



**THE SINGARENI COLLIERIES COMPANY LIMITED**  
**(A Government Company)**  
**Environment Department**  
**KOTHAGUDEM AREA**

**Ref.No:** KGM/ENV/403/ 249

**Date:** 27.05.2020

To  
Director,  
Ministry of Environment, Forests & Climate Change (MoEF &CC),  
Regional Office (South Eastern Zone),  
1<sup>st</sup> & 2<sup>nd</sup> Floor, HEPC Building, No. 34,  
Cathedral Garden Road, Nungambakkam,  
**Chennai - 600 034.**

Sir,

Sub: Half Yearly Environmental Monitoring report (Oct'2019 to Mar'2020) of Jalagam Vengal Rao Opencast - I Expansion coal mining Project of SCCL – Reg.

Ref: MoEF, Gol Lr. No. J-11015/301/2007-1A-II (M) dated 27<sup>th</sup> July 2007.

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With reference to the subject and environmental clearance letters cited, please find enclosed both hard and soft copies of the status of implementation of environmental conditions vis-à-vis project progress of Jalagam Vengal Rao Opencast - I Expansion Project for the half yearly period ending on 31<sup>st</sup> March' 2020.

Yours faithfully

General Manager  
Kothagudem Area  
The S.C.Co.Ltd.  
Venkateshkhani - (P.O)  
Bhadradi Kothagudem - (Dist)  
Telangana(state)

Pin - 507 103.  
**General Manager**  
**S.C.Co.Ltd., KGM. Area.**

Encl: Half yearly compliance report of Jalagam Vengal Rao Opencast - I Expansion Project.

# **HALF-YEARLY MONITORING REPORT**

(In compliance with EIA notification 2006 under Environment (Protection) Act )

FOR

**JALAGAM VENGAL RAO OPEN CAST –I EXPANSION  
PROJECT**

**(KOTHAGUDEM AREA)**

**(For the period 1<sup>st</sup> Oct' 2019 –31<sup>st</sup> Mar' 2020)**



**THE SINGARENI COLLIERIES COMPANY LIMITED**  
**(A GOVERNMENT COMPANY)**

**KOTHAGUDEM AREA**

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# JVR OC – 1 Expansion Project HYMR Report From Oct'2019 – Mar'2020



THE SINGARENI COLLIERIES COMPANY LIMITED  
(A Govt. Company)  
Kothagudem Area

## PART – I

### A. SALIENT FEATURES OF THE PROJECT:

1.	Name of the Project	:	JVR OC - I Expansion Project
2.	Organization	:	Singareni Collieries Company Limited
3.	Coalfield	:	Godavari Valley Coal Field
4.	Type of Mine	:	Opencast Coal Mining Project
5.	Technology	:	Shovel Dumper Combination
6.	Environmental Clearance		
	A. Letter No & date	:	J-11015/301/2007-IA-II (M) dt. 27.07.2007
	B. Sanctioned Capacity	:	2.50 MTPA (Public Hearing is held on 14.02.2020 for enhanced production capacity of 5.00MTPA under Violation Category).
	C. Mining Lease Area.	:	547.08 Ha.
	D. Date of Public Hearing	:	13.03.2007
7.	Location of the Project		
	A. Village	:	Ayyagaripet
	B. Tehasil / Mandal	:	Sathupalli
	C. District	:	Khammam
	D. State	:	Telangana.
	E. Latitude	:	N 17 <sup>0</sup> 11'42" to 17 <sup>0</sup> 12'42"
	F. Longitude	:	E 80 <sup>0</sup> 47'45" to E 80 <sup>0</sup> 49'46".
	G. Topo Sheet	:	Sol Topo Sheet No 65 C/16
	H. Nearest railway station	:	Bhadrachalam Road (65 Km)
	I. Nearest Airport	:	Shamshabad
	J. Nearest town	:	Sathupalli
8.	Address for Correspondence		
	A. Name	:	B. Sanjeeva Reddy.
	B. Designation	:	Project Officer
	C. Address	:	S.C.Co. Ltd, Post: Sathupalli, Dist: Khammam, T.S.
	D. PIN Code	:	507 303
	E. E-mail ID	:	oc_spl@scclmines.com
	F. Telephone No.	:	08761 – 282734, +9194911 44204
	G. Fax No.	:	08761 - 282736
9.	Life of the Project		

## JVR OC – 1 Expansion Project HYMR Report From Oct'2019 – Mar'2020

	A. Date of Opening	:	03.06.2005 (as JVR OC - I Project)	
		:	2007 (as JVR OC - I Expansion Project)	
	B. Total Life of the project as per EMP	:	16Years	
	C. Balance Life	:	1 Year(Revised estimated Life)	
10.	Seams			
	A. No. of Seams Present	:	3 (B, Index and A)	
	B. Seams being worked	:	3 (B, Index and A)	
11.	Depth			
	A. Minimum Depth	:	10.28 m.	
	B. Maximum Depth	:	150 m.	
	C. Present working depth	:	130 m.	
12.	Reserves			
	A. Total Extractable Reserves	:	57.830 MT ( Revised Estimates as per MP)	
	B. Reserves already Extracted	:	54.238 MT	
	C. Coal production during last 6 months	:	2.246MT	
13.	Over Burden			
	A. Total OB	:	170 MB.Cum.( revised anticipated)	
	B. OB extracted since inception	:	169.645 MB.Cu.m (including top soil)	
	C. OB removed in last 6 months	:	2.791 MB.Cu.m	
	D. Stripping Ratio(planned)	:	3.13 (As per revision)	
14.	Top Soil			
	A. Total Topsoil	:	5.60 MB.Cum.	
	B. Topsoil extracted since inception	:	4.080 MB.Cum.	
	C. Top Soil stored in temporary stock yard	:	0.413 MB.Cum.	
15.	Land Requirement			
	A. Total Requirement	:	547.08 Ha.	
	B. Forestland Involved	:	380.52 Ha.	
	C. Non-forestland	:	166.56 Ha.	
16.	Activity wise Land Requirement		<b>As per EMP</b>	<b>Present Status</b>
	A. Quarry Area(Including Drains)	:	371.07 Ha.	371.07 Ha.
	B. External OB Dumps	:	133.10 Ha.	133.10 Ha.
	C. Infrastructures	:	18.13 Ha.	18.13 Ha.
	D. Others	:	24.78 Ha.	24.78 Ha.
	E. Total	:	547.08 Ha.	547.08 Ha.
17.	Statutory Clearances			
	A. Mining Plan Approval	:	Approved by MOC on 21.05.2007	
	B. Ground Water Clearance	:	Memo No. 13019/Hg.II (1)/06 dt. 06.07.07	
	C. Consent for Establishment	:	35/PCB/CFE/RO-KGM/HO/2007 dt.27.09.07	

**JVR OC – 1 Expansion Project HYMR Report From Oct'2019 – Mar'2020**

	D. Consent for Operation	:	CONCENT ORDER NO.16082281186 dt. 03.10.2016 and valid up to 30.06.2021.
	E. Forest Clearance from MoEF	:	No.8-129/2003-FC, dt.02.02.05 (244.02 Ha.) No.8-56/2008-FC, dt.03.07.12 (136.50 Ha.)
	F. Mining Lease (GO MS Nos.)	:	51 I & C (M.III) dt. 21.02.2005 (383.05 Ha.) (Valid upto 22.03.2025). 115 I & C (M.III) dated 13.05.08 (136.50 Ha.) (Valid upto 09.11.2028).
	G. Others: NTR Canal Diversion	:	Obtained permission for diversion vide GO RT No. 1932, I&CADD (MI.II2) dept. dated 30.12.2005.
18.	R & R Involved	:	Nil



**JVR OC – 1 Expansion Project HYMR Report From Oct'2019 – Mar'2020**

**STATUS OF IMPLEMENTATION OF MoEF ENVIRONMENTAL CLEARANCE CONDITIONS AS ON 31.03.2020**

**Environment Clearance vide Lr.No. J-11015/301/2007-IA-II (M) dated 27.07.2007**

**2. A. Specific Conditions:**

<b>Sl. No.</b>	<b>Condition</b>	<b>Compliance Status</b>
(i)	No mining operations shall be under taken in the 136.50 ha of forestland until forestry clearance has been obtained under the provisions of FC Act, 1980.	Final stage clearance has been accorded by MoEF for diversions 136.50 Ha of balance forest land vide its letter no. F.No.8-56/2008-FC,dt. 03.07.2012 and Government of AP has passed GO Ms. No. 94, dt. 07.12.2012. 136.50 Ha of Forest Land was handed over to SCCL on 18.06.2014 by Forest Department.
(ii)	Diversion of NTR canal (Bathupalli Flood Flow canal) for a length of 18.32 Km shall be under taken with the approval of the State Irrigation Department and ensure that it is realigned with the original course so as to retain the existing feeder channels of downstream irrigation tanks.	Diversion of NTR canal (Bethupally Flood Flow canal) for a length of 18.32 Km had already been under taken with the approval of the State Irrigation & CAD Department vide G.O. Rt. No.1163, dt. 23.09.2004 and the diversion work is completed. It is also being ensured that the diverted canal is realigned with the original course so as to retain the existing feeder channels of downstream irrigation tanks.
(iii)	Diversion of PWD road passing through the lease shall be done with the prior approval of the competent authorities.	The PWD road passing through the lease area has already been diverted with the approval of R&B Dept. GoAP, vide permission letter no. 42110/TA13/ AEE4/ 2002, dated 20 <sup>th</sup> July 2003.
(iv)	Topsoil should be stacked properly with proper slope at earmarked site(s) and should not be kept active and the same shall be used for reclamation and development of green belt.	Topsoil is being stacked properly with proper slope at earmarked site and the same is being used for reclamation and development of green belt.
(v)	OB should be stacked at earmarked dumpsite(s) within ML area and shall be a maximum height of 90 m only and consist of three benches of 30 m each. The ultimate slope of the dump shall not exceed 28°. Monitoring and management of rehabilitated dump sites should continue until the vegetation becomes self-sustaining. Compliance status should be submitted to the Ministry of Environment & Forests and its Regional Office located at Bangalore on a yearly basis.	Volume of over burden stacked at earmarked external dump yard within Mining Lease area is 39.075 M.B.Cu.m and the height of the dump has reached 90 mtrs consisting of three benches of 30 meters each. The ultimate slope of the dump is being maintained below 28°.
(vi)	Catch drains and siltation ponds of appropriate size should be constructed to arrest silt and sediment flows from soil, OB and mineral dumps. The water so collected should be utilized for	Catch drains for a length of 17240m and 4 Nos. settling ponds have been made for proper collection of water into the settling ponds and to arrest silt from the run off from OB dump. The water so collected is being utilized for dust suppression in the mine area, on haul roads and

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<b>Sl. No.</b>	<b>Condition</b>	<b>Compliance Status</b>																					
	watering the mine area, roads, green belt development, etc. The drains should be regularly desilted and maintained properly. Garland drains suitable size, gradient and length and sump capacity should be designed keeping 50% safety margin over and above the peak sudden rainfall and maximum discharge in the area adjoining the mine site. Sump capacity should also provide adequate retention period to allow proper settling of silt material.	for green belt development etc.  The garland drains are being maintained around the external dump and quarry for a total length of 13.00 km. and 4240 mtrs.of drain was provided on internal dump yard. The drains and settling ponds are being regularly de-silted and properly maintained.  1760 m length of Toe Wall is constructed around the External and Internal dump yards.																					
(vii)	Dimension of the retaining wall at the toe of dumps and OB benches within the mine to check run-off and siltation should be based on the rainfall data.	A toe wall around the external dump over a length of 1760 m has been made to check runoff and siltation.																					
(viii)	Crushers at the existing CHP and that to be constructed should be operated with high efficiency bag filters, water sprinkling system should be provided to check fugitive emissions from crushing operations, haulage roads, and transfer points.	At present, water sprinkling arrangements have been made on haul roads and other dust emission points to control dust emission. Water spraying arrangements have been made at crushers at CHP to control fugitive emissions from crushing operations. Water spraying is being done to suppress dust emissions along haul roads and loading places with mobile water sprinklers of 28 KL (3 No's), 20 KL (5 No's), 15 KL (2 No's) capacity and 12 KL Water Tanker (3 No's) for water spraying on coal transport roads.																					
(ix)	Drills should be wet operated only.	Drills are provided with wet drilling arrangement.																					
(x)	Controlled blasting should be practiced only during day time with the use of delay detonators. The mitigative measures for control of ground vibrations and to arrest the fly rocks and boulders should be implemented.	Controlled blasting with the use of Non-electrical (Nonel) delay detonators are being practiced and blasting is being done only during day time. Usage of NONELs has helped in control of ground vibrations and to arrest the fly rocks and boulders during blasting operations. The sound vibrations are being monitored as per DGMS guide lines.																					
(xi)	Afforestation shall cover a total area of not less than 393.13 ha which includes reclaimed external dump (72.75 ha), reclaimed top soil dump, back filled area (169.15 ha), along ML boundary, along drains and along service buildings (18.13 ha) within the lease and in township by planting the native plant species in consultation with the local DFO / Agriculture Department. The density of the trees should be around 2500	<table border="1"> <thead> <tr> <th>Sl.No.</th> <th>Description</th> <th>Area in Ha.</th> </tr> </thead> <tbody> <tr> <td>01</td> <td>External Dump Yard</td> <td>115.00</td> </tr> <tr> <td>02</td> <td>Internal Dump Yard</td> <td>27.50</td> </tr> <tr> <td>03</td> <td>Vacant Land within Mining Lease Area</td> <td>35.00</td> </tr> <tr> <td>04</td> <td>Avenue Plantation within Mining Lease Area</td> <td>9.40</td> </tr> <tr> <td>05</td> <td>Gap Plantation in Forest Land between Mine Boundary and R&amp;B Road beyond mandate</td> <td>80.00</td> </tr> <tr> <td>06</td> <td>Safety Zone Area of 136.50 Ha. of Forest Land</td> <td>52.00</td> </tr> </tbody> </table>	Sl.No.	Description	Area in Ha.	01	External Dump Yard	115.00	02	Internal Dump Yard	27.50	03	Vacant Land within Mining Lease Area	35.00	04	Avenue Plantation within Mining Lease Area	9.40	05	Gap Plantation in Forest Land between Mine Boundary and R&B Road beyond mandate	80.00	06	Safety Zone Area of 136.50 Ha. of Forest Land	52.00
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Sl. No.	Condition	Compliance Status	
	plants per Ha.	diverted for JVR OC-I Expn.	Total: 318.90
(xii)	A progressive Mine Closure Plan shall be implemented by reclamation of quarry area of 298.32 ha which shall be back filled and afforested by planting the native plant species in consultation with the local DFO / Agriculture Department.	A progressive Mine Closure Plan is being implemented as per approved Mine Closure Plan and afforestation is done by planting the native plant species in consultation with the local DFO / SCCL Forest Department. Quarry area of 225.133Ha.has been backfilled till Mar-2020 with 130.57M.Cu.M.	
(xiii)	The conditions stipulated by the State Ground Water Department shall be effectively implemented. The company shall obtain prior approval of CGWA / CGWB, Regional office for use of ground water if any, for mining operations.	Approval has been obtained from A.P. State Ground Water Dept. vide Memo No. 13019/Hg.II (1)/06 dt. 06.07.07 for drawl of ground water and the conditions stipulated by the State Ground Water Department are being implemented.	
(xiv)	Regular monitoring of groundwater level and quality should be carried out by establishing a network of existing wells and construction of new piezometers. The monitoring for water levels should be done at least four times a year in pre-monsoon (May) monsoon (August), post-monsoon (November) and winter (January) seasons and for water quality in May. Data thus collected should be submitted to the Ministry of Environment & Forests and the Central Pollution Control Board quarterly within one month of monitoring.	Depth to water in this area is being monitored four times a year by establishing a network of existing wells and also piezometers. As advised by the Director, Telangana Ground Water Department, the piezometric data is being regularly submitted. The quality of ground water is being monitored once in a quarter year.	
(xv)	The Company shall put up artificial groundwater recharge measures for augmentation of groundwater resource. The project authorities should meet water requirement of nearby village(s) in case the village wells go dry due to de-watering of the mine.	Seepage water from the mine is collected in a sump where the suspended solids settle down to a large extent. This water is used for purposes like dust suppression, fire fighting, plantation, etc. Excess water is discharged out into local drainage which reaches the nearby tank i.e. Kistaram tank which helps in augmentation of groundwater. The project authorities will meet water requirement of nearby village(s) in case the village wells go dry due to de-watering of the mine.	
(xvi)	Besides carrying out regular periodic health check up of their workers, 10% of the workers identified from workforce engaged	Health check up for occupational diseases and hearing impairment has been done at SCCL hospital for 20% of the workers identified from workforce engaged in active mining operations.	

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Sl. No.	Condition	Compliance Status
	in active mining operations shall be subjected to health check up for occupational diseases and hearing impairment, if any, through any agency such as NIOH, Ahmadabad within a period of one year and the results reported to this Ministry and to DGMS.	The results are being submitted to the Ministry and to the DGMS at regular intervals.
(xvii)	ETP should be provided for Work shop and CHP waste water. Mine discharge water shall be treated to prescribed standards before discharge in to any natural water course.	<p>ETP has been provided for workshop and 4 Nos. of settling ponds were made for removal of coal fines and suspended solids.</p> <p>Water quality of mine discharge is being monitored at regular intervals before discharging into natural water course and results are in prescribed standards.</p> 
(xviii)	A Sewage treatment plant shall be installed in the combined township and in the proposed township to be established within the lease.	One STP is constructed at Rudrampur, Kothagudem from where the majority of employees are coming to attend the duties daily. As the township at Ayyagaripeta, Sathupalli is under construction. A Sewage Treatment plant will be provided in the proposed township.
(xix)	For monitoring land use pattern and for post mining land use, a time series of land use maps, based on satellite imagery (on scale of 1:5000) of the core zone and buffer zone, from the start of the project until end of the mine life shall be prepared once in 3 years (for any particular season which is consistent in time series), and the report submitted to MoEF and its regional office at Bangalore.	<p>Digital processing of the entire lease area based on satellite imagery is being done regularly once in 3 years for monitoring land use pattern and post mining land use. Land use for core and buffer zone studies carried out during 2017 has already been submitted.</p> 
(xx)	A Final Mine closure plan along with details of Corpus Fund should be submitted to the Ministry of Environment & Forests 5 years in	Mining plan (I revision) including MCP of JVROC (I&II expansion) was approved by MOC on 29/03/2019 by amalgamating JVROC -I Expn and JVROC-II mines. Hence, The final Mine closure

**JVR OC – 1 Expansion Project HYMR Report From Oct'2019 – Mar'2020**

<b>Sl. No.</b>	<b>Condition</b>	<b>Compliance Status</b>
	advance of final mine closure for approval.	plan will be submitted to the Ministry of Environment & Forests 5 years in advance of final mine closure for approval. Form-I is submitted for revised E.C. Public Hearing is also conducted for 5MTPA on 14.02.2020.

**2. B.General Conditions:**

<b>S. No</b>	<b>Condition</b>	<b>Compliance Status</b>
i)	No change in mining technology and scope of working should be made without prior approval of the Ministry of Environment and Forests (MoEF).	There is no change in mining technology as envisaged in approved EMP.
ii)	No change in the calendar plan including excavation, quantum of mineral coal and waste should be made.	To meet the coal requirement for power generation the internal targets were raised. An application was submitted to MoEF for seeking revised EC for the enhanced capacity. Public Hearing is conducted for enhanced production capacity of 5MTPA on 14.02.2020. The details of coal production have been given in part-II of the report.
iii)	Four ambient air quality monitoring stations should be established in the core zone as well as in the buffer zone for SPM, RPM, SO <sub>2</sub> and NO. Monitoring. Location of the stations should be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets in consultation with the State Pollution Control Board.	As per the new guidelines, ambient air quality parameters such as PM <sub>10</sub> , PM <sub>2.5</sub> , and SO <sub>2</sub> & NO <sub>2</sub> are being monitored regularly.  Location of the stations has been decided in consultation with the State Pollution Control Board by considering meteorological data, topographical features and environmentally and ecologically sensitive targets.
iv)	Fugitive dust emissions (SPM and RPM) from all the sources should be controlled regularly monitored and data recorded properly. Water spraying arrangement on haul roads, wagon loading and dump tracks (loading & unloading) points should be provided and properly maintained.	Water spraying is being done for dust suppression at working places, haul roads, approach roads to dump yard by 13 No's of mobile water sprinklers in the mine.(SCCL-28 KL-03 no's&12kl-1no.) & off-loading contractor's has provided water sprinklers of 20 KL (05 no's.), 15 KL (02 no's) capacity and two more 12 KL Water Tankers for water spraying on OB & Coal transport roads.

## JVR OC – 1 Expansion Project HYMR Report From Oct'2019 – Mar'2020

S. No	Condition	Compliance Status
		
v)	Data on ambient air quality (RPM, SPM, SO <sub>2</sub> and NO <sub>x</sub> ) should be regularly submitted to the Ministry including its Regional Office at Bangalore and the A.P Pollution Control Board and the Central Pollution Control Board once in six months.	Data on ambient air quality (PM <sub>10</sub> , PM <sub>2.5</sub> , SO <sub>2</sub> & NO <sub>2</sub> ) is being regularly submitted to the Ministry including its Regional Office at Chennai. Ambient air quality monitoring data is also being submitted to the TS Pollution Control Board, Regional Office, Kothagudem once in six months.
vi)	Adequate measures should be taken for control of noise levels below 85dB(A) in the work environment. Workers engaged in blasting and drilling operations, operations of HEMM, etc. should be provided with ear plugs / muffs.	Regular tuning of vehicles is being taken for control of noise levels below 85 dB(A) in the work environment and workers engaged in blasting and drilling operations, operations of HEMM, etc. have been provided with ear plugs / muffs. Controlled blasting techniques with the use of Non-electric (Nonel) delay detonators are being practiced to control ground vibrations, noise and big boulders. The ambient noise level in the work environment and nearby villages is being monitored regularly.
vii)	Industrial wastewater (workshop and wastewater from the mine) should be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19 <sup>th</sup> May 1993 and 31 <sup>st</sup> December 1993 or as amended from time to time before discharge. Oil and Grease trap should be installed before discharge of workshop effluents.	Mine water is being discharged through 4 Nos. of settling ponds and check dams and ETP was provided for treatment of waste water from Workshop.
viii)	Vehicular emissions should be kept under control and regularly monitored. Vehicles used for transporting the mineral should be covered with tarpaulins and optimally loaded.	Vehicular emissions are being kept under control through regular maintenance of vehicles. Vehicles used for transporting the mineral are being covered with tarpaulins and are optimally loaded. Vehicular emissions are being monitored regularly.
ix)	Environmental laboratory should be established with adequate	Post Project Environmental Monitoring is being carried out through external agency M/s.

## JVR OC – 1 Expansion Project HYMR Report From Oct'2019 – Mar'2020

S. No	Condition	Compliance Status																																										
	number and type of pollution monitoring and analysis equipment in consultation with the State Pollution Control Board.	Environment Protection Training and Research Institute (EPTRI), Hyderabad, which is a CPCB, recognized and NABL accredited laboratory. A Regional Laboratory has been established by EPTRI at Kothagudem for analysis of critical parameters in the field.																																										
x)	Personnel working industry areas should wear protective respiratory devices and they should also be provided with adequate training and information on safety and health aspects. Occupational health surveillance programme of the workers should be undertaken periodically to observe any contractions due to exposure to dust and take corrective measure, if needed.	Personnel working in dusty areas are being provided with protective respiratory devices. They were provided adequate training and information on safety and health aspects.  Occupational health surveillance programme of the workers is being under taken periodically to observe any contractions due to exposure to dust and take corrective measures.																																										
xi)	A separate environmental management cell with suitable qualified personnel should be set-up under the control of a Senior Executive, who will report directly to the Head of the Company.	To carryout functions relating to environmental management at this project, an environment management committee (EMC) has been constituted with the following members: <table border="1" style="width: 100%; border-collapse: collapse;"> <tbody> <tr><td>1.</td><td>SO to GM</td><td>Chairman</td></tr> <tr><td>2.</td><td>Project officer</td><td>Member</td></tr> <tr><td>3.</td><td>Area engineer (E&amp;M)</td><td>Member</td></tr> <tr><td>4.</td><td>Area civil engineer</td><td>Member</td></tr> <tr><td>5.</td><td>Area forest officer</td><td>Member</td></tr> <tr><td>6.</td><td>Area estates officer</td><td>Member</td></tr> <tr><td>7.</td><td>Project Manager</td><td>Member</td></tr> <tr><td>8.</td><td>Project engineer</td><td>Member</td></tr> <tr><td>9.</td><td>Project surveyor</td><td>Member</td></tr> <tr><td>10.</td><td>Project env.officer</td><td>Member</td></tr> <tr><td>11.</td><td>Area env. officer</td><td>Secretary</td></tr> <tr><td>12.</td><td>Sr.Hydro Geologist</td><td>Member</td></tr> <tr><td>13.</td><td>Area Survey Officer</td><td>Member</td></tr> <tr><td>14.</td><td>BaseWorkshop Incharge</td><td>Member</td></tr> </tbody> </table> Review meeting of EMC of the mine is held on 18.11.2019 and minutes of the same is enclosed as Annexure - X.	1.	SO to GM	Chairman	2.	Project officer	Member	3.	Area engineer (E&M)	Member	4.	Area civil engineer	Member	5.	Area forest officer	Member	6.	Area estates officer	Member	7.	Project Manager	Member	8.	Project engineer	Member	9.	Project surveyor	Member	10.	Project env.officer	Member	11.	Area env. officer	Secretary	12.	Sr.Hydro Geologist	Member	13.	Area Survey Officer	Member	14.	BaseWorkshop Incharge	Member
1.	SO to GM	Chairman																																										
2.	Project officer	Member																																										
3.	Area engineer (E&M)	Member																																										
4.	Area civil engineer	Member																																										
5.	Area forest officer	Member																																										
6.	Area estates officer	Member																																										
7.	Project Manager	Member																																										
8.	Project engineer	Member																																										
9.	Project surveyor	Member																																										
10.	Project env.officer	Member																																										
11.	Area env. officer	Secretary																																										
12.	Sr.Hydro Geologist	Member																																										
13.	Area Survey Officer	Member																																										
14.	BaseWorkshop Incharge	Member																																										
xii)	The funds earmarked for Environmental protection measures should be kept in separate account and should not be diverted for other purpose. Year-wise expenditure should be reported to this Ministry and its Regional Office located at Bangalore.	The funds (both capital and recurring) earmarked for environmental control measures are not being diverted for any other purpose and being spent for environmental protection measures only.																																										

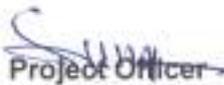
## JVR OC – 1 Expansion Project HYMR Report From Oct'2019 – Mar'2020

S. No	Condition	Compliance Status
xiii)	The Regional Office of this Ministry located at Bangalore shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation of the office(s) of the Regional Office by furnishing the requisite data / information / monitoring reports.	Project authorities are extending full co-operation during the visits of the office(s) of the Regional Office by furnishing the requisite data / information / monitoring reports.
xiv)	A copy of the clearance letter will be marked to concern Panchayat / local NGO, if any, from whom and suggestion / representation has been received while processing the proposal.	This condition was complied immediately after obtaining EC from MoEF&CC, New Delhi.
xv)	State Pollution Control Board should display a copy of the clearance letter at the Regional office, District Industry Center and Collector's Office/Tehsildar's office for 30 days.	SCCL requested APPCB vide letter CRP/PP/A/403/553 dated 31.07.2007 to display the EC letter and the same was complied.
xvi)	The project authorities should advertise at least in two local newspapers widely circulated around the project, one of which shall be in the vernacular language of the locality concerned within seven days of issue of the clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with the State Pollution Control Board and may also be seen at web site of the Ministry of Environment & Forests at <a href="http://envfor.aic.in">http://envfor.aic.in</a> .	The project authorities have advertised in Deccan Chronicle (English) and Eenadu (Telugu) on 06.08.2007 informing that the project has been accorded environmental clearance. A copy of the Clearance Letter is available with the State Pollution Control Board and it can be seen at company web site.
3.	The Ministry or any other competent authority may stipulate any further condition for environmental protection.	If the ministry stipulates any additional conditions, if so necessitated either by change in scope of the project, those additional conditions will also be complied along with existing conditions.
4.	Failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract the provisions of the Environment (Protection) Act, 1986.	SCCL is implementing all the conditions stipulated in EC.

**JVR OC – 1 Expansion Project HYMR Report From Oct'2019 – Mar'2020**

<b>S. No</b>	<b>Condition</b>	<b>Compliance Status</b>
5.	The above conditions will be enforced, inter-alia, under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, The Air (Prevention & Control of Pollution) Act, 1981, The Environment (Protection) Act, 1986 and the Public Liability Insurance Act, 1991 along with their amendments and rules.	Being complied. Public Liability Insurance Policy is taken from the New India Assurance Company Ltd under Public Liability Insurance Act, 1991 vide policy No.61360136203300000004, valid from 30.04.2020 to 29.04.2021, which will be renewed periodically.

A periodic progress report regarding environmental protection measures till 31<sup>st</sup> March 2020 is enclosed as **Part - II**.

  
Project Officer  
JVROC I (Exp) Project  
Project Officer  
**JVR OC-I & OC-II**  
**STPL, Kgm Area.**

**JVR OC – 1 Expansion Project HYMR Report From Oct'2019 – Mar'2020**

**PART - II**

**1. Production Details**

Sl. No	Year	Coal (in MT)		Overburden (M.Cu.M)	
		As per EC	Actual	As per EMP	Actual
1	2005 - 2006	2.50	0.520	2.920	5.965
2	2006 - 2007	2.50	1.280	6.950	8.776
3	2007 - 2008	2.50	1.917	6.940	5.408
4	2008 - 2009	2.50	2.679	14.510	12.183
5	2009 - 2010	2.50	3.573	7.450	13.143
6	2010 - 2011	2.50	3.529	3.550	9.638
7	2011 - 2012	2.50	4.135	5.870	8.947
8	2012 - 2013	2.50	3.963	9.920	5.222
9	2013 - 2014	2.50	4.898	8.610	12.288
10	2014 - 2015	2.50	4.500	8.500	10.224
11	2015 - 2016	2.50	4.545	10.750	22.768
12	2016 - 2017	2.50	5.219	10.800	18.921
13	2017 - 2018	2.50	4.955	10.900	14.380
14	2018 - 2019	2.50	4.710	10.950	13.934
15	2019 - 2020	2.50	3.815	11.180	7.845

**2. Topsoil Management:**

1	Total Topsoil	5.60 MB.Cum.
2	Topsoil removed so far	4.080 MB.Cum.
3	Topsoil stored in temporary stockyard	0.413 MB.Cum.

**3. Overburden Management:**

1.	Total Overburden as per revised estimates.	170.00 MB.Cum.			
2.	Total OB removed since inception	169.645 MB.Cum.			
3.	Total OB removed during last 6months	2.791 MB.Cum			
4.	Details of External OB dumps	Area (in Ha)	Quantity in (M.Cu.M)	Height (m)	Overall slope
	Dump 1	130.39	39.075	+90	23 <sup>0</sup>
5.	Details of Internal dump (Backfilling) (w1+w2)	225.330 (w.r.t. GL)	130.57	0m to +60m	21 <sup>0</sup>
	Above Ground Level	111.77			
	Up to Ground Level	133.00			
	Below Ground Level	225.330			

## JVR OC – 1 Expansion Project HYMR Report From Oct'2019 – Mar'2020

### 4. Plantation:

1.	Total area brought under plantation so far in Ha.	318.90
2.	Total no of plants planted so far since inception	4,95,658 No's.
3.	Species of plants planted	Dendrocalamus strictus, Hardwickia binata Inga dulcii,Albeziaodoratissima, Ficus benghalensis, Ficus relegiosa, Semarouba glauca,Ceiba pentandra, Ficus mollis Aegle marmolose, Mytragyna parvifolia Dolichondran crispa , Madhuka latifolia Terminaliabellarica, Eucalyptus clones etc.
4.	Total Expenditure	Rs.10997368.41.

Note: Plan showing the details of year wise plantation is enclosed as **Figure - I**

### 5. Water Balance Statement:

SI	Description	Quantity in KLD
A.	Average quantity of water pumped out of the mine	3153
B.	Water utilization:	
1.	Water used for dust suppression	1893
2.	Water used for sprinkling at coal crushing points	140
3.	Water used for washing of HEMM	120
4.	Water used for domestic and plantation	160
C.	Excess water let out	0
D.	Point of discharge (as per CFO)	
	Near by irrigation tank & ground water recharge (1348 KLD)	1348
	On land for development of plantation (800 KLD)	800
	Domestic effluents (417 KLD)	417
E.	Total discharge as per CFO of TSPCB	2565

### 6. Soil Erosion Control Measures:

SI	Description	Quantity				
1.	Length of toe Walls	1760 m				
2.	Length of garland drains	13000 m				
3.	No. of settling ponds	4				
		Sl. No.	Length in (m)	Width (m)	Depth (m)	Volume (cu. m)
		1.	40.66	15	2	1220
		2.	52.50	20	2	2100
		3.	50.00	15	2	1500
		4.	132.80	100	2	26560
4.	No. of gabions	Nil				
5.	No. of cribs	8				
6.	No. of rock fill dams	4				

## JVR OC – 1 Expansion Project HYMR Report From Oct'2019 – Mar'2020

### 7. Micro-meteorological Monitoring:

Micro-meteorological station was installed at the project office. The summary of the monitoring from Oct' 2019 to Mar' 2020 is as follows:

S.No	Parameter (s)	Min	Max	Mean
1.	Temperature (°C)	17.9	36.0	26.8
2.	Wind Speed (m/s)	Calm% 25.87	5.6	1.37
3.	Relative Humidity (%)	22.0	99.9	70.9
4.	Predominant Wind direction for the study period	South-South West (S-SW), followed by South West (SW) direction		
5.	Total Rainfall (mm)	211 mm		

### 8. Ambient Air Quality Monitoring:

#### Parameters & Procedure

In accordance with MoEF Notification, GSR-742 (E), DT. 25.09.2000 and National Ambient Air Quality Standards, the concentration of Suspended Particulate Matter (PM<sub>10</sub> and PM<sub>2.5</sub>), Sulphur Dioxide (SO<sub>2</sub>) and Oxides of Nitrogen (NO<sub>x</sub>) is being monitored at work zone locations and also in nearby villages to assess the impact of mining operations on surrounding habitation.

Respirable Dust Sampler is used for monitoring of PM<sub>10</sub>, SO<sub>2</sub> and NO<sub>x</sub> and Ambient Fine Dust Sampler is being used for monitoring of PM<sub>2.5</sub>. SCCL is carrying out post-project environmental monitoring through EPTRI, Hyderabad, a CPCB recognized and NABL accredited laboratory. EPTRI has also established laboratories in SCCL mining areas for analyzing critical parameters in the field.

#### Frequency of Monitoring:

Air quality monitoring is being carried out at a frequency of once in a fortnight (24 hourly sampling) at the identified locations near the dust generating sources.

#### Post project Ambient Air quality monitoring stations:

Sl. No	Location	Zone	Direction w.r.t. Project & Distance	Station Code
1.	Project Office	Core Zone	--	CA7
2.	Base Workshop	Core Zone	--	CA8
3.	JVR OC – II Pit Head CHP	Core Zone	--	CA10
4.	Kistaram Village	Buffer Zone	NW & 5.0 KM	BA5
5.	Sathupalli	Buffer Zone	E & 2.5 KM	BA6
6.	Venkatapuram	Buffer Zone	NE & 2.5 KM	BA7
7.	Pallewada	Buffer Zone	SW & 6.3 KM	BA8

## JVR OC – 1 Expansion Project HYMR Report From Oct'2019 – Mar'2020

### Monitoring data:

The summary of the air quality monitoring data from Oct' 2019 to Mar' 2020 is as follows.

(All values in  $\mu\text{g}/\text{m}^3$ )

Sl. No.	Location	Direction & Distance	PM <sub>10</sub>				
			Min.	Max.	Average	98%tile	Standard
1.	JVR OC Project Office	Core Zone	101	124	113.0	123.34	250
2.	Base Workshop	Core Zone	115	153	140.3	152.12	250
3.	JVR OC – II Pit Head CHP	Core Zone	197	236	222.1	235.12	250
4.	Kistaram Village	NW & 5.0 KM	60	80	72.8	79.56	100
5.	Sathupalli	E & 2.5 KM	52	70	61.6	69.34	100
6.	Venkatapuram	NE & 2.5 KM	50	67	59.2	66.12	100
7.	Pallewada	SW & 6.3 KM	49	61	55.2	60.56	100

Sl. No.	Location	Direction & Distance	PM <sub>2.5</sub>				
			Min.	Max.	Average	98%tile	Standard
1.	JVR OC Project Office	Core Zone	32.4	40.6	36.7	40.29	-
2.	Base Workshop	Core Zone	39.2	52.1	47.6	51.79	-
3.	JVR OC – II Pit Head CHP	Core Zone	64	76.6	71.5	76.20	-
4.	Kistaram Village	NW & 5.0 KM	24.5	32.8	29.8	32.65	60
5.	Sathupalli	E & 2.5 KM	21.6	29.2	25.5	28.85	60
6.	Venkatapuram	NE & 2.5 KM	20.7	27.6	24.4	27.29	60
7.	Pallewada	SW & 6.3 KM	20	25	22.6	24.80	60

	Location	Direction & Distance	SO <sub>2</sub>				
			Min.	Max.	Average	98%tile	Standard
1.	JVR OC Project Office	Core Zone	12.6	15	14.0	14.98	120
2.	Base Workshop	Core Zone	13.5	15.8	14.7	15.73	120
3.	JVR OC – II Pit Head CHP	Core Zone	14.1	16.3	15.3	16.28	120
4.	Kistaram Village	NW & 5.0 KM	12.2	14.6	13.5	14.49	80
5.	Sathupalli	E & 2.5 KM	10.5	14.6	12.9	14.56	80
6.	Venkatapuram	NE & 2.5 KM	10.8	13.6	12.3	13.49	80
7.	Pallewada	SW & 6.3 KM	10	12.3	11.2	12.26	80

	Location	Direction & Distance	NO <sub>2</sub>				
			Min.	Max.	Average	98%tile	Standard
1.	JVR OC Project Office	Core Zone	19.1	23.1	21.5	22.99	120
2.	Base Workshop	Core Zone	19.7	23.5	21.6	23.39	120
3.	JVR OC – II Pit Head CHP	Core Zone	20.9	24.6	22.8	24.58	120
4.	Kistaram Village	NW & 5.0 KM	18.1	21.8	19.9	21.80	80
5.	Sathupalli	E & 2.5 KM	15	22.2	18.8	22.02	80
6.	Venkatapuram	NE & 2.5 KM	15.6	20.1	17.8	19.90	80
7.	Pallewada	SW & 6.3 KM	14.4	18	16.1	17.91	80

## **JVR OC – 1 Expansion Project HYMR Report From Oct'2019 – Mar'2020**

The air quality data monitored at the work zone locations and sathuaplli residential area indicate that PM<sub>10</sub> concentration is within the stipulated limits at all locations. The PM<sub>2.5</sub> concentrations at all locations are within the stipulated limits. The SO<sub>2</sub> and NO<sub>2</sub> levels are well within the limits at all the locations. The fortnightly air quality data monitored during six months period from Oct' 2019 to Mar' 2020 is enclosed as **Annexure - I**.

### **Air Pollution Control Measures**

SCCL is taking following control measures in the JVR OC Expansion Project for air pollution control including reduction of particulate emissions:

- Wet drilling arrangements are provided for controlling dust while drilling.
- Water spraying is being done on haul roads; dump yards and at coal loading and unloading points to reduce the dust arising due to movement of vehicles and wind.
- Two mobile water sprinklers of 28 KL, two mobile water sprinklers of 22KL and three mobile water sprinklers of 12 KL capacities are deployed for water spraying purpose.
- As far as practicable, coal produced is dispatched to the central CHP.
- Automatic sprinkling system under the control of operator is provided at the crushers.
- Periodical maintenance of all diesel / petrol operated vehicles is being done to control SO<sub>2</sub>, NO<sub>2</sub> & CO in the exhaust emissions.
- No burning of coal or wood or cotton waste impregnated with oil and grease is done in the mine premises.
- Employees are being provided with free LPG gas cylinders instead of coal to discourage coal burning for domestic use. All employees are using LPG gas in place of coal.
- Ambient air quality is being monitored every fortnight in and around the project area.
- Cabins of heavy earth moving machines are provided with A.C.
- Emissions from heavy earth moving machinery are being monitored.

### **9. Water Quality Monitoring:**

The impact of the mining activities on the water environment was assessed by studying the quality of groundwater and surface water bodies in the study area. The sampling locations were selected considering their proximity to the project sites. A total of 3 water samples i.e., 1 sample from surface and 2 samples from groundwater were collected and analyzed for various physico-chemical and bacteriological parameters.

## JVR OC – 1 Expansion Project HYMR Report From Oct'2019 – Mar'2020

### Post project water quality monitoring stations:

Sl. No	Location	Zone	Distance & Direction w.r.t. Project	Station Code
<b>I.</b>	<b>Surface Water</b>			
1.	Kistaram Tank	Buffer Zone	NW & 5.0 KM	SW2
<b>II.</b>	<b>Ground Water</b>			
1.	Vengalrao Nagar	Buffer Zone	NE & 0.30 KM	GW3
2.	Pallewada	Buffer Zone	SW & 6.3 KM	GW5
<b>III.</b>	<b>Effluents</b>			
1.	Mine discharge	Core Zone	--	EW6
2.	OB dump surface runoff	Core Zone	--	EW8
3.	Base Workshop(ETP)	Core Zone	--	EW7

### Parameters:

The ground water quality results are compared with IS: 10500 standards of groundwater quality and surface water quality with IS 2296, 1982 and CPCB Water Quality Criteria, Class - A (Drinking Water Source without conventional treatment but after Disinfection), Class - B (Outdoor bathing (organized), Class – C (Drinking Water Source with conventional treatment and after Disinfection, Class - D (Propagation of wild life fisheries) and Class - E (Irrigation, Industrial Cooling, Controlled Waste Disposal).

Effluent water quality monitoring involves periodical assessment of quality of mine discharge water, treated workshop effluents, CHP effluent, treated colony effluents, ground water and surface water. pH, Total Suspended Solids (TSS), TDS, Chemical Oxygen demand (COD), BOD and Oil & Grease are being periodically monitored in effluents as per the Environmental Standards for coalmines, GSR - 742 (E) dated 25.09.2000.

All the parameters as given in Part - A of General Standards for Discharge of Environmental Pollutants, GSR 801 (E) EPA 1986 prescribed by CPCB is being analyzed for all the effluents, in addition to the above parameters, once in a year for assessing the overall quality of effluents.

### Frequency of monitoring

Monitoring of effluent water samples for four critical parameters is being done at a frequency of once in a fortnight. Effluents are also analyzed in every fortnight, whereas ground water (all parameters), surface water (all parameters) are being analyzed once in every quarter.

### Monitoring Data:

The surface water, ground water and effluents quality data monitored during Oct' 2019 to Mar' 2020 is enclosed as **Annexure - II, Annexure - III and Annexure - IV** respectively. The

## JVR OC – 1 Expansion Project HYMR Report From Oct'2019 – Mar'2020

summarized data on effluent water quality in respect of four critical parameters stipulated for coal mines is furnished hereunder.

S.No	Location	Concentration	Parameter					
			pH (at 25 <sup>0</sup> C)	TSS At 105 <sup>0</sup> C	TDS at 180 <sup>0</sup> C	COD	BOD	Oil & Grease
1	JVROC Mine discharge	Min	6	6	860	14	2	<1
		Max	7.4	24	1170	27	7	<1
2	Dump Surface run off settling pond	Min	5.7	6	870	20	3	<1
		Max	7.3	34	1180	30	9	<1
3	BWS -ETP	Min	6.8	6	830	14	2	5.2
		Max	7.7	27	1100	29	8	6.9
MoEF GSR 742 (E) and GSR 801(E) Effluent Standards for coal mines			5.5 to 9.0	100	--	250	30	10

### Water Pollution Control Measures:

- Mine water is being collected in to the sumps inside quarry for settling suspended solids.
- Mine water is passed through garland drain and settling ponds to arrest the silt from surface runoff from OB dumps and mine discharge before letting into nearby Kistaram tank for irrigation.
- The attitude of piezometric surface and phreatic surface level in and around the project area are being recorded seasonally in near by villages and the data of the same is enclosed as Annexure - VII & VIII respectively

**10.** Surface water, Ground water (bore well) and effluents (mine discharge water, dump surface run off and ETP out let water) samples are being collected and analyzed regularly. The analysis results are furnished in the **Annexure - II, III & IV** respectively.

### **11. Water Levels monitoring:**

The peizometric surface levels are being monitored in four peizometric wells around the mine four times in a year i.e., in summer, pre monsoon, post monsoon and winter, around the mine.. The observed data is enclosed as **Annexure – VII**

The phreatic surface levels are being monitored in 27 observation wells around the mine four times in a year i.e., in summer, pre monsoon, post monsoon and winter, around the mine up to 10km radius distance. The water levels are 1.60 m to 10.0m in Pre-monsoon during 2019 and 2.9 m to 11.85 m in winter season during 2019. The observed data is given in from the year 2017 to 2019 is enclosed as **Annexure - VIII.**

### **12. Noise Level Monitoring:**

The summary of noise quality data is as furnished below. The detailed noise quality data monitored from Oct' 2019 to Mar' 2020 is enclosed as **Annexure – V**

## JVR OC – 1 Expansion Project HYMR Report From Oct'2019 – Mar'2020

Sl. No	Location	Direction & Distance	Day Time			
			Min	Max	Avg.	Standard
1.	JVR OC Site office	Core Zone	57.5	63.4	61.36	75
2.	JVR Base workshop	Core Zone	62.5	71.5	68.83	75
3.	Kistaram Village	NW & 5.0 KM	48.9	53.5	51.72	55
4.	Sathupallitown	E & 2.5 KM	48.5	52.7	51.38	55
Sl. No	Location	Direction & Distance	Night Time			
			Min	Max	Avg.	Standard
1.	JVR OC Site office	Core Zone	42.5	48.8	45.93	70
2.	JVR Base workshop	Core Zone	46.2	55.9	52.93	70
3.	Kistaram Village	NW & 5.0 KM	36.2	43.1	40.87	45
4.	Sathupallitown	E & 2.5 KM	35.9	42.1	40.41	45

Note: 1. Daytime is reckoned in between 6 am and 10 pm  
Night time is reckoned in between 10 pm and 6 am

### Noise Pollution Control Measures:

- Proper blasting pattern with optimum charge of explosives and use of delay action detonators is being adopted to reduce noxious gases and dust emissions.
- Controlled blasting techniques using Non-electric detonators (NONELS) are being used scrupulously for blasting to reduce blasting induced ground vibrations. Blasting induced ground vibrations are being recorded on day-to-day basis and the recorded data is being maintained in a proforma specifically designed to monitor the above said parameters and the recorded value i.e. Peak Particle Velocity (PPV) was always well within Director General of Mines Safety (DGMS) limit (10 mm/sec).
- The ground vibrations generated during blasting are measured with mini mate .The readings were enclosed in Annexure- VIII
- Plantations are raised in the mine premises.
- Scientific study was carried out by CMRI for optimum blast geometry and their recommendations regarding the blasting methodology are being adopted.
- Proper maintenance of machinery is being done. Ear plugs are being provided to the employees exposed to high noise levels.
- Protective devices like acoustic wool, earplugs and earmuffs are being provided to the needy workers.
- Sound proof cabins are provided in HEMM.

## JVR OC – 1 Expansion Project HYMR Report From Oct'2019 – Mar'2020

### 13. Capital and Revenue Expenditure incurred on Environment Management and Pollution Control Measures in 1<sup>st</sup> April'2019 to 31<sup>st</sup> March'2020 (Financial Year):-

Sl. No	Pollution Control measure	Expenditure in Rs.
1.	Air pollution (prevention & control)	45460522
2.	Water Pollution (prevention & control)	29524422
3.	Land Development	9656590
4.	Plantation	596768
5.	Plant & Machinery for Env. Protection	3029841
6.	Consultancy payments/ Scientific studies	0
7.	OB Dump/Subsidence Stabilization	0
8.	Others (LPG to employees, CSR & SHAPE Works, Env.management cell etc.)	25034527
	TOTAL	11,33,02,670

### 14. Socio-economic Measures:

- LPG gas is supplied free of cost to the employees.
- Free medical treatment to workmen and their families is given
- 10% (41) of the employees have undergone periodical medical examinations during last six months and all children of workmen are covered under immunization programme.
- Incentives are being given to the employees to encourage them for undergoing family planning operations.

15. **An environment management committee (EMC)** has been constituted with officers of mine and as well as area level. The list of committee members and the minutes of meeting is enclosed as **Annexure - X**.The status of public hearing minutes is enclosed as **Annexure - XI**.The compliance of Groundwater Clearance is enclosed as **Annexure - XII**.

16. **Corporate Social Responsibility** : - Medical camps are being conducted regularly in the surrounding villages of Sathupalli i.e. Kommepalli, Rajerla, Kistaram and NTR Nagar and the details of medical camps and cataract surgeries are being conducted.in the month of March-2018

- The CSR works taken up under Surrounding Habitat Assistance Programme (SHAPE), laying of CC roads and drains bore well constructions and repairs etc.
- Desiltation of village tank viz, Peddacheruvu in kistaram has been taken up (14976 cubic meters.) the month of Feb-2018 for desiltation to improve irrigation facilities and ground water recharge to the surrounding area.
- Singareni Seva Samithi has conducted trainings programs at Sathupalli and surrounding villages.

## **JVR OC – 1 Expansion Project HYMR Report From Oct'2019 – Mar'2020**

- Fabric Painting course under Singareni sewa Samithi had arranged from 16.03.2015 to 15/5/2015 to a batch of 25 women in Kistaram Village.
- Free tailoring and Embroidery training under Singareni sewa Samithi had arranged from 29.03.2015 to 28/9/2015 to a batch of 25 women at Jagannadhapuram.
- 50 No's of LED Bulbs with fittings were given to Kistaram grama panchayath for street lighting on 16.03.2015.
- Conducted employment awareness programme to children of 180 persons.
- Training was given to 25 security Guards.
- Old NTR Canal is filled up.
- Dispensary is provided at SCCL guest house and treatment to PAF's is extended.
- Desilting of Chillavagu Cheruvu and Jinugupalli Cheruvu in 2014. Peddacheruvu of Kistaram in 2015.
- Employment is being provided at the Contractors for unemployed persons of surrounding villages as and when required.
- 1000 Nos. of flower bearing plants were supplied during Oct-2015 to the Sathupalli Ganesh Utsav Committee and 500 to the surrounding schools on free of cost.
- 10000 Nos.of fruit & flower bearing plants were distributed at Sathupalli and surrounding villages of Kistaram, Kommepalli, Rejerla & Jagannadhapuram in 2016 monsoon period.
- Tailoring & Embroidery course at Lingapalem Village, STPL for PAPs from 14.12.2016 to 11.06.2017 (1 Batch 25 Numbers) -6 Months Course
- Motor Driving course is being given to 25 persons in the month of September-2017.
- Motor Driving course is being given to 20 persons from 09.04.2018 for one month.
- Motor Driving course is being given to 20 persons from 19.06.2018 for one month.
- Tailoring & Embroidery course at NTR Nagar, STPL for PAPs from 19.06.2018 to 19.12.2018 (1 Batch 30 Numbers) -6 Months Course.
- Computer coaching to NTR Nagar youth from 6/10/2018(3months).No.of beneficiaries 20 members.
- Muggam works coaching to NTR Nagar youth from 9/02/2019(3months).No. of beneficiaries 20 members.
- Cloth Bags making coaching to Rejarla youth from 15/04/2019(2months).No.of beneficiaries 20 members.
- Provided 04 No's of Sewing Machines to cluster groups at NTR Nagar.

**Medical Camps, etc.:-**

1. Health Awareness Programme on Breast Lump Cancer and Cervical Cancer for Female Employees of SCCL and for Female Dependants of our employees at RCOA Club, Rudrampur on 27.02.2016.
2. Primary Health Checkup (Screening) for Breast Lump Cancer Cervical Cancer for female employees & SEWA members of Kgm Area from 11.03.2016 to 12.03.2016 at Rudrampur Dispensary.
3. Medical camp Held at Muluggudem Primary School, interior of Penagadapa village on 31.05.2016.
4. Organizing of mobile medical camps in NTR Nagar, Rejarla, Kommepalli, Kistaram from 21.03.2018 to 31.05.2018 and No.of beneficiaries are 491 members.

**SPECIAL PROGRAMMES**

- a) Singareni Animuthyalu – Mega Job Mela Programme conducted at Gouthampur Community Hall from 28.01.2016 to 29.01.2016
- b) Yoga Training Programme under Mee Kosam – Mee Arogayam programme from 24.05.2016 to 30.05.2016 at Kothagudem Area i.e. Ramavaram & Pragathi Vanam Rudrampur. (250 numbers).
- c) SI & Police Constable Training Camp conducted at Prof. Jaya Shankar Stadium from 16.05.2016 to 30.06.2016.
- d) International yoga Day conducted at Pragathi Vanam Rudrampur on 21.06.2016 (3000 Numbers attended).
- e) International yoga Day conducted at Kothagudem Area from 17.06.2017 to 21.06.2017. All Mines&Departments, Schools&Colleges were participated.
- f) Telangana Harithaharam programme conducted at PVK-5 Mine, Kothagudem on 15.08.2018. Company CEO has participated in the above programme.
- g) Plantation programme is conducted at JVROC-I Mine Sathupalli on 21.08.2019. Hon'ble MLA of Sathupalli Sri. Sandra Venkata Veeraiah and other public representatives have attended. Company Director (Finance) has also participated in the above programme.

The details of Singareni Seva Samithi trainings programs, medical camps, and CSR works taken up under Surrounding Habitat Assistance Programme (SHAPE) are furnished in **Annexure-XIII**.

# **ANNEXURES**

**Ambient Air Quality Data for the period Oct' 2019 to Mar' 2020**

Station Name	Date of Sampling	Parameters ( $\mu\text{g}/\text{m}^3$ )			
		PM <sub>10</sub> ( $\mu\text{g}/\text{m}^3$ )	PM <sub>2.5</sub> ( $\mu\text{g}/\text{m}^3$ )	SO <sub>2</sub> ( $\mu\text{g}/\text{m}^3$ )	NO <sub>2</sub> ( $\mu\text{g}/\text{m}^3$ )
JV ROC-1EXP Project Office (Code No. CA7)	09.10.2019	110	35.6	13.6	21.1
	22.10.2019	113	36.6	15.0	21.6
	08.11.2019	116	37.7	13.9	21.3
	22.11.2019	119	38.6	14.4	22.1
	07.12.2019	121	39.2	14.4	22.2
	24.12.2019	124	40.6	14.9	23.1
	06.01.2020	111	36.0	13.5	20.6
	24.01.2020	114	37.2	14.3	22.0
	07.02.2020	104	33.7	13.9	21.3
	22.02.2020	118	38.6	14.6	22.6
	07.03.2020	105	34.3	13.4	20.4
21.03.2020	101	32.4	12.6	19.1	
<b>Min</b>		101	32.4	12.6	19.1
<b>Max</b>		124	40.6	15	23.1
<b>Average</b>		113.0	36.7	14.0	21.5
<b>98 Percentile</b>		123.34	40.29	14.98	22.99
<b>Coal mine standards, GSR 742(E),Dated 25.09.2000</b>		<b>250</b>	<b>-</b>	<b>120</b>	<b>120</b>

Station Name	Date of Sampling	Parameters ( $\mu\text{g}/\text{m}^3$ )			
		PM <sub>10</sub> ( $\mu\text{g}/\text{m}^3$ )	PM <sub>2.5</sub> ( $\mu\text{g}/\text{m}^3$ )	SO <sub>2</sub> ( $\mu\text{g}/\text{m}^3$ )	NO <sub>2</sub> ( $\mu\text{g}/\text{m}^3$ )
JV ROC-1EXP Base Workshop (Code No. CA08)	09.10.2019	135	45.8	13.8	20.5
	22.10.2019	139	47.0	15.1	21.9
	08.11.2019	143	48.4	14.1	20.7
	22.11.2019	146	49.6	15.3	22.6
	07.12.2019	149	50.5	14.6	21.6
	24.12.2019	153	52.1	15.8	23.5
	06.01.2020	145	49.2	14.3	21.0
	24.01.2020	149	50.7	15.0	22.2
	07.02.2020	138	46.8	14.8	21.8
	22.02.2020	143	48.8	15.5	23.0
	07.03.2020	128	43.6	14.1	20.8
21.03.2020	115	39.2	13.5	19.7	
<b>Min</b>		115	39.2	13.5	19.7
<b>Max</b>		153	52.1	15.8	23.5
<b>Average</b>		140.3	47.6	14.7	21.6
<b>98 Percentile</b>		152.12	51.79	15.73	23.39
<b>Coal mine standards, GSR 742(E),Dated 25.09.2000</b>		<b>250</b>	<b>-</b>	<b>120</b>	<b>120</b>

**JVR OC – 1 Expansion Project HYMR Report From Oct'2019 – Mar'2020**

Station Name	Date of Sampling	PM <sub>10</sub> (µg/m <sup>3</sup> )	PM <sub>2.5</sub> (µg/m <sup>3</sup> )	SO <sub>2</sub> (µg/m <sup>3</sup> )	NO <sub>2</sub> (µg/m <sup>3</sup> )
<b>at JVR OC-II Pit Head CHP (CA10)</b>	12.10.2019	215	68.8	14.1	21.2
	25.10.2019	221	70.7	15.5	22.1
	12.11.2019	227	72.8	14.5	21.5
	26.11.2019	225	72.0	15.8	23.6
	12.12.2019	219	70.1	15.0	22.4
	27.12.2019	208	67.6	16.3	24.5
	10.01.2020	230	73.6	15.3	22.8
	29.01.2020	236	76.6	16.0	24.1
	11.02.2020	232	74.2	15.5	24.0
	26.02.2020	230	74.8	16.2	24.6
	12.03.2020	225	73.1	14.8	22
	25.03.2020	197	64	14.1	20.9
<b>Min</b>		197	64	14.1	20.9
<b>Max</b>		236	76.6	16.3	24.6
<b>Average</b>		222.1	71.5	15.3	22.8
<b>98% percentile</b>		235.12	76.20	16.28	24.58
<b>Coal mine standards, GSR 742(E), Dated 25.09.2000</b>		<b>250</b>	<b>-</b>	<b>120</b>	<b>120</b>

Station Name	Date of Sampling	Parameters (µg/m <sup>3</sup> )			
		PM <sub>10</sub> (µg/m <sup>3</sup> )	PM <sub>2.5</sub> (µg/m <sup>3</sup> )	SO <sub>2</sub> (µg/m <sup>3</sup> )	NO <sub>2</sub> (µg/m <sup>3</sup> )
<b>Kistaram Village (Code No. BA5)</b>	12.10.2019	69	27.8	12.2	18.1
	25.10.2019	72	29.4	13.4	18.2
	21.11.2019	75	30.6	12.8	18.7
	26.11.2019	73	29.9	14.1	21.0
	12.12.2019	70	28.6	13.5	19.9
	27.12.2019	74	30.2	14.6	21.8
	10.01.2020	76	31.0	13.3	19.6
	29.01.2020	80	32.8	14.1	20.9
	11.02.2020	78	32.1	13.9	20.6
	26.02.2020	76	31.1	14.1	21.8
	12.03.2020	71	29	13.3	19.6
	25.03.2020	60	24.5	12.5	18.3
<b>Min</b>		60	24.5	12.2	18.1
<b>Max</b>		80	32.8	14.6	21.8
<b>Average</b>		72.8	29.8	13.5	19.9
<b>98 Percentile</b>		79.56	32.65	14.49	21.80
<b>Standards as per NAAQ</b>		<b>100</b>	<b>60</b>	<b>80</b>	<b>80</b>

Station Name	Date of Sampling	Parameters ( $\mu\text{g}/\text{m}^3$ )			
		PM <sub>10</sub> ( $\mu\text{g}/\text{m}^3$ )	PM <sub>2.5</sub> ( $\mu\text{g}/\text{m}^3$ )	SO <sub>2</sub> ( $\mu\text{g}/\text{m}^3$ )	NO <sub>2</sub> ( $\mu\text{g}/\text{m}^3$ )
Sathupalli Town (Code No. BA6)	10.10.2019	56	23.1	10.5	15.0
	23.10.2019	58	23.9	11.7	15.8
	09.11.2019	62	25.6	11.0	15.5
	23.11.2019	65	27.1	12.9	18.7
	10.12.2019	60	24.8	11.6	16.5
	25.12.2019	63	26.3	13.6	19.8
	07.01.2020	67	27.6	13.8	20.3
	25.01.2020	70	29.2	14.6	21.4
	08.02.2020	62	25.7	14.4	21.2
	24.02.2020	60	24.9	14.1	22.2
	10.03.2020	64	26.6	13.6	19.9
	23.03.2020	52	21.6	13.1	19.1
	<b>Min</b>		52	21.6	10.5
<b>Max</b>		70	29.2	14.6	22.2
<b>Average</b>		61.6	25.5	12.9	18.8
<b>98 Percentile</b>		69.34	28.85	14.56	22.02
<b>Standards as per NAAQ</b>		<b>100</b>	<b>60</b>	<b>80</b>	<b>80</b>

Station Name	Date of Sampling	Parameters ( $\mu\text{g}/\text{m}^3$ )			
		PM <sub>10</sub> ( $\mu\text{g}/\text{m}^3$ )	PM <sub>2.5</sub> ( $\mu\text{g}/\text{m}^3$ )	SO <sub>2</sub> ( $\mu\text{g}/\text{m}^3$ )	NO <sub>2</sub> ( $\mu\text{g}/\text{m}^3$ )
VenkatapuramVillage (Code No. BA7)	10.10.2019	53	21.4	10.8	15.6
	23.10.2019	55	22.7	12.0	16.4
	09.11.2019	60	24.8	11.3	16.2
	23.11.2019	63	26.1	12.5	18.1
	10.12.2019	57	23.5	11.8	17.0
	25.12.2019	60	24.8	13.0	19.0
	07.01.2020	63	26.2	12.2	17.7
	25.01.2020	67	27.6	13.1	19.2
	08.02.2020	60	25.0	13.0	18.9
	24.02.2020	63	26.0	13.6	20.1
	10.03.2020	59	24.4	12.5	18.1
	23.03.2020	50	20.7	11.6	16.7
	<b>Min</b>		50	20.7	10.8
<b>Max</b>		67	27.6	13.6	20.1
<b>Average</b>		59.2	24.4	12.3	17.8
<b>98 Percentile</b>		66.12	27.29	13.49	19.90
<b>Standards as per NAAQ</b>		<b>100</b>	<b>60</b>	<b>80</b>	<b>80</b>

Station Name	Date of Sampling	Parameters ( $\mu\text{g}/\text{m}^3$ )			
		PM <sub>10</sub> ( $\mu\text{g}/\text{m}^3$ )	PM <sub>2.5</sub> ( $\mu\text{g}/\text{m}^3$ )	SO <sub>2</sub> ( $\mu\text{g}/\text{m}^3$ )	NO <sub>2</sub> ( $\mu\text{g}/\text{m}^3$ )
Pallewada Village (Code No. BA8)	11.10.2019	50	20.2	10.0	14.4
	24.10.2019	52	21.2	10.8	14.4
	11.11.2019	55	22.7	10.3	14.6
	25.11.2019	58	23.7	11.3	16.2
	11.12.2019	56	23.1	10.8	15.4
	26.12.2019	59	24.1	11.8	17.0
	09.01.2020	58	24.0	11.4	16.5
	27.01.2020	61	25.0	12.1	17.6
	10.02.2020	56	23.1	11.8	17.5
	25.02.2020	53	21.6	12.3	18.0
	11.03.2020	55	22.4	11.3	16.2
	24.03.2020	49	20	10.5	14.9
<b>Min</b>		49	20	10	14.4
<b>Max</b>		61	25	12.3	18
<b>Average</b>		55.2	22.6	11.2	16.1
<b>98 Percentile</b>		60.56	24.80	12.26	17.91
<b>Standards as per NAAQ</b>		<b>100</b>	<b>60</b>	<b>80</b>	<b>80</b>



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**SURFACE WATER DATA FOR THE PERIOD Oct' 2019 to Mar' 2020**

**ANNEXURE- II**

**Physical-Chemical and Bacteriological Characteristics of Surface Water at Selected Locations in the Study Area**

S.No.	Parameters	Unit	Test Method	Tolerance Limits IS: 2296-1982	CPCB Water Quality Criteria			RESULT	
				Class C	Class A	Class B	Class C	SW-2 (Kistaram Tank)	
								<b>05.11.2019</b>	<b>27.01.2020</b>
1	pH	-	4500-H*B	6.5-8.5	6.5 -8.5	6.5 - 8.5	6.5 - 9	7.8	7.2
2	Temperature	°C	2550. B	-	-	-	-	25.4	25.4
3	Turbidity	NTU	2130. B	-	-	-	-	1.0	3.4
4	Electrical Conductivity	µmhos/cm	2510-B	-	-	-	-	325	317
5	Total Dissolved Solids at 180° C	mg/L	2540.C	-	-	-	-	188	178
6	Total Suspended Solids at 105° C	mg/L	2540. D	1500	-	-	-	12	24
7	Dissolved Oxygen	mg/L	4500-O.C	4	6 mg/l or more	5 mg/l or more	4 mg/l or more	6.4	5.1
8	Bio chemical Oxygen Demand for 3 days at 27° C	mg/L	IS: 3025	3	2 mg/l or less	3 mg/l or less	3 mg/l or less	5	3
9	Total Coliforms	MPN/100mL	9221A & B	5000	50 or less	500 or less	5000 or less	220	220
10	Fecal Coliforms	MPN/100mL	9221 E	-	-	-	-	23	33
11	<i>E. coli</i>	Presence or Absence/MPN/100 mL	9221 F	-	-	-	-	Absent	Absent
12	Chemical Oxygen Demand	mg/L	5220. D	-	-	-	-	20	20
13	Chlorides as Cl <sup>-</sup>	mg/L	4500-Cl.B	600	-	-	-	25	55
14	Nitrites as NO <sub>2</sub> <sup>-</sup>	mg/L	4500-NO <sub>2</sub> <sup>-</sup> .B	-	-	-	-	BDL	BDL
15	Nitrates as NO <sub>3</sub> <sup>-</sup>	mg/L	4500-NO <sub>3</sub> <sup>-</sup> .B	50	-	-	-	5.2	6
16	Sulphates as SO <sub>4</sub> <sup>2-</sup>	mg/L	4500-SO <sub>4</sub> <sup>2-</sup> .E	200	400	-	-	9.7	13

**JVR OC – 1 Expansion Project HYMR Report From Oct'2019 – Mar'2020**

S.No.	Parameters	Unit	Test Method	Tolerance Limits IS: 2296-1982	CPCB Water Quality Criteria			RESULT	
				Class C	Class A	Class B	Class C	SW-2 (Kistaram Tank)	
								05.11.2019	27.01.2020
17	Arsenic as As	mg/L	3120. B	0.01	-	-	-	BDL	BDL
18	Lead as Pb	mg/L	3120. B	0.01	-	-	-	BDL	BDL
19	Zinc as Zn	mg/L	3120. B	5	-	-	-	0.28	0.27
20	Cadmium as Cd	mg/L	3120. B	0.003	-	-	-	BDL	BDL
21	Total Chromium as Cr	mg/L	3120. B	-	-	-	-	BDL	BDL
22	Nickel as Ni	mg/L	3120. B	0.02	-	-	-	BDL	BDL
23	Iron as Fe	mg/L	3120. B	50	-	-	-	0.16	0.23
24	Copper as Cu	mg/L	3120-B	0.05	-	-	-	BDL	BDL
25	Boron as B	mg/L	3120-B	1.0	-	-	-	0.21	0.06
26	Colour	Pt-co	2120. B	300	-	-	-	20	10
27	Odour	TON	2150. B	-	-	-	-	No Odour observed	No Odour observed
28	Ammonical Nitrogen as NH <sub>3</sub> -N	mg/L	4500-NH <sub>3</sub> -C	-	-	-	-	BDL	BDL
29	Total Phosphates	mg/L	4500-P-D	-	-	-	-	BDL	BDL
30	Oil & Grease	mg/L	5520. B	-	-	-	-	<1	<1
31	Fluoride	mg/L	4500-F.C	-	-	-	-	1.1	0.57
32	Phenolic compounds as C <sub>6</sub> H <sub>5</sub> OH	mg/L	5530-D	-	-	-	-	BDL	BDL
33	Selenium as Se	mg/L	3120-B	-	-	-	-	BDL	BDL

*NTU – Nephelometric Turbidity Unit; TON – Threshold Odour Number; FTN – Flavor Threshold Number; BDL – Below Detection Limit, Detection Limit – Phenols – 0.1 mg/L; Mercury – 20 µg/L; Cyanide – 0.05 mg/L Hex. Chromium – 0.05 mg/L; Copper – 0.02 mg/L; Manganese – 0.01 mg/L; Cadmium – 0.01 mg/L; Selenium – 0.04 mg/L; Arsenic – 0.04 mg/L; Lead – 0.04 mg/L; Aluminum – 0.04 mg/L; Chromium – 0.03 mg/L; Nickel – 0.03 mg/L; Residual free chlorine – 1 mg/L; Nitrites – 0.01 mg/L; Orthophosphates – 0.05 mg/L; ND-Not Detected; Detection Limit : Pesticides– 0.1 ppm; PAHs – 1 ppm. \*Not Performed –PCBs, Trihalomethanes, Radioactive materials, Alachlor, Atrazine, Butachlor, Ethion, Monocrotophos*

**GROUND WATER DATA FOR THE PERIOD Oct' 2019 to Mar' 2020**

**Physico-Chemical, Bacteriological Characteristics of Groundwater Collected within the Study Area  
Organoleptic and Physical Parameters**

S.No.	Parameters	Unit	Test Method	IS: 10500 Requirement (Acceptable Limit)	IS: 10500 Permissible Limits	RESULT			
						GW-3 (Vengalrao Nagar)		GW-5 (Pallewada Village)	
						05.11.2019	27.01.2020	05.11.2019	27.01.2020
1.	Colour	Pt-co	2120. B	5	15	<5	<5	<5	<5
2.	Odour	TON	2150. B	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
3.	pH	-	4500-H <sup>+</sup> B	6.5 to 8.5	No relaxation	7.3	7.1	7.8	7.1
4.	Taste	FTN	2160. B	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
5.	Turbidity	NTU	2130. B	1	5	1.02	0.38	1.20	0.8
6.	Total Dissolved Solids at 180° C	mg/L	2540.C	500	2000	605	630	982	932

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**General Parameters Concerning Substances Undesirable in Excessive Amounts**

S. No.	Parameters	Unit	Test Method	IS: 10500 Requirement (Acceptable Limit)	IS: 10500 Permissible Limits	RESULT			
						GW-3 (Vengalrao Nagar )		GW-5 (Pallewada Village)	
						05.11.2019	27.01.2020	05.11.2019	27.01.2020
1	Aluminium as Al	mg/L	3120-B	0.03	0.2	BDL	BDL	0.07	BDL
2	Barium as Ba	mg/L	3120. B	0.7	No relaxation	0.10	0.15	0.2	0.13
3	Boron as B	mg/L	3120-B	0.5	1.0	0.09	0.17	0.26	0.22
4	Calcium as Ca	mg/L	3500-Ca.B	75	200	120	42	96	68
5	Chlorides as Cl <sup>-</sup>	mg/L	4500-Cl <sup>-</sup> .B	250	1000	125	131	270	197
6	Copper as Cu	mg/L	3120-B	0.05	1.5	BDL	BDL	BDL	BDL
7	Fluoride as F <sup>-</sup>	mg/L	4500-F <sup>-</sup> .C	1.0	1.5	0.36	0.97	0.66	0.84
8	Residual free chlorine	mg/L	4500-Cl <sup>-</sup> .B	0.2	1.0	BDL	BDL	BDL	BDL
9	Iron as Fe	mg/L	3120-B	0.3	No relaxation	0.15	0.19	0.31	0.26
10	Magnesium as Mg	mg/L	3500-Mg.B	30	100	25	41	100	66
11	Manganese as Mn	mg/L	3120-B	0.1	0.3	BDL	BDL	BDL	BDL
12	Nitrates as NO <sub>3</sub>	mg/L	4500-NO <sub>3</sub> <sup>-</sup> .B	45	No relaxation	22	25	80	60
13	Phenolic compounds as C <sub>6</sub> H <sub>5</sub> OH	mg/L	5530-D	0.001	0.002	BDL	BDL	BDL	BDL
14	Selenium as Se	mg/L	3120-B	0.01	No relaxation	BDL	BDL	BDL	BDL
15	Silver as Ag	mg/L	3120. B	0.1	No relaxation	BDL	BDL	BDL	BDL
16	Sulphates as SO <sub>4</sub> <sup>2-</sup>	mg/L	4500-SO <sub>4</sub> <sup>2-</sup> .E	200	400	29	35	59	48
17	Total Alkalinity as CaCO <sub>3</sub>	mg/L	2320. B	200	600	173	300	236	355
18	Total Hardness as CaCO <sub>3</sub>	mg/L	2340. C	200	600	405	275	650	440
19	Zinc as Zn	mg/L	3120-B	5	15	0.19	0.20	0.26	0.24

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**Parameters Concerning Toxic Substances**

S. No.	Parameters	Unit	Test Method	IS: 10500 Requirement (Acceptable Limit)	IS: 10500 Permissible Limits	RESULT			
						GW-3 (Vengalrao Nagar )		GW-5 (Pallewada Village)	
						05.11.2019	27.01.2020	05.11.2019	27.01.2020
1	Cadmium as Cd	mg/L	3120-B	0.003	No relaxation	BDL	BDL	BDL	BDL
2	Cyanide as CN-	mg/L	4500-CN.F	0.05	No relaxation	BDL	BDL	BDL	BDL
3	Lead as Pb	mg/L	3120-B	0.01	No relaxation	BDL	BDL	BDL	BDL
4	Molybdenum as Mo	mg/L	3120. B	0.07	No relaxation	BDL	BDL	BDL	BDL
5	Nickel as Ni	mg/L	3120-B	0.02	No relaxation	BDL	BDL	BDL	BDL
6	Pesticides: α-BHC, β-BHC, γ-BHC, δ-BHC, o,p-DDT, p,p' -DDT, Endosulfan, β- Endosulfan, Aldrin, Dieldrin	µg/L	6630. D	Absent	0.001	ND	ND	ND	ND
	2,4-D, Carbaryl (Carbonate) Malathion Methyl Parathion Anilophos, Chloropyriphos	Qualitative analysis	6630. D	Absent	0.001	ND	ND	ND	ND
7	Polyaromatic Hydrocarbons (PAH's): Acenaphthene, Acenaphthylene, Anthracene, B(a)A, B(a)P, B(b)F, B(k)F, Pyrene, Dibenz (a,h) anthracene, Fluoranthene, Fluorene, Indeno (1,2,3-d) Pyrene, Naphthalene, Phenanthrene, Pyrene, Methyl Naphthalene	µg/L	6440.C	--	--	ND	ND	ND	ND
8	Total Arsenic as As	mg/L	3120-B	0.01	0.05	BDL	BDL	BDL	BDL
9	Total Chromium as Cr	mg/L	3120-B	0.05	No relaxation	BDL	BDL	BDL	BDL

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**Bacteriological Quality of Drinking water**

S.No.	Parameters	Unit	Test sMethod	IS: 10500 Requirement (Acceptable Limit)	IS: 10500 Permissible Limits	RESULT			
						GW-3 (Vengalrao Nagar )		GW-5 (Pallewada Village)	
						05.11.2019	27.01.2020	05.11.2019	27.01.2020
1	<i>E. Coli</i>	Presence or Absence/ 100 mL	9221 F	-	-	Absent	Absent	Absent	Absent
2	Total Coliforms	MPN/100 mL	9221A & B	-	-	<1.8	<1.8	<1.8	<1.8
3	Fecal Coliforms	MPN/100 mL	9221 E	-	-	<1.8	<1.8	<1.8	<1.8



**Effluents Quality Data**  
**Sampling Period: Oct' 2019 to Mar'2020**

Station Name	Date of Sampling	Parameters Concentration in mg/Liter (Except pH)					
		pH (at 25 <sup>o</sup> C)	TSS At 105 <sup>o</sup> C	TDS at 180 <sup>o</sup> C	COD	BOD	Oil & Grease
JVR OC -I Exp. Mine Discharge (JVR OC-I Exp.) (EW-6)	15.10.2019	6.7	14	1060	18	2	<1
	30.10.2019	6.8	19	860	24	4	<1
	15.11.2019	7.0	6	1090	14	2	<1
	30.11.2019	7.0	7	890	16	2	<1
	15.12.2019	6.2	9	920	20	3	<1
	30.12.2019	6.8	19	880	19	3	<1
	15.01.2020	7.4	11	910	21	3	<1
	30.01.2020	6.2	24	1040	27	7	<1
	15.02.2020	6.9	14	1020	24	4	<1
	29.02.2020	6.9	7	1170	18	2	<1
	15.03.2020	6.1	15	1085	20	3	<1
	30.03.2020	6.0	9	920	16	2	<1
<b>Standards as per GSR 742 (E) &amp; GSR 801 (E)</b>		<b>5.5 to 9.0</b>	<b>100</b>	<b>--</b>	<b>250</b>	<b>30</b>	<b>10</b>

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Station Name	Date of Sampling	Parameters Concentration in mg/Liter (Except pH)					
		pH (at 25 <sup>o</sup> C)	TSS At 105 <sup>o</sup> C	TDS at 180 <sup>o</sup> C	COD	BOD	Oil & Grease
JVR OC-I Exp. Base Workshop ETP Outlet (JVR OC-I Exp.) (EW7)	15.10.2019	6.8	7	900	22	2	5.3
	30.10.2019	6.9	13	1060	21	3	5.9
	15.11.2019	6.7	12	960	25	6	6.5
	30.11.2019	6.9	20	830	29	8	6.9
	15.12.2019	7.2	26	870	25	6	6.5
	30.12.2019	7.5	27	910	21	3	6.0
	15.01.2020	7.7	8	890	17	2	5.3
	30.01.2020	6.8	7	930	18	3	6.7
	15.02.2020	7.1	12	950	21	3	6.1
	29.02.2020	7.1	6	1100	17	2	5.2
	15.03.2020	6.9	16	940	22	4	6.0
30.03.2020	7.2	26	870	25	6	6.5	
<b>Standards as per GSR 742 (E) &amp; GSR 801 (E)</b>		<b>5.5 to 9.0</b>	<b>100</b>	<b>--</b>	<b>250</b>	<b>30</b>	<b>10</b>

Station Name	Date of Sampling	Parameters Concentration in mg/Liter (Except pH)					
		pH (at 25 <sup>o</sup> C)	TSS At 105 <sup>o</sup> C	TDS at 180 <sup>o</sup> C	COD	BOD	Oil & Grease
JVR OC-I Exp. OB Dump surface run off settling tank outlet (JVR OC-I Exp.) EW-8	15.10.2019	7.1	6	990	30	9	<1
	30.10.2019	6.9	17	980	28	8	<1
	15.11.2019	7.3	14	1030	23	4	<1
	30.11.2019	7.2	16	1130	26	5	<1
	15.12.2019	6.8	20	880	23	4	<1
	30.12.2019	6.9	23	870	25	6	<1
	15.01.2020	7.1	10	1040	22	3	<1
	30.01.2020	5.7	12	1090	20	3	<1
	15.02.2020	7.2	34	1180	23	3	<1
	29.02.2020	7.3	15	1070	23	3	<1
	15.03.2020	7.3	24	1170	20	3	<1
30.03.2020	6.8	20	952	23	4	<1	
<b>Standards as per GSR 742 (E) &amp; GSR 801 (E)</b>		<b>5.5 to 9.0</b>	<b>100</b>	<b>--</b>	<b>250</b>	<b>30</b>	<b>10</b>

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Annexure –V

**Noise Levels Period: Oct’ 2019 to Mar’2020**

Station Code	Monitoring Stations	Noise Standards		OCT 1ST FN			OCT 2ND FN			NOV 1ST FN			NOV 2ND FN		
		Day time	Night time	Date of Sampling	Leq Day	Leq Night	Date of Sampling	Leq Day	Leq Night	Date of Sampling	Leq Day	Leq Night	Date of Sampling	Leq Day	Leq Night
CN5	JVR OC - I Site Office	75	70	12.10.2019	63.3	48.8	25.10.2019	62	45.3	12.11.2019	62.9	48.1	26.11.2019	63.4	47.1
CN6	JVR OC - I Base Workshop	75	70	12.10.2019	70.5	55.5	25.10.2019	69	54.2	12.11.2019	70	55.9	26.11.2019	70.8	54.8
BN4	Kistaram Village	55	45	10.10.2019	52.4	42.9	23.10.2019	50.8	41	09.11.2019	51.8	42	23.11.2019	52.2	42.3
BN5	Sathupalli Town	55	45	09.10.2019	51.6	41	22.10.2019	52	41.9	08.11.2019	52	41.5	22.11.2019	51.4	41.4

Station Code	Monitoring Stations	Noise Standards		DEC 1ST FN-2019			DEC 2ND FN-2019			JAN1ST FN -2020			JAN 2ND FN		
		Day time	Night time	Date of Sampling	Leq Day	Leq Night	Date of Sampling	Leq Day	Leq Night	Date of Sampling	Leq Day	Leq Night	Date of Sampling	Leq Day	Leq Night
CN5	JVR OC - I Site Office	75	70	12.12.2019	59.9	43.4	27.12.2019	60.7	44.2	10.01.2020	62.8	47.3	29.01.2020	60.7	45.5
CN6	JVR OC - I Base Workshop	75	70	12.12.2019	71.5	55.8	27.12.2019	69.3	51.7	10.01.2020	69.9	55.1	29.01.2020	70.7	53
BN4	Kistaram Village	55	45	10.12.2019	51.7	41.3	25.12.2019	53.5	43.1	07.01.2020	51.7	42.2	25.01.2020	52.5	39.4
BN5	Sathupalli Town	55	45	07.12.2019	50.9	40.8	24.12.2019	52.4	42.1	06.01.2020	51.9	41.7	24.01.2020	52.7	40

Station Code	Monitoring Stations	Noise Standards		FEB 1ST FN			FEB 2ND FN			March 1st Fn			March 2nd fn		
		Day time	Night time	Date of Sampling	Leq Day	Leq Night	Date of Sampling	Leq Day	Leq Night	Date of Sampling	Leq Day	Leq Night	Date of Sampling	Leq Day	Leq Night
CN5	JVR OC - I Site Office	75	70	11.02.2020	61.1	45.8	26.02.2020	61.8	47	12.03.2020	60.2	46.1	25.03.2020	57.5	42.5
CN6	JVR OC - I Base Workshop	75	70	11.02.2020	67.5	50.6	26.02.2020	68.8	52.3	12.03.2020	65.4	50.1	25.03.2020	62.5	46.2
BN4	Kistaram Village	55	45	08.02.2020	52	40	24.02.2020	51.9	40.8	10.03.2020	51.2	39.2	23.03.2020	48.9	36.2
BN5	Sathupalli Town	55	45	07.02.2020	51.4	39.6	22.02.2020	51	40.1	07.03.2020	50.8	38.9	21.03.2020	48.5	35.9

Annexure –VI

Vehicular Emissions Study in JVR-OCP Sathupalli Area

S.No	EqptType/ Capacity	Eqpt Name	Make	D.O.C	Cummlated Hrs As On 30.05.2019	Tested date	H.S.U % 65	K m-1 2.45	TEST STATUS
1	DUMPER-35T	C-1	BEML	17.02.2015	18071	1.10.19	74.9	3.26	FAIL
2	DUMPER-35T	C-2	BEML	17.02.2015	18057	1.10.19	35.8	1.02	PASS
3	DUMPER-35T	C3	BEML	17.06.2015	16930	1.10.19	35.5	1.01	PASS
4	DUMPER-35T	C5	BEML	17.06.2015	16956	1.10.19	86.4	4.32	FAIL
5	DUMPER-35T	C6	BEML	17.06.2015	16373	1.10.19	26.4	0.65	PASS
6	DUMPER-35T	C7	BEML	17.02.2015	17196	2.10.19	43.2	1.26	PASS
7	DUMPER-35T	C8	BEML	29.07.2015	17030	12.10.19	-	-	BD
8	DUMPER-35T	C9	BEML	07.08.2015	17387	2.10.19	38.8	2.05	PASS
9	DUMPER-35T	C10	BEML	08.08.2015	16630	2.10.19	62.4	2.41	PASS
10	DUMPER-35T	C11	BEML	28.07.2015	17561	2.10.19	43.2	1.30	PASS
11	DUMPER-35T	C12	BEML	28.07.2015	19324	2.10.19	63.5	2.39	PASS
12	DUMPER-35T	C13	BEML	29.07.2015	16123	2.10.19	17.5	2.02	PASS
13	DUMPER-35T	C14	BEML	29.07.2015	7284	3.10.19	35.4	0.84	PASS
14	DUMPER-35T	C15	BEML	09.10.2015	17230	3.10.19	84.7	4.30	FAIL
15	DUMPER-60T	60-1	BEML	25.01.2017	7915	3.10.19	28.5	0.58	PASS
16	DUMPER60T	60-2	BEML	25.01.2017	8184	3.10.19	34.5	0.95	PASS
17	DUMPER60T	60-3	BEML	25.01.2017	7033	3.10.19	42.3	1.42	PASS
18	DUMPER60T	60-5	BEML	25.01.2017	8205	4.10.19	14.2	0.28	PASS
19	DUMPER60T	60-6	BEML	28.08.2017	6261	4.10.19	34.4	0.39	PASS
20	DUMPER60T	60-7	BEML	28.08.2017	6796	4.10.19	33.4	0.85	PASS
21	DUMPER60T	60-8	BEML	28.08.2017	6796	4.10.19	35.5	1.32	PASS
22	DUMPER60T	60-9	BEML	28.08.2017	7910	4.10.19	26.1	0.68	PASS
23	DUMPER60T	60-10	BEML	28.08.2017	7419	5.10.19	30.5	0.92	PASS
24	DUMPER60T	60-11	BEML	28.08.2017	7747	5.10.19	28.3	0.56	PASS
25	DUMPER60T	60-12	BEML	28.08.2017	8150	5.10.19	54.4	1.92	PASS
26	DUMPER60T	60-13	BEML	28.08.2017	7727	5.10.19	20.9	0.04	PASS
27	DUMPER60T	60-14	BEML	11.03.2019	1910	5.10.19	22.6	0.62	PASS
28	DUMPER60T	60-15	BEML	11.03.2019	1929	6.10.19	43.3	0.25	PASS
29	DUMPER60T	60-16	BEML	11.03.2019	1198	6.10.19	13.4	0.21	PASS
30	DUMPER60T	60-17	BEML	11.03.2019	1383	6.10.19	42.6	1.35	PASS
31	WATER SPRINKLER	WT-3	BEML	28.10.2015	9931	6.10.19	64.0	2.20	PASS
32	WATER SPRINKLER	WT-5	BEML	20.10.2017	4392	6.10.19	75.2	3.20	FAIL

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33	WATER SPRINKLER	WT-6	BEML	19.01.2018	4557	7.10.19	73.3	3.24	<b>FAIL</b>
34	MOTOR GRADER	MG-2	BEML	06.02.2013	14856	7.10.19	48.2	0.38	PASS
35	DOZER	D-7	BEML	31.10.2017	6104	7.10.19	12.1	0.19	PASS
36	MOTOR GRADER	MG-3	BEML	16.12.2015	7954	7.10.19	35.2	1.00	PASS
37	SHOVEL	S1	L&T	1.11.2015	NA	7.10.19	43.2	0.26	PASS
38	SHOVEL	LC-3	TATA	25.07.2018	648	8.10.19	10.3	0.21	PASS
39	DOZER	D-8	BEML	28.12.2013	6936	8.10.19	54.2	1.93	PASS
40	MOTOR GRADER	MG-5	Komatsu	01.05.2018	10211	8.10.19	19.8	0.39	PASS
41	TYRE HANDLER	14-TH-1	BEML	14.11.2017	NA	8.10.19	71.7	3.01	<b>FAIL</b>
42	DOZER	D-10	Komatsu	09.07.2019	535	8.10.19	8.5	0.24	PASS
43	SHOVEL	S-2	Komatsu	25.10.2015	NA	9.10.19	54.3	0.96	PASS
44	SHOVEL	S-5	TATA	25.04.2018	NA	9.10.19	33.5	0.52	PASS
45	CRANE	C-6	ACE	25.04.2019	1415	7.10.19	15.8	0.39	PASS
46	DOZER	D-9	Komatsu	09.07.2019	704	11.10.19	10.2	0.21	PASS
47	LOADER	LC-2	VALVO	03.09.2017	12615	10.10.19	18.4	0.45	PASS
48	DOZER	D-5	BEML	11.04.2015	9216	10.10.19	34.2	0.89	PASS
49	DOZER	D-6	BEML	16.09.2017	45214	11.10.19	32.1	0.39	PASS
50	SHOVEL	LC-2	TATA	11.04.2015	12565	11.10.19	35.4	0.94	PASS
51	SHOVEL	S-3	TATA	22.10.2017	NA	11.10.19	48.5	0.52	PASS

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**Annexure –VII**

**Piezometric Block/Mine: JVR OCP-I & II**

Piezometric Well no.	Location	Depth (m)	Dia (m)	Measuring point (m)	Period	Depth to Water (m)				
						2016	2017	2018	2019	2020
JVR-PW2	Opp. Sepket yard, 200m NW from quarry edge; located in eucalyptus plantation 17°12'43.34"N, 80°48'28.31"E	50.0	0.10	0.50	Winter	18.29	19.50	17.55	15.85	15.32
					Pre-monsoon	20.15	21.17	18.00	17.23	
					Monsoon	19.53	14.50	12.17	17.12	
					Post-monsoon	17.07	13.83	14.84	14.94	
JVR-PW3	About 100m from Eastern edge, near Service buildings, on Sattupalli –Vemsoor bypass road. 17°12'41.51"N, 80°48'48.66"E	50.0	0.10	0.50	Winter	17.15	16.00	13.31	13.91	13.96
					Pre-monsoon	17.81	17.40	16.00	16.57	
					Monsoon	16.70	16.50	5.70	15.75	
					Post-monsoon	14.22	11.70	12.45	13.52	
JVR-PW4	About 500m SW of the quarry, on the way to Kommepalli Road; adj. to forest boundary. 17°11'29.44"N, 80°46'53.30"E	50.0	0.10	0.50	Winter	13.94	13.00	12.62	10.21	7.96
					Pre-monsoon	14.64	14.20	13.80	14.80	
					Monsoon	12.81	10.32	5.22	10.42	
					Post-monsoon	11.60	11.00	9.50	7.06	
JVR-PW6	About 500m South of the quarry, on the way to Vemsoor near culvert. 17°10'47.54"N, 80°48'22.69"E	50.0	0.10	0.50	Winter	36.00	37.00	39.60	26.68	24.54
					Pre-monsoon	33.62	40.80	28.40	29.38	
					Monsoon	31.25	6.00	16.50	18.57	
					Post-monsoon	16.87	10.60	12.80	7.87	
JVR-PW8	In Mother Theresa Engg. College, Kothuru. 17°11'18.95"N, 80°49'42.38"E	50.0	0.10	0.80	Winter	22.45	25.16	24.82	24.22	24.86
					Pre-monsoon	24.23	25.58	26.34	25.10	
					Monsoon	24.00	24.57	24.32	25.87	
					Post-monsoon	24.00	23.50	23.80	24.37	
JVR-PW9	In JVR Degree college, 17°12'45.54"N, 80°49'29.71"E	50.0	0.10	0.80	Winter	9.66	9.18	8.58	8.38	8.13
					Pre-monsoon	11.20	9.54	10.00	9.30	
					Monsoon	9.70	8.00	7.68	10.17	
					Post-monsoon	7.91	7.00	7.63	7.86	
JVR-PW10	Near Hanuman temple, Vemsoor road 17°11'53.66"N, 80°49'22.56"E	50.0	0.10	0.80	Winter	8.24	8.87	8.68	7.86	7.48
					Pre-monsoon	9.10	9.61	9.38	8.67	
					Monsoon	8.07	6.80	6.82	8.01	
					Post-monsoon	7.60	7.17	7.55	7.29	

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**Annexure –VIII**

**Phreatic Monitoring data**

Well No.	Name of village	Location	Owner's name	Type of well	Dimensions (m)	Total depth (m)	Geology	Measuring point (m)	Period	Depth to water (m)				Nearest mine&dist.(km)
										2017	2018	2019	2020	
1	Cherukupalli	Beside Thati Ramakrishna house 17°15'6.00", 80°46'37.00"	Govt well	Domestic	1.20	5.15	Kamthi Fm.	0.75	Winter	3.10	4.10	3.26	3.25	JVR OC
									Pre-mon	3.90	3.80	4.67	4.9	
									Monsoon	2.70	2.78	1.62		
									Post-mon	3.30	4.06	3.59		
2	Jagannadapuram	Opp PriSepy school, 17°14'12.81" , 80°47'19.76"	Govt well	Domestic	2.25	14.35	Barakar Fm.	0.55	Winter	4.70	5.90	5.88	3.73	JVR OC
									Pre-mon	6.30	8.05	8.50	2.8	
									Monsoon	2.40	2.00	8.00		
									Post-mon	2.75	6.48	2.37		
4	Kistaram	Towards STPL main road, 17°13'11.98, 80°46'43.99"	Govt well	Domestic	2.00	12.00	Barakar Fm.	0.30	Winter	6.90	6.45	4.77	AB	JVR OC
									Pre-mon	7.40	7.55	7.33	1.3	
									Monsoon	3.45	1.73	4.04		
									Post-mon	4.00	4.19	AB		
5	Kistaram	Towards STPL main road, 17°12'52.92" , 80°46'41.34"	Jasti Apparao	Domestic	2.00	12.50	Barakar Fm.	0.60	Winter	10.00	9.40	7.42	6.20	JVR OC
									Pre-mon	Dry	11.85	12.20	0.8	
									Monsoon	6.80	2.53	10.10		
									Post-mon	6.40	7.00	5.16		
6	Kistaram	Main Road Junction, 17°12'26.14" , 80°46'35.04"	JhanKhan	Domestic	1.00	8.00	Barakar Fm.	0.28	Winter	3.10	3.00	3.14	3.65	JVR OC
									Pre-mon	3.30	4.50	4.52	0.6	
									Monsoon	2.40	1.77	2.00		
									Post-mon	2.80	4.08	2.64		
9	Vemsoor	Near Sarangala Chennarao house 17°7'53.80"N, 80°47'34.40" E	Govt well	Domestic	1.50	12.80	Gneisses	0.50	Winter	5.92	2.90	2.71	1.44	JVR OC
									Pre-mon	8.00	5.30	6.33	7.3	
									Monsoon	1.50	1.20	1.81		
									Post-mon	1.60	3.09	1.39		

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13	Sadasiivun ipalem	Opp Bus stop and Temple, 17° 9'15.00", 80°50'17.00"	Kshatria Julardhan singh	Domrstic	1.25	14.00	Kamthi Fm.	0.65	Winter	11.30	11.85	10.20	9.86	JVR OC
									Pre-mon	12.85	11.16	10.69		
									Monsoon	7.90	11.51	8.69		
									Post-mon	4.00	10.15	10.15		
														5.3
15	Sattupalli	Opp. TTD Office, 17°12'27.61" , 80°49'48.91"	Narasim ha reddy	Domestic	1.50	10.30	Barakar Fm.	0.60	Winter	4.20	4.30	4.20	7.52	JVR OC
									Pre-mon	3.57	4.50	4.73		
									Monsoon	2.80	2.60	2.40		
									Post-mon	4.40	4.18	4.27		
														2.0
16	Tallamada	Adjacent to raod near transformer, 17°34'41.68" , 80°20'26.32"	Tota Venkat Rao	Domestic	1.00	8.50	Barakar Fm.	0.20	Winter	5.60	4.50	3.50	2.92	JVR OC
									Pre-mon	3.20	3.48	3.60		
									Monsoon	2.77	2.25	2.15		
									Post-mon	2.00	2.79	2.99		
														5.8
17	Bethupalli	Opp.Hanum an temple, 17°11'48.25" , 80°52'57.75"	Pakalapati Jagannadh am	Domestic	1.75	11.50	Barakar Fm.	0.80	Winter	7.80	4.70	6.30	4.50	JVR OC
									Pre-mon	11.20	7.00	9.54		
									Monsoon	2.70	3.00	2.11		
									Post-mon	6.50	5.50	2.12		
														7.2
19	Kakarlapalli	After crossing canal 17°13'30.09" , 80°50'39.41"	Govt well	Domestic	1.00	12.50	Barakar Fm.	0.50	Winter	4.00	3.70	3.43	2.90	JVR OC
									Pre-mon	3.70	3.80	3.48		
									Monsoon	2.65	2.35	2.06		
									Post-mon	3.40	3.50	2.77		
														3.8
20	Rudraksha palli	Opp Mango garden, Near Ch.Kelu house 17°15'25.30" , 80°50'48.79"	Govt. well	Domestic	2.00	7.60	Gangapu r Fm.	0.20	Winter	3.75	3.45	2.85	AB	JVR OC
									Pre-mon	4.40	3.82	3.44		
									Monsoon	1.80	1.76	1.48		
									Post-mon	3.00	2.79	NR		
														6.1
21	Sattupalli	In Govt.Degree College, 17°12'45.66" , 80°49'26.97"	Govt well	Domestic	6.50	12.00	Barakar Fm.	0.45	Winter	8.38	7.50	5.92	6.13	JVR OC
									Pre-mon	9.34	9.04	6.46		
									Monsoon	8.05	4.31	4.68		
									Post-mon	5.80	4.31	5.80		
														1.0

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22	Sattupalli	Vengalrao nagar colony, Masid Lane, H.No.10-38 17°12'42.61" , 80°48'36.47"	Jainabhi /Md. Liyakhath Ali	Domestic	1.50	8.00	Barakar Fm.	0.30	Winter	5.20	5.90	4.20	4.42	JVR OC
									Pre-mon	8.10	6.70	6.55		
									Monsoon	2.70	2.20	3.13		
									Post-mon	3.80	4.03	3.68		0.2
23	Lankapalli	Near Lankapalli Junction, 17°12'5.36", 80°43'58.88"	Dosapati Ragha vaiah	Domestic	1.50	12/8.50	Gneisses	0.75	Winter	Dry	Dry	Dry	DRY	JVR OC
									Pre-mon	12.00	Dry	Dry		
									Monsoon	8.4	5	1.32		
									Post-mon	10.5	Dry	Dry		4.3
25	Gangaram	Near Khamakshamma temple, 17°12'33.11" , 80°53'38.07"	Govt well	Domestic	2.15	12.00	Barren measure s Fm.	0.70	Winter	5.50	11.00	7.02	6.38	JVR OC
									Pre-mon	12.00	10.30	8.60		
									Monsoon	2.30	3.04	1.98		
									Post-mon	9.30	9.90	6.13		9.0
26	Buggapadu	Village end, 17°16'50.26" , 80°51'51.51"	Palsa Durgapras ad	Agri. well	5.00	14.00	Gangapu r Fm.	0.70	Winter	7.60	5.00	5.04	4.95	JVR OC
									Pre-mon	9.15	5.89	5.89		
									Monsoon	5.10	3.10	3.65		
									Post-mon	6.90	4.32	4.78		7.0
27	Tumbur	Village centre 17° 07'53.98", 80°51'24.11"	Kosraju Srirama murthi	Domestic	1.00	7.50	Gneisses	0.30	Winter	4.30	5.10	3.63	AB	JVR OC
									Pre-mon	5.20	6.63	AB		
									Monsoon	2.00	1.67	AB		
									Post-mon	1.80	3.20	AB		9.0
28	Ramanag aram	Raod side, 17°13'42.90" , 80°52'58.69"	Mutta Krishna murthy	Domestic	1.20	7.00	Gangapu r Fm.	0.60	Winter			2.92	2.18	JVR OC
									Pre-mon		4.47	3.00		
									Monsoon		2.47	2.07		
									Post-mon		2.62	2.55		7.5

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**Annexure -IX**

**BLASTING VIBRATIONS MONITORING DATA**

Oct-2019		Nov-2019		Dec-2019		Jan-2020		Feb-2020		Mar-2020	
Date	ppv in mm/sec										
1- Oct	0.381	1- Nov	0.508	1- Dec	0.508	1-Jan	0.508	1-Feb	0.508	1- Mar	-
2- Oct	0.508	2- Nov	0.508	2- Dec	0.762	2- Jan	-	2- Feb	-	2- Mar	-
3- Oct		3- Nov	0.254	3- Dec	-	3- Jan	0.381	3- Feb	-	3 Mar	0.508
4- Oct	1.143	4- Nov	0.508	4- Dec	1.27	4- Jan	0.635	4- Feb	0.762	4- Mar	0.635
5- Oct	0.635	5- Nov	0.508	5- Dec	0.254	5- Jan	0.508	5- Feb	1.143	5- Mar	-
6- Oct	-	6- Nov	0.762	6- Dec	-	6- Jan	1.27	6- Feb	0.762	6- Mar	-
7- Oct	-	7- Nov	0.635	7- Dec	0.635	7- Jan	0.381	7- Feb	1.270	7- Mar	-
8- Oct	-	8- Nov	-	8- Dec	-	8- Jan	0.508	8- Feb	0.889	8- Mar	0.127
9- Oct	0.508	9- Nov	0.889	9- Dec	-	9- Jan	-	9- Feb	0.508	9- Mar	1.397
10- Oct	-	10- Nov	0.381	10- Dec	-	10- Jan	-	10- Feb	0.127	10- Mar	1.524
11- Oct	-	11- Nov	1.016	11- Dec	0.762	11- Jan	0.381	11- Feb	0.508	11- Mar	1.651
12- Oct	1.143	12- Nov	0.381	12- Dec	1.016	12- Jan	0.635	12- Feb	0.254	12- Mar	0.762
13 Oct	0.762	13- Nov	0.762	13- Dec	1.016	13- Jan	0.508	13- Feb	1.397	13- Mar	-
14- Oct	0.889	14- Nov	0.762	14- Dec	1.27	14- Jan	0.254	14- Feb	-	14- Mar	-
15- Oct	1.143	15- Nov	0.762	15- Dec	-	15- Jan	0.508	15- Feb	-	15- Mar	0.127
16- Oct	0.508	16- Nov	1.524	16- Dec	0.889	16- Jan	1.27	16- Feb	-	16- Mar	1.270
17- Oct	1.651	17- Nov	0.508	17- Dec	0.508	17- Jan	0.889	17- Feb	0.508	17- Mar	-
18- Oct	0.635	18- Nov	0.508	18- Dec	1.905	18- Jan	0.635	18- Feb	-	18- Mar	-
19- Oct	0.254	19- Nov	0.508	19- Dec	0.127	19- Jan	-	19- Feb	-	19- Mar	1.270
20- Oct	0.762	20- Nov	0.635	20- Dec	1.397	20- Jan	0.635	20- Feb	0.508	20- Mar	0.508
21- Oct	0.762	21- Nov	0.508	21- Dec	1.143	21- Jan	-	21- Feb	-	21- Mar	-
22- Oct	0.508	22- Nov	0.254	22- Dec	0.508	22- Jan	0.508	22- Feb	-	22- Mar	-
23- Oct	-	23- Nov	0.381	23- Dec	-	23- Jan	0.635	23- Feb	0.762	23- Mar	-
24- Oct	-	24- Nov	0.889	24- Dec	0.762	24- Jan	-	24- Feb	-	24- Mar	-
25- Oct	1.143	25- Nov	0.889	25- Dec	0.762	25- Jan	-	25- Feb	-	25- Mar	-
26- Oct	-	26- Nov	0.381	26- Dec	0.127	26- Jan	0.508	26- Feb	0.889	26- Mar	-
27- Oct	1.524	27- Nov	0.889	27- Dec	0.508	27- Jan	-	27- Feb	1.651	27- Mar	-
28- Oct	1.016	28- Nov	0.889	28- Dec	1.270	28- Jan	-	28- Feb	-	28- Mar	-
29- Oct	1.143	29- Nov	-	29- Dec	0.762	29- Jan	0.889	29- Feb	-	29- Mar	0.254
30- Oct	0.889	30- Nov	1.016	30- Dec	0.381	30- Jan	1.270	-	-	30- Mar	1.397
31- Oct	0.762	-	-	31-Dec	1.524	31- Jan	0.762	-	-	31-Mar	-

**Annexure-X**

**Minutes of Environment Management Committee (EMC) meeting of JVR OC-I Expansion Project held on 18.11.2019 at 4.30 PM in the Office of SO to GM (Chairman of EMC), Kothagudem.**

The following persons have attended the EMC meeting:

1. Sri. R Narayana Rao, Chairman, EMC, SO to GM, KGM(A).
2. Sri. B.Sanjeev Reddy, P.O, JVR OC-I Expn Proj. & II
3. Sri. N.Damoder Rao, Dy.G.M(E&M), KGM(A),
4. Sri. B.Srinivasa Chary, SOM, JVROC.
5. Sri. B Brahmajee Rao, Safety Officer, JVROC,
6. Sri. Lakshmana Murthy, S.E(E&M), Project Engineer, JVROC
7. Sri. D.Adinarayana, Dy.S.E(Civil), JVROC,
8. Sri. T.Satyanarayana, Secretary, EMC, Addl.Mgr(Env.), Kgm (A).
9. Sri .A.Sridhar, Dy.S.E.(E&M), I/C Base work shop, JVR OC-I Expn Proj
10. Sri. A.V.A.Setty, Dy.G.M(Estates), Kgm (A).
11. Sri. B.Kalyan, Jr.Forest officer, Corp.
12. Sri .S.Sadanandam, Area survey officer, Kgm (A).
13. Sri. R.Ramesh, Sr.Hydro geologist, Corp.
14. Sri. KVM Kumara swamy, SSO, JVR OC-I & II

At the outset, SO to GM who is also the Chairman of the Committee welcomed all the Officers attended for the EMC meeting.

Chairman of the meeting has reviewed EC condition-wise compliance status for the period ending 31<sup>st</sup> Mar 2020. He has also reviewed action taken on the minutes recorded during the earlier EMC meeting held on 16/07/2019. The following are the minutes of this review meeting.

Chairman enquired Sr.Hydro Geologist about the status and effects of water levels in the surrounding villages of the project.

Sr.Hydro Geologist replied that 26 phreatic wells and 7 piezo meters are there around the mine within 10 km radius and water levels are monitored in every season (4 times in a year) and report is being submitted regularly to the concerned authorities. There is no abnormal change in ground water level.

Action: Sr.Hydro Geologist.

Chairman advised the Project Officer, JVR OC-I Expansion to instruct the Project Engineer to ensure the performance, quality and periodical maintenance of the ETP at Base Workshop and also suggested to maintain the record of waste oil.

Project Engineer, JVR OC-I Expansion has replied that the ETP is working satisfactorily and the waste oil collected from ETP is being returned to Kothagudem Area Stores regularly. ETP is being cleaned every month and proper record is being maintained.

Action: PE, JVROC.

Chairman advised the Project Engineer, Project Officer and the Mine Manager for monitoring the vehicular emissions and to take suitable steps to control them. He instructed that the vehicles used for transporting the coal should be covered with tarpaulins and optimally loaded. He also advised them to insist the contractors to use good quality tarpaulins and the load Lorries should be covered fully to arrest spillage of coal.

Project Engineer has replied that vehicular emission check was done, in the period from 01.10.2019 to 11.10.2019. 51 No's of HEMM are checked and found 06 vehicles are failed. Project Officer has replied that they will insist the lorry owners to use good quality tarpaulins.

Action: PE, PO & Manager, JVROC.

Chairman advised the P.O, JVR OC-I Expansion to monitor the dust suppression at Coal Bench & stock yards by deploying the water sprinklers / water spray through pipe lines from Pump.

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Chairman asked the Project Officer arrangements shall be made to clean nozzles regularly for the dust suppression and the dust suppression system should work in all 365 days without fail. Chairman also advised Project Engineer and Project Officer to install mist spray arrangement at crushers to arrest air borne dust.

Action: PE&PO, JVROC

Addl.Manager(Env)/kgm has advised the PO&Manager to plan for De-Silting of village Tanks. As per Condition No.xvi of F.C No.8-56/2008-FC,Dt.03.07.2012, it is mentioned that, "*De-silting of the village tanks falling within 5 Kms radius from the lease boundary shall be taken up by the user agency at regular intervals*".

*PO has instructed the Mine Surveyor Sri.KVM Kumara Swamy to prepare a note for De-Siltation of Chillavagu in this season on priority basis.*

Action: Project Officer/Mine Surveyor.

Chairman advised the Project Engineer, JVR OC Expansion that the Crushers at the existing CHP and that to be constructed should be operated with high efficiency bag filters, water sprinkling system should be provided to check fugitive emissions from crushing operations, haulage roads, and transfer points..

Project Engineer replied that, requisition will be raised in next Annual Plan for procurement of Mist spray to check fugitive emissions from crushing operations at transfer points/crushers in order to have affective dust suppression.

Action: Project Engineer.

Chairman enquired about the construction of toe walls and cleaning of catch drains and siltation ponds of appropriate size should be constructed to arrest silt and sediment flows from soil, OB and mineral dumps. The water so collected should be utilized for watering the mine area, roads, green belt development, etc. The drains should be regularly desilted and maintained properly.

Project Officer, JVR OC-I Expansion has replied that cleaning of drains will be taken up and construction of toe wall is in progress and settling ponds are disturbed in operation of JVR OC-II. As settling ponds are to be maintained as per E.C and they will be taken up immediately.

Action: Project Officer/Manager

Chairman enquired about the noise and vibration levels during blasting in the Project.

Project Officer, JVR OC-I Expansion has replied that the noise and vibration levels are being recorded regularly by using Minimate and results are within the stipulated limits at 300 mtrs. distance.

Action: Project Officer/Manager

Chairman enquired about the Green belt development in JVR OC-I (Expn) Mine.

Jr.Forest Officer has replied that, in 2019 an area of 3.5 Ha was completed in 2019 and an area of 0.7 Ha is proposed in OC-I Mine in 2020 planting season.

Action: Jr.Forest Officer, Kgm Area / Addl.Mgr (Env).

Chairman instructed that the Drills should be wet operated only.

Project Engineer, JVR OC has replied that the Drills are wet operated only.

Action: Project Engineer/Manager

Chairman enquired about the Continuous Ambient Air Quality Monitoring Equipment in the Project and advised the PO to appoint one officer for continuous monitoring of CAAQMS.

PO, JVR OC-I Expansion has replied that the Continuous Online Air Quality Monitoring (CAAQMS) has installed and connected with TSPCB server. Now it is working properly and checked the data on TSPCB website also. He also replied that T Sridhar, Dy Mgr is appointed as Mine Env Officer and looking after the Environmental works and also CAAQMS.

Action. Project Officer

**STATUS OF COMPLIANCE OF ISSUES RAISED DURING PUBLIC HEARING**

S.No	Requests / Demands	Present status																																																		
1.	I. Construction of Bus shelter near Vengala Rao Nagar Colony	Bus shelter was constructed near Vengala Rao Nagar Colony.																																																		
	II. Plantation shall be taken up in large scale	<table border="1"> <thead> <tr> <th>Sl.No.</th> <th>Description</th> <th>Area in Ha.</th> </tr> </thead> <tbody> <tr> <td>01</td> <td>External Dump Yard</td> <td>115.00</td> </tr> <tr> <td>02</td> <td>Internal Dump Yard</td> <td>27.50</td> </tr> <tr> <td>03</td> <td>Vacant Land within Mining Lease Area</td> <td>35.00</td> </tr> <tr> <td>04</td> <td>Avenue Plantation within Mining Lease Area</td> <td>9.40</td> </tr> <tr> <td>05</td> <td>Gap Plantation in Forest Land between Mine Boundary and R&amp;B Road beyond mandate</td> <td>80.00</td> </tr> <tr> <td>06</td> <td>Safety Zone Area of 136.50 Ha. of Forest Land diverted for JVR OC-I Expn.</td> <td>52.00</td> </tr> <tr> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Sl.No.	Description	Area in Ha.	01	External Dump Yard	115.00	02	Internal Dump Yard	27.50	03	Vacant Land within Mining Lease Area	35.00	04	Avenue Plantation within Mining Lease Area	9.40	05	Gap Plantation in Forest Land between Mine Boundary and R&B Road beyond mandate	80.00	06	Safety Zone Area of 136.50 Ha. of Forest Land diverted for JVR OC-I Expn.	52.00																													
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2.	1. Providing a Hospital at Sathupalli for local people	<p>1. Persons are being benefited on the each Medical camps are being conducted in alternative days in a week. Visiting dAprilors from main hospital, Kothagudem with medicines is being continued in surrounding villages thrice a week.i.e Rejarla, Kommepalli, Jagannadhapuram, Kistaram and Vengal Rao Nagar of Sathupalli village.</p> <p>2. On average 50 medical camps.</p> <p>3. SCCL also conducted free Eye camps in surrounding villages of the project, Sathuaplli, Vemsur, NTR colony, Rejarla and surrounding villages.</p> <table border="1"> <thead> <tr> <th>Sl. No</th> <th>Date of camp</th> <th>Place of camp</th> <th>No. of persons attended</th> <th>No. of cases undergone cataract surgery</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>09.03.2003</td> <td>Sathupalli</td> <td>6000</td> <td>200</td> </tr> <tr> <td>2</td> <td>28.09.2003</td> <td>Vemsur</td> <td>5130</td> <td>175</td> </tr> <tr> <td>3</td> <td>05.03.2006</td> <td>NTR colony</td> <td>4006</td> <td>104</td> </tr> <tr> <td>4</td> <td>24.09.2006</td> <td>Rejarla</td> <td>4219</td> <td>115</td> </tr> <tr> <td>5</td> <td>13.07.2008</td> <td>Rejarla</td> <td>4700</td> <td>320</td> </tr> <tr> <td>6</td> <td>Free Eye Camp – Apr &amp; May-2013</td> <td>Surrounding villages</td> <td>549</td> <td>185</td> </tr> <tr> <td>7</td> <td>Mobile medical camps in the months Aug &amp; Sept, 2014</td> <td>Surrounding villages (Kistaram, Kommepalli,Rejarla,J agannadhapuram, NTR Nagar)</td> <td>806</td> <td>-</td> </tr> <tr> <td>8</td> <td>Mobile medical camps in the months Feb to Apr, 2017</td> <td>Surrounding villages (Kistaram, Kommepalli,Rejarla,J agannadhapuram, NTR Nagar)</td> <td>358</td> <td>-</td> </tr> <tr> <td>9</td> <td>Mobile medical</td> <td>Surrounding villages (Kistaram,</td> <td></td> <td>-</td> </tr> </tbody> </table>	Sl. No	Date of camp	Place of camp	No. of persons attended	No. of cases undergone cataract surgery	1	09.03.2003	Sathupalli	6000	200	2	28.09.2003	Vemsur	5130	175	3	05.03.2006	NTR colony	4006	104	4	24.09.2006	Rejarla	4219	115	5	13.07.2008	Rejarla	4700	320	6	Free Eye Camp – Apr & May-2013	Surrounding villages	549	185	7	Mobile medical camps in the months Aug & Sept, 2014	Surrounding villages (Kistaram, Kommepalli,Rejarla,J agannadhapuram, NTR Nagar)	806	-	8	Mobile medical camps in the months Feb to Apr, 2017	Surrounding villages (Kistaram, Kommepalli,Rejarla,J agannadhapuram, NTR Nagar)	358	-	9	Mobile medical	Surrounding villages (Kistaram,		-
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			camps in the months Mar to May, 2018	Kommepalli,Rejarla,J agannadhapuram, NTR Nagar)	491	
		10	Free mobile medical camps conducted from 13.04.2019 to 30.08.2019 (on every Friday)	Surrounding villages (Kistaram, Kommepalli, Rejarla, Jagannadhapuram, NTR Nagar, Lankapalli, Kakarlapalli, Thallamada, Kothuru, Chodavaram, Gowrigudem, Cherukupalli, Vengalrao Nagar)	956	-
		11	Free mobile medical camps conducted from 27.09.2019 to 22.11.2019 (on every fortnight)	NTR Nagar	316	
		12	Free mobile medical camps conducted on 06.12.2019	Kakarlapalli	61	
		Total			27,592	1099
	2. Establishment of Power Plant as suggested by MLA	The matter is with the state government and a decision is to be taken by TSGENCO.				
3.	1. Land losers were not compensated properly.	<p>Compensation was paid as per the guide lines &amp; also as per the directives of the court. Further preference is being given to land losers for all contractual works.</p> <p>A) <u>Patta lands</u>: compensation paid for patta lands as per the land acquisition Act;</p> <p>i) Through normal award under section 11 (1) of L.A act, rupees 98,400/- per acre.</p> <p>ii) Through consent award under section 11(2) of la act rupees 147600/- per acre.</p> <p>B) <u>Exgratia paid for govt. lands</u> as per the GO ms. No. 1307, issued by the state govt.</p> <p>i) Assigned land (Sepket value + 30%) i.e. Rs.72000+Rs.2260=Rs.74260/-</p> <p>ii) encroached land only Sepket value i.e. Rs.7200/-</p> <p><u>Govt Land:-</u></p> <p>i) Eligible encroachers only Sepket value i.e. Rs.72000/- per acre.</p> <p>ii) Ineligible encroachers no payment.</p> <p>The payment of exgratia was fixed by the district collector as per the GO Ms no. 639 dt, 29.9.2001 and GO Ms no. 224 dt, 21.02.2005.</p> <p><u>Details of amount paid for patta land:-</u> u/s sec11(1)-Rs.12150428.00(normal award)</p>				

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		u/ssec11(1)-Rs.22020521.00(court enhancement) u/sec 11(2)-Rs 16995624.00(consent award) <u>Details of Assigned / Govt land:</u> - An amount of Rs.4746015.00 was paid to RDO, khammam.															
	2. Establishment of Power Plant as suggested by MLA	Same as point no 2.1															
	3. Construction of Hospital at Sathupalli	Established at JVR Guest House.															
	4. Up gradation of Degree college to PG college	The degree college has been updated to PG College.															
	5. Providing employment to the local people	Local people being considered for housekeeping, casual labour, employment through OB removal contract etc. <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 5%;">1.</td> <td style="width: 85%;">OB removal contract</td> <td style="width: 10%; text-align: center;">480</td> </tr> <tr> <td>2.</td> <td>House Keeping</td> <td style="text-align: center;">18</td> </tr> <tr> <td>3.</td> <td>DLR G/Shift and E&amp;M &amp; CHP</td> <td style="text-align: center;">33</td> </tr> <tr> <td>4.</td> <td>Private Light Vehicle Drivers</td> <td style="text-align: center;">25</td> </tr> <tr> <td>5.</td> <td>Canteen</td> <td style="text-align: center;">6</td> </tr> </table>	1.	OB removal contract	480	2.	House Keeping	18	3.	DLR G/Shift and E&M & CHP	33	4.	Private Light Vehicle Drivers	25	5.	Canteen	6
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3.	DLR G/Shift and E&M & CHP	33															
4.	Private Light Vehicle Drivers	25															
5.	Canteen	6															
	6. Survey may be conducted prior to the land acquisition for future projects.	6. Land was deSeccated in the field for acquisition for JVROC – II. And survey has been done by SCCL and SD surveyors.															
4.	1. Land losers were not compensated properly.	Same as 3.1 above															
	2. Ground water in bore wells is depleting due to opencast mining and mine discharge water would be let into the Rejarla Tanks.	As per the ground water monitoring, no depletion is observed. However, discharge water is diverted to Kistaram pond and Rejarla tanks. The phreatic surface levels around the project in 2015 are below; In pre-monsoon varied from 1.4m to 11.8m In post monsoon varied from 0.8m to 8.80m															
5.	DeSeccate the area required for new proposals and the area likely to be affected by blasting.	The same is being followed. The area required for new proposals & area likely to be affected by blasting has been deSeccated.															

**The compliance of Ground water clearance condition**

Sl. No.	Condition	Status																														
1.	Periodical monitoring of groundwater levels and quality (every month) should be taken and report to be submitted to the Deputy Director, Ground Water Department, Khammam regularly.	The ground water levels and quality are being monitored four seasons in a year and the same are being furnished to Deputy Director, Ground Water Department, Khammam.																														
2.	Rain water harvesting structures should be taken up in all the villages within the radius of 10 Km. of the project area.	The construction of RWHS involves land acquisition in village. Hence desiltation of existing tanks of surrounding villages has been taken up, which improves ground water recharge.																														
3.	Aforestation in surrounding areas may have to be taken up.	<p>Plantation was raised as per EMP in the JVROC-I Expn Mine. SCCL has carried out plantation in an area of 142.5 Ha on the OB dumps and 35 ha of block plantation in the project. In addition to that the plantation was taken up in 80 Ha of Forest Land in between JVR OC - I and diversion of PWD road. 9.40 Ha of avenue plantation is taken up in JVR OC- I Expn Mine, also 52 Ha of plantation done in safety zone area of 136.50 Ha of forest land diverted for JVROC-I Expn Mine and 5.0km of avenue plantation is taken up in Sathupalli, Kistaram and Rejarla villages. In addition, plants were freely distributed to the villagers of Kistaram, Sathupalli, and Rejarla villages. So far SCCL has spent an amount of Rs. 3784316 for plantation.</p> <p>Free distribution of EP Clones:</p> <table border="1"> <thead> <tr> <th>Sl.No</th> <th>Village</th> <th>Nos.</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>kistaram</td> <td>260000</td> </tr> <tr> <td>2.</td> <td>Rejarla</td> <td>100000</td> </tr> </tbody> </table> <p>Free distribution of fruit bearing plants in the surrounding villages of Rejerla, Kistaram, Kommepalli, Sathupalli, Jagannadapuram and Kothuru for the period from 2015 of upto 2019.</p> <table border="1"> <thead> <tr> <th>Sl.No</th> <th>year</th> <th>No.of plants</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>2015</td> <td>9100</td> </tr> <tr> <td>2.</td> <td>2016</td> <td>10000</td> </tr> <tr> <td>3.</td> <td>2017</td> <td>71007</td> </tr> <tr> <td>4.</td> <td>2018</td> <td>60000</td> </tr> <tr> <td>5.</td> <td>2019</td> <td>37300</td> </tr> <tr> <td colspan="2">Total</td> <td>1,87,407</td> </tr> </tbody> </table> <p>Name of Plants distributed; Coconut,Mango,Pomegranite,Panasa,Nimma ,Bathai,Seethafal,Neredu,Usiri,Vepa etc</p>	Sl.No	Village	Nos.	1.	kistaram	260000	2.	Rejarla	100000	Sl.No	year	No.of plants	1.	2015	9100	2.	2016	10000	3.	2017	71007	4.	2018	60000	5.	2019	37300	Total		1,87,407
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Total		1,87,407																														
4.	Dewatering from mine if any may have to be planned	Excess mine discharge is being let out into Kistaram tank located near mine site (after conventional treatment) and																														

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	considering needs of the farming community.	the same is being used for various purposes by the villagers.					
5.	Recommended to establish water purification plant. The water may be supplied only after purification unlike it is practiced now.	As the mine water is discharged with suspended solids, the water is being purified in the series of settling ponds before letting out.					
6.	Construction of series of check-dams for augmentation of ground water. a) Across stream lets of Tammileru river b) Across Chilla Vagu and streams of Lankapalli tank.	Construction of series of check-dams has not been taken up as these streams are far away from the ML area. Desiltation of village tanks i.e Chillavagu, Jeenugupalli Cheruvu and Kistaram Pedda Cheruvu has been taken up in 2014 to 2018. The quantity removed and amount spent on desiltation is given under.					
		S. No	Name of Tank	Year	Quantity Removed (cum)	SCCL/HI Red(Contract)	Amount Spent(Rs)
		1	Chillavagu	2014	20,000	External	17,54,118
		2	Jeenugupalli cheruvu	2014	10,000	External	
		3	Kistaram Cheruvu	2017	14,980	SCCL	18,27,212
				2018	14,976	External	14,79,895

## Corporate Social Responsibility

### Corporate Social Responsibility

- Medical camps are being conducted regularly in the surrounding villages of Sathupalli i.e. Kommepalli, Rajerla, Kistaram and Jagannathapuram and the details of medical camps and cataract surgeries conducted is as below.

Sl. No.	Date of camp	Place of camp	No. of persons attended	No. of cases undergone for cataract surgery	Total expenditure (Rs.)
1.	09.03.2003	Sathupalli	6000	200	2,30,000/-
2.	28.09.2003	Vemsur	5130	175	3,82,600/-
3.	05.03.2006	NTR Colony	4006	104	3,35,200/-
4.	24.09.2006	Rejarla	4219	115	4,98,300/-
5.	13.07.2008	Rejarla	4700	320	8,50,000/-
6.	Free eye camp (April and may 2013)	Surrounding villages	549	185	7,44,000
<b>Total</b>			<b>24055</b>	<b>914</b>	<b>30,40,100/-</b>

- The details of CSR works taken up under Surrounding Habitat Assistance Programme (SHAPE)

(Figures in Rs.Lakhs)

Year	Town / Village	Park	Community Halls	Drains	CC Roads	School	Other works	Total
2004 - 05	Sathupalli	40.00	--	--	--	--	--	40.00
	Kistaram	0.00	--	--	11.00	--	--	11.00
	Rejarla	0.00	--	3.00	9.00	--	--	12.00
	<b>Sub Total</b>	<b>40.00</b>	<b>0.00</b>	<b>3.00</b>	<b>20.00</b>	<b>0.00</b>	<b>0.00</b>	<b>63.00</b>
2005 - 06	Sathupalli	20.00	--	24.96	46.39	13.65	5.00	110.00
	Kistaram	--	--	--	--	13.00	--	13.00
	Rejarla	--	--	--	--	18.00	--	18.00
	<b>Sub Total</b>	<b>20.00</b>	<b>0.00</b>	<b>24.96</b>	<b>46.39</b>	<b>44.65</b>	<b>5.00</b>	<b>141.00</b>
2008 - 09	Sathupalli	--	--	47.30	39.70	--	--	87.00
	Kistaram	--	--	--	--	--	--	0.00
	Rejarla	--	--	--	--	--	--	0.00
	<b>Sub Total</b>	<b>0.00</b>	<b>0.00</b>	<b>47.30</b>	<b>39.70</b>	<b>0.00</b>	<b>0.00</b>	<b>87.00</b>
2011 - 12	Sathupalli	--	--	--	98.00	--	8.50	106.50
	Kistaram	--	5.00	--	23.00	--	5.00	33.00
	Rejarla	--	--	--	--	--	--	0.00
	<b>Sub Total</b>	<b>0.00</b>	<b>5.00</b>	<b>0.00</b>	<b>121.00</b>	<b>0.00</b>	<b>13.50</b>	<b>139.50</b>
<b>Grand Total</b>	Sathupalli	60.00	0.00	72.26	184.09	13.65	13.50	343.50
	Kistaram	0.00	5.00	0.00	34.00	13.00	5.00	57.00
	Rejarla	0.00	0.00	3.00	9.00	18.00	0.00	30.00
	<b>Grand Total</b>	<b>60.00</b>	<b>5.00</b>	<b>75.26</b>	<b>227.09</b>	<b>44.65</b>	<b>18.50</b>	<b>430.50</b>

- Singareni Seva Samithi has conducted training programs at Sathupalli and surrounding villages and the details of the same is as below.

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Sl.no	Programme	Participants	year	Expenditure
01	Tailoring course at JVR OC-I old office	20	2006	Rs.20,000/-
02	Computer Hardware at JVR OC-I old office	20	2006	Rs.20,000/
03	Tailoring course at JVR OC-I old office.	15	2007	Rs.20,000/
04	DTPcourse at JVR OC-I old office.	20	2007	Rs.20,000/
05	Electrician course at JVR OC-I old office.	14	2008	Rs.15,000/
06	Motor Driving Course at Sathupalli.	25	2009	Rs.37,500/
07	Tailoring & embroidery 2 batches (Kistaram)	50	2009	Rs.40,000/
08	Motor driving course (2nd Batch) at Sathupalli.	20	2009	Rs.37,500/
09	Maggam course (Kistaram)	25	2009	Rs.10,000/
10	Paper Bags making course at HYD (Kistaram)	25	2010	Rs.30,000/
11	Tailoring and embroidery course (Kistaram)	25	2010	Rs.20,000/
12	Tailoring course at KHAMMAM (Rejerla& Lingapalem)	15	2011	Rs.5,000/
13	Tailoring and embroidery course (Lingapalem)	25	2011	Rs.20,000/
14	Entrepreneur Development Programme (EDP) by Khadi Gramodyoga Maha Vidyalaya, Hyd at Kistaram village.	Tailoring, embroidery, Maggam & Paper bags making.	2011	Rs.10,000/
15	Fabric painting course in Lingapalem	25	2012	Rs.10,000/
16	Fabric painting course (Rejerla)(2 batches)	50	2012	Rs.15,000/
17	Tailoring & Embroibery course in Lingapalem	25	2012	Rs.20,000/
18	Taioloring & Embroidery course in Rejerla	25	2013	Rs.23,000/
19	Fabric painting course in Rejerla	25	2013	Rs.10,000/
20	Tailoring & Embroidery course in Kommepally	25	2013	Rs.23,000/
21	Fabric painting course in Kommepally	25	2013	Rs.10,000/
22	Motor Driving Course (Kistaram, Kommepally, Rejerla, L.Palem)	20	2013	Rs.40,000/
23	Tailoring & Embroidery course in Kistaram	50	12.12.2013 – 12.06.2014	Rs.50,000/
24	Motor Driving Course	20	30.03.2014	Rs.42,000/
25	Fabric Painting course in Kistaram	25	16.03.2015	Rs.8,000/
26	Tailoring & Embroidery course in Jagannadhapuram	25	29.03.2015	Rs.23,000/
27.	Tailoring & Embroidery course in Rejerla – 2 batches.	50	10.03.2016	Rs. 46,000/-
28.	Fabric Painting in Rejerla	25	10.03.2016 to 09.05.2016	Rs.10,000/-
29	Motor Driving Course	20+20(Two batches)	14.12.2016	Rs.1,20,000/
30	Tailoring & Embroibery course in Lingapalem-6 months	25	14.12.2016	Rs.32,000/

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**Medical camps**

Sl. No.	Date of camp	Place of camp	No. of persons attended	No. of cases undergone cataract surgery
01	09.03.2003	Sathupalli	6000	200
02	28.09.2003	Vemsur	5130	175
03	05.03.2006	NTR colony	4006	104
04	24.09.2006	Rejarla	4219	115
05	13.07.2008	Rejarla	4700	320
06	Free Eye Camp – Apr & May-2013	Surrounding villages	549	185
07	Mobile medical camps in the months Aug & Sept, 2014	Surrounding villages (Kistaram, Kommepalli, Rejarla, Jagannadhapuram, NTR Nagar)	806	-
08	Mobile medical camps in the months Feb to Apr, 2017	Surrounding villages (Kistaram, Kommepalli, Rejarla, Jagannadhapuram, NTR Nagar)	358	-
09	Mobile medical camps in the months Mar to May, 2018	Surrounding villages (Kistaram, Kommepalli, Rejarla, Jagannadhapuram, NTR Nagar)	491	-
10	Free mobile medical camps conducted from 13.04.2019 to 30.08.2019 (on every Friday)	Surrounding villages (Kistaram, Kommepalli, Rejarla, Jagannadhapuram, NTR Nagar, Lankapalli, Kakarlapalli, Thallamada, Kothuru, Chodavaram, Gowrigudem, Cherukupalli, Vengalrao Nagar)	956	-
11	Free mobile medical camps conducted from 27.09.2019 to 22.11.2019 (on every fortnight)	NTR Nagar	316	
12	Free mobile medical camps conducted on 06.12.2019	Kakarlapalli	61	
<b>Total</b>			<b>27,592</b>	<b>1099</b>

**SPECIAL PROGRAMMES**

- a) Singareni Animuthayala – Mega Job Mela Programme conducted at Gouthampur Community Hall from 28.01.2016 to 29.01.2016
- b) Yoga Training Programme under Mee Kosam – Mee Arogyam programme from 24.05.2016 to 30.05.2016 at Kothagudem Area i.e. Ramavaram & Pragathi Vanam Rudrampur. (250 numbers).
- c) SI & Police Constable Training Camp conducted at Prof. Jaya Shankar Stadium from 16.05.2016 to 30.06.2016.
- d).International Yoga day programme conducted in Kgm Area at all Mines & Departments, Ramavram, Rudrampur & Schools & Colleges from 17.06.2017 to 21.06.2017.
- e) Telanganaku Harithaharam programme conducted in the month of July 2017 in KGM Area at all mines ,colonies,etc...
- f) Environment Awareness Week – 2017 was observed from 5<sup>th</sup> June – 30<sup>th</sup> June 2017 in all mines and departments.
- g) Motor driving training has been given to 25 members in Sathupalli.
- h) Distributed 300 nos tarpaulins in Kommepalli village at cost of Rs. 2.35Lakh in the month of June – 2017.
- i)Motor driving training has been given to 20 members in Sathupalli from 09.04.2018 for one month.
- J)Tailoring at NTR Nagar,STPL for 30 PAF"s from 19.06.2018 for one month.
- k)Computer coaching at NTR Nagar for 20 members from 06.10.2018 for three months.
- L)Motor driving at STPL for 20members from 19.06.2018 for one month.
- M)Mobile Medical camps were conducted from 21.03.2018 to 31.05.2018.No.of beneficiaries are 491.
- N) Computer coaching to NTR Nagar youth from 6/10/2018(3months).No.of beneficiaries 20 members.
- O) Muggam works coaching to NTR Nagar youth from 9/02/2019(3months).No. of beneficiaries 20 members.
- P) Cloth Bags making coaching to Rejarla youth from 15/04/2019(2months).No.of beneficiaries 20 members.
- Q) Provided 04 No's of Sewing Machines to cluster groups at NTR Nagar.

**Shape Funds spent in Project Affected Villages**

**CSR activities in progress:**

- OHT line from Vengal Rao Nager substation to Kistaram drinking water well: Rs.15.00 Lakhs work completed and power connection also given.
- Laying of metal road from State Highway to Kistaram via Pedda Cheruvu: Rs.10.00 lakhs.
- Construction of road dam on the road from State Highway to Kistaram : Rs.5.00 lakhs.
- Construction of side walls at SC Colony of Kistaram: Rs.5.00 lakhs.
- Construction of CC roads in Sathupalli: Rs.90.00 Lakhs.
- Repairs of School buildings in Kistaram & Sathupalli: Rs. 9.00 lakhs.
- On 16.03.2015, CFL Bulbs with fittings – 50 Nos. were issued to Kistaram Grama Panchayath for street lighting. Also, 50 Nos. of fibre chairs were issued to Kistaram Grama Panchayath: Rs.50,000/-

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- An amount of Rs 15,00,000/- spend on pipeline laying and valves fitting etc.. in different parts of Sathupally and its surrounding villages .

Town/ Village (Exp. Rs.Lakhs)	Park	Comm- unity halls	Drains	CC roads	School build- ings	Other works	Total (Rs. Lakhs)
Sathupalli	60.0	0	72.26	94.74	0	5.60 (Bore wells)	232.60
Kistaram	0.00	11.00 Two No.s	0.00	08.00	5.0	8.60 (ANM Sub centre, Hand Bore well, Balance work of Community Hall)	32.60
Rejarla	0.00	8.00	3.00	9.00	10.0	0.60 (Hand Borewell)	30.60
<b>Total</b>	<b>60.0</b>	<b>19.00</b>	<b>75.26</b>	<b>111.74</b>	<b>15.0</b>	<b>14.80</b>	<b>295.80</b>

### Plantation Details

#### List of OB plantations in JVROC, Sathupalli since 2006-2019

Sl. No.	Year	Location	Species	Area in Ha	No. of seedlings planted	Survival in Nos.	Expenditure Occurred in	Legal status
1	2006	JVROCP, OB	M	5.0	12500	11450	96339.00	SCCL
2	2008	JVROCP, OB	M	1.0	2600	1950	8525.00	SCCL
3	2009	JVROCP-Sathupally, OB	M	10.0	25000	19500	287043.00	SCCL
4		JVROCP-Sathupally, OB	M	15.0	34000	26520		SCCL
5		Revisiting of old Plantations JVROC	M	12.0	24000	19200	159953.00	SCCL
6	2010	JVROCP, Sathupally, OB	M	43.0	48907	39126	289555.00	SCCL
7	2011	JVROC-I Expn.-OB	M	22.0	56161	53353	324099.00	SCCL
8		Revisiting of old Plantations JVROC-I	M	10.0	20000	16000	101520.00	SCCL
9	2012	JVROC-I Expn., OB (Internal dump)	M	3.0	7522	6394	27665.00	SCCL
10		Revisiting of old Plantations JVROC	M	10.0	20000	16000	92218.00	SCCL
11	2013	JVROC, OB (Internal dump)	M	8.5	22000	17600	219128.00	RF
12		Revisiting of old Plantations JVROC	M	10.0	20000	16000	258480.00	SCCL
13	2014	JVROC, OB(Internal dump)	M	8.5	22450	17960	223865.00	RF
14		Revisiting of old Plantations JVROC	M	10.0	20000	16000	207150.00	SCCL
15	2015	JVOC-I Expn, OB	M	7	16500	15500	133731.00	SCCL
16	2015	JVR OC bund plantation including safety zone	M	7	18710	15345	145874.00	RF
17	2016	OB plantatiobn at JVR OC	M	14	39000	32980	299826.00	SCCL
18		Revisiting of old Plantations JVROC-I	M	10	20000	16100	125471.00	SCCL
19	2017	JVROC-I Expn, OB	M	17.5	43750	35100	86822.00	SCCL
20		Revisiting of old Plantations JVROC	M	10	20000	16200	167233.00	SCCL
21	2018	JVROC OB plantation	M	4	10000	9400	62554.00	SCCL
22		Revisiting of old Plantations JVROC	M	20	40000	32300	193995.00	SCCL
23	2019	Revisiting of old Plantations JVROC	M	10	20000	16100	175606.00	SCCL
<b>Total</b>				<b>267.5</b>	<b>563100.0</b>	<b>466078.0</b>	<b>3686652.00</b>	

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Species planted: Pongamia pinnata, Ficus religiosa, Ficus bengalensis, Albezia procera, Dalbergia latifolia, Madhuca latifolia, Hardwickia binnata, Dendroclamus strictus, Aegle marmelous, pithacalobium dulci, Dalbergia sisso, Azardicta indica, Ceiba pentandra etc

### List of Block plantations in Sathupalli since 2006-2017

Sl.No.	Year	Location	Species	Area in Ha	No. of seedlings planted	Survivals in Nos.	Expenditure Occurred in Rs.	Legal status
1	2006	JVROCP, Block	M	7.0	10363	2000	96339	SCCL
2	2007	JVROCP-Sathupally,Block	EC&M	4.0	13014	5000	69232	RF
3		JVROCP,Gap pl', Block-Sathupally,	M	4.0				SCCL
4	2009	JVROCP-Sathupally,Block	EC&M	6.0	4890	400	56802	SCCL
5	2010	JVROCP-Sathupally,Block	EC&M	4.0	13014	5000	80032	RF
6		JVROCP,Gap pl', Block-Sathupally,	M	4.0				SCCL
7	2011	JVROC-I Vacant patches, Block	M	4.0	3373	1000	201908	SCCL
8		Maintenance of Block Plantations at JVROC	M	4.0			54540	RF
9	2012	RF land of JVROC-I Expn. Project & diverted road to Sathupally,	M	58.0	17305	15000	1650759	RF
10		Maintenance of Block Plantations at JVROC	M	58.0			46,359	RF
11	2013	RF land between JVROC-I mine boundary of JVROC-I Expn. Project and diverted road to Sathupally	M	22.0	22100	20000	1188332	RF
12		Maintenance of Block Plantations at JVROC	M	65.0			60034	RF
13	2014	Degraded Forest land all along the boundary of 136.5 Ha.of Forest land diverted for JVROC-I Expn.Sathupalli, Block	M	30.0	26000	20000	397969	RF
14		Maintenance of Block Plantations at JVROC-I	M	80.0			78779	RF
15	2015	Maintenance of Block Plantations at JVROC 2006-2011	EC & M	144.0			83008	RF
16		Maintenance of Block Plantations at JVROC 2012-13	M	80.0			85347	RF
17	2016	RF plantationr JVR OC	M	8	8500	7395	299826	RF
18		Maintenance of Block Plantations at JVROC 2014-2016 Plantations	EC & M	45			290317	RF
19		Maintenance of Block Plantations at JVROC 2012-2013Plantations	M	80			95948	RF
20	2017	Euc. & Misc. block plantation,Sattupalli	EC & M	5	8520	8094	226243	SCCL
21		Maintenance of Block Plantations at JVROC 2006-2015 Plantations	M	168			102903	RF
22	2018	Maintenance of Block Plantations at JVROC 2006-2015 & 2012-2013 Plantations	M	240			175111	RF
		<b>Total</b>		<b>1120.0</b>	<b>127079.0</b>	<b>83889.0</b>	<b>5339788.0</b>	

Species planted: Ficus religiosa, Ficus bengalensis, Albezia procera, Dalbergia latifolia, Madhuca latifolia, Hardwickia binnata, Dendroclamus strictus, Aegle marmelous, pithacalobium dulci, Dalbergia sisso, Azardicta indica, Tamarindus indica Pongamia pinnata etc

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**List of Avenue plantations in Sathupalli since 2006-2016**

Sl.No	Year of raising	Location	Species	Length in Kms	No. of seedlings planted	Survivals in Nos.	Expenditure Occurred in Rs.	Legal status
1	2008	JVROCP, Avenue	M	2.0	841	150	356223.00	SCCL
2	2009	Diverted road of Sathupally, Avenue	EC&M	5.0	10082	8000	723391.00	SCCL
3	2014	Avenue plantation All along the boundary of 136.5 Ha. of Forest Land diverted for JVROC-I Expansion Project, Sathupally	M	2.0	242	200	98618.00	SCCL
4	2016	Avenue plantation Sathupalli	M	2	800	800	792696.41	RF
		<b>Total</b>		11.0	11965.0	9150.0	1970928.4	

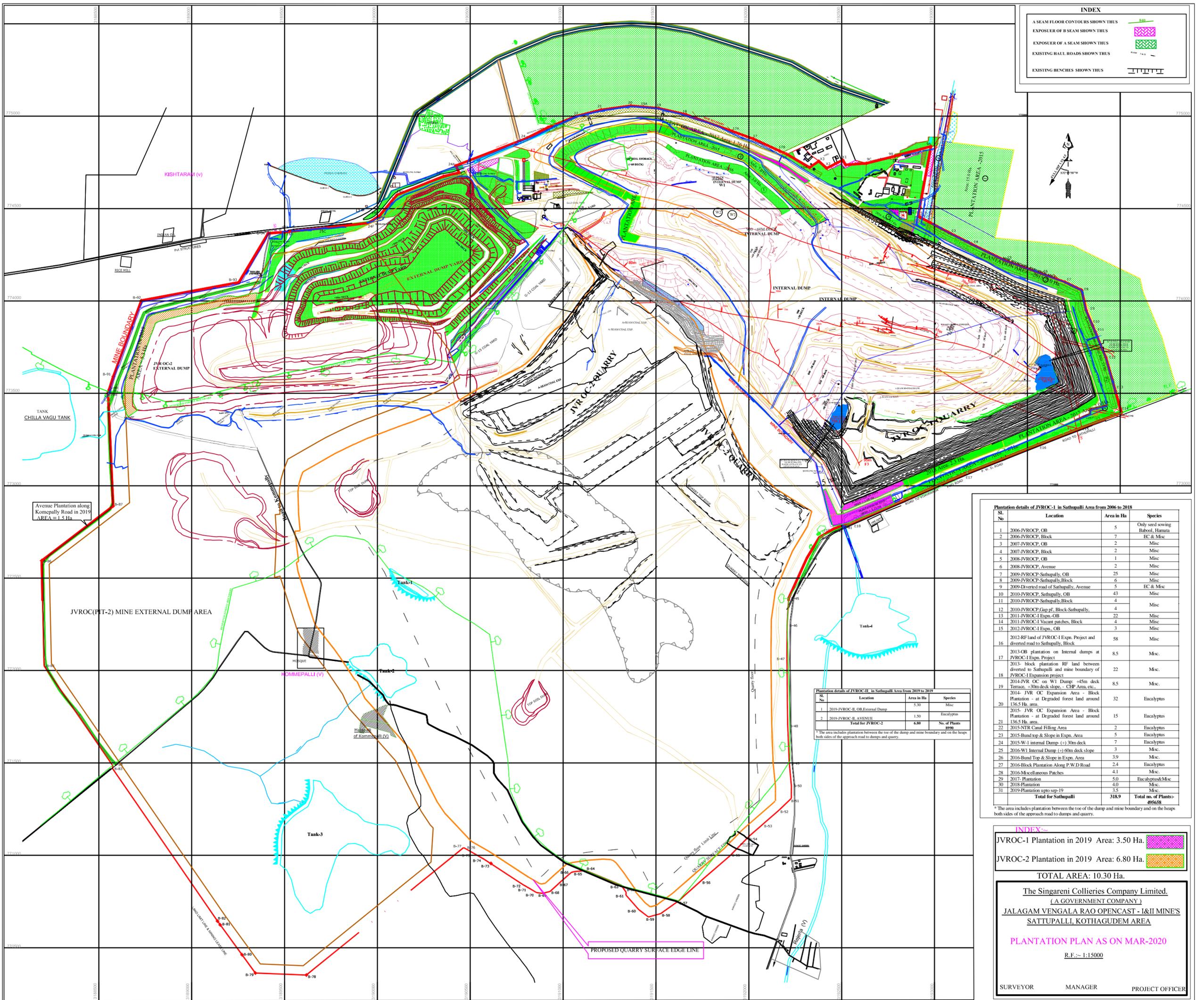
Species planted : Alestonia scolaris, Millingtonia hortensis, Bahuenia sps, Peltoforum, Pongamia pinnata, Ficus religiosa, Ficus bengalensis, Albezia procera, Gulmohar, Dalbergia sisso, Azardicta indica, Tamarindus indica etc

SL.no	Name of the plantation	Expenditure Occurred in Rs.
1	Avenue	1970928.41
2	Block	5339788.00
3	OB & Revisiting	3686652.00
	<b>Total</b>	<b>10997368.41</b>

**Other programmes conducted for PAPs:**

01. Employment awareness programme to children of 180 persons.
02. Training in Security Guards: 25 persons.
03. Old NTR canal is filled up.
04. Tarpaulins provided to Kommepalli villagers in 2014
05. Desilting of Chillavagu cheruvu and Jinugupalli Cheruvu in 2014. Pedda Cheruvu of Kistaram in 2015.
06. Desilting of pedda cheruvu in Kistaram village at about 4976 Cu.m in the month of Aug- 2018.

  
**Project Officer**  
**JVR OCP I (Exp) Project Officer**  
**JVR OC-I & OC-II**  
**STPL, Kgm Area**



INDEX	
A SEAM FLOOR CONTOURS SHOWN THUS	
EXPOSER OF A SEAM SHOWN THUS	
EXPOSER OF A SEAM SHOWN THUS	
EXISTING HAUL ROADS SHOWN THUS	
EXISTING BENCHES SHOWN THUS	



Avenue Plantation along Komepally Road in 2019 AREA = 1.5 Ha

JVROC(P1-2) MINE EXTERNAL DUMP AREA

Sl. No	Location	Area in Ha	Species
1	2019-JVROC-B, OB External Dump	3.30	Misc
2	2019-JVROC-B, AVENUE	1.50	Eucalyptus
<b>Total for JVROC-2</b>		<b>6.80</b>	<b>No. of Plants 8099</b>

\* The area includes plantation between the toe of the dump and mine boundary and on the heaps both sides of the approach road to dumps and quarry.

Sl. No	Location	Area in Ha	Species
1	2006-JVROCP, OB	5	Only seed sowing Babool, Hamata
2	2006-JVROCP, Block	7	EC & Misc
3	2007-JVROCP, OB	2	Misc
4	2007-JVROCP, Block	2	Misc
5	2008-JVROCP, OB	1	Misc
6	2008-JVROCP, Avenue	2	Misc
7	2009-JVROCP-Sathupalli, OB	25	Misc
8	2009-JVROCP-Sathupalli, Block	6	Misc
9	2009-Diverted road of Sathupalli, Avenue	5	EC & Misc
10	2010-JVROCP, Sathupalli, OB	43	Misc
11	2010-JVROCP, Sathupalli, Block	4	Misc
12	2010-JVROCP, Gap rd, Block Sathupalli	4	Misc
13	2011-JVROC-1 Expn, OB	22	Misc
14	2011-JVROC-1 Vacant patches, Block	4	Misc
15	2012-JVROC-1 Expn, OB	3	Misc
16	2012-RF land of JVROC-1 Expn, Project and diverted road to Sathupalli, Block	58	Misc
17	2013-OB plantation on Internal dumps at JVROC-1 Expn, Project	8.5	Misc
18	2013- block plantation RF land between diverted to Sathupalli and mine boundary of JVROC-1 Expansion project	22	Misc
19	2014-JVR OC on W1 Dumps +45m deck Terrace, +30m deck slope, - CHP Area, etc.	8.5	Misc
20	2014- JVR OC Expansion Area - Block Plantation - at Degraded forest land around 136.5 Ha, area.	32	Eucalyptus
21	2015- JVR OC Expansion Area - Block Plantation - at Degraded forest land around 156.5 Ha, area.	15	Eucalyptus
22	2015-NTR Canal Filling Area	2	Eucalyptus
23	2015-Bund top & Slope in Expn, Area	5	Eucalyptus
24	2015-W-1 Internal Dump (-) 30m deck	7	Eucalyptus
25	2016-W1 Internal Dump (-) 60m deck slope	3	Misc
26	2016-Bund Top & Slope in Expn, Area	3.9	Misc
27	2016-Block Plantation Along P.W.D Road	2.4	Eucalyptus
28	2016-Miscellaneous Patches	4.1	Misc
29	2017- Plantation	5.0	Eucalyptus&Misc
30	2018-Plantation	4.0	Misc
31	2019-Plantation upto sep-19	3.5	Misc
<b>Total for Sathupalli</b>	<b>318.9</b>	<b>Total no. of Plants:- 49568</b>	

\* The area includes plantation between the toe of the dump and mine boundary and on the heaps both sides of the approach road to dumps and quarry.

**INDEX:-**

JVROC-1 Plantation in 2019 Area: 3.50 Ha.

JVROC-2 Plantation in 2019 Area: 6.80 Ha.

**TOTAL AREA: 10.30 Ha.**

**The Singareni Collieries Company Limited.**  
 (A GOVERNMENT COMPANY)  
**JALAGAM VENGALA RAO OPENCAST - I&II MINE'S**  
**SATTUPALLI, KOTHAGUDEM AREA**

**PLANTATION PLAN AS ON MAR-2020**

R.F.:- 1:15000

SURVEYOR                      MANAGER                      PROJECT OFFICER