

# OFFICE OF THE TAHASILDAR, SONEPUR

Letter No. 5901 / Dtd. 14-12-2021

To

The Chairman,  
State Environment Impact Assessment Authority,  
Qr. No-5 R F-2/1, Unit-9, Bhubaneswar- 751022.

Sub: Application for Environmental Clearance as per EIA Notification 2006 and amended thereafter from MoEF & CC for production of 540 Cum/year of Ragudipali Stone Quarry over an 0.914 ha at village Ragudipali under Sonepur Tahasil of Subarnapur district, Odisha.

Sir,

With reference to the above cited subject, I am herewith submitting the application for grant of "Environmental Clearance" for Ragudipali Stone Quarry (0.914 ha) at village Ragudipali under Sonepur Tahasil of Subarnapur district, Odisha as per the procedure specified in EIA Notification 2006 & amendment thereafter.

In this connection, please find the enclosed documents for your kind perusal and necessary approval.

**Enclosures:-**

1. Check List
2. Form-I
3. Approved Mining Plan
4. Pre feasibility Report
5. Environment Management Plan
6. DSR and other relevant documents.

Yours faithfully,

  
**Tahasildar**  
Tahasildar, Sonepur

## MODIFIED CHECK LIST FOR MINOR MINERAL MINING PROJECT

1.	Online date of application & File No.	:	
2.	Scrutiny fees challan details	:	Not Applicable
3.	Name & address of the Applicant (with postal pin code, mobile / landline no., Email ID.)	:	Tahasildar, Sonepur At/Po/Ps-Sonepur Dist- Subarnapur, Odisha, Pin- 767017 Contac No- 06654-220230 E-Mail Id- tah.sonepur-od@nic.in (On Behalf of Successful Bidder)
4.	Category of Project(B1/B2)	:	B2
5.	Type of proposal (New / Existing / Expansion/ Extension / Amendment)	:	New
6.	Name of the Minor Mineral projects	:	Road Metal (Ragudipali Stone Quarry)
7.	Whether the present proposal is shown as an identified source of the particular minor mineral in the approved DSR report of the District (Yes / No.) If yes, the page no. / para no / map location in DSR report.	:	Yes  SL No- 4 of Page No- 9
8.	Lease period, letter of lease and lease execution documents granted by the concerned authority.	:	5 Years & Letter No- 1913 & date-09.04.2021
9.	Area of the lease (ha)	:	0.914 Ha
	a) Forest Land (ha.)	:	No Forest land involved.
	i) If Forest land; status of forest clearance	:	
	b) Non-forest / Govt. land (ha.)	:	0.914 Ha
	c) Non-forest Private land (ha.)	:	Not Applicable
10.	For Minor Mineral other than Sand (i.e. Stone / Murrum / Laterite / Decorative Stone / Brick Earth etc.), the concerned DFO to verify the DLC report of the District, and inform, if the proposed lease area plots are listed therein as forest land. Whether the said Certificate from DFO is attached (Yes / No)	:	Yes,  DLC certificate is Attached..
11.	For Brick Earth Minor Mineral cases on Agricultural land Please specify following:	:	Not Applicable
	(i) Upland / medium land / low land	:	Not Applicable
	(ii) Rain fed / irrigated	:	Not Applicable
	(iii) Cropping pattern involved	:	Not Applicable
	(iv) Distance of site from nearest Thermal Power Plant	:	Not Applicable
12.	Whether any vegetation exists in the lease area? If so, specify the type and quantity (number/area)	:	No Vegetation exists in the lease area.

13.	Location of mine (Detailed land schedule, etc.) with landmark.	:	Ragudipali Stone Quarry		
	i) District	:	Subarnapur, Odisha		
	ii) Tahasil	:	Sonepur		
	iii) Name of the River, incase of Sand Bed	:	Not Applicable		
	iv) Village / Mouza	:	Ragudipali		
	v) Khata No.	:	229		
	vi) Plot No.	:	Sl. No.	Plot No.	Kisam
	vii) Kisam (Classification)	:	1	495 497 500	Patharbani
	viii) Co-ordinates of the site (Latitude and Longitude)	:	Latitude: N20° 53' 05.3" to N20° 53' 10.2" Longitude: E83° 46' 57.3" to E83° 47' 03.2"		
14.	Longitude and Latitude of nearest mine with boundary to boundary distance.	:	Nearest Mine- Kirtipur Stone Quarry is at a distance of 2 Km. Latitude : N20° 53' 45.9" to N20° 53' 52.0" Longitude: E83° 46' 06.9" to E83° 46' 15.4".		
15.	Whether mine area shown clearly in topo map and village sheet (in colour marking) (Yes / No.)	:	Yes, lease area Shown in Colour Marking.		
16.	<b>Environmental Sensitivity (should be mentioned clearly in Kilometers)</b>				
Sl. No.	Area		Distance in Kilometer from the boundary of the lease area with Geo-coordinate i.e. longitude and latitude		
I.	<b>Distance from the following infrastructural facilities</b>				
	Nearest Railway line (with name)	:	Khaliapali Railway Station-26.7 Km Latitude- N20°56'56.55" Longitude- E83°32'09.51"		
	Nearest National Highway (with name)	:	NH-224 is 5.5 km away from lease area (Sonepur -Bolangiri Road) Latitude- N20°50'36.91" Longitude- E83°48'43.64"		
	Nearest State Highway (with name)	:	SH-55 is about 3.5 Km from lease area (Sonepur -Rampur road) Latitude- N20°53'37.76" Longitude- E83°48'56.63"		
	Nearest Major District Road (with name)	:	District Major road-5.5 Km (Sonepur -Bolangiri Road) Latitude- N20°50'36.91" Longitude- E83°48'43.64"		
	Nearest Any Other Road (with name)	:	Village Road-0.7 Km (Ragudipali Village Road) Latitude- N20°52'58.64" Longitude- E83°47'23.79"		
	Nearest Railway bridge / road bridge	:	Road Bridge, Nearest Dhaurakhman Village- 3.5 Km Latitude- N20°53'48.35" Longitude- E83°48'54.99"		
	Nearest Electric transmission line pole or tower	:	Nearest Electric Transmission Line Pole is 1 Km from the lease area at Ragudipali. Latitude- N20°53'10.36" Longitude- E83°47'39.86"		



	Nearest Canal or check dam or reservoirs or lake or ponds	: Pond-1.3Km. Latitude- 20°52'58.50 " Longitude- E83°46'15.52"
	Nearest in-take point with name for drinking water / industrial use	: Drinking water/Industrial use-1km (Ragudipali Village) Latitude- N20°53'10.36" Longitude- E83°47'39.86"
	Nearest intake for irrigation	: Mega Lift Irrigation Project Gunjimunda Schme(Pump House)-25.5Km Latitude- N20°39'43.24" * Longitude- E83°43'38.41"
	Nearest River Embankment	: Nearest River Embankment - 1.8 Km Latitude- N20°53' 54.94" Longitude- E83°47' 34.98"
	Nearest point of intersection of the road used for transporting the minerals from the lease area with the NH/SH/Major district road/any other road.	: Nearest point of intersection of the road to SH-55 is at a distance of 3.5 KM from the lease area. Latitude- N20°53'37.76" Longitude- E83°48'56.63"
	Distance of the haulage road(If to be constructed separately) from the embankment. If so, length and width of the haulage road and meeting point of haulage road with any other main road and also distance between the village road and the haulage road.	: Not Applicable
	Villages and name of those villages and their roads that will be used for transportation of minerals.	: Village Road-0.7 Km (Ragudipali Village Road) Latitude- N20°53'48.35" Longitude- E83°48'54.99"
	Number and type of vehicle to be engaged for the purpose of transportation and their frequency of plying.	: JCB-2 Nos. Hyva-3 Nos Tipper/Tractor- 2 Nos
	Time and duration during which the loaded and empty vehicles for minerals will be used. Total distances of such village(s) road.	: 8 hrs in a day. For loading and transport. Mine site to village Road -0.7 Km Latitude- N20°53'48.35" Longitude- E83°48'54.99"
ii.	Nearest Sanctuary / National Park/Eco-Sensitive Zone / Elephant Corridor/ Conservation Reserve and its distance from boundary of lease. (along with name of the Sanctuary / National Park) etc.	: 67 Kms from Debrigarh Wildlife Sanctuary Latitude- N21°29'24.47" Longitude- E83°45'16.37"
iii.	Nearest reserve forest (with name) with distance.	: Gargabahal Reserve Forest- 8 Km Latitude- N20°57'26.64" Longitude- E83°47'24.75"
iv.	Nearest Archaeological site (along with the name of the Archaeological Site) with distance.	: Maa Purnamasi Temple - 3 Km. Latitude- N20°53'49.78" Longitude- E83°45'23.06"
v.	Nearest State boundaries with distance.	: Nearest State boundaries is at Bamhmidwar, Chhattisgarh at a distance of 68 Km. Latitude- N21°09'08.44" Longitude- E83°11'32.89"

vi.	Nearest Defense installations with distance.	: Sonepur- 13 km Longitude- E83°53'37.62" Latitude- N20°50'51.27"		
vii.	Nearest Densely populated / built-up area / human habitation with distance from boundary of lease. (Name of the nearest habitation)	: 1 Km from the lease area at Ragudipali Village. Latitude- N20°53'10.36" Longitude- E83°47'39.86"		
viii.	High tide line of sea and river, Nala, canal, estuaries as per CRZ act on upstream and its distance from boundary of lease.	: Bay of Bengal-213.5 Km Latitude- N19°26'57.16" Longitude- E85°08'49.85"		
ix.	Nearest areas occupied by sensitive man-made land uses with distance. (hospitals, educational institutions, places of worship, community facilities, viz bus stoppage, park etc)	: Government Hospital, Binka - 15 Km Latitude- N21°01'34.16" Longitude- E83°48'37.85"  Kartang School – 4.3 Km Latitude- N20°55'09.87" Longitude- E83°48'09.71"  Maa Purnamasi Temple – 3 Km. Latitude- N20°53'49.78" Longitude- E83°45'23.06"  Children's Park,Sonepur -14 Km Latitude- N20°50'45.08" Longitude- E83°54'41.74"		
17.	<b>Details of other mine(s) located within 500 meter from the periphery of the lease area</b>			
Sl. No.	Name and address of the mine	Name of mineral	Lease area	EC status
(i)	No other mines located within 500 meter from the preparing of the lease area.	Not Applicable	Not Applicable	Not Applicable
18.	Certificate of the Tahasildar that there is no other minor mineral lease or proposed lease area located within 500 m from the periphery of the proposed mine lease area as per approved DSR report in the area.  Whether Certificate from Tahasildar attached (Yes/No)	: Yes, Certificate is attached.  :		
19.	<b>Other Proposals of the Same Lessee/proponent submitted for EC</b>			
Sl. No.	Name and address of the mine	Name of mineral	Lease area	EC status
(i)	Kirtipur Stone Quarry	Stone	1.651 Ha	Under Process
20.	Whether the mining plan is approved? (Yes/No) If so, period of plan and name of the competent approving authority	: Yes, Approved by N.K Mishra, JDG, Authorised Officer, O/o Joint Directorate of Geology,Balangir Govt. of Odisha		



21.	Mining method (Manual/Semi mechanized/Mechanized)	:	Opencast Semi-Mechanized method of mining will be adopted.
22.	Whether drilling and blasting is required(Yes / No.) If yes, explosive storage license status:	:	Yes, The project proponent will get the explosive storage license certificate from the concerned authority after finalization of tendering process.
23.	If any other minor mineral rich or proposed lease area is located within 500 mtrs from the periphery of the proposed mine lease area exist, the corresponding names with exact distances along with Geo-coordinates  I.e. longitude and latitude is be indicated	:	No other mines located within 500 meter radius the proposed Quarry.
24.	Plan for year wise plantation with species at the river embankment and along side of haulage road/village road for sand mining be indicated.	:	This is Stone Quarry project. Year-wise Plantation will be developed along the safety zone area @ 50 Nos. of Saplings per Year. (As per approved Mining Plan)
25.	Top and Bottom R.L. of the stone quarry	:	Top RL-131 mRL Bottom RL- 129 mRL
26.	Whether any no complaint or court case exists against the lease (Yes / No)	:	No court case against the lease.
27.	Whether any EC granted earlier by SEIAA / DEIAA (Yes / No)	:	Yes. Previous EC Letter Attached

Counter signed and recommended for  
Environmental Clearance

  
Tahasildar  
Sonepur  
Signature with seal of Tahasildar

Certified that the information  
furnished above are true to the best of  
my Knowledge

  
Signature of Applicant  
Sonepur

  
Tahasildar  
Sonepur

Encl: The following documents are mandatory to submit along with filled-in checklist to receipt the proposal for consideration of Environmental Clearance:

		Put mark	tick
1.	Form-I duly filled.	✓	
2.	Pre-feasibility Report (PFR) properly binding.	✓	
3.	Environment Management Plan (EMP) properly binding.	✓	
4.	Approved District Survey Report for minor mineral as per the amended Notification S.O. No. 3977(E) dated 14.08.2018 issued by MoEF&CC, Govt. of India.	✓	
5.	Certificate from the concerned DFO/ Tahasildar about involvement of DLC land in the lease area, whether it is forest or non-forest land (in case minor mineral other than sand).	✓	
6.	Certificate from Tahasildar that there is no other mines located within 500m from the periphery of the proposed mine lease area as per DSR report in the area.	✓	
7.	Certificate from Tahasildar indicating distance of boundary of mining lease from River Bridge, Railway Bridge, river embankment and Electric High Transmission Line (in case of sand mining).	✓	
8.	Location map / Trace map from Tahasildar of all leases (existing & operating) around 1 km area of the project site.	✓	
9.	Full scape toposheet (1:50,000 scale) showing all features and depicting lease site (colour marking).	✓	
10.	Full scape village sheet showing location of the project and other mines within 500 meter (colour marking).	✓	
11.	Full scape Toposheet showing areas within 10 Km radius from the lease area including Sanctuary/National Park, if Any (colour marking).	✓	
12.	Lease permission /sanction order of Competent Authority (Tahasildar /any other).	✓	
13.	Scrutiny fee payment details	✓	
14.	Approved mining plan along with approval letter.	✓	
15.	Category of land and conversion document, if required	--	
16.	Copy of Environmental Clearance, if granted by DEIAA/SEIAA earlier and compliance to the Environmental Clearance conditions if granted.	--	
17.	Distance from the nearest Eco-sensitive Zone in map	✓	
18.	Google map showing the present lease hold area with all sairat source within 500 meter boundary of the lease hold area.	✓	

## CERTIFICATE

This is to certify that there is no mines comes within 500mtr radius from **Ragudipali Stone Quarry** under Sonepur Tahasil, Dist - Subarnapur which have been applied for EC. The Land Schedule details is given in the table below:-

### LAND SCHEDULE

Sl. No.	Name of Source	Khata No.	Plot No.	Area in Ac.	Kisam
1	Ragudipali Stone Quarry	229	495	0.980	Patharbani
			497	0.280	
			500	1.000	
			3 Plots	2.260Ac / 0.914 Ha	

*Ndr*  
Tahasil  
Sonepur  
Tahasildar, Sonepur



# OFFICE OF THE TAHASILDAR, SONEPUR

Letter No. 5902 / Dtd. 14.12.2021

To,

The Chairman,  
State Environment Impact Assessment Authority,  
Qr. No-5 R F-2/1, Unit-9, Bhubaneswar- 751022.


Sub-Clarification of DLC status for Minor Minerals proposals-regarding.

Sir,

With reference to your letter cited above on the captioned subject, it is to inform you that, the Plot No-495,497 & 500, Khata No-229 as mentioned against the Mouza- Ragudipali are not included in the DLC report.

Sl. No.	Name of Source	Khata No.	Plot No.	Area in Ac.	Kisam
1	Ragudipali Stone Quarry	229	495	0.980	Patharbani
			497	0.280	
			500	1.000	
			3 Plots	2.260Ac / 0.914 Ha	

Yours faithfully,

  
Tahasildar,  
Sonepur



**GOVERNMENT OF ODISHA**  
**OFFICE OF THE JOINT DIRECTOR GEOLOGY ZONAL SURVEY, BALANGIR**

E.mail-jdgbgr@gmail.com

Phone: 06652 250935, Tel/Fax: 06852 250936

Letter No.

/BZ, Dt.

From

The Joint Director, Geology, (I/C)  
Zonal Survey, Balangir.

To

**The Tahasildar, Sonepur,  
Dist- Subarnapur.**

Sub: Approval of Mining Plan with progressive mine closure plan in respect of applied area over **2.260 Acres or 0.914 Hects.** for grant of **Rugudipali Stone Quarry** in Village-**Rugudipali** under **Sonepur** Tahasil of **Subarnapur** District for **Black Stone** in favour of **Tahasildar, Sonepur.**

Sir,

In exercise of powers conferred by the rule 27-A & 28(5) of chapter-IV & chapter-V of OMMC (Amendment) Rules, 2014 vide notification S.R.O. No. 443/2014, Dt. 16.09.2014 and No. 7293/SM, Dt. 25.09.2014 & S.R.O. No. 601/SM, Dt. 14.12.2016 of Steel & Mines Dept. Govt. of Odisha, the Modified Mining Plan Submitted by Sri Saidatta Das Regd. No.RQP/OD/074/2017 as per rule-28(5) in respect of the above applied Quarry Lease area is hereby approved by undersigned subject to the following conditions.

- I. This Mining Plan is approved without prejudice to any other laws applicable to the Quarry Lease/Area from time to time whether made by the Central Govt. /State Govt. /any other authority.
- II. The Mining Plan is approved without prejudice to any order or direction from the Court of Competent jurisdiction.
- III. The approval of aforesaid Mining Plan does not in any way imply the approval of the Govt. in terms of any other provisions under OMMC (Amendment) Rules, 2016 or any other laws.
- IV. Forest growth, if any available in the area shall not be cut or cleared during quarrying operation without prior approval of forest authority.
- V. Tahasildar should visit the mines/quarry from time to time during mining operation to ensure the progress of mining work as per the approved plan.
- VI. The lessee should strictly adhere to the OMMC (AMENDMENT) Rules, 2016 in all respect while undertaking the mining operation during his tenure of lease. Two copies of Approved Mining Plan are enclosed herewith for your needful action.

Yours faithfully,

*Sdf -*

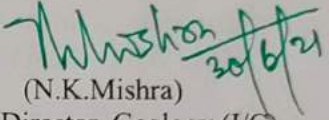
(N.K.Mishra)

Joint Director, Geology(I/C)  
Zonal Survey, Balangir



Memo No. 636 /BZ, Dt. 30.6.2021

Copy to Sri Saidatta Das, Regd. No. RQP/OD/074/2017 Geo-Environmental Services, Bhubaneswar, Dist.- Khurda (Odisha) for information and necessary action.

  
(N.K.Mishra)

Joint Director, Geology, (I/C)  
Zonal Survey, Balangir

# **MINING PLAN**



*(Prepared under Rule 28 (4) of the Odisha Minor Mineral Concession*

*Rules, 2016)*

*OF*

## **RAGUDIPALI STONE QUARRY**

OVER 2.260 ACRES OR 0.914 HECT IN VILLAGE RAGUDIPALI UNDER SONEPUR  
TAHASIL OF SUBARNAPUR DISTRICT, ODISHA

**ON BEHALF OF**  
**TAHASILDAR, SONEPUR**  
**SUBARNAPUR, ODISHA**

**PREPARED BY**

**SAIDATTA DAS**

**RQP/OD/074/2017**

**MOB-7978772448**

**GEO ENVIRONMENTAL SERVICES, BBSR**



**APPROVED**

*Thirushor 20/6/21*

**JOINT DIRECTOR GEOLOGY (I/C)**  
**ZONAL SURVEY, BALANGIR**



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## Consent Letter

The Mining Plan of **Ragudipali Stone Quarry** over **2.260 Acres / 0.914** Hectares from village **Ragudipali** under **Sonepur** Tahasil of **Subarnapur** district, Odisha has been prepared by **Mr. Saidatta Das, RQP/OD/074/2017**. I request the authorized officer O/o, The Joint Directorate of Geology, Bolangir to make further correspondences on his following address:

**Mr. Saidatta Das**  
**4<sup>th</sup> floor Flat No-405**  
**Nageswar Residency, Kalarahanga, Patia**  
**Bhubaneswar**  
**Cell No:+91-7978772448**  
**Email:saidattadas143@gmail.com**  
**Regn. No.-RQP/OD/074/2017**

I hereby undertake that the mining plan with progressive mine closure plan have been made by the RQP with my knowledge and consent and shall be acceptable to me and binding on me in all respects.

  
**Tahasildar, Sonepur**  


Place:  
Date:

A



## Certificate from RQP

Certified that the provisions of Odisha Minor Minerals Concession Rules, 2016 have been observed in the mining plan in respect of **Ragudipali Stone Quarry** over an area of **2.260 Acres / 0.914 Hectares** from village **Ragudipali** under **Sonepur** Tahasil of **Subarnapur** district Odisha, prepared under Rule 28(4) of OMMC Rules 2016 of **Tahasildar, Sonepur** and wherever specific permission is required, the lessee will approach the concerned statutory authorities.

Certified that the information furnished in the mining plan is correct to the best of my knowledge and belief.

  
Mr. Saiddatta Das  
RQP/OD/074/2017

Geo Environmental Services, BBSR

B



## Certificate from Revenue Inspector

Certified that the lease area is demarcated and shown in the field by me in respect of **Ragudipali Stone Quarry** over an area of **2.260 Acres / 0.914 Hectares** from village **Ragudipali** under **Sonepur** Tahasil of **Subarnapur** district, Odisha of the applicant **Tahasildar, Sonepur** for quarrying and mining the area.

The detail of the land schedule is given in the below table:-

Village	Khata No	Plot No	Area (In Acres)	Kissam
Ragudipali	229	495	0.980	Patharbani
		497	0.280	
		500	1.000	
		3 Plots	2.260 Ac / 0.914 Ha	

Certified that the information furnished by me is correct to the best of my knowledge.

14/05/2014  
Revenue Inspector

C





### **LIST OF ANNEXURES**

- I. Copy of letter of Tahasildar to prepare mining plan
- II. Copy of RQP Certificate

### **LIST OF PLATES**

LIST OF PLATES		
Plate No.	Description	Scale
I	Key Plan	1 : 50,000
II	Lease plan	16" = 1 mile
III	Surface Plan	1 : 1,000
IV	Geological Plan	1 : 1,000
V	Development Plan	1 : 1,000
VI	Environmental Management Plan	1 : 1,000
VII	Progressive Mine Closure Plan	1 : 1,000

D

**MINING PLAN FOR WINNING OF STONE (ROAD METAL) UNDER RAGUDIPALI VILLAGE,  
UNDER SONEPUR TAHASIL OF SUBARNAPUR DISTRICT, ODISHA**



**Introduction:**

The area over 2.260 Ac.(0.914 Ha) under reference is located in village Ragudipali under Sonepur Tahasil in Subarnapur district of Odisha. The quarry lease has been proposed to be granted by the Tahasildar, Sonepur for minor mineral (Road metal) for the five years.

The area under reference is featured in the Survey of India Topo-sheet no. F44X13 and bounded between the latitudes of N20° 53' 05.3" to N20° 53' 10.2" and longitudes of E83° 46' 57.3" to E83° 47' 03.2".

The representative of the competent authority, i.e. the Revenue Inspector of the concerned area surveyed the area in the field (map enclosed in Annexure-II), the co-ordinates and levels of the area was recorded with GPS at the time of very fixation for boundary description of the area. The co-ordinates of boundary corner points are shown in the Surface Plan (Plate No.3) and in boundary description in the prescribed minor mining plan format-O.

**APPROVED**

*Whisker 20/6/21*  
**JOINT DIRECTOR GEOLOGY (I/C),  
ZONAL SURVEY, BALANGIR**

*Saidatta Das*  
**SAIDATTA DAS**

**RQP/OD/074/2017  
GEOENVIRONMENTAL SERVICES, BBSR**

## FORM - O

(Under Rule 28 (4) of the Odisha Minor Mineral Concession Rules, 2016)

(As per MoEF Notification, 2006 and its amendments-Category: B2)

As per the provisions/guidelines of MCDR, 1988- Category: B)



1. **Name & Address of the Lessee** : On behalf of  
Tahasildar, Sonapur  
Subarnapur, Odisha
2. **Particulars of the Area (Acreage, Boundary Description & Land Schedule), Attach Location map and surface plans showing the existing features of the area with contours at 2m interval):**

This area comprises of 2.260 Acres/0.914 Hectares acreage. Boundary description & land schedule has been mentioned below. Location map & surface plan has been attached as Plate no -1 & 3 respectively.

### **BOUNDARY DESCRIPTION:**

The pillar co-ordinates given below are calculated by geo-referencing based on the DGPS as shown by the representative of the competent authority.

PILLAR NO	LATITUDE	LONGITUDE
1	N20° 53' 05.3"	E83° 46' 57.4"
2	N20° 53' 05.8"	E83° 47' 00.4"
3	N20° 53' 06.4"	E83° 47' 00.4"
4	N20° 53' 06.6"	E83° 46' 59.6"
5	N20° 53' 07.0"	E83° 46' 59.7"
6	N20° 53' 07.0"	E83° 47' 00.8"
7	N20° 53' 07.7"	E83° 47' 00.9"
8	N20° 53' 07.8"	E83° 47' 01.3"
9	N20° 53' 07.7"	E83° 47' 03.1"
10	N20° 53' 08.1"	E83° 47' 03.2"
11	N20° 53' 09.0"	E83° 47' 02.7"
12	N20° 53' 10.0"	E83° 47' 00.4"
13	N20° 53' 10.2"	E83° 46' 59.8"
14	N20° 53' 09.8"	E83° 46' 59.1"
15	N20° 53' 09.0"	E83° 46' 59.3"
16	N20° 53' 08.8"	E83° 47' 00.4"
17	N20° 53' 08.0"	E83° 47' 00.1"
18	N20° 53' 06.3"	E83° 46' 57.3"

Mining Plan; RAGUDIPALI STONE QUARRY over 2.260 Acres/0.914 Hectares in Village- RAGUDIPALI

**APPROVED**

JOINT DIRECTOR GEOLOGY (I/C)  
ZONAL SURVEY, BALANGIR

SANDIP DAS

RQP/OD/074/2017

GEOENVIRONMENTAL SERVICES, BBSR





### **LAND SCHEDULE:**

As per the lease plan the Land schedule is as follows:

Village	Khata No	Plot No	Area (In Acres)	Kissam
Ragudipali	229	495	0.980	Patharbani
		497	0.280	
		500	1.000	
		3 Plots	2.260 Ac / 0.914 Ha	

3. **Status of the Lessee: (Private Individual/ Private Company/ Public Sector/ Undertaking/ Joint Sector Undertaking/ Others)** : Others, On the behalf of Tahasildar, Sonepur
4. **Period of the concession** : 5 years
5. **Mineral intended to be won** : Black Stone
6. **Name, Address & Registration No. of RQP Preparing the mining plan with validity of Recognition.** : Sri Saidatta Das  
S/o Sri Pravat Kumar Das  
House No-405, Nageswore Residency,  
Kalarahanga, Patia, BBSR, 751024  
saidattadas143@gmail.com  
Mobile --91-7978772448  
Regn. No. - RQP/ OD/074/2017
7. **Order No. & date of Competent Authority; granting the concession: (Copy of the order to be attached)**(Copy enclosed in Annexure I) : Letter No-1913 & Date-9.4.2021 of Sonepur Tahasildar
8. **If, forest area, whether forest clearance obtained (Attached copy of forest clearance)** : No Forest land is involved in the lease hold area. So forest clearance is not required.

3

**Mining Plan; RAGUDIPALI STONE QUARRY over 2.260 Acres/0.914 Hectares in Village- RAGUDIPALI**

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SAIDATTA DAS  
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**9. Reserves (Estimation to be based on the exploration, if any, carried out in the area or on the local parameters)**

The area under report forms a part of Eastern Ghats super group Granite rocks, comprising of Granite gneisses. It is hard, compact and medium to fine grained rock and leucocratic to melanocratic in nature. Mineralogically it contains Pyroxene, Hornblende, Plagioclase & Quartz. The rock is regionally metamorphosed to Granulite facies. The main rock types encountered in the area are Granites, Dolerites, Quartzites. The rock in this Q.L. area cannot be raised in form of blocks for decorative use because of presence of undersize boulders, cracks, joints & color variation. Rather it may be only used for road development, construction and building purposes.

The proposed area is occupied by the Eastern Ghats Mobile Belt (EGMB) constituted of rock types belonging to Eastern Ghats Supergroup comprising metasediments, Granite and its variants and migmatitic granitoids. All the above mentioned lithotypes have undergone and are products of intense polyphase deformation and granulite facies metamorphism during proterozoic. Magmatic bodies intrusive into EGMB include massif-type anorthosites, miaskitic nepheline syenite and minor ones like peridotite and pyroxenite.

The area constitutes part of Eastern Ghats belt of Archaean age. The strongly metamorphosed sequence of litho-facies along with its structural complexity indicates a complex tectonic history of the Eastern Ghats Supergroup.

The lithological assemblage of Khondalite Group of rocks, Granites and the ubiquitous gneisses along with the related pegmatites and quartz veins comprise the Eastern Ghats Group. The laterites and quarternaries represent the Pleistocene and Holocene formations.

Quartz - garnet - sillimanite - graphite gneisses and schists, quartzite and calc - granulites, represent the khondalite group. The pyroxene granulites, termed by some workers as Granite, comprise the Granite suite along with its intermediate and acid variants. The entire sequence of both the groups has undergone regional metamorphism along with the intrusion of Granite syntectonically resulting in obliteration of structural and metamorphosed features. Extensive migmatization has affected all the litho-units to various degrees along with emplacement of pegmatites and quartz veins.

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### **Local Geology:**

The lease area under the report contains various granitic rocks. The total area represents Granite throughout the hillock. The dip amount is 80°.

Granite occurrence is found to be jointed & fractured. Due to the presence of joints & fractures, the rock is not suitable for decorative stone and therefore used for road construction & buildings.

### **Reserve (Method of estimation of reserve)**

- (i) The reserve of road metal in the leasehold area been calculated by cross sectional area method.
- (ii) The cross sectional area of each section have been calculated and multiplied with the length of influence of the respective section & recovery factor to achieve the volume of rock mass in Cu.m.
- (iii) The Geological reserves have been calculated under proved, probable and possible category for road metal. Where as mineable reserve has been calculated upto the ultimate pit limit, which has been proposed up to the probable zone excluding 7.5m safety zone.
- (iv) The top most RL of the lease area is 131mRL and the lowest RL is 129mRL and from field survey it is found that there are three existing quarries present in the lease hold area. The lowest RL of the lease area has been considered as the proved limit for the quarry lease area. Further 6m below the prove limit has been considered as probable limit that is 123mRL.
- (v) As there is exposed rock body present in the quarry lease area, 10% of RoM will be removed and will be treated as waste. However 90% of RoM is the ore expected. Detail calculation has been shown in the table.
- (vi) For the reserve assessment, 2 no of cross-sections along A-A' & B-B' has been drawn based on the field observation & the lease area observation. Leaving space for mining benches mineable reserve has been calculated. Details of both geological & mineable reserve calculations are given below:

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*Thakur 30/6/21*  
**JOINT DIRECTOR GEOLOGY (I/C)  
ZONAL SURVEY, BALANGIR**

*Saidappa Das*  
**SAIDAPPA DAS  
RQP/OD/074/2017  
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**TABLE- 4**

GEOLOGICAL RESERVE						
SECTION CONSIDERED	X- SECTIONAL AREA OF ROCK MASS (m <sup>2</sup> )	LENGTH OF INFLUENCE (m)	VOL. OF ROCK MASS ( m <sup>3</sup> )	VOL. OF UNUSABLE WASTE MASS ( m <sup>3</sup> )	VOL. OF USABLE ROCK MASS ( m <sup>3</sup> )	CATEGORY
A	B	C	D=B x C	E= D x0.1	F =D x 0.9	G
A-A'	40	60	2400	240	2160	PROVED
	395	60	23700	2370	21330	PROBABLE
	395	60	23700	2370	21330	POSSIBLE
	Sub-Total		49800	4980	44820	
B-B'	65	50	3250	325	2925	PROVED
	455	50	22750	2275	20475	PROBABLE
	455	50	22750	2275	20475	POSSIBLE
	Sub-Total		48750	4875	43875	
Total			98550	9855	88695	

**Total Geological reserve :88,695Cu.m**

**Mining Plan; RAGUDIPALI STONE QUARRY over 2.260 Acres/0.914 Hectares in Village- RAGUDIPALI**

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The mineable reserve has been estimated in similar manner as geological reserve and excluding 7.5m safety zone barrier all along the lease boundary.

**TABLE- 5**

MINEABLE RESERVE						
SECTION CONSIDERED	X-SECTIONAL AREA OF ROCK MASS (m <sup>2</sup> )	LENGTH OF INFLUENCE (m)	VOL. OF ROCK MASS ( m <sup>3</sup> )	VOL. OF UNUSABLE WASTE MASS ( m <sup>3</sup> )	VOL. OF USABLE ROCK MASS ( m <sup>3</sup> )	CATEGORY
A	B	C	D=B x C	E= D x0.1	F =D x 0.9	G
A-A'	22	52	1144	114.4	1029.6	PROVED
	269	52	13988	1398.8	12589.2	PROBABLE
	Sub-Total		15132	1513.2	13618.8	
B-B'	68	42	2856	285.6	2570.4	PROVED
	365	42	15330	1533	13797	PROBABLE
	Sub-Total		18186	1818.6	16367.4	
Total			33318	3331.8	29986.2	

**Total Mineable reserve; 29986.2Cu.m**

#### 10. Mining:

**(a) Whether manual or semi-mechanized or mechanized : Semi-mechanized**

In the applied quarry lease area, the road metal shall be excavated by semi-mechanized open cast mining methods. Handling of rock mass will be done both manually and by machineries i.e. excavators. Handpicks, spade, chisel, hammer will be used by manual labourers for sorting and sizing. Loosening of rock mass will be done by short hole drilling and blasting. The excavated rock mass will be loaded into tippers/hyva by loaders and dispatched to the nearby crusher.



**(b) If semi-mechanized or mechanized, number, type and capacity of machines to be used :**

As mentioned earlier the mining will be operated in semi-mechanized manner.

**Drilling & blasting:** Loosening of rock mass will be done by short hole drilling and blasting. Hard rock mass will be drilled by jack hammer either in single or multi rows on staggered pattern which will be blasted using light charges.

**Excavation & loading:** The rock/mineral will be excavated & loaded either by machinery or manually that depends.

**Haulage & transport for Granite stone/mineral and waste/overburden;** The excavated mineral will be transported through tippers or tractors from the quarry.

The number, type and capacity of machines to be used are described in the table below;

**TABLE- 6(Machineries used)**

Type of Machines	Capacity	No. of Machines
Excavator/JCB	0.9 Cu.m.	2
Wagan Drill	100mm Dia	1
Water Tanker	6000ltr	1
Hyva	8.0cum	3
Jack Hammer	6kg/sq.m.	2
Tipper/Tractor	4/2.5 Cu.m.	2

**(c) Whether drilling and blasting will be made use of, If yes, state monthly quantity of explosives to be consumed :**

As mentioned earlier, for loosening of rock mass drilling and blasting will be done by compressor & jack hammer. A maximum of 5kg of explosives in a month shall be used.

**(d) Benching pattern (Height x Width) :**

As per the statutory regulations the width of the bench must be more than the height or equal to the height of the bench. Maximum height of bench proposed is 3m. Accordingly the width of bench is kept 3m or more.

**(e) Face lay out (attach development plan) :**

During the plan period the development has been proposed in the Northern part of the lease area. [Ref; Plate no. 6]

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(f) Quarry Floor level (RL) at the end of each year & at the end of period of the concession:

The proposed excavation floor level at the end of the plan period shall be:

YEAR	QUARRY FLOOR LEVEL
1st Year	136mRL
2nd Year	136mRL
3rd Year	136mRL
4th Year	136mRL
5th Year	136mRL

(g) Quantity of mineral to be won (Annual Level of Production)

The production details have been described in the table shown below;

**TABLE-7 (Development/Production)**

YEAR	SECTION CONSIDERED	LENGTH OF INFLUENCE IN (m)	X- SECTION AL AREA (m <sup>2</sup> )	VOL.OF EXCAVATED ROCK MASS ( m <sup>3</sup> )	VOL.OF UNUSABLE WASTE MASS ( m <sup>3</sup> )	VOL.OF USABLE ROCK MASS ( m <sup>3</sup> )
A	B	C	D	E=C X D	F= E x0.1	G =E x 0.9
1 <sup>st</sup> Year	A-A'	52	12	600	60	540
2 <sup>nd</sup> Year	A-A'	52	12	600	60	540
3 <sup>rd</sup> Year	A-A'	52	12	600	60	540
4 <sup>th</sup> Year	A-A'	52	12	600	60	540
5 <sup>th</sup> Year	A-A'	52	12	600	60	540
Total				3000	300	2700

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The above annual production has been proposed on the basis of the capability of the applicant to sale/utilize the road metal in the domestic market.

**(h) Quantity of overburden to be removed (Show location of such disposal in development plan)** :

Negligible quantity of overburden is noticed as the area exposes hard rock to the surface.

**(i) Whether heavy blasting to be adopted, if yes, location of nearest habitation (To be shown in the surface plan)** :

No heavy blasting is required. Only small dia holes drilled only by jack hammer using light charges will be followed. Muffled blasting will be done whenever and wherever required.

**(j) Safety precautions to be adopted** :

As per the safety guidelines of DGMS, all the machineries used for mining operation shall be checked and calibrated by the competent person/authority. The manpower utilized will be provided with helmets, safety shoes, goggles, ear plugs & hand gloves, etc. Vehicles are to be covered with tarpaulin during transportation from source to destination to avoid air pollution. Employees are to be supplied all types of safety equipment by the employer as per the safety rules and regulations based on their types of work. All accidents that includes injury or loss of life or damage to the property will must be reported to the district administrative. There are some precautionary measures for the protection of environment in and around the lease area which are described below;

- ✓ The boundary marks & pillars are to be maintained in good conditions.
- ✓ No mining operations will be carried out within the safety zone area which has been considered 7.5 m wide all along the lease boundary.
- ✓ Mining activities will be carried out with appropriate environment safeguards and shall take such steps for reclamation whenever necessary.
- ✓ The mining operation will be stopped when it touches the ground water table, and the same will be informed to the appropriate authorities. Any-how such type of occurrence is not expected presently as per data collected.
- ✓ The provisions of *Mines Act, 1952*, *Mines and Minerals (Development & Regulation) Act, 1957* and the rules & regulations framed under time to time as well as *Explosives Act, 1984* and rules made there under for development of minor minerals shall be strictly observed by the lessee.
- ✓ If hill slopes are encountered, proper maintenance and safeguards must be ensured so as to prevent erosion or landslide.





**(k) Brief description on method of procurement and storage of explosives** :

The lessee will obtain user license and by agreement procure explosives from the authorized license holder for supply of explosives. The storage of explosives is not required as the required blasting shall be done by the blaster of the supplier agency and the left over explosive will be refund back and no need of storage of explosives. A daily register will be maintained for total use and refund of explosives.

**11. Waste Disposal** :

500 cum vol. of waste generated during mining which will be consumed for road development & the remaining waste will be used for plantation purpose. (Refer Plate No-V)

**(a) Location (show it in the development plan)** : Not Applicable.

**(b) Area covered** : Not Applicable

**(c) Environmental safeguards for such Disposal** : Not Applicable

**12. Mine drainage (Give details of total make of water during dry and rainy season and its method of handling)** :

As the area is situated at a height from the general ground level, the runoff water will follow the natural path on the surface of the earth. So no artificial drainage system is required.

**13. Mineral processing (Give details of processing including sizing, sorting, generation of rejects/fines etc.)** :

The road metal raised from the quarry will be subjected to manual sorting at the quarry site. Handpicks, spade, chisel, hammer will be used by manual labors for sorting and sizing. The total materials/sized and sorted materials will be shifted to nearby crushers for processing. After crushing and screening all the products will be sold to the end users.





**14. (a) No. of trees to be uprooted due to mining operation**

As the applied lease area is devoid of any trees, so no trees will be uprooted in mining operation except some scrubs and bushes.

**(b) Programme of Plantation**

Plantation will be done in the safety zone of the applied quarry lease area. Fifty numbers saplings of Banyan, Mango, Neem, Saguan, & other local species will be planted every year.

YEARWISE PLANTATION	
YEAR	NO. OF SAPLINGS
1st Year	50
2nd Year	50
3rd Year	50
4th Year	50
5th Year	50
<b>TOTAL</b>	<b>250</b>

**15. Manpower:**

**(a) Supervisory (inclusive of statutory personnel's)**

One qualified 2<sup>nd</sup> class manager to be appointed duly approved by DGMS followed by foreman & mining mate. One supervisor having sound knowledge and good experience which will fulfill the basic requirements of quarrying minor minerals and he must be capable to manage the annual production.



**(b) Non-Supervisory (skilled, semi-skilled & un-skilled)**

All the operators of these machines & driver should be skilled. All the helpers of machines & tippers should be semi-skilled. And all the labors come under un-skilled category.

**TABLE- 8(Employment potential)**

Skilled	Semi- skilled	Un- skilled	Total
00	00	01	1

**(c) OMS**

: 1.8Cu.m/Man Shift

Maximum annual production = 540Cu.m  
No. of working days in a year = 300 days (Average)  
Production per day =  $540/300 = 1.8\text{CuM}$

$1.8\text{CuM (Production per day)} \div 1\text{Nos} = \text{OMS } 1.8\text{CuM}$

**16. Use of Mineral (Specification and monthly quantity to be dispatched & furnished):**

**(a) For domestic use** : 54CuM quantity of mineral (Average) will be dispatched monthly and the said mineral (Granite) will be exclusively used for road making and construction purposes. These rocks are not suitable for decorative stones.

**(b) For export** : There will be no export of Granite (road metal) at present.

**APPROVED**

*M. H. Mishra*  
30/6/21

JOINT DIRECTOR GEOLOGY (I/C)  
ZONAL SURVEY, BALANGIR

SAIDATTA DAS

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### 17. Mine Closure Plan:

**(a) Describe the process/activities to be undertaken for reclamation and rehabilitation in respect of the following:**

**(i) Mined out land:** During the present plan period the mined out land will be 0.060 ha.

The existing as well as proposed land use of the area is given as below:

	Type of land use	At present in (ha)
1	Area of excavation	0.184
2	Area for Plantation	0.041
3	Untouched Area	0.689
	Total Lease Area	0.914

**(ii) Waste/reject dump** : 300cum vol. of waste generated during mining which will be consumed for road development & the remaining waste will be used for plantation purpose.

**(iii) Top-soil stack and its utilization** : There is no top soil generated during plan period.

**(b) Financial assurance (To be furnished as a bank guarantee in respect of the area to be put to use at the rate of Rs. \_\_\_\_\_ per hectare)** :

An undertaking is furnished by the lessee to submit the financial assurance in shape of bank guarantee to the competent authority before signing lease deed.

**APPROVED**

*Thakur*  
JOINT DIRECTOR GEOLOGY (I/C)  
ZONAL SURVEY, BALANGIR

SAIDANTA DAS  
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**18. Certificate:**

I, **Tahasildar, Sonepur**, the holder of the applied lease of **Ragudipali Stone Quarry** for **Black stone** (mineral) over **2.260 Acres/0.914 Hectares** in village **Ragudipali** under **Sonepur Tahasil of Subarnapur** district hereby solemnly affirm that the plans and programmes in this mining plan will be scrupulously implemented by me/us and I/we will be strictly held responsible for any deviation thereof. I/We also hereby certify that the provisions of Mines and Minerals (Development & Regulation) Act, 1957, and the Mines Act, 1952 and Rules and Regulations made under these Acts, along with the provisions of Odisha Minor Mineral Concession Rules, 2016 will be strictly adhered to while implementing this mining plan and wherever specific permissions will be required, I/We will approach the concerned authorities of Directorate General of Mines Safety and the State Government as the case may be.

For, **Ragudipali Stone Quarry**

Place:

Date:

  
Tahasildar, Sonepur

15

**Mining Plan; RAGUDIPALI STONE QUARRY over 2.260 Acres/0.914 Hectares in Village- RAGUDIPALI**

**APPROVED**  
  
JOINT DIRECTOR GEOLOGY (I/C)  
ZONAL SURVEY, BALANGIR

**SAIDATTA DAS**  
RQP/OD/074/2017  
GEOENVIRONMENTAL SERVICES, BBSR

## Undertaking from lease applicant



I do hereby undertake that the highest bidder will submit the financial assurance in form of Bank guarantee from any nationalized bank as and when decided by the competent authority for Ragudipali Stone Quarry.

Place:

Date:

Tahasildar Sonepur

OFFICE OF THE TAHASILDAR : SONEPUR

No. 1913 Dt. 9.4.2021



To

Sri Saidatta Das  
Geo-Environmental Services  
RQP/OD/074/2017  
D-405, Nageswar Residency  
Kalarahanga, Patia, Bhubaneswar

Sub: Regarding preparation of mining plan

Sir

Enclosed please find herewith the land schedule and sketch map of the following sairat sources (separate sheet attached). In this connection you are requested to prepare revised mining plan for next five years of it's closing date mentioned against each.

1. Dhaurakhman sand quarry
2. Lakarma sand quarry
3. Matikod sand quarry
4. Panisiali sand quarry
5. Lachhipur sand quarry
6. Kirtipur stone quarry
7. Rugudipali stone quarry

Tahasildar, Sonepur

Memo No. 1914 Dt. 9.4.2021  
Copy submitted to the Additional District Magistrate, Subarnapur /Sub-Collector, Sonepur for favour of kind information and necessary action.

Tahasildar, Sonepur



Land schedule

Sl No.	Name of the source	Closing date of lease	MGQ per annum	Mouza	P.S.	p.s.No.	Holding No.	Plot No.	Kisam	Total area in Ac.	Proposed area in Ac.	mark
1	2	3	4	5	6	7	8	9	10	11	12	13
1.	Dhaurakhman sand quarry	22.11.2021	2250	Dhaurakhman	Sonepur	7	115	1/746	Nadi (Ong nadi)	36.500	12.355	A
2	Lakarma sand quarry	26.09.2021	2400	Lakarma	Sonepur	57	139	1199/1200	Nadi (Tel nadi)	22.720	12.355	A
3	Matikod sand quarry	05.12.2021	3280	Matikod	Sonepur	16	227	1496	Nadi (suktel)	36.000	12.355	A
4	Panisiali sand quarry	25.10.2021	2490	Panisiali	Panisiali	2	97	543	Nadi (Mahanadi)	33.750	12.355	A
5	Lachhipur sand quarry	13.10.2021	3280	Lachhipur	Dunguripali	124	1	6	Nadi (Ong nadi)	35.520	12.355	A
6	Rugudipali stone quarry	06.12.2021	540	Rugudipali	Sonepur		229	495 497 500	patharbani	0.980 0.280 1.000 2.260	0.980 0.280 1.000 2.260	Full
7	Kirtipur stone quarry	06.12.2021	810	Kirtipur	Sonepur		334	590 595 596	patharbani	0.350 2.300 1.430 4.08	0.350 2.300 1.430 4.08	Full



Tahasildar Sonepur



GOVERNMENT OF ODISHA  
DEPARTMENT OF STEEL AND MINES  
DIRECTORATE OF MINES



**CERTIFICATE OF RECOGNITION AS QUALIFIED PERSON**

(Under rule 20(2) of Odisha Minor Mineral Concession Rules, 2016)

Sri *Saidatta Das* S/o Sri Pravat Kumar Das, House No-405, Nageswore Recidency, Kalarahanga, Patia, Bhubaneswar, Odisha-751024, whose photograph and signature are affixed herein, having given satisfactory evidence of his qualification and experience, is hereby **recognised** under rule 20(2) of Odisha Minor Mineral Concession Rules, 2016 as a **qualified person** to prepare Mining Plans for Minor Minerals within the State of Odisha, India.



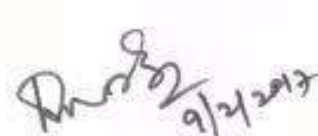
His/ Her Registration No. is

RQP/OD/074/2017

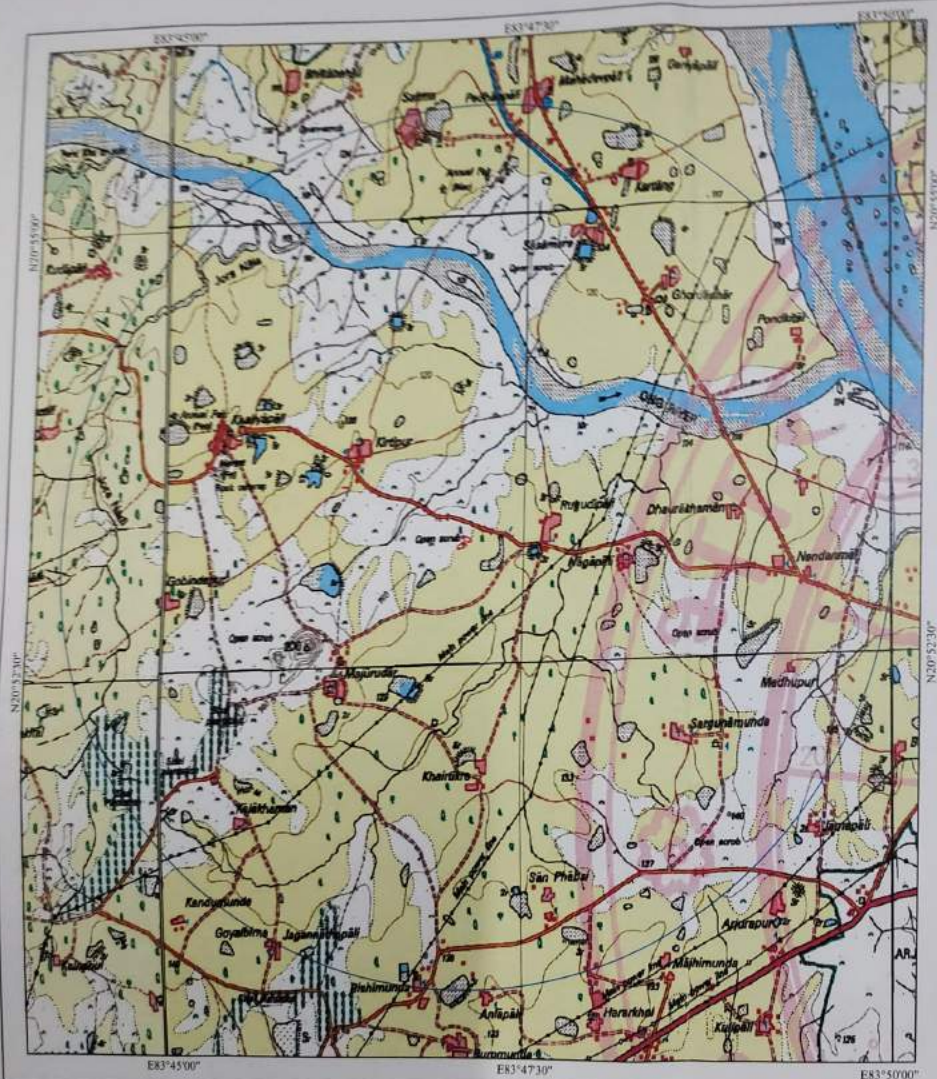
This Recognition is valid for a period of 10 years ending on **08-02-2027**. This certificate will be liable to be withdrawn/ cancelled in the event of furnishing wrong information/ documents in the Mining Plans to be submitted by him.

Place: Bhubaneswar

Date: **09.02.2017**

  
DIRECTOR OF MINES, ODISHA  
BHUBANESWAR





# INDEX

M.L. BOUNDARY



5KM BUFFER ZONE



SCALE- 1:50,000

PLATE NO:-1

RUGUDIPALI STONE QUARRY OVER AN AREA OF 2.260 AC OR 0.914 HA IN VILLAGE-RUGUDIPALI TAHASIL SONEPUR, DISTRICT - SUBARNAPUR OF ODISHA

## KEY PLAN

Toposheet No:- 64P/13

Certified that this plan is up to date & correct

**APPROVED**

JOINT DIRECTOR GEOLOGY (VC)  
ZONAL SURVEY, BALANGIR

SAIDATTA DAS  
ROP/OD/074/2017

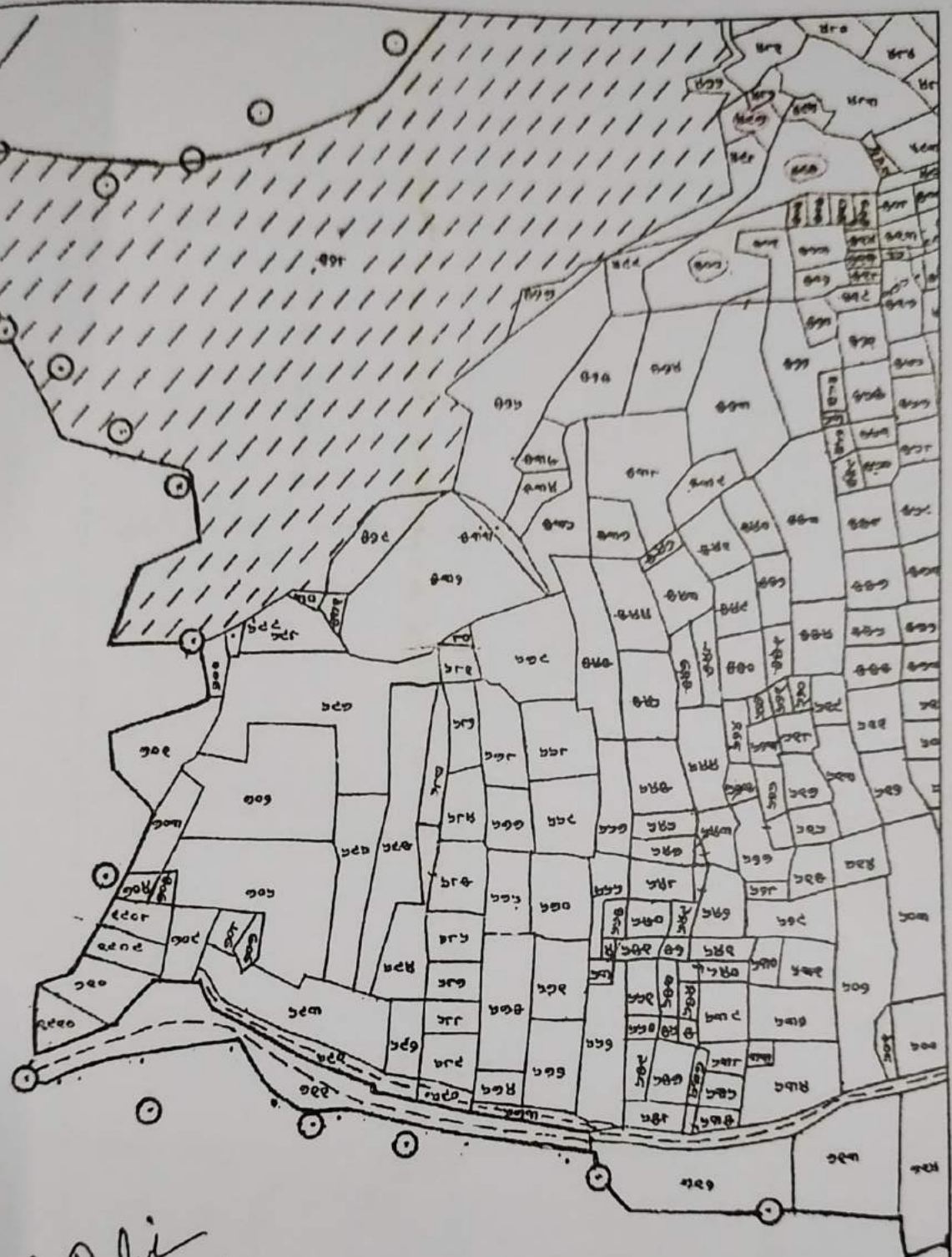




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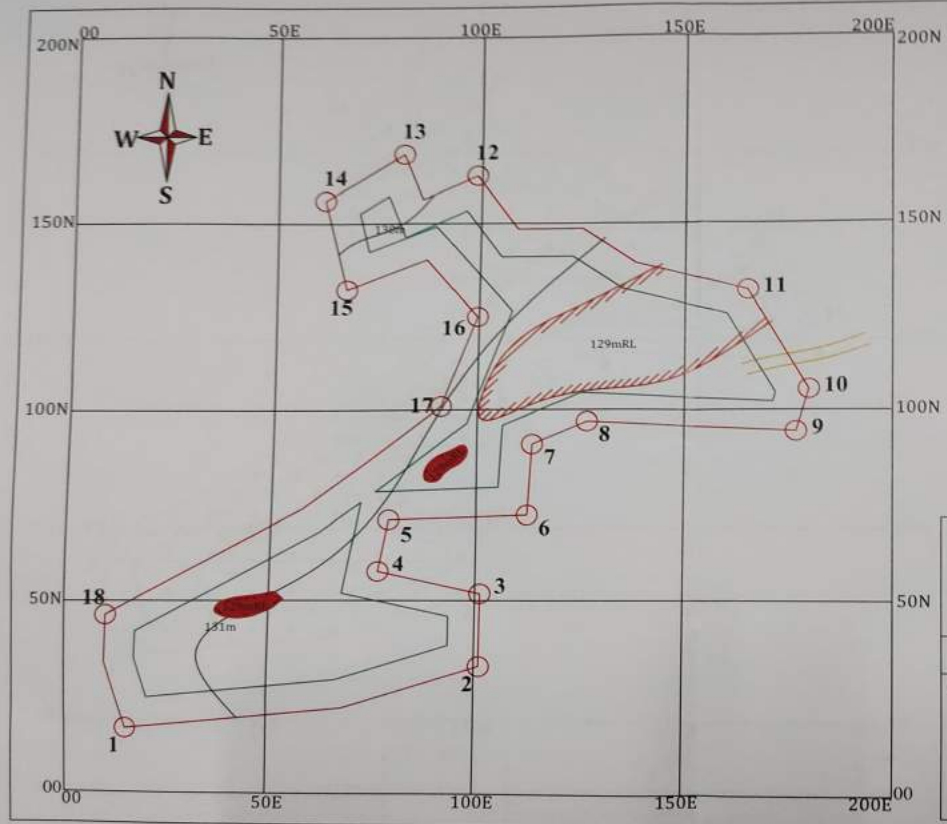
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Subarnapur District

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RUGUDIPALI STONE QUARRY  
OVER AN AREA 2.260 Acres, VILLAGE - RUGUDIPALI  
IN SUBARNAPUR DISTRICT, ODISHA



**INDEX**

- M.L. BOUNDARY
- SAFETY ZONE
- CONTOUR
- EXISTING QUARRY
- ROAD

PILLAR NO	LATITUDE	LONGITUDE
1	N20° 53' 05.3"	83° 46' 57.4"
2	N20° 53' 05.8"	83° 47' 00.4"
3	N20° 53' 06.4"	83° 47' 00.4"
4	N20° 53' 06.6"	83° 46' 59.6"
5	N20° 53' 07.0"	83° 46' 59.7"
6	N20° 53' 07.0"	83° 47' 00.9"
7	N20° 53' 07.3"	83° 47' 00.9"
8	N20° 53' 07.8"	83° 47' 01.3"
9	N20° 53' 07.3"	83° 47' 01.1"
10	N20° 53' 08.1"	83° 47' 03.2"
11	N20° 53' 09.0"	83° 47' 02.7"
12	N20° 53' 10.0"	83° 47' 00.4"
13	N20° 53' 10.3"	83° 46' 59.8"
14	N20° 53' 09.8"	83° 46' 59.1"
15	N20° 53' 09.0"	83° 46' 58.3"
16	N20° 53' 08.8"	83° 47' 00.4"
17	N20° 53' 08.0"	83° 47' 00.1"
18	N20° 53' 06.3"	83° 46' 57.3"

PLATE NO:-III

RUGUDIPALI STONE QUARRY OVER AN  
AREA OF 2.260 AC OR 0.914 HA IN  
VILLAGE-RUGUDIPALI TAHASIL SONEPUR,  
DISTRICT - SUBARNAPUR OF ODISHA

**SURFACE PLAN**

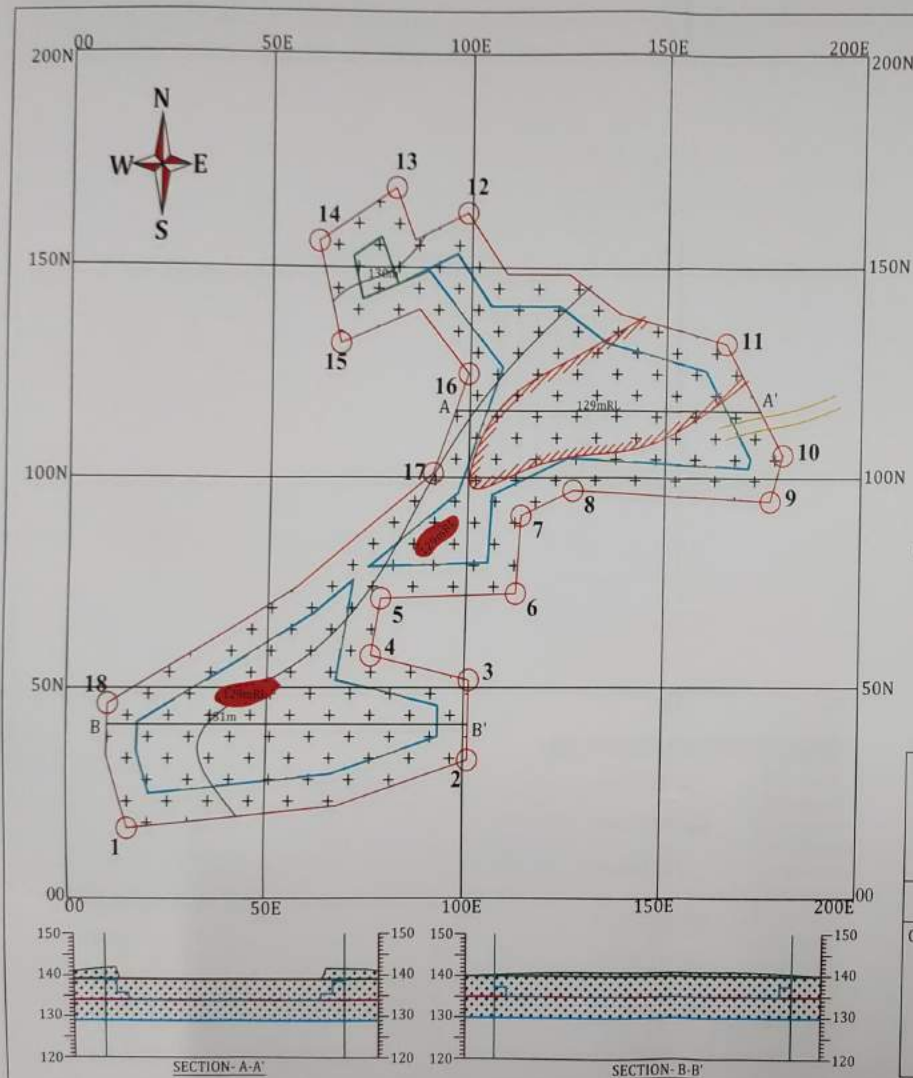
Certified that this plan is up to date & correct	Date of Survey-12.05.2021
SCALE- 1:1000	

SANDATTA DAS  
RQP/OW/679/2017

**APPROVED**

JOINT DIRECTOR GEOLOGY (I/C)  
ZONAL SURVEY, BALANGIR





# INDEX

- M.L. BOUNDARY
- SAFETY ZONE
- CONTOUR
- EXISTING QUARRY
- ROAD
- GRANITE
- ULTIMATE PIT LIMIT
- SECTION LINE
- PROVED ZONE
- PROBABLE ZONE
- POSSIBLE ZONE

APPROVED

JOINT DIRECTOR GEOLOGY (IIC)  
ZONAL SURVEY, BALANGIR

PLATE NO:-IV

RUGUDIPALI STONE QUARRY OVER AN  
AREA OF 2.260 AC OR 0.914 HA IN  
VILLAGE-RUGUDIPALI TAHASIL SONEPUR,  
DISTRICT - SUBARNAPUR OF ODISHA

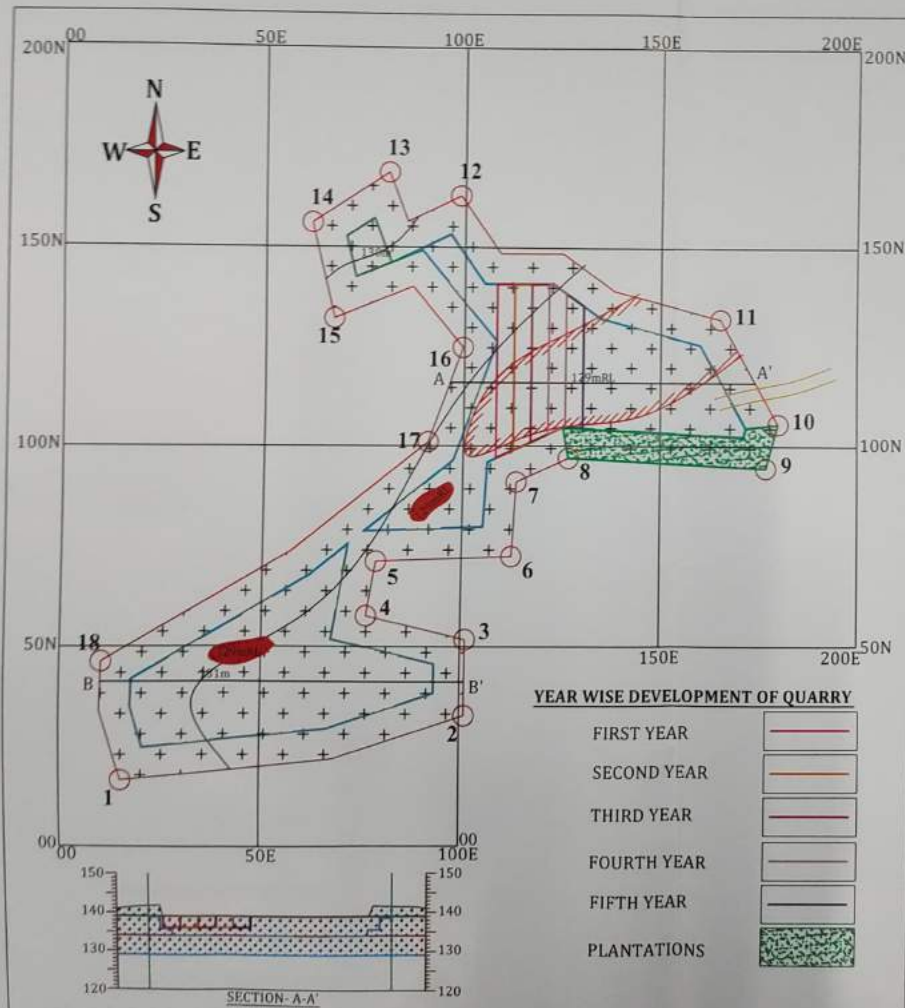
## GEOLOGICAL PLAN & SECTION

Certified that this plan is up to  
date & correct

Date of Survey-12.05.2021

SCALE- 1:1000

SANJAY K. DAS  
RQP/OD/074/2017



### INDEX

M.L. BOUNDARY

SAFETY ZONE

CONTOUR

EXISTING QUARRY

ROAD

GRANITE

ULTIMATE PIT LIMIT

SECTION LINE

PROVED ZONE

PROBABLE ZONE

POSSIBLE ZONE

### YEAR WISE DEVELOPMENT OF QUARRY

FIRST YEAR

SECOND YEAR

THIRD YEAR

FOURTH YEAR

FIFTH YEAR

PLANTATIONS

RUGUDIPALI STONE QUARRY OVER AN  
AREA OF 2.260 AC OR 0.914 HA IN  
VILLAGE-RUGUDIPALI TAHASIL SONEPUR,  
DISTRICT - SUBARNAPUR OF ODISHA

### DEVELOPMENT PLAN & SECTION

Certified that this plan is up to  
date & correct

Date of Survey-12.05.2021

SCALE- 1:1000

SAIDATTA DAS  
RQP/OD/074/2017

APPROVED

JOINT DIRECTOR GEOLOGY (JG)  
ZONAL SURVEY, BALANGIR

PLATE NO:-V



# INDEX

M.L. BOUNDARY

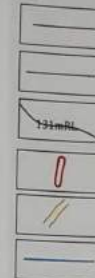
SAFETY ZONE

CONTOUR

EXISTING QUARRY

ROAD

ULTIMATE PIT LIMIT



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ZONAL SURVEY, BALANGIR

PLATE NO:-VI

## YEAR WISE DEVELOPMENT OF QUARRY

FIRST YEAR

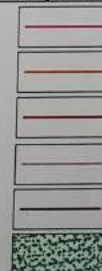
SECOND YEAR

THIRD YEAR

FOURTH YEAR

FIFTH YEAR

PLANTATIONS



RUGUDIPALI STONE QUARRY OVER AN  
AREA OF 2.260 AC OR 0.914 HA IN  
VILLAGE-RUGUDIPALI TAHASIL SONEPUR,  
DISTRICT - SUBARNAPUR OF ODISHA

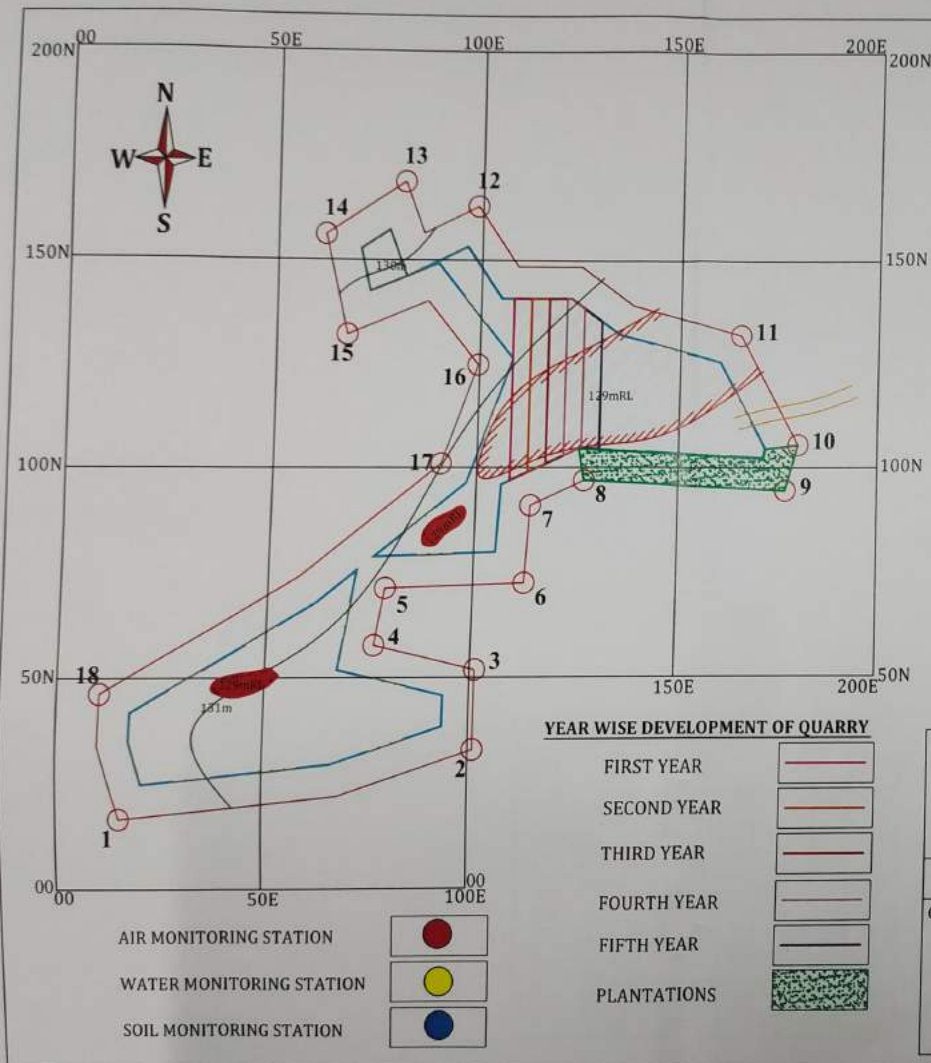
## ENVIRONMENTAL MANAGEMENT PLAN

Certified that this plan is up to  
date & correct

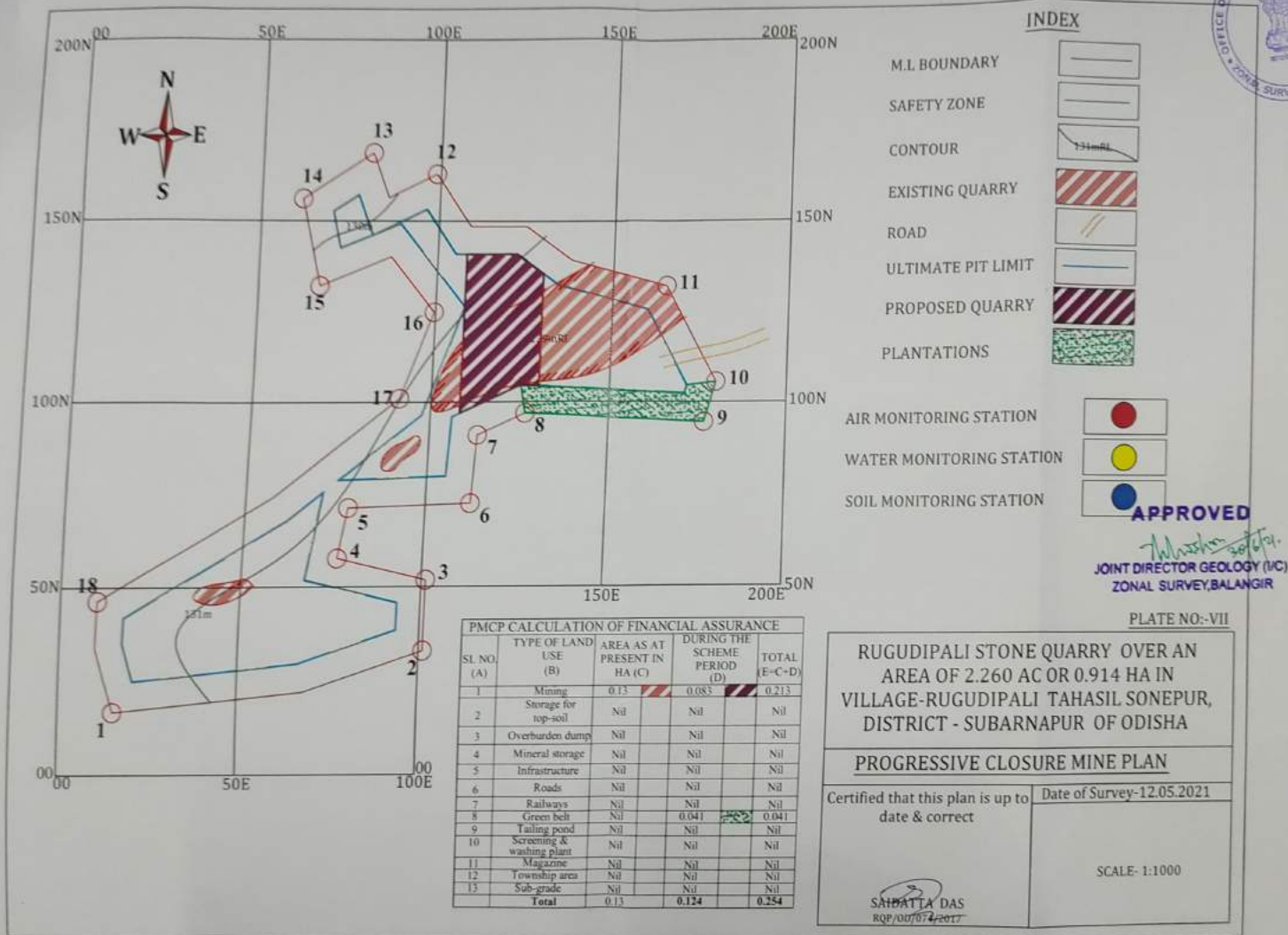
Date of Survey-12.05.2021

SABITA DAS  
RQP/00/074/2017

SCALE: 1:1000







PMPC CALCULATION OF FINANCIAL ASSURANCE				
SL. NO. (A)	TYPE OF LAND USE (B)	AREA AS AT PRESENT IN HA (C)	DURING THE SCHEME PERIOD (D)	TOTAL E-C-D
1	Mining	0.13	0.083	0.213
2	Storage for top-soil	Nil	Nil	Nil
3	Overburden dump	Nil	Nil	Nil
4	Mineral storage	Nil	Nil	Nil
5	Infrastructure	Nil	Nil	Nil
6	Roads	Nil	Nil	Nil
7	Railways	Nil	Nil	Nil
8	Green belt	Nil	0.041	0.041
9	Tailing pond	Nil	Nil	Nil
10	Screening & washing plant	Nil	Nil	Nil
11	Magazine	Nil	Nil	Nil
12	Township area	Nil	Nil	Nil
13	Sub-area	Nil	Nil	Nil
	<b>Total</b>	<b>0.13</b>	<b>0.124</b>	<b>0.254</b>

RUGUDIPALI STONE QUARRY OVER AN  
AREA OF 2.260 AC OR 0.914 HA IN  
VILLAGE-RUGUDIPALI TAHASIL SONEPUR,  
DISTRICT - SUBARNAPUR OF ODISHA

## PROGRESSIVE CLOSURE MINE PLAN

Certified that this plan is up to  
date & correct

Date of Survey-12.05.2021

SCALE- 1:1000

SAIBATTA DAS  
ROP/007074/2017

# FORM-1

## RAGUDIPALI STONE QUARRY

Mouza	Khata No.	Plot No.	Area (ha)	Kissam
Ragudipali	229	495,497,500	0.914	Patharbani

Tahasil:- Sonepur  
District:- Subarnapur  
State:- Odisha

“Category- B2”

**PROJECT PROPOSED BY**

***Tahasildar, Sonepur***

*(On Behalf of Successful Bidder)*

*At/Po/Ps-Sonepur*

*Dist- Subarnapur, Odisha, Pin- 767017*

*Contact No:- 06654-220230*

*E-Mail Id- tah.sonepur-od@nic.in*

*Prepared By*



**GEO ENVIRONMENTAL SERVICES**

**Sri Saidatta Das**

**Regn. No. - RQP/ OD/074/2017**

**Flat no-405, 4th floor,  
Nageswar residency, Kalarahanga,  
Bhubaneswar-751024**

**Cell No:-+917978772448**

**E-mail: saidattadas143@gmail.com**

**APPENDIX I**  
**(See Paragraph-6)**

**FORM 1**

**(I) Basic Information**

S. No.	Item	Details
1.	Name of the Project/s	Ragudipali Stone Quarry
2.	S. No in the schedule	1 (a)
3.	Proposed capacity / area /length/tonnage to be handled /command area /lease area/number of wells to be drilled	2.260Acres/ 0.914Hectares
4.	New /Expansion /Modernization	New
5.	Existing Capacity / Area etc. *	2.260 Acres/ 0.914 Hectares
6.	Category of project i.e. 'A' or 'B'	"B2"
7.	Does it attract the general condition? If yes, please specify.	No
8.	Does it attract the specific condition? If yes, please specify.	No
9.	Location	Refer to Toposheet No: F44X13 Latitude: N20° 53' 05.3"to N20° 53' 10.2" Longitude: E83° 46' 57.3" to E83° 47' 03.2"
	Plot/Survey/Khata No.	Plot No-495, 497 & 500, Khata No-229
	Village	Ragudipali
	Tahasil	Sonepur
	District	Subarnapur
	State	Odisha
10	Nearest railway station/airport along with distance in kms.	The nearest railway station is Khaliapali Railway Station which is about 26.7 km from the mine lease area. The nearest airport is Jharusuguda Airport at 117 km from the mining site.
11	Nearest Town, city, District, Headquarters along with distance in kms.	The nearest town Sonepur is which is at a distance of 13 kms from the lease area. The District Head Quarter Sonepur is at a distance covering 13 km.
12	Village Panchayats, Zilla Parisad, Municipal Corporation, Local body (complete postal addresses with telephone nos. to be given)	Village- Ragudipali, Municipal Corporation- Subarnapur
13	Name of the applicant	Tahasildar, Sonepur
14	Registered address	Tahasildar, Sonepur At/Po/Ps-Sonepur ,Dist- Subarnapur, Odisha, Pin- 767017, Contac No- 06654-220230 E-Mail Id- tah.sonepur-od@nic.in



15	Address for correspondence :	Tahasildar,Sonepur At/Po/Ps-Sonepur Dist- Subarnapur,Odisha,Pin- 767017 Contac No- 06654-220230 E-Mail Id- tah.sonepur-od@nic.in
	Name	Tahasildar,Sonepur
	Designation (Owner/Partner/CEO)	Owner
	Address	Tahasildar,Sonepur At/Po/Ps-Sonepur Dist- Subarnapur,Odisha,Pin- 767017 Contac No- 06654-220230 E-Mail Id- tah.sonepur-od@nic.in
	Pin code	767017
16.	Details of Alternative sites examined, if any, Location of these sites should be shown on a toposheet.	Village-District-State 1. 2. NA 3.
17.	Interlinked Projects	No interlinked projects involved.
18.	Whether separate application of interlinked project has been submitted?	No separate application of interlinked project has been submitted.
19	If yes, date of submission	Not Applicable
20	If no, reason	Not Applicable
21	Whether the proposal involves approval / clearance under: if yes, details of the same and their status to be given. (a) The Forest (Conservation) Act, 1980? (b) The Wildlife (Protection) Act, 1972? (c) The C.R.Z Notification, 1991?	The proposal does not involve any approval/clearance under the said act & notification
22	Whether there is any Government order/Policy relevant/relating to the site?	No Government order/Policy relevant/relating to this site.
23	Forest land involved (hectares)	No Forest land involved.
24	Whether there is any litigation pending against the project and/or land in which the project is propose to be set up? (a) Name of the Court (b) Case No. (c)Orders/directions of the Court, if any and its relevance with the proposed project.	Not litigation pending against the project

**(II) Activity****1. Construction, operation or decommissioning of the project involving actions, which will cause physical changes in the locality (topography, land use, changes in water bodies, etc.)**

<b>S. No.</b>	<b>Information/Checklist confirmation</b>	<b>Yes/No</b>	<b>Details thereof (with approximate quantities /rates, wherever possible) with source of information data.</b>
1.1	Permanent or temporary change in land use, land cover or topography including increase in intensity of land use (with respect to local land use plan)	Yes	Permanent change of land will be occurred due to excavation of minor mineral from the land.
1.2	Clearance of existing land. Vegetation and buildings?	No	No clearance is required as the area comes under revenue department.
1.3	Creation of new land uses?	No	Not Applicable.
1.4	Pre-construction investigations e.g. bore houses, soil testing?	No	Not required. Stone will be direct sell to market.
1.5	Construction works?	No	Not Applicable
1.6	Demolition works?	No	No demolition works are involved.
1.7	Temporary sites used for construction works or housing of construction workers?	No	Temporary site for temporary Office/rest shelter etc only. Local laborers from nearby area will be employed. No housing will be required.
1.8	Above ground buildings, structures or earthworks including linear structures, cut and fill or excavations	Yes	There will be no building/structure to stay as work will be carried out in day time only. Local laborer will be employed in priority.
1.9	Underground works including mining or tunneling?	No	Not Applicable. As this is Mining project by opencast method.
1.10	Reclamation works?	Yes	Backfilling and a forestation as per mine closure plan after mining.
1.11	Dredging?	No	Not Applicable
1.12	Offshore structures?	No	Not Applicable
1.13	Production and manufacturing processes?	Yes	There is no production process in mining.
1.14	Facilities for storage of goods and materials?	No	Mineral excavated will be loaded directly into truck for transportation. The OB & mine waste will be simultaneously backfilled Tools and equipments will be stored in store room at site after work.
1.15	Facilities for treatment or disposal of solid waste or liquid effluents?	No	The OB & mine waste will be simultaneously backfilled. No liquid effluent from the mine lease area will be discharged
1.16	Facilities for long term housing of operational workers?	No	Most of the workers will be employed from nearby villages. Hence long term housing facilities are not involved.

1.17	New road, rail or sea traffic during construction or operation?	No	No new road, rail or sea traffic is required. Existing facilities for transportation of minerals will be utilized. Only temporary approach roads will be made which connects to existing tar road.
1.18	New road, rail, air water borne or other transport infrastructure including new or altered routes and stations, ports, airports etc?	No	Existing facilities are sufficient.
1.19	Closure or diversion of existing transport routes or infrastructure leading to changes in traffic movements?	No	The project does not involve any closure or diversion of existing transport routes or infrastructure leading to changes in traffic movements.
1.20	New or diverted transmission lines or pipelines?	No	The project does not involve any new or diversion of transmission lines or pipeline.
1.21	Impoundment, damming, culverting, realignment or other changes to the hydrology of watercourses or aquifers?	No	No impoundment or damming is involved in the project. No ground water intersection is involved hence no change is anticipated in the hydrology of watercourses or aquifers by the mining operation.
1.22	Stream crossings?	No	Proposed project will not disturb natural drainage pattern.
1.23	Abstraction or transfers of water from ground or surface water?	No	Total water requirement is about 5 KLD water requirement fulfilled from all nearby village.
1.24	Changes in water bodies or the land surface affecting drainage or run-off?	No	There will be no change in the flow pattern of the water body as the proposed project will not disturb natural drainage pattern, nallah of the area.
1.25	Transport of personnel or materials for construction, operation or decommissioning?	No	No construction is proposed. The staff and the workers involved in the project will use the local transport for communication to the project area.
1.26	Long-term dismantling or decommissioning or restoration works?	No	No dismantling work will be carried in this project.
1.27	Ongoing activity during decommissioning which could have an impact on the environment?	Yes	No decommissioning activity is proposed.
1.28	Influx of people to an area in either temporarily or permanently?	No	There will temporary influx of people for employment and for business opportunities.
1.29	Introduction of alien species?	No	No alien species were found.
1.30	Loss of native species or genetic diversity?	No	No loss of native species or genetic diversity.
1.31	Any other actions?	No	No other action will be involved for the excavation of Stone.



**2. Use of Natural resources for construction or operation of the project (such as land, water, materials or energy, especially any resources which are non renewable or in short supply):**

S. No	Information/checklist confirmation	Yes/No	Details thereof (with approximate quantities /rates, wherever possible) with source of information data.
2.1	Land specially undeveloped or agricultural land (ha)	Yes	Non Forest Govt. land will be converted to Mining purposes.
2.2	Water (expected source & competing users) unit: KLD	Yes	Water requirement will be 5 KLD. Water would be purchased from wells and tube wells from nearby areas..
2.3	Minerals (CuM)	Yes	Maximum 540Cum of annual production is proposed.
2.4	Construction material- Morrum, aggregates, and /soil (expected source –MT)	No	Only 540Cum of annual production has been proposed.
2.5	Forests and timber (source –MT)	No	No sources like this.
2.6	Energy including electricity and fuels (source, competing users) Unit : fuel (MT), energy (MW)	No	Only Fuel will be required for vehicles and operating Machines
2.7	Any other natural resources (use appropriate standard units)	No	No other natural resources found.

**3. Use, storage, transport, handling or production of substances or materials, which could be harmful to human health or the environment or raise concerns about actual or perceived risks to human health.**

S. No.	Information/Checklist confirmation	Yes/No	Details thereof (with approximate quantities /rates, wherever possible) with source of information data.
3.1	Use of substances or materials, which are hazardous (as per MSIHC rules ) to human health or the environment (flora, fauna, and water supplies)	No	No use of substances or materials, which are hazardous (as per MSIHC rules ) to human health or the environment (flora, fauna, and water supplies)
3.2	Changes in occurrence of disease of affect disease vectors (e.g. insect or water borne diseases)	No	No changes in occurrence of disease of affect disease vectors (e.g. insect or water borne diseases)
3.3	Affect the welfare of people e.g. by changing living conditions?	Yes	Socio-economic condition will improve and will have positive impact due to increasing earning sources of nearby peoples.
3.4	Vulnerable groups of people who could be affected by the project e.g. hospital patients, children, the elderly etc.	No	No Vulnerable groups of people will be affected by the project.

3.5	Any other causes.	No	All precautions will be taken to prevent generation of dust by water sprinkling at its source. The mine worker will also be medically examined as per statutory provisions.
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#### 4. Production of solid wastes during construction or operation or decommissioning (MT/month)

S. No.	Information/Checklist confirmation	Yes/No	Details thereof (with approximate quantities /rates, wherever possible) with source of information data.
4.1	Soil, overburden or mine wastes	yes	300 Cum waste will be generated from the quarry.
4.2	Municipal waste (domestic and or commercial wastes)	No	No Municipal waste were generated.
4.3	Hazardous wastes (as per Hazardous Waste Management Rules)	No	No Hazardous waste (as per Hazardous Waste Management Rules) will be generated.
4.4	Other industrial process wastes	No	There will be no industrial process waste involved in the project.
4.5	Surplus product	No	No surplus product will generate.
4.6	Sewage sludge or other sludge from effluent treatment.	No	Domestic effluent will be discharged in septic tank / soak pit
4.7	Construction or demolition wastes	No	No construction or demolition waste is involved.
4.8	Redundant machinery or equipment	No	Excavator, Tippers, Water tankers and pumps etc are provided by the contractor.
4.9	Contaminated soils or other materials	No	No contamination of soil as there is absence of top soil.
4.10	Agricultural wastes	No	No agricultural waste will be generated.
4.11	Other solid wastes	No	No other solid waste generated.

#### 5. Release or pollutants or any hazardous, toxic or noxious substances to air (Kg/hr)

S. No.	Information/Checklist confirmation	Yes/No	Details thereof (with approximate quantities /rates, wherever possible) with source of information data.
5.1	Emissions from combustion of fossil fuels from stationary or mobile sources	No	Negligible emission is seen due to vehicular movement on the unmetalled road.
5.2	Emission from production processes	No	No emission from production processes.
5.3	Emissions from materials handling including storage or transport	No	No emissions from materials handling including storage or transport facilities.
5.4	Emissions from construction activities including plant and equipment	No	No emissions from construction activities including plant and equipment.

5.5	Dust or odours from handling of materials including construction materials, sewage and waste	No	No dust or odours from handling of materials including construction materials, sewage and waste.
5.6	Emissions from incineration of waste	No	No emissions from incineration of waste.
5.7	Emission from burning of waste in open air (e.g./materials, construction debris)	No	No emission from burning of waste in open air (e.g./materials, construction debris).
5.8	Emission from any other sources	No	No emission from any other sources.

#### **6. Generation of Noise and Vibration, and Emissions of Light and Heat:**

<b>S. No.</b>	<b>Information/Checklist confirmation</b>	<b>Yes/No</b>	<b>Details thereof (with approximate quantities /rates, wherever possible) with source of information data.</b>
6.1	From operation of equipment e.g. engines, ventilation plant, crushers	Yes	Noise will be generating from movement of mining machineries 2 transport vehicles.
6.2	From industrial or similar processes	No	No industrial noise or vibration will generate.
6.3	From construction or demolition	No	Temporary rest shed will be created.
6.4	From blasting or piling	No	No, blasting will be adopted in the mining lease area.
6.5	From construction or operational traffic	No	No construction or traffic sources will generate.
6.6	From lighting or cooling systems	No	Proposed mining is open cast thus emission of light and heat will be negligible. All the mining operation will be done in day only. No cooling system is required.
6.7	From any other sources	No	No other sources found.



**7. Risks of contamination of land or water from releases of pollutants in to the ground or in to sewers, surface waters groundwater, costal waters or the sea:**

<b>S. No.</b>	<b>Information/Checklist confirmation</b>	<b>Yes/No</b>	<b>Details thereof (with approximate quantities /rates, wherever possible) with source of information data.</b>
7.1	From handling, storage, use or spillage of hazardous materials	No	No anticipation of pollution of ground water or surface water as the mining operation will be carried out much above the ground water table and the mining will be Open cast Semi mechanized mining. There will be no effluent discharge from the mines.
7.2	From discharge sewage or other effluents to water or the land (expected mode and place of discharge)	No	No discharge sewage or other effluents to water or the land (expected mode and place of discharge)
7.3	By deposition of pollutants emitted to air in to the land or in to water	No	Air quality will be within the prescribed SPCB norms though there will be mining activities.
7.4	From any other sources	No	Not Applicable.
7.5	Is there a risk of long term build up of pollutants in the environment from these sources?	No	No risk of long term build up of pollutants in the environment from these sources.

**8. Risk of accidents during construction or operation of the project, which could affect human health or the environment.**

<b>S. No.</b>	<b>Information/Checklist confirmation</b>	<b>Yes/No</b>	<b>Details thereof (with approximate quantities /rates, wherever possible) with source of information data.</b>
8.1	From explosions, spillages, fires etc from storage, handling, use or production of hazardous substances	No	No explosions, spillages, fires etc from storage, handling, use or production of hazardous substances
8.2	From any other causes	No	Not Applicable.
8.3	Could the project be affected by natural disasters causing environmental damage (e.g. floods, earthquakes, landslides, cloudburst etc.)?	No	This project area is coming under low damage risk zone in the context of seismic intensity.

**9. Factors which should be considered (such as consequential development) which could lead to environmental effects or the potential for cumulative impacts with other existing or planned activities in the locality.**

S. No.	Information/Checklist confirmation	Yes/No	Details thereof (with approximate quantities /rates, wherever possible) with source of information data.
9.1	Lead to development of supporting. Laities, ancillary development or development stimulated by the project which could have impact on the environment e.g.: <ul style="list-style-type: none"> <li>Supporting infrastructure (roads. Power Supply, waste or waste water treatment, etc.)</li> <li>Housing development</li> <li>Extractive industries</li> <li>Supply industries</li> <li>Other</li> </ul>	Yes  No  No No No	Roads and transport facility will be improved due to frequently available of mine vehicles. Project proponent will organize regular medical checkup Camps and recreational activities. Employment to local people will be generated. Overall living standard of nearby people will have positive impact. ----- ----- ----- -----
9.2	Lead to after-use of the site, which could have an impact on the environment	Yes	After excavation of mineral, the area will be reclaimed and total area will be plantation as per approved mining plan
9.3	Set a precedent for latter developments	No	No such type of developments will created.
9.4	Have cumulative effects due to proximity to other existing or planned projects with similar effects.	No	No cumulative effects due to proximity to other existing or planned projects with similar effects

**(III) Environmental Sensitivity**

S. No.	Areas	Name/ Identity	Aerial distance (within 15 km.) Proposed project location boundary
1	Areas protected under international conventions national or local legislation for their ecological, landscape, cultural or other related value	No	No areas protected under international conventions national or local legislation for their ecological, landscape, cultural or other related value.
2	Areas which are important or sensitive for ecological reasons-Wetlands, watercourses or other water bodies, costal zone, biospheres, mountains, forests	No	No areas which are important or sensitive for ecological reasons-Wetlands, watercourses or other water bodies, costal zone, biospheres, mountains, forests

3	Areas used by protected, important or sensitive species of flora or fauna for breeding, nesting, foraging, resting, over wintering, migration	No	No areas used by protected, important or sensitive species of flora or fauna.
4	Inland, costal, marine or underground waters	No	No Inland, costal, marine or underground waters in the lease area.
5	State, national boundaries	No	No State, national boundaries nearby.
6	Routes or facilities used by the public for access to recreation or other tourist, pilgrim areas	No	No routes or facilities used by the public for access to recreation or other tourist, pilgrim areas.
7	Defense installations	No	Not Applicable
8	Densely populated or built-up area	No	No densely populated or built-up area will affected.
9	Areas occupied by sensitive man-made land uses (Hospitals, schools, places worship, community facilities)	Yes	Hospitals and schools are available in nearby villages
10	Areas containing important, high quality or scares resources (Groundwater resource, forestry, agriculture, fisheries, tourism, minerals)	No	No areas containing important, high quality or scares resources
11	Areas already subjected to pollution or environmental damage.(those where existing legal environmental standards are exceeded)	No	No areas already subjected to pollution or environmental damage.
12	Areas susceptible to natural hazard which could cause project to present environmental problems (earthquakes, subsidence, land slides, erosion, flooding or extreme or adverse climatic conditions )	No	This project area is coming under low damage risk zone in the context of seismic intensity

#### (IV) Proposed Terms of Reference for EIA studies

- Purpose and Brief of the Project.
- Project description in terms of type, need, size and magnitude of operation, technology & process description and other details of utilities including site /location map, plan and relevant sections for the proposed mining and waste management.

The EIA study will be done for the mines site (core zone) and area within 10 km radius (buffer zone), both of which comprise the 'study area'. The following data, through field survey and Baseline Data Generation (One season) for Rapid EIA/EMP Studies.



### PROPOSED TERMS OF REFERENCE FOR EIA STUDIES.

To study the area surrounding 10 km. radius of the mine lease area as the centre. The TOR for EIA broadly includes:

- Project details like technology, methodology, production, handling of waste, waste dumping etc.
- To conduct a literature review and to collect data relevant to the study area;
- To undertake environmental monitoring so as to establish the baseline environmental status of the study area;
- To identify various existing and expected pollution loads due to various activities in the ambient levels;
- To identify impact on Air, water regime, ecology and land environment.
- To prepare an Environmental Management Plan (EMP) outlining the measures for reducing the adverse impact and improving the environmental quality and scope for future expansions for environmentally sustainable development; and collection of the environment data as per the following table

Sl. No.	Attribute	Parameters	Frequency of Monitoring
1	<b>Ambient air quality</b>	SPM, RSPM SO <sub>2</sub> , NO <sub>x</sub> AND CO	24 hourly samples twice a week for three months covering one season for at least four locations. Monitoring as per NAAQ norms.
2	<b>Meteorology</b>	Wind speed and direction, temperature, relative humidity, rainfall & cloud cover	Data collected from secondary sources like IMD
3	<b>Water quality</b>	Physical, Chemical and Bacteriological parameters	One season sampling/analysis from surface and ground water sources.
4	<b>Ecology</b>	Existing terrestrial and aquatic flora and fauna	Through field visits
5	<b>Noise levels</b>	Noise levels in dB (A)	Recording at regular interval for per location for one season
6	<b>Soil</b>	Parameters related to agricultural and afforestation potential	Soil sampling / analysis for one season.
7	<b>Land use</b>	Trend of land use change for different categories	Based on data published in district census handbooks
8	<b>Socio economic aspects</b>	Socio-economic characteristics, labor force characteristics, boom town effects etc.	Secondary sources like census handbooks.
9	<b>Geology</b>	Geological history	Based on data collected from secondary sources and exploration undertaken during the course of mining
10	<b>Hydrology</b>	Drainage area and pattern, nature of streams, aquifer characteristics, recharge and discharge areas	Based on data collected from secondary sources
11	<b>Hydrogeology</b>	Ground water assessment	As per GEC 1997.

Identification and evaluation of impacts through dispersion modeling and preparation of EIA report with Environmental Management plan (Basing on the above baseline data).

- Details of fauna (wild and domestic), flora within a distance of 5 km from the project site (including forest details).
- Major habitat within 15 km radius.
- Major industries within 15 km radius.
- Sensitive places / historical monuments and sanctuaries within 10 km radius.
- Land use pattern within core zone and buffer zone (10 km radius around the core zone) including the cropping pattern.
- Demography and Socio-economic based on last available Census data for entire study area.
- Relevant meteorological data, for previous decades from India Meteorological Department (IMD).
- Study of present environmental protection and mitigation measures in nearby operating similar projects, if any.
- Geo-hydrological aspects based on available data from various sources.
- Identification of water bodies, hills, roads etc. within 10 km radius and collecting data regarding discharge of streams and flood levels etc. from existing records, if any river lies in study area.

**The environmental impacts would be anticipated in core and buffer zone on:**

- Topography
- Climate
- Water Quality (Surface/Ground)
- Hydro-geological Regime
- Air quality
- Noise Levels
- Flora and Fauna (terrestrial, aquatic)
- Traffic density
- Land-Use
- Socio-Economic Conditions
- Habitat
- Health, culture, human environment including public health, occupational health and safety.
- Sensitive Places/Historical Monuments
- Aesthetics and Visual intrusion
- The impacts would be anticipated based on experience of similar projects and success of this mine operation during the past.

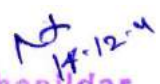
### **Proposed Environmental Safeguards and Monitoring Mechanism**

- Reclamation of areas disturbed during construction but not required for any activity during operation.
- Measures to control the surface and ground water pollution due to various effluents to be discharged
- Measures to control air pollution due to proposed activities/ operation.
- Green belt development and identification of flora species which can be planted in and around the project
- Measures to control noise pollution and mitigate adverse impact on workers and habitat in core and buffer zone
- Pronounce the improvement in socio-economic conditions and benefits the people will get on implementation of the project
- Measures to control health hazard of workers and surrounding population
- Total and specific cost of implementation of control measures
- Environmental monitoring, implementation organization and feedback mechanism to effect mid course corrections.
- Impact due to displacement, if any

The experience of similar project(s) will be made use of for envisaging the pollution control measures by pronouncing the success in the past.

“I hereby given undertaking that the data and information given in the application and enclosures are true to the best of my knowledge and believe and I am aware that if any part of the data and information submitted is found to be false or misleading at any stage, the project rejected and clearance given, if any to the project will be revoked at our risk and cost.

Place: Sonepur  
Date:

  
**Tahasildar**  
**Sonepur**  
 Tahasildar, Sonepur  
 At/Po/Ps-Sonepur  
 Dist- Subarnapur, Odisha



# **ENVIRONMENTAL MANAGEMENT PLAN**

*OF*

## **RAGUDIPALI STONE QUARRY**

**OVER AN AREA OF 2.260 ACRE /0.914 HA**

**IN VILLAGE RAGUDIPALI OF SONEPUR TAHASIL OF SUBARNAPUR DISTRICT  
OF ODISHA.**

*For and on behalf of*  
**Tahasildar, Sonepur**  
**At/Po/Ps-Sonepur**  
**Dist- Subarnapur, Odisha, Pin- 767017**  
**Contac No- 06654-220230**  
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**Regn. No. - RQP/ OD/074/2017**  
**GEO ENVIRONMENTAL SERVICES**



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## **1 Introduction**

Environmental Management Plan (EMP) is a site specific plan developed to ensure that the Ragudipali mine project is implemented in an environmentally suitable manner. Environmental Management Plan also ensures that the project implementation is carried out in accordance with design by taking appropriate mitigation methods to minimize impacts on the environment during the construction and/ or operational phase. Environmental Management Plan will outline Environmental Aspects of concern as well as their level of risk and environmental protection measures to diminish this risk. It emphasizes how the development may impact on relevant environmental factors and how these impacts may be mitigated and managed so that they are environmentally acceptable accordingly Environmental Management Plan is prepared.

### **1.1. Brief Description of the Project**

The Mining lease for Stone over an extent of 0.914 ha of Village Ragudipali Under Sonepur Tahasil of Subarnapur District of Odisha. The mining lease area is bounded by Latitude N20° 53' 05.3" to N20° 53' 10.2" and Longitude E83° 46' 57.3" to E83° 47' 03.2" in the Topo sheet no. F44X13.

The project comes under i.e. Ragudipali Stone Quarry of Tahasildar, Sonepur comes within 500mts radius. So the Environmental Management Plan (EMP) is being prepared for one mines.

The objective of the Ragudipali Stone Quarry of Tahasildar, Sonepur, to produce 2700 Cum, of Stone respectively to meet the raw material requirement of nearby crusher, the community needs by ensuring the economy feasibility pointing the following objectives.

- Ensure that ecological balance of the area is not adversely affected by air , noise missions and solid wastes
- To minimize operational risk and maximize safety of working persons.
- Improvement in the living standard of local inhabitants.
- Improvement of indirect means of livelihood.



**EMP Report of Ragudipali Stone Quarry**

**Table 1-1: Salient features**

<b>Description</b>	<b>Details</b>
<b>Site Location</b>	Plot No-495,497 & 500, Khata No.-229 Ragudipali (V), Sonepur (T),Subarnapur(D),Odisha
<b>Production</b>	540 of Stone Per Annum
<b>Mine Lease Area</b>	0.914 Hectares
<b>Latitude</b>	Latitude: N20° 53' 05.3"to N20° 53' 10.2"
<b>Longitude</b>	Longitude: E83° 46' 57.3" to E83° 47' 03.2".
<b>Top sheet No.</b>	F44X13
<b>Nearest railway line</b>	Khaliapali Railway Station-26.7 Km
<b>Airport</b>	Jharusuguda Airport-117 Km
<b>Road/ Highway</b>	NH-224- 5.5 Km
<b>Hospital</b>	Government Hospital, Binka - 15 Km
<b>Nearest Town</b>	Subarnapur- 13 km
<b>Neatest Habitant &amp; Village</b>	Ragudipali Village-1 Km
<b>Nearest Canal/Dam/Lake</b>	Canal-1.3Km.
<b>Nearest Reserve Forest</b>	Gargarbahal Reserve Forest- 8 Km
<b>Nearest Archaeological site</b>	Maa Purnamasi Temple -3 Km.
<b>Method of Mining</b>	Opencast semi mechanized method

## **2 Reserves Estimation and Life of Mine**

Geological traverses in the quarry and the study exposures in the vicinity of quarries facilitated to access the shape and size of the deposit in the area.

### **2.1 Method for estimation of reserves**

Stone rich in iron and aluminum are formed in hot and wet tropical areas. Nearly all Stones are rusty-red because of iron oxides. They develop by intensive and long-lasting weathering of the underlying parent rock. Tropical weathering (laterization) is a prolonged process of chemical weathering which produces a wide variety in the thickness, grade, chemistry and ore mineralogy. The majority of the land area containing Stone is between the tropics of Cancer and Capricorn.

The initial products of weathering are essentially kaolinized rocks called saprolites. A period of active laterization extended from about the mid-Tertiary to the mid-Quaternary periods (35 to 1.5 million years ago).

Stones are formed from the leaching of parent sedimentary rocks (sandstones, clays, limestones); metamorphic rocks (schists, gneisses, migmatites); igneous rocks (granites, basalts, gabbros, peridotites); and mineralized proto-ores; which leaves the more insoluble ions, predominantly iron and aluminium. The mechanism of leaching involves acid dissolving the host mineral lattice, followed by hydrolysis and precipitation of insoluble oxides and sulfates of iron, aluminium and silica under the high temperature conditions of a humid sub-tropical monsoon climate. An essential feature for the formation of Stone is the repetition of wet and dry seasons. Rocks are leached by percolating rain water during the wet season; the resulting solution containing the leached ions is brought to the surface by capillary during the dry season. These ions form soluble salt compounds which dry on the surface; these salts are washed away during the next wet season. Stone formation is favored in low topographical reliefs of gentle crests and plateaus which prevents erosion of the surface cover. The reaction zone where rocks are in contact with water—from the lowest to highest water table levels—is progressively depleted of the easily leached ions of sodium, potassium, calcium and magnesium.

The mineralogical and chemical compositions of Stones are dependent on their parent rocks. Stones consist mainly of quartz, zircon, and oxides of titanium, iron, tin, aluminium and manganese, which remain during the course of weathering. Quartz is the most abundant relic mineral from the parent rock. Stones vary significantly according to their location, climate and depth.

## **EMP Report of Ragudipali Stone Quarry**

### **Reserve (Method of estimation of reserve)**

- (i) The reserve of road metal in the leasehold area been calculated by cross sectional area method.
- (ii) The cross sectional area of each section have been calculated and multiplied with the length of influence of the respective section & recovery factor to achieve the volume of rock mass in Cu.m.
- (iii) The Geological reserves have been calculated under proved, probable and possible category for road metal. Where as mineable reserve has been calculated upto the ultimate pit limit, which has been proposed up to the probable zone excluding 7.5m safety zone.
- (iv) The top most RL of the lease area is 131mRL and the lowest RL is 129mRL and from field survey it is found that there are three existing quarries present in the lease hold area. The lowest RL of the lease area has been considered as the proved limit for the quarry lease area. Further 6m below the prove limit has been considered as probable limit that is 123mRL .
- (v) As there is exposed rock body present in the quarry lease area, 10% of RoM will be removed and will be treated as waste. However 90% of RoM is the ore expected. Detail calculation has been shown in the table.
- (vi) For the reserve assessment, 2 no of cross-sections along A-A' & B-B' has been drawn based on the field observation & the lease area observation. Leaving space for mining benches mineable reserve has been calculated. Details of both geological & mineable reserve calculations are given below.

### **2.2 Total Mineable Reserves: 29986.2 Cum**

### **2.3 Total Geological reserve :88695Cu.m**

### **2.4 Life of the Mine**

$$\begin{aligned}\text{Life of the Mine} &= \text{total mineable reserves/ Annual production rate} \\ &= 29986.2/540 \text{ or } 55.53 \\ &= 55.53 \text{ or Say as } 55 \text{ Years}\end{aligned}$$

### **3 Production details**

#### **3.1 Land Usage details**

Land Use Pattern of the quarry area during the next 5 years will be as for approved Mining Plan.

**Table 3-2 : Man power requirement**

<b>S. No</b>	<b>Category</b>	<b>No. of Persons</b>
1	Mine Supervisor	00
2	Skilled Workers	00
3	Semi Skilled Workers	00
4	Un-skilled	01
Total		01

### **4 Environmental Management Plan**

Mining of Stone involves using heavy machinery and impacts the surrounding environment. In order to reduce the impact, we assessed the possible impacts on surrounding environment and suggested possible preventive measures by categorizing as Air, Noise and Water. The details of the possible causes and measures taken to reduce them are as follows. In addition to these measures a green belt will also be developed to remedy the biomass loss occurring due to the mining process.

#### **4.1 Air pollution management**

In the process of mining heavy machinery such as excavators, Tippers, etc are used.

These result in air pollution at various stages, which are stated as follows

1. Particulate matter generation from the mining process,
2. Particulate matter generation due to hauling, loading & unloading of mined Stone & Dolomite.
3. NO<sub>x</sub> & SO<sub>2</sub>
4. generation form the consumption of fossil fuels in heavy machinery and transportation vehicles.



***4.1.1 Measures taken to reduce pollution***

During mining: Particulate matter generation during mining is mainly from drilling holes which can be controlled by covering the drill holes with cloth.

Transportation:

- a. To minimize the particulate mixing in air during hauling the vehicles are never overloaded and covered with a tarpaulin.
- b. The particulate generation from the vehicular movement is suppressed by sprinkling water twice a day and conducting regular road repairs

Additionally the proposed green belt would act as sinks for particulate matter.

## **4.2 Noise Pollution management**

The major source of noise pollution is due to

- i. Drilling,
- ii. Blasting and
- iii. Vehicular movements.

Regular maintenance of noise generating units (repairing, greasing and minimization vibrations) will be taken to minimize noise levels. During blasting operations the noise level may increase (short time exposures). Blasting will be carried out during daytime to avoid noise intensity to the surrounding people at night time.

Personal protective equipment like earplugs and other protective devices will be provided to workers those who are working near by the noise generating sources (drill machine operators). But as with distance away from the mining operations, the noise levels will reduce and the anticipated noise levels falls below the day and night residential standard limits set by CPCB (day Leq 55 and night Leq 45 dB(A)).

Dense vegetation is planned at the periphery of the lease area to minimize the impact of blasting in the surrounding environment.

## **4.3 Water Pollution Management**

The ground water table in this belt is 30 m below from the surface and since the quarry depth will not reach upto this depth in the near future flooding by ground water is not anticipated. However, during rainy months, there is a possibility of wet conditions developing in the working pit. This will be minimized if not altogether eliminated by adopting simple techniques like digging trenches all round to drain off rainwater and preventing surface run off from entering and flooding working pit. The water from the will be pumped by deploying suitable pumps, if and when required, the mine drainage can be effectively managed and the pit kept dry to keep up the production schedule.

#### **4.4 Green belt development**

The whole area is occupied by scattered sparse vegetation of thorny trees and small bushes. In the quarry lease area now wild animals are witnessed as per the statements collected from the local population, since 50 years. There will be loss of biomass due to clearing of existing vegetation, but will be compensated by the given afforestation plan. As the site is near to human settlement other than domestic animals no important wild life is found that need to take special attention. However due to planned development of green belt, the area attracts more avifauna and also gives shelter to other domestic animals.

**Table 4-1: Proposed Green belt & corresponding water requirement**

<b>Year</b>	<b>Trees at the end of year (No.)</b>	<b>Water needed @2 L/tree (KLD)</b>
1 <sup>st</sup> Year	50	0.20
2 <sup>nd</sup> Year	50	0.20
3 <sup>rd</sup> Year	50	0.20
4 <sup>th</sup> Year	50	0.20
5 <sup>th</sup> Year	50	0.20

**Table 4-2: Suggested trees for green belt**

<b>No.</b>	<b>Botanical Name</b>	<b>Comm on Name</b>	<b>Heig ht (m)</b>	<b>Color of the flower</b>	<b>Floweri ng time</b>
1	<i>Acacia Arabica</i>	Nallathumma	8.0-10.0	Yellow	March-May
2	<i>Azadirachta indica</i>	Neem	15.0- 20.0	White	January- May
3	<i>Terminalia catappa</i>	Badam	10.0- 35.0	White	March - April

### **EMP Report of Ragudipali Stone Quarry**

4	<i>Nerium odorum</i>	Ganneru	2.0-4.0	Red, white	Febrary- March
5	<i>Tectona GRANDIs</i>	Teak	10-45	White	June - september
6	<i>Annonasquamos a</i>	Sethaphalam	3.0 -8.0	Creami sh yellow	May- August
7	<i>Eucalyptus citridora</i>	Eucalyptus	30.0 - 45.0	White	July- August

#### **4.5 Environmental Monitoring program**

The survey of air pollution comprises of the following monitoring aspects;

- i. Ambient air quality survey
- ii. Noise Level Monitoring

Ambient air quality and noise level Monitoring will be carried out at minimum three stations, one station within mine site and two stations nearby residential areas out- side the mine. Parameters like suspended particulate matter, sulphur dioxide, oxides of nitrogen carbon monoxide and lead will be monitored. The frequency of monitoring is preferably once in three months on 24 hour basis. The samples will be collected in accordance with the procedures given by CPCB.



## **4.6 Mine closure plan:**

### **Reclamation**

The top soil or the waste generated from the mine will be used to refill the pit and since it won't be sufficient to fill the mine. The mining pit will be developed as water logged areas with suitable fencing all along the boundaries. Storage of rain water in the mine it will help to improve the ground water table in the area.

As this area always experiences acute drought situation, this water body can act as a source of water. The aqua fauna like fishes, prawns, etc. will be developed in the hydro-reclaimed areas by migrating them from the area having similar type of environment. The pit will be fenced appropriately keeping in view the most important aspect of safety.

## **4.7 Occupational health and safety**

Health and safety aspects of the mine will be taken care off as per the World Bank (WB) guidelines on open pit mining. The guidelines provide the detailed information on the aspects that are required to be taken into account for maintaining proper health and safety issues. The workers continuously exposed to dust will be provided with some protective devices like dust mask to prevent respiratory disorders. The workers continuously exposed to a high noise will be provided with ear muffs/ earplugs. Green belt in and around the mining area will be developed to attenuate noise and dust impact. The blasting carried out in the mine area will be carefully planned and executed under the supervision of a responsible officer, to avoid any accidents. Drinking water supply for the employees will be provided by the project authority. The standard of the drinking water will be per WHO guidelines.

Periodical training programme to inform the employees about their task, associated risk, and safe working practices will be undertaken. Training will also include information on accident prevention, proper control and maintenance of equipment and safe material handling practices.

A regular monitoring of the Occupational Health and Safety will reduce the chances of accidents in the mine. Records of job related accidents and illness should be maintained. This information will be reviewed and evaluated to improve the effectiveness of Environmental Health and Safety programme.

#### **4.8 Other management aspects**

Records will be maintained for the analysis of ambient air quality and noise levels. These records are not only required for the perusal of the Pollution Control Board authorities. The management will maintain the records as per the hazardous waste regulations and EPA regulations and apply for the annual consents for air and water, and renewal of authorization for the storage of hazardous waste as per the Hazardous Waste (Handling & Management) Rules, 1989. The records of hazardous waste manifest will be maintained. The format of the same is enclosed in appendix.

The mine shall obtain the consent to operate (CTO) as required under section 25/26 of the Water act, 1974 and under section 21/22 of Air Act, 1981, bT will be renewed each year by the management. The mine will submit environmental statement every year before September 30. The management ensures that it will comply with all the directions and regulations issued by the Ministry of Environment and Forests, New Delhi, State and Centre Pollution Control Boards.

The Consent to Establish & Consent to Operate will be displayed in a conspicuous location for reference to the inspecting authorities of different departments.

**EMP Report of Ragudipali Stone Quarry**

**4.9 Cost of Environmental Management Plan**

The total project cost is Rs.1 Lakhs and the details of the same are given below.

**Budgetary measures for EMP**

<b>Heads</b>		<b>Ragudipali Stone Quarry</b>
<b>Sl. No.</b>	<b>Activity</b>	<b>Total Capital Cost in Rs.</b>
1.	Environmental Monitoring & Pollution Control Measures	75,000
2.	Maintenance of Vehicles	10,000
3.	Plantation & Maintenance	10,000
4.	Water Sprinkling	5,000
<b>Total Capital Cost in Rs.</b>		<b>Rs. 1,00000</b>
<b>Total Recurring Cost in Rs.</b>		<b>Rs.25,000/annum</b>