THE SINGARENI COLLIERIES COMPANY LIMITED

(A Government Company)
BELLAMPALLI AREA

PART-1

A. SALIENT FEATURES OF THE PROJECT: GOLETI 1 & 1A Incline

1	Name of the Project		:	**Goleti 1&1A Incline.**
2	Organization		:	Singareni Collieries Company Limited
3	Coalfield		:	Godavari Valley Coal Field
4	Type of Mine		:	Underground Coal Mine
5	Technology		:	Bord and pillar method with Semi-mechanized with SDLs.
6	Environmental Clearance		:	
	A	Letter No & date	:	EC. No: J-11015/309/2007-1A.II(M), dtd. 27th October, 2008.
	B	Sanction capacity	:	5.40 LTPA and peak production: 0.60 MT PA
	C	Mining Lease Area	:	658.26 Ha.
	D	Date of Public Hearing	:	11.03.2008
7	Location of the Project			
	A	Village	:	Goleti
	B	Tehasil/Mandal	:	Rebbena Mandal
	C	District	:	Adilabad
	D	State	:	Andhra Pradesh
	E	Latitude	:	Lattitude: N 19^0 12' 57" to 19^0 14' 06"
	F	Longitude	:	Longitude: E 79^0 22' 17" to 79^0 23' 35"
	G	Topo Sheet	:	Survey of India Topo Sheet No:56M/8, 56N/5, 56N/9 & 56N/12.
	H	Nearest railway station	:	Asifabad Road Railway Station of South Central Railway which is 9 Km away from Goleti 1&1A Incline.
	I	Nearest Airport	:	Hyderabad
	J	Nearest town	:	Bellampalli
8	Address for Correspondence		:	
	A	Name	:	Sri. K. Kondaiah
	B	Designation	:	Agent
	C	Address		O/o Agent(UG mines), The S.C.Company Ltd., Bellampalli Area, Goleti Village, Rebbena Mandal, Adilabad District A.P.
	D	Pin Code	:	504292.
	F	E-mail ID	:	glt1_bpa@scclmines.com;po_khg@scclmines.com
	G	Telephone No.	:	(Agent's cell:9491144404); Office Mobile No:9491145125
	H	Fax No.	:	08736-238222
9	Life of the Project		:	
	A	Date of Opening		14-11-2005 Goleti No.1A Section

				(03-02-1977 Goleti NO.1 Incline)
	B	Total Life of the project as per EMP	:	38 Years (from the expansion year)
	C	Balance Life	:	30 Years.
10	Seams		:	
	A	Total Seams Present	:	3 nos.
	B	Seams being worked	:	1
11	Depth			
	A	Minimum Depth (m)		30 m
	B	Maximum Depth (m)		360 m.
	C	Present working depth (m)		240-300 m; 300-360 m; 90-200 m
12	Reserves			
	A	Total Geological Reserves	:	65.23 MT
	B	Total Extractable Reserves	:	20.89 MT
	C	Reserves already Extracted	:	68.68 LT
	D	Balance Reserves	:	14.02 MT
	E	Coal production during last six months	:	0.8527 LT
13	Land Requirement			
	A	Total Requirement (Mine Take Area)		658.26 Ha.
	B	Forestland Involved		434.25 Ha.
	C	Non-forestland		224.01 Ha. (SCCL acquired Forest land before enactment of FC Act, 1980)
	D	Land acquired so far (Surface rights)		39.05 Ha.
14	Statutory Clearances		:	
	A	Ground Water Clearance		Order No. 441/T/2005, dtd: 15.07.2005.
	B	Consent for Establishment	:	Order No: 53/PCB/CFE/RO-NZB/HO/2009, dtd: 20.07.2009
	C	Consent for Operation	:	Consent Order No: APPCB/HYD/HYD/80/HO/ CFO/ 2011-2451, dtd.05.11.2011.
	D	Forest Clearance	:	
	E	Mining Lease	:	Tandur Mining Lease
	F	Others (Specify)		--
15	R & R Involved		:	Nil.

THE SINGARENI COLLIERIES COMPANY LIMITED
(A Government Company)
BELAMPALLI AREA, HQ.Goleti -504292

HALF YEARLY COMPLIANCE REPORT OF ENVIRONMENTAL CLEARANCE CONDITIONS FOR THE PERIOD APRIL-2013 TO SEPTEMBER-2013.

PROJECT DESCRIPTION:

1	Name of the Project	**Goleti 1&1A Incline**
2	Environmental clearance letter no and date.	J-11015/ 309/ 2007-IA.II(M), dated. 27-10-2008
3	Present status of the project	
A	Method of coal extraction	Semi-mechanization
B	Coal produced during last six months	0.8527 LT
C	Total coal produced from this mine since inception	68.68 LT
D	Mineable reserves	20.96 MT

Goleti 1&1AIncline started in 1977 and having environmental clearance vide MoEF Lr.No.J-11015/27/86-IA.II (M) Dated: 29.12.1992 for production capacity of 7.6Lakh tones per Annum (LTPA) with long wall technology. But due to geological disturbances and Operational difficulties presently working with hand section and Semi-mechanization (SDL)

Again Environmental clearance has been obtained to this project for expansion of the mining lease area from 408.26ha to 658.26Ha by annexing 250ha of land planned to produce 5.40LTPA and the mine will achieve peak production 6.0LTPA of coal with semi-mechanization vide letter No. J - 11015/309/2007 - IA.II (M) dated 27th October 2008

PART-I

ENVIRONMENTAL CLEARANCE CONDITIONS

vis-à-vis

COMPLIANCE STATUS FOR THE PERIOD ENDING 30.09.2013.

A. SPECIFIC CONDITIONS:

Cd. No	CONDITION	COMPLIANCE STATUS
(i)	Mining shall not be carried in forestland for which forestry clearance has not been obtained under the provisions of FC Act, 1980.	The mine take area of Goleti 1&1A Incline is 658.26 Ha. covered under Tandur Mining Lease and Goleti Mining Lease. Forest clearance under the provisions of FC Act, 1980 accorded for the forest land covered under Tandur mining lease vide MoEF Lr. no. 8-216/85-Fry (Cons), dtd. 07.10.1986 for underground mining and other forestland involved in Goleti Mining Lease was accorded Clearance vide Lr. no. 8-10/2005-FC, dtd 30th January, 2009.
(ii)	Sufficient coal pillars shall be left un-extracted around the Air shaft (Within the subsidence influence area) to protect from any damage from subsidence, if any.	It was planned to leave sufficient coal pillars (40 nos.) un-extracted around the Air-shaft, Main Incline entries, etc., during depillaring operations to protect from any damage from subsidence.
(iii)	Solid barriers shall be left below the roads falling within the blocks to avoid any damage to the road.	Depillaring is not yet started. At the time of de-pillaring, solid barriers shall be left below the road falling within the mine take area to safeguard the road.
(iv)	Depression due to subsidence resulting in water accumulating within low lying areas shall be filled up or drained out by cutting drains.	Mine is under development stage & depillaring is not yet started. This condition will be complied during de-pillaring operations.
(v)	While extracting the panels in the lower seam, all the water bodies in the subsidence area shall be drained. Dewatering of old goves of the upper seams shall be continued as long as the lower seam is worked to prevent the accumulation of large water bodies over working area.	Before commencement of extraction of panels in lower seam, all the water bodies in the subsidence area if any, old goaved out panels in the upper seams will be de-watered and arrangements will be made to pump out continuously to prevent accumulation of water in upper seams or upper workings etc., and all precautions will be ensured under the provisions of Regulation 126 and 127 of Coal Mines Regulation, 1957. The permission from the Inspector of mines as per Reg. 100 of Coal Mines Regulation, 1957 shall be obtained.
(vi)	Regular monitoring of subsidence movement on the surface over	De-pillaring operations have not yet commenced at this mine. Proposals

Cd. No	CONDITION	COMPLIANCE STATUS
	and around the working area and impact on natural drainage pattern, water bodies, vegetation, structure, roads and surroundings should be continued till movement ceases completely. In case of observation of any high rate of subsidence movement, appropriate effective corrective measures should be taken to avoid the loss of life and material. Cracks should be effectively plugged with ballast and clayey soil/suitable material.	were prepared for Depillaring with sand stowing at this mine. All the conditions as mentioned will be complied before and during de-pillaring operations.
(vii)	Garland/surface drains (size gradient and length) around the safety areas such as mine shaft and low lying areas and sump capacity should be designed keeping 50% safety margin over an above the peak sudden rainfall and maximum discharge in the area adjoining the mine sites. Sump capacity should also provide adequate retention period to allow proper settling of silt material. Sufficient number of pumps of adequate capacity shall be deployed to pump out mine water during peak rainfall.	The height of pit entries such as airshaft, main incline and man way dip were designed to be 1.5 m above the HFL. The actual heights of the pit entries are enclosed as **Annexure-VIII to Part-II of the report.** Drains are planned around the proposed depillaring panels and low-lying areas, around mine shaft if any. The sumps are designed keeping 50% safety margin over and above the peak sudden rain fall in the area. Sump has sufficient capacity to provide adequate retention period to allow settling of silt. Adequate numbers of pumps were provided to pump out mine water during peak rainfall.
(viii)	Crushers at the CHP should be operated with high efficiency bag filters, water sprinkling system should be provided to check fugitive emissions from crushing operations, conveyor system, haulage roads, and transfer points, etc.	Effective water spraying arrangements were provided at unloading, transfer and conveyor points. Water spraying arrangements were provided for spraying on unpaved roads. There are 20 water spraying points on surface within the premises from where all the internal roads, coal bunker area, coal transfer points, along belt conveyor water spraying is being taken up. Coal transportation roads and permanent internal roads are black topped.
(ix)	Drills should be wet operated.	Electrical drills are in use for drilling in coal faces. However water spraying in under ground working faces is being implemented as per the provisions of Regulation 123 of Coal Mines Regulation, 1957 to avoid the dust generation in the working places. Water is being sprayed at coal faces before and

Cd. No	CONDITION	COMPLIANCE STATUS
		after every blasting so as to prevent coal dust from entering into the mine atmosphere. Dust masks are being issued periodically to workmen working at face. During last six months 452 nos. of Dust Masks were issued to workmen. **Details of dust masks issued are enclosed as Annexure-VII(b) of part-II** of the report.
(x)	A progressive afforestation plan shall be prepared and implemented for the undisturbed area and shall include area brought under greenbelt development, areas along the roads, infrastructure, over surface where mining is being done below, along ML boundary an township outside the lease areas, etc., by planting native species in consultation with the local DFO/Agriculture Department. The density of the trees should be around 2500 plants per Ha.	A progressive afforestation plan has been prepared as envisaged in the EIA/EMP. The Company has separate Forest department under the control of IFS officer deputed from AP(state) Forest Department to implement afforestation plan into action as per EIA/EMP. The progressive plantation details are being furnished in the half yearly monitoring reports submitted to Regional Office, MoEF, Bangalore and Regional Office, AP Pollution Control Board. As on date plantation was done in 13.02 Ha. within the mine take area apart from vacant areas within the office complex. Other areas of plantation with in the lease area are 11.00 Ha in township, 57Ha in de-graded forest land. Block plantation of 443.00 Ha and avenue plantation of 24km was carried in the area out side the mining lease and in Goleti & Madaram townships. **Plantation details are furnished at Point no.2 of Part-II of the report.**
(xi)	Conservation plan for endangered species found in and around the project area shall be formulated in consultation with the State Forest and Wildlife Departments.	As the existing project is an underground project and the workings are restricted to under ground only, so there will not be any impact on the flora and fauna. During diversion of Forest land for mining activity for SCCL, the Divisional Forest officer of Bellampalli area certified in his compliance report that in the proposed area no endangered /rare species were reported/identified. However if required, conservation plan shall be formulated and implemented in consultation with the State Forest & Wildlife

Cd. No	CONDITION	COMPLIANCE STATUS
		Department.
(xii)	Regular monitoring of groundwater level and quality should be carried out by establishing a network of exiting wells and construction of new peizometers. The monitoring for quantity shall be done four times a year in pre-monsoon (May), monsoon(August), post-monsoon (November) and winter (January) seasons and for quality in May. Data thus collected shall be submitted to the Ministry of Environment & Forests and to the Control Pollution Board quarterly within one month of monitoring.	Phreatic surface in the area around the project is being monitored four times in the year using network of 12 existing observation wells and 4 peizometric wells in the study area. The monitoring data is being submitted along with half yearly monitoring reports submitted to Regional Office, MoEF, Bangalore and Regional Office, AP Pollution Control Board. **The piezometric monitoring details are enclosed as Annexure-V of Part – II of this report.**
(xiii)	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 dewatering of mine.	The excess mine discharge water is being diverted to nearby Sonapur nalla which is let out into Goleti Tank for augmentation of ground water. 35 rainwater harvesting structure were constructed in the colony. A requisition for construction of rain water harvesting structures in mining areas and in the colonies is submitted and is under approval stage. The Company will supply drinking and domestic water to the nearby villages in case of the village(s) wells go dry due to dewatering of mine.
(xiv)	The company shall obtain approval of CGWA/CGWB Regional Office for use of ground water if any, for mining operations.	Ground water clearance was obtained from Ground Water Department, Government of Andhra Pradesh vide Lr.no. 8187 /Hg.II(1) /2005, dated 27.4.2006.
(xv)	Sewage treatment plant should be installed in the existing colony. ETP should also be provided for workshop and CHP wastewater.	Sewage treatment in existing colony is being carried out through septic tanks followed by soak pits. Requisition was given for the construction of new Sewage treatment plant at Goleti & Madaram town ships. An ETP provided at the Area workshop is serving for the vehicles used at this mine.
(xvi)	For monitoring land use pattern and for post mining land use, a time series of land use maps, based on satellite imaginary (on a scale of 1:5000) on the core zone and buffer zone, from the start of the project until end of mine life shall be prepared once in 3 years	Land use pattern using satellite imagery of core and buffer zone is being conducted once in every three (3) years. A similar survey was conducted during 2012 by private agency 'Tec datum' Info services Pvt. Ltd., Hyderabad.

Cd. No	CONDITION	COMPLIANCE STATUS
	(for any one particular season which is consistent in the time series.) and the report submitted to MOEF and its Regional office at Bangalore.	
(xvii)	A Final Mine Closure Plan along with details of Corpus Fund should be submitted to the Ministry of Environment & Forests 5 years in advance of final mine closure for approval.	A final mine closure plan along with details of corpus fund shall be prepared and submitted to MoEF for approval 5 years in advance of the final mine closure for approval (i.e. in the year 2038).

B: GENERAL CONDITIONS

Cnd No.	CONDITION	COMPLIANCE STATUS
(i)	No change in mining technology and scope of working shall be made without prior approval of the Ministry of Environment and Forests.	There is no change in mining technology and scope of working. Bord & Pillar method with development using SDLs (Side Discharge Loader) is the technology being used at present.
(ii)	No change in the calendar plan including excavation, quantum of mineral coal and waste shall be made.	Calendar plan is being followed. **Year wise Production details are furnished in Table-1 of Part-II of the report**.
(iii)	Four ambient air quality monitoring stations shall be established in the core zone as well as in the buffer zone for SPM, RPM, SO2 and NOx, Hg and other heavy metals such as Rb, Cr, As etc. Location of the stations shall be decided based on the meteorological data, topographical features and environmentally and ecologically sensitive targets in consultation with the State Pollution Control Board.	Four ambient air quality monitoring stations such as Goleti 1&1A Incline (Core Zone), Goleti Township (NE-1.5Km), Goleti village (NE-2.8Km) and Khairagudem village (NE-1.5km) were established in consultation with Regional Officer, AP Pollution Control Board, Nizamabad considering the meteorological data. The monitoring is being carried out regularly once in a fortnight for the parameters SPM, RSPM, SO_2 and NO_X through an external agency 'Environment Protection Training & Research Institute' (EPTRI) , HYDERABAD, which is CPCB recognized and NABL accredited lab.
(iv)	Fugitive dust emissions (SPM and RSPM, Hg and other heavy metals) from all the sources shall be controlled regularly monitored and data recorded properly. Water spraying arrangement on haul roads, wagon loading, dump trucks (loading and unloading) points shall be provided and properly maintained.	Fugitive dust emissions are being monitored regularly at Goleti 1&1A Incline. About 20 nos. of water spraying points were fixed all along the internal roads, coal tippling point, belt conveyor, transfer point etc., **Air quality monitoring data is enclosed as Annexure-I of Part–II of the report**.

Cnd No.	CONDITION	COMPLIANCE STATUS
(v)	Data on ambient air quality (SPM, RSPM, SO2 and NOx, Hg and other heavy metals) shall be regularly submitted to the Ministry including its Regional Office at Bangalore and to the State Pollution Control Board and the Central Pollution Control Board once in six months.	The Ambient Air Quality monitoring reports are being submitted to MoEF/Bangalore and APPCB on half yearly basis.
(vi)	Adequate measures shall be taken for control of noise levels below 85 dB(A) in the work environment. Workers engaged in blasting and drilling operation, operation of HEMM, etc shall be provided with ear plugs/muffs.	Noise control measures such as plantation around the fan house & in mine take area, provision of evacey to main mechanical ventilator, reduction of height of fall of coal into the bunkers, maintenance of machinery, etc., are being taken up. Noise levels are found to be with in the permissible limits. **Details of earplugs issued in last six months are enclosed as Annexure-VII(c) of Part–II of the report**.
(vii)	Industrial waste water (workshop and waste water from the mine) shall be properly collected, treated so as to conform to the standards prescribed under GSR 422(E) dated 19th May 1993 and 31st December 1993 or as amended from time to time before discharge. Oil and grease trap shall be installed before discharge of workshop effluents.	Mine seepage water is being collected in the under ground sumps of adequate capacity to settle the suspended solids and water is being pumped out to the surface filter beds having slow sand filters for further treatment to conform to the prescribed standards. Oil and Grease trap has been established in the Area Workshop for treatment of workshop effluents before discharging into natural stream. The efficacy of the system is being monitored through fortnight sampling and analysis of effluents is being done by external agency 'Environment Protection Training & Research Institute' (EPTRI), Hyderabad which is CPCB recognized and NABL accredited lab. **Effluents monitoring data is enclosed as Annexure-IV of part–II of the report.**
(viii)	Vehicular emissions shall be kept under control and regularly monitored. Vehicles used for transporting the mineral shall be covered with tarpaulins and optimally loaded.	Vehicular emissions are being kept under control by regular maintenance of HEMM and vehicles at workshop. Vehicles are being tuned regularly. Coal transporting Trucks are being fully covered with tarpaulin cloth. Awareness is being given by writing letters to coal Contractors transporting coal from mines to dispatch points. In addition

Cnd No.	CONDITION	COMPLIANCE STATUS
		to the above, Posters on using tarpaulin covering and Pamphlets with small write-up on dust pollution and its effects on health were circulated to all the coal transport drivers at weigh bridges as an additional measure. **Poster & Pamphlet copies are enclosed as Annexure-XII (a) & XII(b) of Part-II of the report**.
(ix)	Environmental laboratory shall be established with adequate number and type of pollution monitoring and analysis equipment in consultation with the State Pollution Control Board.	Post Project Environmental monitoring work is being carried out by out sourced agency "Environment Protection Training and Research Institute (EPTRI),HYD)" which is CPCB recognized and NABL accredited lab. One such Regional Laboratory was established at Mandamarri Area for serving Bellampalli Area Mines.
(x)	Personnel working in dusty areas shall wear protective respiratory devices and they shall also be provided with adequate training and information on safety and health aspects. Occupational health surveillance programme of the workers shall be undertaken periodically to observe any contractions due to exposure to dust and to take corrective measures, if needed.	Persons working in dusty areas are being provided dust respirators. Training and information on safety and health aspects are being given through Internal Safety Organization and Mine Vocational Training Centers. **List of employees issued with dust respirators is enclosed as Annexure-VII (b) of Part-II of the report.** Occupational health surveillance is being carried out periodically through Periodical Medical Examinations (PME) once in every 5 years. Every year 20% of workmen engaged in active dusty environment are being subjected to PME. Employees above 45 years of age are being sent for PME for every 3 years period. **PME details are enclosed as Annexure-VII (a) of Part-II of the report.**
(xi)	A separate environmental management cell with suitable qualified personnel shall be set up under the control of a Senior Executive, who will report directly to the Head of the Company.	Company Level Environment Cell with qualified personnel is established to monitor and guide in implementation of the environmental safeguards. An Area Environmental Department headed by Environmental Officer is functioning under the control of General Manager of the Area to monitor the environmental safeguards. Apart from this, an Environmental Management Committee is formulated with multi disciplinary team under the Chairmanship of

Cnd No.	CONDITION	COMPLIANCE STATUS
		Project Officer to oversee the environmental safeguards and requirements/short comes at the mine. The Minutes of the environmental committee meeting are being recorded. Environmental Management committee and **the minutes of EMC meeting are enclosed as Annexure-IX of Part-II of the report.**
(xii)	The funds earmarked for environmental protection measures shall be kept in separate account and shall not be diverted for other purpose. Year-wise expenditure shall be reported to this Ministry and its Regional Office at Bangalore.	The funds earmarked for the environmental protection measures are being kept in separate account and will not be diverted for other purpose. Year wise expenditure is being reported to the Ministry and its Regional Office located at Bangalore through half yearly monitoring reports. **Details of environmental expenditure for the past six (6) months are enclosed as Annexure-XI of Part-II of the report.**
(xiii)	The Regional Office of this Ministry located at Bangalore shall monitor compliance of the stipulated conditions. The Project authorities shall extend full cooperation to the office(s) of the Regional Office by furnishing the requisite data/ information/ monitoring reports.	Project authorities are extending full co-operation to the office(s) of the Regional Office by furnishing the requisite data / information / monitoring report.
(xiv)	A copy of the environmental clearance letter shall be marked to concerned Panchayat / Local NGO, if any, from whom any suggestion / representation has been received while processing the proposal.	A copy of the Environmental clearance letter was marked to the concerned Panchayath vide Ref. No: BPA/ENV /G /06/2008/173, Dated: 06.12.2008.
(xv)	State Pollution Control Board shall display a copy of the clearance letter at the Regional Office, District Industry Centre and Collector's Office/ Tahsildar's Office for 30 days.	This condition was already Complied.
(xvi)	The Project authorities shall 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 the clearance letter informing that the project has been accorded environmental	The advertisement was given on 18.11.2008 in Deccan Chronicle (English Daily) and Vartha (Telugu Daily) daily news papers widely circulated around the project.

Cnd No.	CONDITION	COMPLIANCE STATUS
	clearance and a copy of the clearance letter is available with the State Pollution Control Board and may also be seen at the website of the ministry of Environment & Forests at http://envfor.nic.in.	

PART – II

1. Production details Goleti 1 & 1A Incline.

Sl. No	Year	Coal (in MT)	
		As per EC	Actual
1	2006-07	5.40	4.175
2	2007-08	5.40	4.089
3	2008-09	5.40	4.178
4	2009-10	5.40	2.803
5	2010-11	5.50	2.679
6	2011-12	6.00	2.255
7	2012-13	5.80	2.067
8	2013-14	6.00	0.085 (up to Sept-2013)

2. Plantation:

1	No of plants planted during last six months / last year	It is an under ground mine. There is no left over space for plantation. However 15 plants were planted in the mine premises.
2	Area covered in Ha in last six months	Nil (no identified area)
3	Expenditure incurred in Rs.lakhs in last six months	Nil
4	Total area brought under plantation so far in Ha	73.65 Ha
5	Total no of plants planted so far since inception	79,174 nos.
6	Species of plants planted	Babul,Neem,Kanji,Eucalytus (clonal), Jungle jilebi,Jamun,Peepal,Banyan,Yeru Maddi, Boaganvilla.Techoma etc.
7	Seeds sown so far	--
8	Small plants planted so far	--
9	Expenditure on plantation in last six months	--
10	Total expenditure in Rs. lakhs -	Rs 88,500.00

3: Water Balance Statement:

Sl.no.	activity	Quantity (m^3/day)
1	Total quantity of water pumped out	5665
2	Water used for drinking purpose	648
3	Water used for dust suppression	350
4	Water used for washing of HEMM	--
5	Water used for fire fighting	--
6	Water supplied for nearest township/village for domestic purpose(Goleti township & Workshop)	950
7	Water used for plantation	-
8	Total water used at the mine(2+3+4+5+7)	998
9	Total water used(2+3+4+5+7+8)	1948 (as per CFO:1964)
10	Total quantity of water let out	3717
11	Point of discharge (as per CFO)	Septic tank followed by soak pits
12	Discharge Consent from APPCB(domestic effluents)	1346 (Max)

4. Micro-meteorological Monitoring:

Micro-meteorological station was installed at Top of GM Office: The summary of the monitoring from April-2013 to September-2013 as follows:

Sl. No.	Parameter	Min.	Max.	Mean
1.	Temperature (^{0}C)	22.30	46.70	29.60
2.	Wind Speed (Km/hr)	(Calm %) 17.40	16.00	2.13
3.	Relative Humidity (%)	6.70	99.90	65.30
4	Predominant Wind direction for the entire study period	SW		
5	Total rainfall (mm)	1091.50		

5. Ambient Air Quality Monitoring: Period: April-2013 to September-2013

a) Parameters:

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_{10} and $PM_{2.5}$), Sulphur Dioxide (SO_2) and Oxides of Nitrogen (NO_x) 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 $PM_{10,}$ SO_2 and NO_x and Ambient Fine Dust Sampler is being used for monitoring of $PM_{2.5}$. 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.

b) 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

c) Monitoring Locations at Goleti 1&1A Incline are:

S.No.	Station Code	Name of the Stations	Latitude	Longitude
CORE ZONE:				
1	CA1	Goleti 1 & 1A Incline	N 19º 13’ 30.9”	E 79º 21’ 49.9”
BUFFER ZONE				
2	BA1	Goleti Village	N 19º 13’ 51.4”	E 79º 23’ 15.3”
3	BA2	Khairiguda Village	N 19º 14’ 16.8”	E 79º 22’ 25.0”
4	BA3	Sonapur Village	N 19º 13’ 56.5”	E 79º 20’ 58.0”
5	BA4	Gampalapalli Village	N 19º 12’ 15.0”	E 79º 21’ 29.7”

d) Summary of the AAQ monitoring Data from April-2013 to September-2013 as follows:

Location	Zone	PM_{10}			
		Min.	Max.	98%tile	STD
Goleti 1 & 1A Incline	Core	103	174	169.60	300
Goleti Village	Buffer	61	112	109.8	100
Khairiguda Village	Buffer	60	116	114.02	100
Sonapur Village	Buffer	56	123	120.8	100
Gampalapalli Village	Buffer	64	104	102.68	100
Location	Zone	$PM_{2.5}$			
		Min.	Max.	98%tile	STD
Goleti 1 & 1A Incline	Core	37.8	72.30	71.00	60
Goleti Village	Buffer	30.7	59.1	58.48	60
Khairiguda Village	Buffer	30.8	63.4	62.78	60
Sonapur Village	Buffer	29.7	62.4	62.4	60
Gampalapalli Village	Buffer	33.6	60.8	60.0	60
Location	Zone	SO_2			
		Min.	Max.	98%tile	STD
Goleti 1 & 1A Incline	Core	10.50	16.40	16.07	120
Goleti Village	Buffer	10.6	16.9	16.37	80
Khairiguda Village	Buffer	9.5	15.4	15.35	80
Sonapur Village	Buffer	10.5	15	14.80	80
Gampalapalli Village	Buffer	11	15.6	15.55	80
Location	Zone	NO_x			
		Min.	Max.	98%tile	STD
Goleti 1 & 1A Incline	Core	14.30	28.50	28.50	120
Goleti Village	Buffer	18.1	29.9	29.9	80
Khairiguda Village	Buffer	16.2	34.2	32.79	80
Sonapur Village	Buffer	17.8	27.7	27.59	80
Gampalapalli Village	Buffer	13.4	26	25.95	80

* Water sprinkling was improved immediately. Three nos.12 KL capacity hired water sprinklers were deployed for water sprinkling along coal transport road from Dorli OCP-II to Tandur cross road. A 28KL capacity new water sprinkler was purchased and commissioned at KHG OC Expn. project by SCCL.

The fortnightly air quality data monitored during last six months period is enclosed as **Annexure-I**.

e) Air Pollution Control Measures:

The following control measures are being taken at Goleti 1&1A incline for air pollution including reduction of particulate emissions:

1	Water spraying arrangements are made for spraying water at all coal transfer points along the belt conveyors.
2	The entire coal transportation route is black topped.
3	plantation raised around fan house, surface bunkers and within mine premises
4	Coal stocking in the mine premises is not in practice (except in emergencies) to avoid spontaneous heating and coal fires
5	No burning of oil, coal and other inflammable combustion materials is allowed in the mine premises.
6	All the workmen are provided with LPG connection for their domestic use and cost is borne by SCCL.
7	Smokes from Black smithy section are being released at a height through a chimney to prevent air pollution.
8	All the vehicles used are sent for periodical maintenance as per the schedule to control noxious gas emission.
9	The mine return air samples of Goleti 1&1A incline are being collected and analyzed for the presence of foul gases such as CO2, CO and CH4 and also to know the % of oxygen and nitrogen. The analysis results are furnished here under.

6. 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 8 water samples i.e., 2 samples from surface and 3 samples from groundwater and 3 samples from effluents were collected and analyzed for various physico-chemical and bacteriological parameters.

a): Surface Water Sampling Locations

S.No.	Sample code	Date of sampling		Sampling Location	Latitude	Longitude
		(Ist Quarter)	(2nd Quarter)			
1	SW-5	17.05.2013	20.08.2013	Sonapur Nala	N 19˚ 13’ 58.6”	E 79˚ 21’ 11.7”
2	SW-6	17.05.2013	20.08.2013	Narsapur Nala	N 19˚ 12’ 14.1”	E 79˚ 21’ 45.7”

b): Groundwater Sampling Locations:

S.No.	Sample code	Date of sampling		Sampling Location	Latitude	Longitude
		(Ist Quarter)	(2nd Quarter)			
1	GW-3	17.05.2013	20.08.2013	Goleti Village	N 19˚ 13’ 51.9”	E 79˚ 23’ 19.5”
2	GW-4	17.05.2013	20.08.2013	Narsapur Village	N 19˚ 12’ 14.2”	E 79˚ 21’ 45.7”
3	GW-5	17.05.2013	20.08.2013	Bijal Village	N 19˚ 12’ 40.7”	E 79˚ 20’ 32.2”

c): Effluents sampling locations:

Sl.No.	Sample code	Name of the Location	Latitude	Longitude
1.	EW1	Goleti 1& 1A incline mine discharge	N 19˚ 13' 30.9"	E 79˚ 22' 12.8"
2.	EW12	Goleti colony effluent	N 19˚ 14' 5.6"	E 79˚ 17' 5.8"
3.	EW3	BPA OC 2 extn Base work shop ETP outlet	N 19˚ 13' 13.7"	E 79˚ 21' 29.5"

d): 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 year.

e): Monitoring Data:

The surface water, ground water quality and effluent quality data monitored during April-2013 to September-2013 is enclosed as **Annexure-II, III & IV respectively.**

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

f): Summary of Effluent Data from April-2013 to September-2013

Location	Zone	PH			
		Min.	Max.	98%tile	STD
Goleti 1& 1A incline mine discharge (EW1)	Core	7.1	8.1	8.1	5.5-9.0
Goleti colony effluent (EW12)	Buffer	7.1	8.2	8.18	5.5-9.0
BPA OC 2 extn Base work shop ETP outlet(EW3)	Buffer	6.8	8.3	8.21	5.5-9.0
		TSS			
Goleti 1& 1A incline mine discharge (EW1)	Core	6	20	19.78	100
Goleti colony effluent(EW12)	Buffer	9	30	28.63	100
BPA OC 2 extn Base work shop ETP outlet(EW3)	Buffer	10	25	24.78	100
		COD			
Goleti 1& 1A incline mine discharge (EW1)	Core	10	39	37.02	250
Goleti colony effluent (EW12)	Buffer	20	50	49.78	250
BPA OC 2 extn Base work shop ETP outlet(EW3)	Buffer	3	40	40	250
		Oil & Grease			
Goleti 1& 1A incline mine discharge (EW1)	Core	<1	1.9	1.83	10

Goleti colony effluent (EW12)	Buffer	<1	2	2	10
BPA OC 2 extn Base work shop ETP outlet(EW3)	Buffer	<1	3.4	3.34	10

g): Water Pollution Control Measures:

1.	Mine seepage water is collected in sumps of large capacities in the under ground and pumped out to surface after settling.
2.	Mine water pumped out is treated in filter beds and after chlorination it is used for drinking, washing etc and supplied to colonies. Its quality is being monitored regularly. The excess mine water let out is allowed to join narsapur nala and Goleti Tank.
3.	All the residential quarters in colonies were provided with flush out latrines. Waste water from service buildings/office is treated in septic tank and let out in to natural stream.
4.	Quality of ground water, surface water, colony effluents is being monitored. RO-plant was established in Goleti 1&1A Inc and quality of RO plant water is also being monitored for its fitness.
5.	Depth of water table in the open wells of near by villages is being monitored seasonally the same is furnished in the annexure IV enclosed here with.
6.	Excess water from filter bed is let-out into natural stream.

7. Noise Level Monitoring:

The summary of the Noise level monitoring from April-2013 to September-2013 as follows:

Location	Direction & Distance	Day Time			
		Min.	Max.	98%tile	STD
Goleti 1 & 1A Incline (CN1)	N 19º 13' 30.9" E 79º 21' 49.9"	64.6	*77.5	*77.19	75
Goleti Village(BN1)	N 19º 13' 55.6" E 79º 16' 46.4"	52.50	*63.10	*62.11	55
Khairiguda Village (BN2)	N 19º 14' 16.8" E 79º 22' 25.0"	51.8	*57.70	*57.26	55
Sonapur Village(BN3)	N 19º 13' 56.5" E 79º 20' 58.0"	48.20	*58.20	*58.20	55
Gampalapalli Village(BN4)	N 19º 12' 15.0" E 79º 21' 29.7"	52.1	*55.2	*55.09	55
Location	**Direction & Distance**	**Night Time**			
		Min.	Max.	98%tile	STD
Goleti 1 & 1A Incline(CN1)	N 19º 13' 30.9" E 79º 21' 49.9"	54.9	65.9	65.70	70
Goleti Village (BN1)	N 19º 13' 55.6" E 79º 16' 46.4"	43.1	*53.70	*53.52	45
Khairiguda Village (BN2)	N 19º 14' 16.8" E 79º 22' 25.0"	42.80	*50.40	*50.18	45
Sonapur Village	N 19º 13' 56.5" E 79º 20' 58.0"	43.30	*51.20	*51.20	45
Gampalapalli Village(BN4)	N 19º 12' 15.0" E 79º 21' 29.7"	42.50	45.5	45.39	45

Note: 1. Daytime is reckoned in between 6 am and 10 pm
2. Night time is reckoned in between 10 pm and 6 am
*Ear-plugs were issued to employees exposed to more noise.

The Fortnightly Noise level data monitored during last six months is enclosed as **Annexure – VI**

a) Noise Pollution control Measures*:*

1	Regular maintenance and replacement of worn-out parts of the belt rollers and other machinery is in practice to reduce noise levels and breakdown of the machinery.
2	Old belt liners laid over the chute plates at transfer points along belt conveyors to reduce noise levels
3	Green belt developed around mine fan house to mitigate noise levels
4	Ear plugs provided to persons exposed to high noise levels
5	Noise levels are being recorded every fortnight in and around the mine area which is furnished in the annexure 3 enclosed here with.

8. Socio-economic Measures:

1	A well planned central colony is provided on non coal bearing area with all facilities like black topped roadways, sewage and drainage network, protected water supply, recreation clubs, playgrounds schools, hospitals, telephone services, post office police station, community halls, bank and market places etc. Out of 1091 employees working in the mine 795 employees were provided with quarter facilities.
2	Work men were encouraged to undergo family planning operations by giving cash incentives and leave. Rs 1000/- and 600/- and six days special leave is being given to all SCCL employees those who were under going for family operation.
3	Weekly Vaccination programme for children against polio, DPT, measles and other Vaccination programme against epidemic diseases are being carried out at the dispensaries and area hospital.
4	Regular sports and games competitions are being organized to promote the social attitude of the work persons and others. Work men were encouraged to participate in Coal India level competitions.
5	Regular Cleaning of roads and colonies is being taken up by local civil & health departments. Dust bins are kept at few selected places to habituate cleanliness among families.
6	To discourage burning of coal for domestic use, the company is reimbursing the cost of one LPG gas cylinder per month .As a result; all the employees and workmen are using LPG gas in place of coal. The company stopped supply of free issue of coal from 01-01-2001 by making special drive among employees to take LPG connections. At this mine 1031employees were given LPG connections out 1091 total men on roll.
7	230 employees have undergone periodical medical examination during last six months.

9. Land use details are enclosed as Annexure-X.

10. Ground water compliance details are enclosed as Annexure-XIII

11. Army training & medical camps details are enclosed as Annexure-XIV (a).

12. Details of Vocational courses taken up by Singareni Sewasamithi are enclosed as Annexure-XIV(b)

13. Env. expenses related civil works(env.) are enclosed as Annexure-XV

14. Plantation details of all projects & other areas of Bellampalli area are enclosed as as Annexure-XVI

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