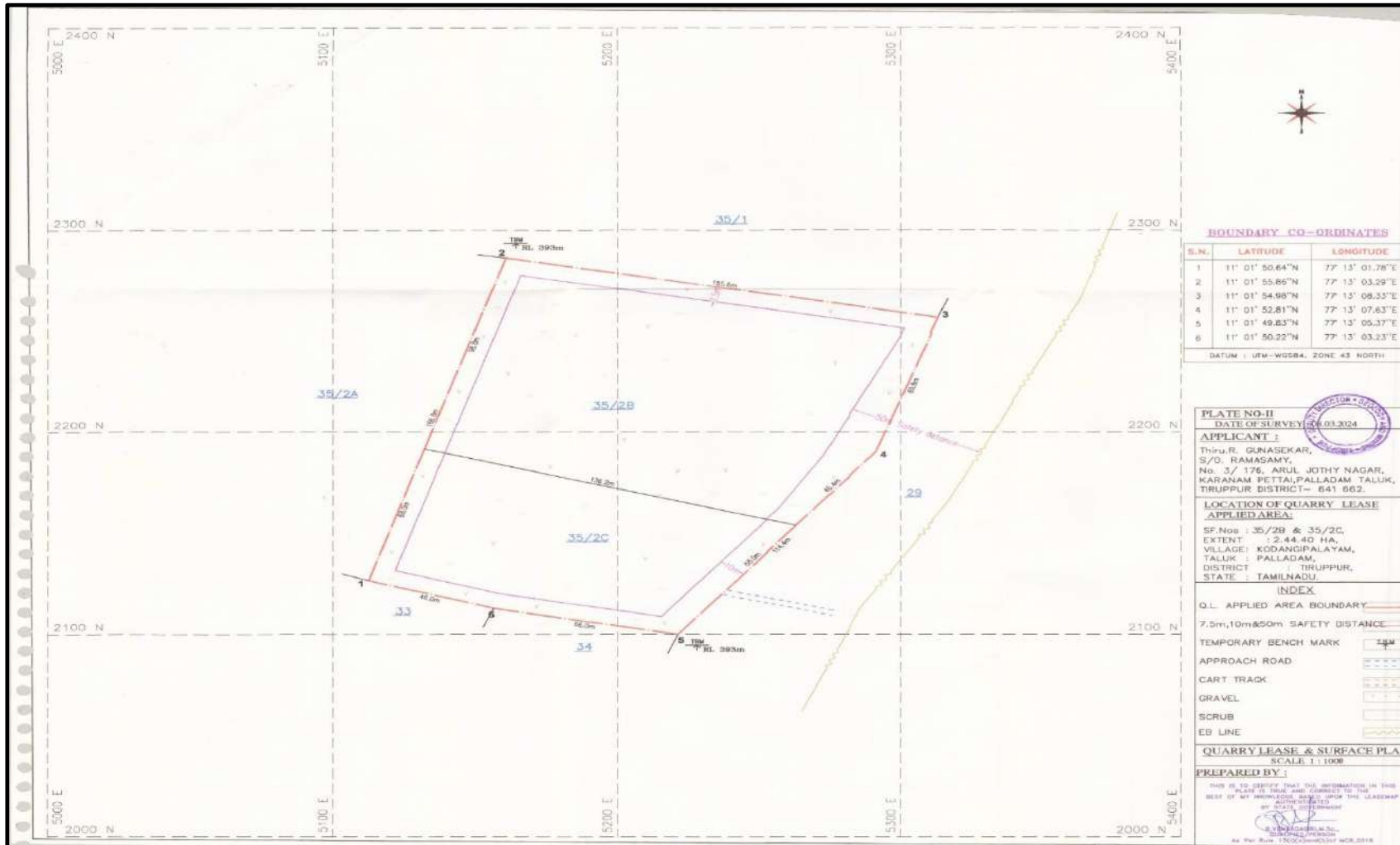




FIGURE 2.11: QUARRY LEASE PLAN / SURFACE PLAN – P2

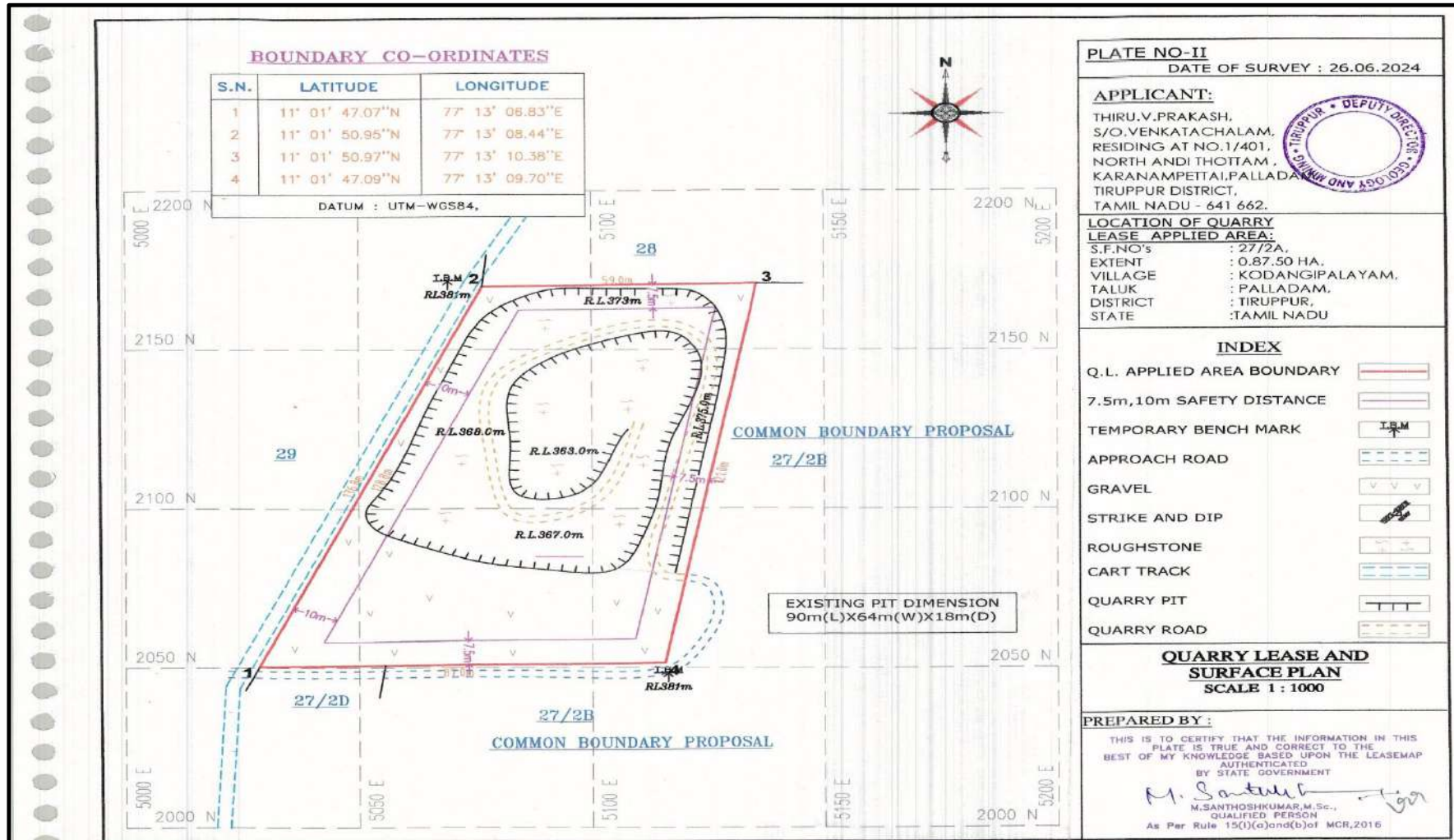
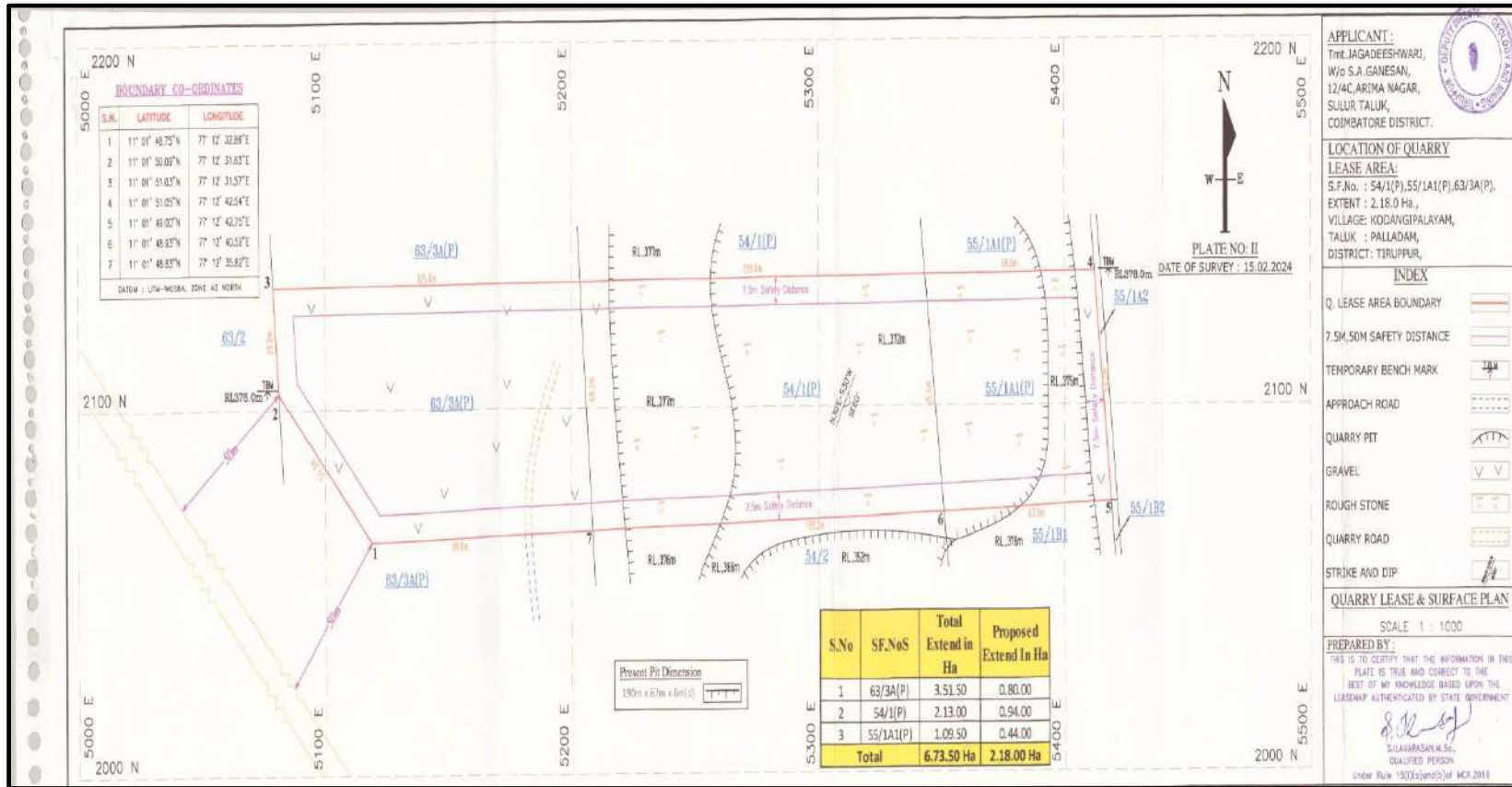


FIGURE 2.12: QUARRY LEASE PLAN / SURFACE PLAN – P3



Source: Approved Mining Plan

FIGURE 2.13: QUARRY LEASE PLAN / SURFACE PLAN – P4

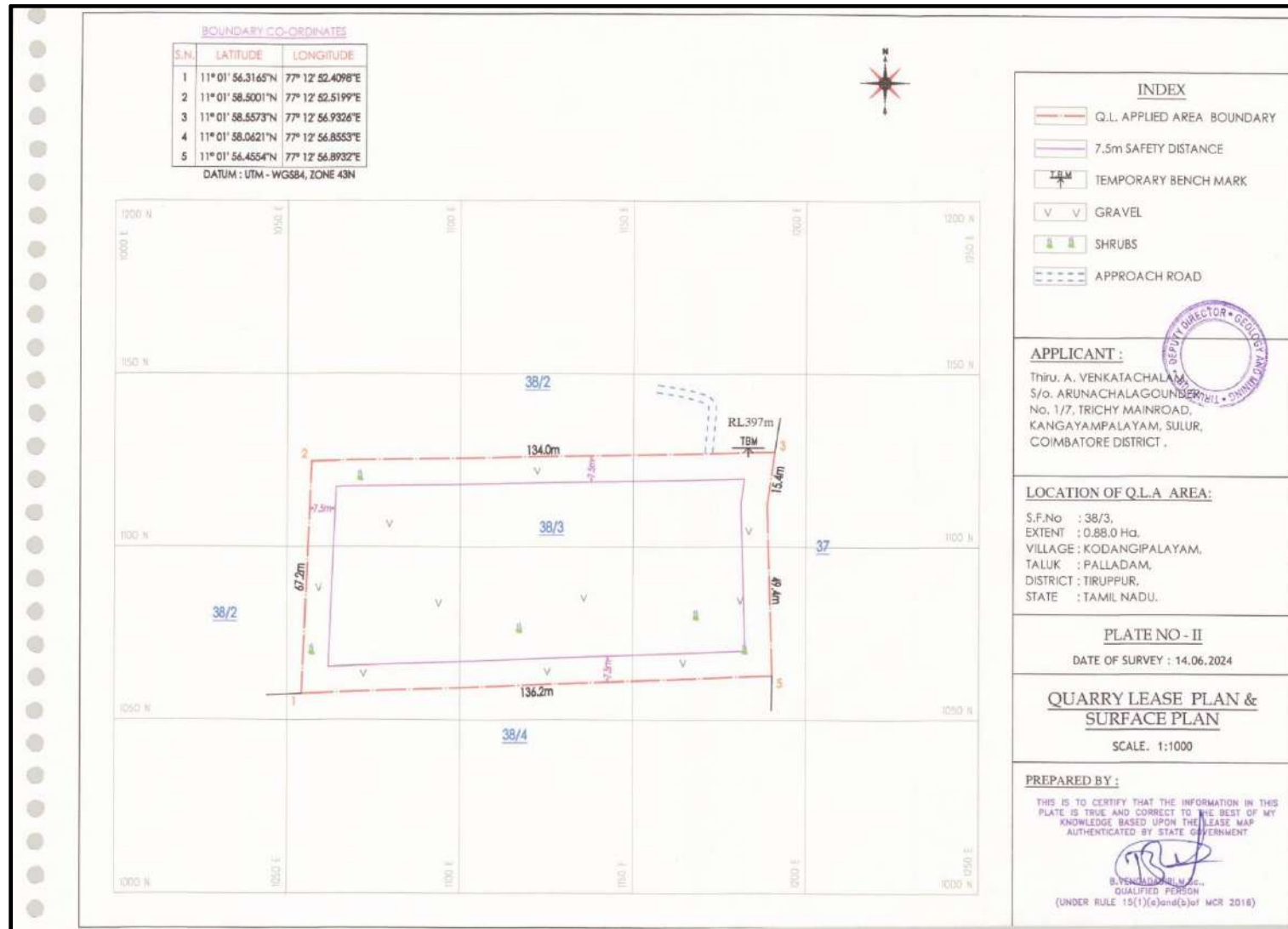
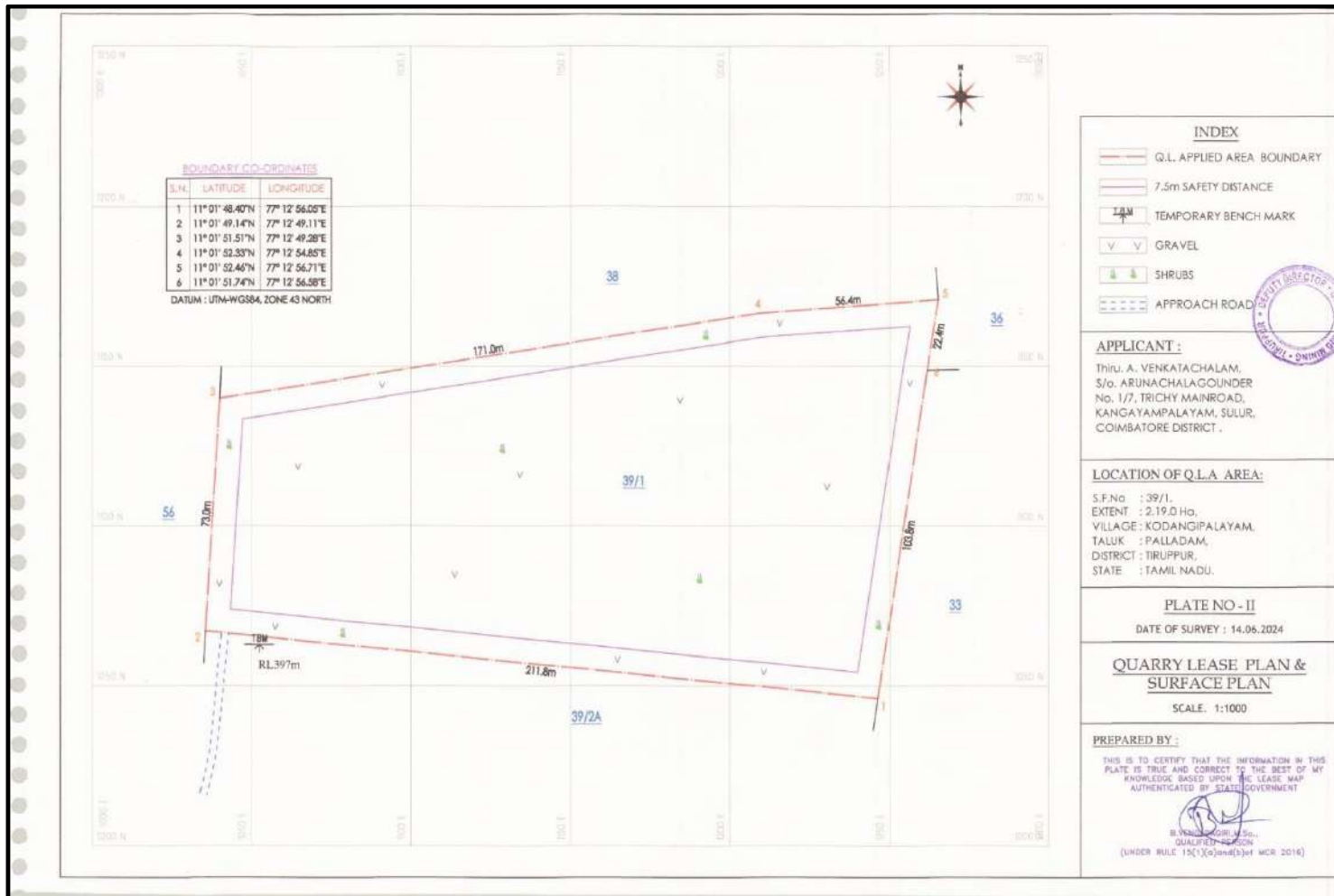


FIGURE 2.14: QUARRY LEASE PLAN / SURFACE PLAN – P5



Source: Approved Mining Plan

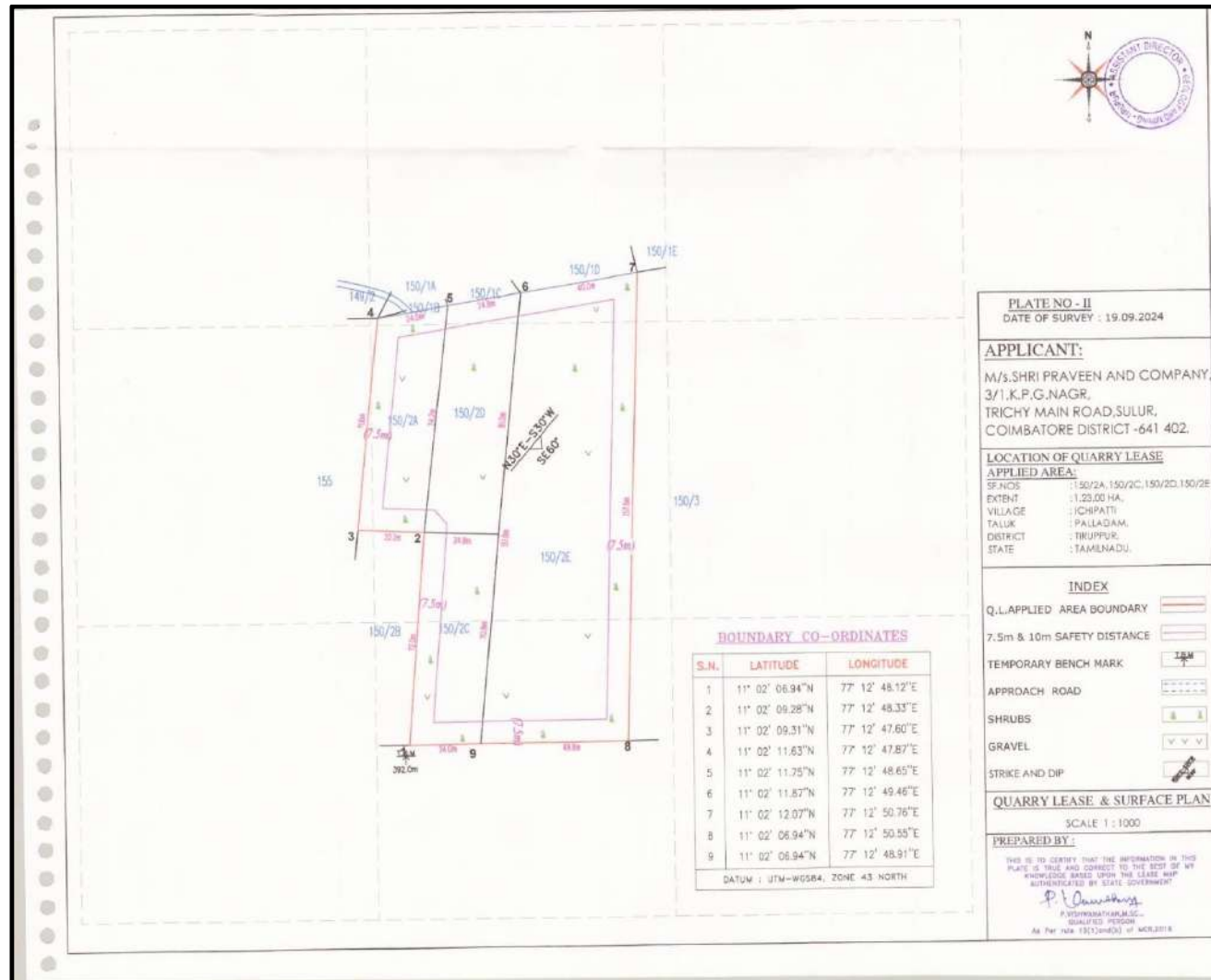


FIGURE 2.15: QUARRY LEASE PLAN / SURFACE PLAN – P6



Source: Approved Mining Plan

FIGURE 2.16: QUARRY LEASE PLAN / SURFACE PLAN – P7



## 2.4 METHOD OF MINING

Opencast Mechanized Mining Method is being proposed by formation of 5.0-meter height bench with a bench width not less than the bench height. However, as far as the quarrying of Rough Stone is concerned, observance of the provisions of Regulation 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 Mine Act – 1952.

The top layer of Topsoil will be Excavate directly by Hydraulic Excavators and preserved all along the safety barrier to facilitate greenbelt development during Mine Closure Stage. The Rough Stone is a batholith formation and the splitting of rock mass of considerable volume from the parent rock mass will be carried out by deploying jackhammer drilling and Slurry Explosives will be used for blasting. Hydraulic Excavators attached with Rock Breakers unit will be deployed for breaking large boulders to required fragmented sizes to avoid secondary blasting and hydraulic excavators attached with bucket unit will be deployed for loading the Rough Stone into the tippers and then the stone is transported from pithead to the nearby crushers.

## 2.5 PROPOSED MACHINERY DEPLOYMENT FOR P1 to P7

<b>PROPOSAL – P1</b>				
<b>S.NO.</b>	<b>TYPE</b>	<b>NOS</b>	<b>SIZE/CAPACITY</b>	<b>MOTIVE POWER</b>
1	Jack hammers	5 Nos	1.2m to 2.0m	Compressed air
2	Compressor	2 Nos	400psi	Diesel Drive
3	Excavator with Bucket / Rock Breaker Unit	1 Nos	300 HP	Diesel Drive
4	Tippers / Dumpers	3 Nos	20 Tonnes	Diesel Drive
<b>PROPOSAL – P2</b>				
<b>S.NO.</b>	<b>TYPE</b>	<b>NOS</b>	<b>SIZE/CAPACITY</b>	<b>MOTIVE POWER</b>
1	Jack hammers	3 Nos	1.2m to 2.0m	Compressed air
2	Compressor	1 Nos	400psi	Diesel Drive
3	Excavator with Bucket / Rock Breaker Unit	1 Nos	300 HP	Diesel Drive
4	Tippers / Dumpers	2 Nos	20 Tonnes	Diesel Drive
<b>PROPOSAL – P3</b>				
<b>S.NO.</b>	<b>TYPE</b>	<b>NOS</b>	<b>SIZE/CAPACITY</b>	<b>MOTIVE POWER</b>
1	Jack hammers	6 Nos	1.2m to 2.0m	Compressed air
2	Compressor	2 Nos	400psi	Diesel Drive
3	Excavator with Bucket / Rock Breaker Unit	1 Nos	300 HP	Diesel Drive
4	Tippers / Dumpers	3 Nos	20 Tonnes	Diesel Drive
<b>PROPOSAL – P4</b>				
<b>S.NO.</b>	<b>TYPE</b>	<b>NOS</b>	<b>SIZE/CAPACITY</b>	<b>MOTIVE POWER</b>
1	Jack hammers	2 Nos	1.2m to 2.0m	Compressed air
2	Compressor	1 Nos	400psi	Diesel Drive
3	Excavator with Bucket / Rock Breaker Unit	1 Nos	300 HP	Diesel Drive

4	Tippers / Dumpers	1 Nos	20 Tonnes	Diesel Drive
<b>PROPOSAL – P5</b>				
<b>S.NO.</b>	<b>TYPE</b>	<b>NOS</b>	<b>SIZE/CAPACITY</b>	<b>MOTIVE POWER</b>
1	Jack hammers	6 Nos	1.2m to 2.0m	Compressed air
2	Compressor	2 Nos	400psi	Diesel Drive
3	Excavator with Bucket / Rock Breaker Unit	2 Nos	300 HP	Diesel Drive
4	Tippers / Dumpers	3 Nos	20 Tonnes	Diesel Drive
<b>PROPOSAL – P6</b>				
<b>S.NO.</b>	<b>TYPE</b>	<b>NOS</b>	<b>SIZE/CAPACITY</b>	<b>MOTIVE POWER</b>
1	Jack hammers	12 Nos	1.2m to 2.0m	Compressed air
2	Compressor	3 Nos	400psi	Diesel Drive
3	Excavator with Bucket / Rock Breaker Unit	3 Nos	300 HP	Diesel Drive
4	Tippers / Dumpers	5 Nos	20 Tonnes	Diesel Drive
<b>PROPOSAL – P7</b>				
<b>S.NO.</b>	<b>TYPE</b>	<b>NOS</b>	<b>SIZE/CAPACITY</b>	<b>MOTIVE POWER</b>
1	Jack hammers	4 Nos	1.2m to 2.0m	Compressed air
2	Compressor	1 Nos	400psi	Diesel Drive
3	Excavator with Bucket / Rock Breaker Unit	1 Nos	300 HP	Diesel Drive
4	Tippers / Dumpers	2 Nos	20 Tonnes	Diesel Drive

## 2.6 CONCEPTUAL MINING PLAN/ FINAL MINE CLOSURE PLAN

The ultimate pit size is designed based on certain practical parameters such as economical depth of mining, safety zones, permissible area, etc.,

## 2.7 ULTIMATE PIT DIMENSION

<b>PROPOSAL – P1</b>			
<b>Pit</b>	<b>Length (Max) (m)</b>	<b>Width (Max) (m)</b>	<b>Depth (Max)</b>
I	166	126	47 m bgl
<b>PROPOSAL – P2</b>			
<b>Pit</b>	<b>Length (Max) (m)</b>	<b>Width (Max) (m)</b>	<b>Depth (Max)</b>
I	120	67	47 m bgl
<b>PROPOSAL – P3</b>			
<b>Pit</b>	<b>Length (Max) (m)</b>	<b>Width (Max) (m)</b>	<b>Depth (Max)</b>
I	309	67	27 m bgl
<b>PROPOSAL – P4</b>			
<b>Pit</b>	<b>Length (Max) (m)</b>	<b>Width (Max) (m)</b>	<b>Depth (Max)</b>
I	125	50	22 m bgl
<b>PROPOSAL – P5</b>			
<b>Pit</b>	<b>Length (Max) (m)</b>	<b>Width (Max) (m)</b>	<b>Depth (Max)</b>
I	116	83	32 m bgl
II	83	98	47 m bgl
<b>PROPOSAL – P6</b>			
<b>Pit</b>	<b>Length (Max) (m)</b>	<b>Width (Max) (m)</b>	<b>Depth (Max)</b>
I	208	135	49 m bgl
<b>PROPOSAL – P7</b>			

Pit	Length (Max) (m)	Width (Max) (m)	Depth (Max)
I	61	73	32 m bgl
II	70	55	27

### 3.0 DESCRIPTION OF THE ENVIRONMENT

The baseline status of the project environment is described section wise for better understanding of the broad-spectrum conditions. The baseline environment quality represents the background environmental scenario of various environmental components such as Land, Water, Air, Noise, Biological and Socio-economic status of the study area. Field monitoring studies to evaluate the base line status of the project site were carried out covering March 2023 to May 2023 as per CPCB & MoEF & CC guidelines.

#### 3.1 ENVIRONMENT MONITORING ATTRIBUTES FOR P1 to P7

Attribute	Parameters	Frequency of Monitoring	No. of Locations	Protocol
Land-use Land cover	Land-use Pattern within 10 km radius of the study area	Data's from census handbook 2011 and from the satellite imagery	Study Area	Satellite Imagery Primary Survey
*Soil	Physio-Chemical Characteristics	Once during the study period	6 (2 core & 4 buffer zone)	IS 2720 Agriculture Handbook - Indian Council of Agriculture Research, New Delhi
*Water Quality	Physical, Chemical and Bacteriological Parameters	Once during the study period	6 (2 surface water & 4 ground water)	IS 10500& CPCB Standards
Meteorology	Wind Speed Wind Direction Temperature Cloud cover Dry bulb temperature Rainfall	1 Hourly Continuous Mechanical/Automatic Weather Station	1	Site specific primary data& Secondary Data from IMD Station
*Ambient Air Quality	PM <sub>10</sub> PM <sub>2.5</sub> SO <sub>2</sub> NO <sub>x</sub> Fugitive Dust	24 hourly twice a week (Oct to Dec 2021)	7 (2 core & 5 buffer)	IS 5182 Part 1-23 National Ambient Air Quality Standards, CPCB
*Noise Levels	Ambient Noise	Hourly observation for 24 Hours per location	7 (2 core & 5 buffer zone)	IS 9989 As per CPCB Guidelines

Ecology	Existing Flora and Fauna	Through field visit during the study period	Study Area	Primary Survey by Quadrate & Transect Study Secondary Data – Forest Working Plan
Socio Economic Aspects	Socio–Economic Characteristics, Population Statistics and Existing Infrastructure in the study area	Site Visit & Census Handbook, 2011	Study Area	Primary Survey, census handbook & need based assessments.

### 3.2 LAND ENVIRONMENT

To study the land use pattern of the core as well as a buffer zone, land use/land cover details have been identified/ maps have been prepared in accordance with the Standard ToR point. A visual interpretation technique has been adopted for land use supervised classification based on training site by Level III classification with 1:50,000 scale for the preparation of land use mapping. Land use pattern of the area was studied through **LISSIII, Bhuvan, NRSC**. The 10 km radius map of study area was taken for analysis of **Land use/Landcover**.

**TABLE 3.1: LAND USE / LAND COVER TABLE 10 KM RADIUS**

S.No	CLASSIFICATION	AREA_Ha	Area_%
1	URBAN	2213.31	6.22
2	RURAL	3166.50	8.89
3	MINING	567.02	1.59
4	CROP LAND	19435.40	54.58
5	AGRICULTURAL PLANTATION	1974.08	5.54
6	FALLOW LAND	6535.40	18.35
7	SCRUB LAND	1166.57	3.28
8	WATER BODIES	550.89	1.55
	<b>TOTAL</b>	<b>35609.17</b>	<b>100.00</b>

#### Interpretation & Conclusion

From the above table, pie diagram and land use map it is inferred that the majority of the land in the study area is Crop land (includes crop land) 54.58% followed by Built-up Lands 15.997%, Mining – 1.59%, Water bodies 1.55% and Scrub Land 3.28%;

The total mining area within the study area is 567.02 ha i.e., 1.59 %. This small percentage of Mining Activities shall not have any significant impact on the environment.

### 3.3 SOIL ENVIRONMENT

The samples were analysed as per the standard methods prescribed in “Soil Chemical Analysis (M.L. Jackson, 1967) & Department of Agriculture, Cooperation & Farmers Welfare, Ministry of Agriculture & Farmers Welfare, Government of India”. The important properties analysed for soil are bulk density, porosity, infiltration rate, pH and Organic matter, kjeldahi Nitrogen, Phosphorous and Potassium

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**Physical Characteristics –**

The physical properties of the soil samples were examined for texture, bulk density, porosity and water holding capacity. The soil texture found in the study area is Clay Loam Soil and Bulk Density of Soils in the study area varied between 1.03 – 1.20 g/cc. The Water Holding Capacity and Porosity of the soil samples is found to be medium i.e. ranging from 48.4 – 51.8 %.

**Chemical Characteristics –**

- The nature of soil is slightly alkaline to strongly alkaline with pH range 7.66 to 8.29
- The available Nitrogen content range between 238.33 to 388.8 kg/ha
- The available Phosphorus content range between 2.5 to 9.8 mg/ha
- The available Soluble Potassium range between 0.94 to 1.20 mg/100g

**3.4 WATER ENVIRONMENT****Surface Water****Ph:**

- The pH varied from 7.55 to 7.81 while turbidity found within the standards (Optimal pH range for sustainable aquatic life is 6.5 to 8.5 pH).

**Total Dissolved Solids:**

Total Dissolved Solids varied from 700 to 765 mg/l, the TDS mainly composed of carbonates, bicarbonates, Chlorides, phosphates and nitrates of calcium, magnesium, sodium and other organic matter.

**Other parameters:**

Chloride content is 126.8 - 135 mg/l. Nitrates varied from 3.24 to 3.52 mg/l, while sulphates varied from 22.18 to 27.2 mg/l.

**Ground Water**

The pH of the water samples collected ranged from 7.02 to 7.61 and within the acceptable limit of 6.5 to 8.5. pH, Sulphates and Chlorides of water samples from all the sources are within the limits as per the Standard. On Turbidity, the water samples meet the requirement. The Total Dissolved Solids were found in the range of 612 - 705 mg/l in all samples. The Total hardness varied between 212 – 272 mg/l for all samples.

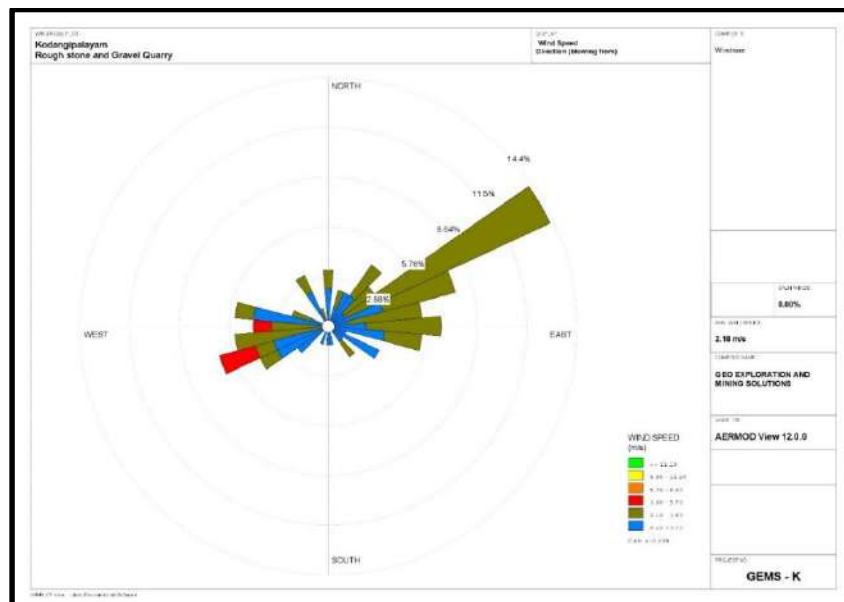
On Microbiological parameters, the water samples from all the locations meet the requirement. The parameters thus analysed were compared with IS 10500:2012 and are well within the prescribed limits.

**3.5 AIR ENVIRONMENT**



The baseline studies on air environment include identification of specific air pollution parameters and their existing levels in ambient air. The ambient air quality with respect to the study zone of 10 km radius around the proposed quarry forms the baseline information.

**FIGURE – 6: WIND ROSE DIAGRAM**



### 3.6 SUMMARY OF AMBIENT AIR QUALITY

As per monitoring data, PM<sub>10</sub> ranges from 41.1 µg/m<sup>3</sup> to 49.4 µg/m<sup>3</sup>, PM<sub>2.5</sub> data ranges from 20 µg/m<sup>3</sup> to 27.4 µg/m<sup>3</sup>, SO<sub>2</sub> ranges from 4.0 µg/m<sup>3</sup> to 7.1 µg/m<sup>3</sup> and NO<sub>2</sub> data ranges from 16.9 µg/m<sup>3</sup> to 25.4 µg/m<sup>3</sup>. The concentration levels of the above criteria pollutants were observed to be well within the limits of NAAQS prescribed by CPCB.

### 3.7 NOISE ENVIRONMENT

Ambient noise levels were measured at 7 (Seven) locations around the proposed project area. Noise levels recorded in core zone during day time were from 43.1 to 46.9 dB (A) Leq and during night time were from 34.9 to 36.4 dB (A) Leq. Noise levels recorded in buffer zone during day time were from 44.4 to 48.3 dB (A) Leq and during night time were from 34.5 to 37.0 dB (A) Leq.

Thus, the noise level for Industrial and Residential area meets the requirements of CPCB. The values of noise observed in some of the areas are primarily owing to quarrying activities due to cluster of quarries within 500m radius, movement of vehicles and other anthropogenic activities.

### 3.8 ECOLOGICAL ENVIRONMENT

The study involved in the collection of primary data by conducting a survey in the field, examination of floral and faunal records in previously published reports and records. Analysis of the information is the view of the possible alteration in the environment of the project site. For the survey of fauna, both direct and indirect observation methods were used.



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There is no schedule I species of animals observed within study area as per Wildlife Protection Act 1972 as well as no species is in vulnerable, endangered or threatened category as per IUCN. There is no endangered red list species found in the study area. Hence this small operation over short period of time will not have any significant impact on the surrounding flora and fauna.

### **3.9 SOCIO ECONOMIC ENVIRONMENT**

It includes demographic structure of the area, provision of basic amenities viz., housing, education, health and medical services, occupation, water supply, sanitation, communication, transportation, prevailing diseases pattern as well as feature like temples, historical monuments etc., at the baseline level. This will help in visualizing and predicting the possible impact depending upon the nature and magnitude of the project.

The socio-economic study of surveyed villages gives a clear picture of its population, average household size, literacy rate and sex ratio etc. It is also found that a part of population is suffering from lack of permanent job to run their day-to-day life. Their expectation is to earn some income for their sustainability on a long-term basis.

The proposed project will aim to provide preferential 50 persons to the local people there by improving the indirect employment opportunity for 50 persons and in turn the social standards will improve.

## **4. ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES**

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 sustainable resource extraction.

### **4.1 LAND ENVIRONMENT:**

#### **ANTICIPATED IMPACT**

- Permanent or temporary change on land use and land cover.
- Change in Topography: Topography of the ML area will change at the end of the life of the mine.
- Movement of heavy vehicles sometimes cause problems to agricultural land, human habitations due to dust, noise and it also causes traffic hazards.
- Due to degradation of land by pitting the aesthetic environment of the core zone may be affected.
- Earthworks during the rainy season increase the potential for soil erosion and sediment laden water entering the water ways.
- If no due care is taken wash off from the exposed working area may choke the water course & can also causes the siltation of water course.

#### **MITIGATION MEASURES**

- The mining activity will be gradual confined in blocks and excavation will be undertaken progressively along with other mitigative measures like phase wise development of greenbelt etc.,
- Construction of garland drains all around the quarry pits and construction of check dam at strategic location in lower elevations to prevent erosion due to surface runoff during rainfall and also to collect the storm water for various uses within the proposed area

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- Green belt development along the boundary within safety zone. The small quantity of water stored in the mined-out pit will be used for greenbelt.
  - Thick plantation will be carried out on unutilized area, top benches of mined out pits, on safety barrier, etc.,
  - At conceptual stage, the land use pattern of the quarry will be changed into Greenbelt area and temporary reservoir.
  - In terms of aesthetics, natural vegetation surrounding the quarry will be retained (such as in a buffer area i.e., 7.5 m safety barrier and other safety provided) so as to help minimise dust emissions.
  - Proper fencing will be carried out at the conceptual stage, Security will be posted round the clock, to prevent inherent entry of the public and cattle.

## **4.2 SOIL ENVIRONMENT**

### **IMPACT ON SOIL ENVIRONMENT**

**Erosion and Sedimentation** (Removal of protective vegetation cover; Exposure of underlying soil horizons that may be less pervious, or more erodible than the surface layers; Reduced capacity of soils to absorb rainfall; Increased energy in storm-water runoff due to concentration and velocity; and Exposure of subsurface materials which are unsuitable for vegetation establishment).

### **MITIGATION MEASURES FOR SOIL CONSERVATION**

- Run-off diversion – Garland drains will be constructed all around the project boundary to prevent surface flows from entering the quarry works areas. And will be discharged into vegetated natural drainage lines, or as distributed flow across an area stabilised against erosion.
- Sedimentation ponds - Run-off from working areas will be routed towards sedimentation ponds. These trap sediment and reduce suspended sediment loads before runoff is discharged from the quarry site. Sedimentation ponds should be designed based on runoff, retention times, and soil characteristics. There may be a need to provide a series of sedimentation ponds to achieve the desired outcome.
- Retain vegetation – Retain existing or re-plant the vegetation at the site wherever possible.
- Monitoring and maintenance – Weekly monitoring and daily maintenance of erosion control systems so that they perform as specified specially during rainy season

## **4.3 WATER ENVIRONMENT**

### **ANTICIPATED IMPACT**

- The major sources of water pollution normally associated due to mining and allied operations are:
  - Generation of waste water from vehicle washing.
  - Washouts from surface exposure or working areas
  - Domestic sewage

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- Disturbance to drainage course in the project area
  - Mine Pit water discharge
  - Increase in sediment load during monsoon in downstream of lease area
  - This being a mining project, there will be no process effluent. Waste from washing of machinery may result in discharge of Oil & grease, suspended solids.
  - The sewage from soak pit may percolate to the ground water table and contaminate it.
  - Surface drainage may be affected due to Mining
  - Abstraction of water may lead to depletion of water table

#### **MITIGATION MEASURES**

- Garland drain, settling tank will be constructed along the project area. The Garland drain will be connected to settling tank and sediments will be trapped in the settling traps and only clear water will be discharged out to the natural drainage
- Rainwater will be collected in sump in the mining pits and will be allowed to store and pumped out to surface settling tank of 15 m x 10m x 3m to remove suspended solids if any. This collected water will be judiciously used for dust suppression and such sites where dust likely to be generated and for developing green belt. The proponent will collect and judiciously utilize the rainwater as part of rainwater harvesting system.
- Providing benches with inner slopes and through a system of drains and channels, allowing rain water to descent into surrounding drains, so as to minimize the effects of erosion & water logging arising out of uncontrolled descent of water
- Reuse the water collected during storm for dust suppression and greenbelt development within the mines
- Installing interceptor traps/oil separators to remove oils and greases. Water from the tipper wash-down facility and machinery maintenance yard will pass through interceptor traps/oil separators prior to its reuse;
- Using flocculating or coagulating agents to assist in the settling of suspended solids during monsoon seasons;
- Periodic (every 6 month once) analysis of quarry pit water and ground water quality in nearby villages
- Domestic sewage from site office & urinals/latrines provided in ML is discharged in septic tank followed by soak pits
- Waste water discharge from mine will be treated in settling tanks before using for dust suppression and tree plantation purposes
- De-silting will be carried out before and immediately after the monsoon season
- Regular monitoring (every 6 month once) and analysing the quality of water in open well, bore wells and surface water.

#### **4.4 AIR ENVIRONMENT**

##### **ANTICIPATED IMPACT**

- During mining, at various stages activities such as excavation, drilling, blasting, and transportation of materials, particular matter (PM), gases such as Sulphur dioxide, oxides of Nitrogen from vehicular exhaust are the main air pollutants.

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- Emissions of noxious gases due to incomplete detonation of explosive may sometimes pollute the air.
  - The fugitive dust released from the mining operations may cause effect on the mine workers who are directly exposed to the fugitive dust.
  - Simultaneously, the air-borne dust may travel to longer distances and settle in the villages located near the mine lease area.

## **MITIGATION MEASURES**

**Drilling** – To control dust at source, wet drilling will be practiced. Where there is a scarcity of water, suitably designed dust extractor will be provided for dry drilling along with dust hood at the mouth of the drill-hole collar.

### **Advantages of Wet Drilling: -**

- In this system dust gets suppressed close to its formation. Dust suppression become very effective and the work environment will be improved from the point of occupational comfort and health.
- Due to dust free atmosphere, the life of engine, compressor etc., will be increased.
- The life of drill bit will be increased.
- The rate of penetration of drill will be increased.
- Due to the dust free atmosphere visibility will be improved resulting in safer working conditions.

### **Blasting –**

- Establish time of blasting to suit the local conditions and water sprinkling on blasting face
- Avoid blasting i.e., when temperature inversion is likely to occur and strong wind blows towards residential areas
- Controlled blasting includes Adoption of suitable explosive charge and short delay detonators, adequate stemming of holes at collar zone and restricting blasting to a particular time of the day i.e., at the time lunch hours, controlled charge per hole as well as charge per round of hole
- Before loading of material water will be sprayed on blasted material
- Dust mask will be provided to the workers and their use will be strictly monitored

### **Haul Road & Transportation –**

- Water will be sprinkled on haul roads twice a day to avoid dust generation during transportation.
- Transportation of material will be carried out during day time and material will be covered with tarpaulin.
- The speed of tippers plying on the haul road will be limited below 20 km/hr to avoid generation of dust.
- Water sprinkling on haul roads & loading points will be carried out twice a day.

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- Main source of gaseous pollution will be from vehicle used for transportation of mineral; therefore, weekly maintenance of machines improves combustion process & makes reduction in the pollution.
  - The un-metalled haul roads will be compacted weekly before being put into use.
  - Over loading of tippers will be avoided to prevent spillage.
  - It will be ensured that all transportation vehicles carry a valid PUC certificate
  - Grading of haul roads and service roads to clear accumulation of loose materials.

#### **Green Belt –**

- Planting of trees all along main mine haul roads and regular grading of haul roads will be practiced to prevent the generation of dust due to movement of dumpers/trucks
- Green belt of adequate width will be developed around the project areas.

#### **Occupational Health –**

- Dust mask will be provided to the workers and their use will be strictly monitored.
- Annual medical check-ups, trainings and campaigns will be arranged to ensure awareness about importance of wearing dust masks among all mine workers & tipper drivers.
- Ambient Air Quality Monitoring will be conducted six months once to assess effectiveness of mitigation measures proposed.

### **4.5 NOISE ENVIRONMENT**

#### **ANTICIPATED IMPACT**

Noise pollution poses a major health risk to the mine workers. Following are the sources of noise in the existing open cast mine project are being observed such as Drilling, & Blasting, Loading and during movement of vehicles.

#### **MITIGATION MEASURES**

- Usage of sharp drill bits while drilling which will help in reducing noise;
- Secondary blasting will be totally avoided and hydraulic rock breaker will be used for breaking boulders;
- Controlled blasting with proper spacing, burden, stemming and optimum charge/delay will be maintained;
- The blasting will be carried out during favourable atmospheric condition and less human activity timings by using nonelectrical initiation system;
- Proper maintenance, oiling and greasing of machines will be done every week to reduce generation of noise;
- Provision of sound insulated chambers for the workers working on machines (HEMM) producing higher levels of noise;
- Silencers / mufflers will be installed in all machineries;
- Green Belt/Plantation will be developed around the project area and along the haul roads. The plantation minimizes propagation of noise;
- Personal Protective Equipment (PPE) like ear muffs/ear plugs will be provided to the operators of HEMM and persons working near HEMM and their use will be ensured through training and awareness.

- Regular medical check-up and proper training to personnel to create awareness about adverse noise level effects.

#### 4.6 BIOLOGICAL ENVIRONMENT

##### ANTICIPATED IMPACT

The developmental programs, policies, and projects operated or managed by government or private bodies can cause potentially significant changes in the physical, biological, and socio-economic environment. In some cases, the changes may be beneficial while in others it may be detrimental to the environment. Accordingly, environmental impact studies are required for systematic identification, qualification, and interpretation of the anticipated changes. The main environmental problems associated with mining activities are deforestation, land degradation (change in topography, soil erosion), visual intrusion, disturbance to the hydrological system, and water, air, and noise pollution which ultimately impact upon the floral and faunal status of the project area.

##### MITIGATION MEASURES

Keeping all this in mind the mitigations have been suggested under environmental management plan. With the understanding of the role of plant species as bio-filter to control air pollution, appropriate plant species (mainly tree species) have been suggested conceding the area/site requirements and needed performance of specific species. The details of year wise proposed plantation program are given in Table 4.13.

The main objective of the green belt is to provide a barrier between the source of pollution and the surrounding areas

In order to compensate the loss of vegetation cover, it is suggested to carry out afforestation program mainly in proposed areas falls in the cluster earmarked for plantation program as per Approved Mining Plan in different phases. This habitat improvement program would ensure the faunal species to re-colonize and improve the abundance status in the core zone.

##### The objectives of the green belt cover will cover the following:

- Noise abatement
- Ecological restoration
- Aesthetic, biological and visual improvement of area due to improved vegetative and plantations cover.

##### GREENBELT DEVELOPMENT PLAN

CODE	No of Trees proposed to be planted	Name of the Species	Area to be covered sq.m
P1	1222	Neem, Vilvam , Ashokha	Near 7.5m safety distance, panchayat road and village road
P2	438	Neem, Vilvam , Ashokha	
P3	1090	Neem, Vilvam , Ashokha	
P4	440	Neem, Vilvam , Ashokha	
P5	1095	Neem, Vilvam , Ashokha	
P6	2050	Neem, Vilvam , Ashokha	
P7	615	Neem, Vilvam , Ashokha	
<b>Total</b>	<b>6950</b>	Neem, Vilvam , Ashokha	

#### 4.7 SOCIO ECONOMIC ENVIRONMENT

## ANTICIPATED IMPACT

- ∞ No. of people will get employment during the construction stage resulting in the ancillary development and growth. Nearby Local people will be given preference for employment on the basis of their skill and experience.
- ∞ Further due to proposed project, influx of working community will also generate an indirect employment through development of nearby market/ shops, trade centers, activities, transportation etc.
- ∞ Population influx during the construction phase can introduce various water and vector borne diseases which can lead to various unhygienic health problems in the area by disturbing the existing sanitation infrastructure.
- ∞ Rapid diverse population influx at the project site can create unusual behavioural activity such as worker-community conflicts, increase violence such as theft/stabbing, and increased consumption of drugs/alcohol within the area.
- ∞ Impacts on the health of nearby villagers can be envisaged due to the transportation activities leading to short term exposure of fugitive dust, resulting in various acute diseases such as increased eye irritation, nausea, headache etc.

## MITIGATION MEASURES

- Good maintenance practices will be adopted for all machinery and equipment, which will help to avert potential noise problems.
- Green belt will be developed in and around the project site as per Central Pollution Control Board (CPCB) guidelines.
- Air pollution control measure will be taken to minimize the environmental impact within the core zone.
- For the safety of workers, personal protective appliances like hand gloves, helmets, safety shoes, goggles, aprons, nose masks and ear protecting devices will be provided as per mines act and rules.
- Benefit to the State and the Central governments through financial revenues by way of royalty, tax, duties, etc., from this project directly and indirectly.
- From above details, the quarry operations will have highly beneficial positive impact in the area.

**Table 4.6.3 Impact Evaluation Impact evaluation is given in table below.**

<b>Impact Evaluation Element</b>	Impact on socio economics due to the applied for rough stone and Gravel quarry over a Cluster extent of 30.33.3 ha of Patta lands in Kodangipalayam & Ichipatti Village, Palladam Taluk, Tiruppur District		
<b>Potential Effect/ Concern</b>	Proposed project will provide direct & indirect employment opportunities to the local residents, which will help to increase their earning and better living standard as well as further up-liftment of socio-economic status of the area.		
<b>Characteristics of Impacts</b>			
Nature	Positive	Negative	Netural

	✓			
Type	Direct	Indirect	Cumulative	
			✓	
Extent	Project area	Local	Zonal	Regional
	✓			
Duration	Short time		Long term	
			✓	
Intensity	Low		Medium	High
			✓	
Frequency	Remote (R)	Occasional (O)	Periodic (P)	Continuous (C)
			✓	
<b>Significance of Impact</b>				
Significance	Insignificant	Minor	Moderate	Major
			✓	

## 5. ANALYSIS OF ALTERNATIVES (TECHNOLOGY AND SITE)

No alternatives are suggested as all the mine sites are mineral specific.

## 6. ENVIRONMENT MONITORING PROGRAM

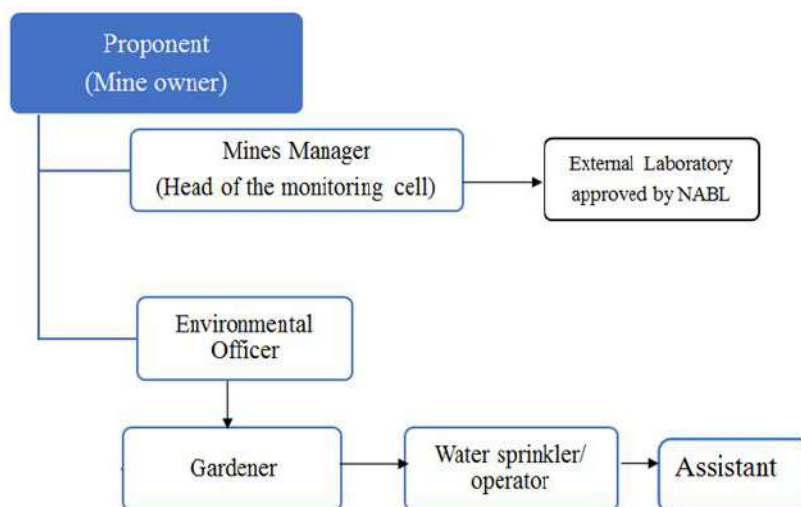
An Environment monitoring cell (EMC) will be constituted to monitor the implementation of EMP and other environmental protection measures in all the proposed quarries.

The responsibilities of this cell will be:

- Implementation of pollution control measures
- Monitoring programme implementation
- Post-plantation care
- To check the efficiency of pollution control measures taken
- Any other activity as may be related to environment
- Seeking expert's advice when needed.



## 6.1 ENVIRONMENTAL MONITORING CELL



## 6.2 POST ENVIRONMENTAL CLEARANCE MONITORING SCHEDULE FOR P1 to P7

S. No.	Environment Attributes	Location	Monitoring		Parameters
			Duration	Frequency	
1	Air Quality	8 Locations (1 Core & 7 Buffer)	24 hours	Once in 6 months	Fugitive Dust, PM <sub>2.5</sub> , PM <sub>10</sub> , SO <sub>2</sub> and NO <sub>x</sub> .
2	Meteorology	At mine site before start of Air Quality Monitoring & IMD Secondary Data	Hourly / Daily	Continuous online monitoring	Wind speed, Wind direction, Temperature, Relative humidity and Rainfall
3	Water Quality Monitoring	6 Locations (2SW & 4 GW)	-	Once in 6 months	Parameters specified under IS:10500, 1993 & CPCB Norms
4	Hydrology	Water level in open wells in buffer zone around 1 km at specific wells	-	Once in 6 months	Depth in bgl
5	Noise	8 Locations (1 Core & 7 Buffer)	Hourly – 1 Day	Once in 6 months	Leq, Lmax, Lmin, Leq Day & Leq Night
6	Vibration	At the nearest habitation (in case of reporting)	–	During blasting Operation	Peak Particle Velocity
7	Soil	6 Locations (1 Core & 5 Buffer)	–	Once in 6 months	Physical and Chemical Characteristics

8	Greenbelt	Within the Project Area	Daily	Monthly	Maintenance
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## 7. ADDITIONAL STUDIES

### 7.1 RISK ASSESSMENT

The methodology for the risk assessment has been based on the specific risk assessment guidance issued by the Directorate General of Mine Safety (DGMS), Dhanbad, vide Circular No.13 of 2002, dated 31<sup>st</sup> December, 2002. The DGMS risk assessment process is intended to identify existing and probable hazards in the work environment and all operations and assess the risk levels of those hazards in order to prioritize those that need immediate attention. Further, mechanisms responsible for these hazards are identified and their control measures, set to timetable are recorded along with pinpointed responsibilities.

The whole quarry operation will be carried out under the direction of a Qualified Competent Mine Manager holding certificate of competency to manage a metalliferous mine granted by the DGMS, Dhanbad for proposed project. Risk Assessment is all about prevention of accidents and to take necessary steps to prevent it from happening.

### 7.2 DISASTER MANAGEMENT PLAN

Natural disasters like Earthquake, Landslides have not been recorded in the past history as the terrain is categorized under seismic zone III. The area is far away from the sea hence the disaster due to heavy floods and tsunamis are not anticipated.

The Disaster Management Plan is aimed to ensure safety of life, protection of environment, protection of installation, restoration of production and salvage operations in this same order of priorities.

The objective of the Disaster Management Plan is to make use of the combined resources of the mine and the outside services to achieve the following:

- Rescue and medical treatment of casualties;
- Safeguard other people;
- Minimize damage to property and the environment;
- Initially contain and ultimately bring the incident under control;
- Secure the safe rehabilitation of affected area; and
- Preserve relevant records and equipment for the subsequent inquiry into the cause and circumstances of the emergency.

### 7.3 CUMULATIVE IMPACT STUDY

#### CUMULATIVE PRODUCTION LOAD OF ROUGH STONE IN CLUSTER

Quarry	PROPOSED PRODUCTION DETAILS			
	5 Years in m <sup>3</sup>	Per Year in m <sup>3</sup>	Per Day in m <sup>3</sup>	Number of Lorry Load Per Day
P1	2,01,270	40,254	134	11
P2	1,00,363	20,072	67	6
P3	1,95,935	39,187	131	11
P4	58,180	11,636	39	3
P5	1,55,100	31,020	103	9
P6	6,97,617	1,39,523	465	39

P7	72,830	14,566	49	4
<b>Total</b>	<b>14,81,295</b>	<b>296258</b>	<b>988</b>	<b>83</b>
E1	369000	73800	246	21
E2	177020	35404	118	10
E3	268630	53726	179	15
E4	1,92,600	38520	128	11
E5	1,84,295	36,859	123	10
E6	5,37,600	1,07,520	358	30
<b>Total</b>	<b>8,14,650</b>	<b>2,38,309</b>	<b>1152</b>	<b>97</b>
<b>Grand Total</b>	<b>22,95,945</b>	<b>5,34,567</b>	<b>2140</b>	<b>180</b>

#### CUMULATIVE PRODUCTION LOAD OF GRAVEL IN CLUSTER

Quarry	PROPOSED PRODUCTION DETAILS			
	3 Years in m <sup>3</sup>	Per Year in m <sup>3</sup>	Per Day in m <sup>3</sup>	Number of Lorry Load Per Day
P1	36,756	12,252	41	3
P2	4,494	1,498	5	1
P3	14,820	4,940	16	1
P4	11,700	3,900	13	1
P5	33,436	11,145	37	3
P6	65,004	21,668	72	5
P7	16,606	5,535	18	1
<b>Total</b>	<b>1,82,816</b>	<b>60,938</b>	<b>202</b>	<b>15</b>
E1	37,376	18,688	62	5
E2	7,068	2,356	8	1
E3	24,044	8,014	27	2
E4	20,340	6,780	22	2
E5	23,128	7,709	26	2
E6	47,098	15,699	52	4
<b>Total</b>	<b>1,59,054</b>	<b>59,246</b>	<b>197</b>	<b>16</b>
<b>Grand Total</b>	<b>3,41,870</b>	<b>1,20,184</b>	<b>399</b>	<b>31</b>

#### PREDICTED NOISE INCREMENTAL VALUES FROM CLUSTER

Location ID	Background Value (Day) dB(A)	Incremental Value dB(A)	Total Predicted dB(A)	Residential Area Standards dB(A)
Habitation Near P1	46.2	47.2	49.8	55
Habitation Near P2	47.5	46.7	50.1	
Habitation Near P3	50.3	48.7	52.6	
Habitation Near P4	46.5	41.0	47.6	
Habitation Near P5	46.2	47.2	49.8	

Habitation Near P6	47.5	46.7	50.1
Habitation Near P7	50.3	48.7	52.6
Habitation Near E1	42.7	48.1	49.2
Habitation Near E2	43.1	44.5	46.9
Habitation Near E3	43.8	42.4	46.2
Habitation Near E4	42.7	48.5	49.5
Habitation Near E5	43.7	46.1	48.1
Habitation Near E6	44.9	49.2	50.6

### SOCIO ECONOMIC BENEFITS

	Project Cost	CER
P1	Rs. 1,91,56,000/-	Rs. 5,00,000/-
P2	Rs. 63,45,000/-	Rs. 5,00,000
P3	Rs. 1,54,08,000 /-	Rs. 5,00,000
P4	Rs. 92,72,000/-	Rs. 5,00,000
P5	Rs. 1,55,70,000/-	Rs. 5,00,000
P6	Rs. 2,89,16,000/-	Rs. 5,00,000
P7	Rs. 71,16,000/-	Rs. 5,00,000
<b>Total</b>	<b>Rs.10,17,83,000/-</b>	<b>Rs.35,00,000/-</b>
E1	Rs.89,51,000/-	Rs. 5,00,000
E2	Rs.1,06,08,000/-	Rs. 5,00,000
E3	Rs.1,04,17,000/-	Rs. 5,00,000
E4	Rs.88,77,100/-	Rs. 5,00,000
E5	Rs.2,98,41,200/-	Rs. 5,00,000
E6	Rs.1,59,83,000/-	Rs. 5,00,000
<b>Total</b>	<b>Rs.8,46,77,300/-</b>	<b>Rs.30,00,000/-</b>
<b>Grand Total</b>	<b>Rs.18,64,60,300/-</b>	<b>Rs.65,00,000/-</b>

A total of 202 people will get employment due to 7 proposed mines in cluster and 368 people are already employed at existing mines.

Allocation for Corporate Environment Responsibility (CER) shall be made as per Government of India, MoEF & CC Office Memorandum F.No.22-65/2017-IA.III, Dated: 01.05.2018 by all the mines.

### 8. PROJECT BENEFITS

Seven Proposed Projects for Quarrying Rough Stone at Kodangipalayam & Ichipatti Village aims to produce cumulatively **14,81,295** m<sup>3</sup> Rough Stone a period of 5 Years & **1,82,816** m<sup>3</sup> of Gravel over a period of 3 Years This will enhance the socio-economic activities in the adjoining areas and will result in the following benefits.

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### Increase in Employment Potential

- Improvement in Socio-Economic Welfare
- Improvement in Physical Infrastructure
- Improvement in Social infrastructure

## 9. ENVIRONMENT MANAGEMENT PLAN

The Environment Monitoring cell discussed formed by the mine management will ensure effective implementation of environment management plan and to ensure compliance of environmental statutory guidelines through Mine Management Level.

The said team will be responsible for:

- ✚ Monitoring of the water/ waste water quality, air quality and solid waste generated
- ✚ Analysis of the water and air samples collected through external laboratory
- ✚ Implementation and monitoring of the pollution control and protective measures/ devices which shall include financial estimation, ordering, installation of air pollution control equipment, waste water treatment plant, etc.
- ✚ Co-ordination of the environment related activities within the project as well as with outside agencies.
- ✚ Collection of health statistics of the workers and population of the surrounding villages.
- ✚ Green belt development.
- ✚ Monitoring the progress of implementation of the environmental monitoring programme.
- ✚ Compliance to statutory provisions, norms of State Pollution Control Board, Ministry of Environment and Forests and the conditions of the environmental clearance as well as the consents to establish and consents to operate.

## 10. CONCLUSION

Various aspects of mining activities were considered and related impacts were evaluated. Considering environmental impacts are associated, EMP will be under regular review. Senior Management responsible for the project will conduct a review of EMP and its implementation to ensure that the EMP remains effective and appropriate. Thus, the proper steps will be taken to accomplish all the goals mentioned in the EMP and the project will bring the positive impact in the study area. All the possible ways to mitigate the environmental concerns Environmental Management Plan was prepared and fund has been allocated for the same. The EMP is dynamic, flexible and subjected to periodic review.

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