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Ministry of Environment & Forests (MOEF)

BY SPEED POST

No. J-11015/332/2008-IA.II (M)

Paryavaran Bhawan,
CGO Complex,
New Delhi-110510.

Dated: 22nd October 2010

To,

M/s Western Coalfields Ltd.
Coal Estate, Civil Lines,
NAGPUR – 440001.
Maharashtra

Sub: **Expansion of Saoner UG Project (0.96 MTPA to 2 MTPA in ML area of 2871.39 ha) of M/s Western Coalfields Ltd., located in village Borgaon, Tehsil Saoner, District Nagpur, Maharashtra - Environmental Clearance-regarding**

Sir,

This has reference to letter No 43011/62/2008-CPAM dated 30.07.2008 of Ministry of Coal forwarding your application for TOR, which was granted vide MOEF letter dated 23.10.2008 and your application for environmental clearance dated 22.04.2010 on the above-mentioned subject. The Ministry of Environment & Forests has considered your application. The present proposal is for expansion in terms of production capacity from 0.96 to 2 MTPA over an ML area of 2871.39 ha of which 2315.33 ha is under mining rights and 151.56 ha is under surface rights. Of the total ML area, 2466.89 ha is agricultural land and 404.50 ha is Govt. wasteland. No forestland is involved. The main drainage of the area is controlled by River Kolar and River Chandragandha flowing east. Few seasonal nalas mainly carrying the rain water during monsoon discharge into these Rivers. River Kolar is about 2 KM away from project site and joins River Kanhan. There are no National Parks, Wildlife Sanctuary, Biosphere Reserves found in the 10 km buffer zone. Mining will continue to be underground by Board & Pillar with extraction of developed pillars in conjunction by caving. Average Subsistence has been estimated as 1.65m (maximum - 2.10m). The subsided areas would be plugged and reclaimed for land use such as agriculture/plantation. Mineable reserve is 44.80 MT. Coal grade 'E'. Wherever depillaring is undertaken, land acquisition would be carried out. An estimated 6060 TPD of coal would be transported outside the ML by rail. Transport form mine to Saoner BG Railway Siding would be by road located at a distance of 1.5 km to 5 km. Water table is in the study area in the range of 10.40-13.50 m bgl in core zone and 2.80-21.00 mbgl in the buffer zone during pre-monsoon and in the range of 7.85-12.50m in core zone and 1.10-17.70mbgl in buffer zone during post-monsoon.. Peak water demand is 5610 m^3/d of water of which, 360m^3/d is for mine operation, 600 m^3/d for dust suppression, 1200 m^3/d is for green belt,600 m^3/d for fire fighting,600 m^3/d for CHP/Beneficiation, and 2250 m^3/d is for domestic purposes. The entire water requirements would be met from mine sump/pit water. No groundwater will be used. Mine water discharge will be 11080m^3/day. Balance life of the mine at the rated capacity is 25 years No R&R is involved. Subsidence Prediction Modelling has been undertaken. Fund for Environment protection is Rs 18.28 Lakhs. Public Hearing was held on 05.12.2009. Capital cost of the project is Rs. 97.91 crores. Project approval of M/s WCL was obtained on 21.08.2009.

2. The Ministry of Environment & forests hereby accords environmental clearance for the above-mentioned **Saoner Underground Coal Mine of M/s Western Coalfields Ltd. for expansion in production from 0.96 MTPA to 2.0 MTPA and ML area from 2871.39 ha** under Section 7(ii) of the Environmental Impact Assessment Notification, 2006 and subsequent amendments thereto subject to the compliance of the terms and conditions mentioned below:

A. Specific Conditions

(i) Regular monitoring of subsidence movement on the surface over and around the working area and impact on natural drainage pattern, water bodies, vegetation, structure, roads, and surroundings shall be continued till movement ceases completely. In case of observation of any high rate of subsidence movement, appropriate effective corrective measures shall be taken to avoid loss of life and material. Cracks shall be effectively plugged with ballast and clayey soil/suitable material.

(ii) Mining shall be carried out as per statuette at a safe distance from the river/nallah flowing adjacent to the lease boundary.

(iii) High root density tree species shall be selected and planted over areas likely to be affected by subsidence.

(iv) Coal extraction including depillaring shall be carried out as per statuette in areas where agricultural production is continuing, areas of habitation and water bodies, roads, etc.

(v) Subsidence shall be monitored closely and if subsidence is found exceeding the permitted limits, then the landowners shall be adequately compensated with mutual agreement with the landowners.

(vi) Garland drains (size, gradient and length) around the safety areas such as mine shaft and low lying areas and sump capacity shall 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 shall also be provided adequate retention period to allow proper settling of silt material.

(vii) Water sprinkling system shall be provided to check fugitive emissions from loading operations, conveyor system, haulage roads, transfer points, etc. Major approach roads shall be black topped and properly maintained.

(viii) A progressive afforestation plan shall be prepared and implemented over the mine lease area acquired and shall include areas under green belt development, areas along roads, infrastructure, along ML boundary and township etc, by planting native species in consultation with the local DFO/Agriculture Department.

(ix) Regular monitoring of groundwater level and quality shall 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 tot eh Central Pollution Control Board quarterly within one month of monitoring. The quality of groundwater shall be randomly got analysed through laboratories recognised under the EPA Rules 1986.

(x) The Company shall put up artificial groundwater recharge measures for augmentation of groundwater resource, in case water table shows a declining trend. The project authorities shall meet water requirement of nearby village(s) in case the village wells go dry due to dewatering of mine.

(xi) Besides carrying out regular periodic health check up of their workers, 10% of the workers identified from workforce engaged in active mining operations shall be subjected to health check up for occupational diseases and hearing impairment, if

any, through an agency such as NIOH, Ahmadabad within a period of one year and the results reported to this Ministry and to DGMS.

(xii) Activities under CSR undertaken for the neighbouring villages shall be for not less than Rs 5 per tonne of coal and the progress made thereon shall be uploaded on the company annually on the company website.

(xiii) A Final Mine Closure Plan along with details of Corpus Fund shall be submitted to the Ministry of Environment & Forests 5 years in advance of final mine closure for approval.

B. General Conditions

(i) No change in technology and scope of working shall be made without prior approval of the Ministry of Environment and Forests.

(ii) No change in the calendar plan including quantum of mineral coal and waste being produced shall be made.

(iii) Four ambient air quality monitoring stations shall be established in the core zone as well as in the buffer zone for monitoring PM10, PM2.5, SO2 and NOx. 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. Monitoring of heavy metals such as Hg, As, Ni, Cd, Cr, in RSPM etc. shall be carried out at least once in six months.

(iv) Data on ambient air quality (PM10, PM2.5, SO2 and NOx and heavy metals such as Hg, As, Ni, Cr, etc) and other monitoring data shall be regularly submitted to the Ministry including its Regional Office at Bhopal and to the State Pollution Control Board and the Central Pollution Control Board once in six months. Random verification of samples through analysis from independent laboratories recognized under the EP Rules, 1986 shall be furnished as part of the compliance report.

(v) Adequate measures shall be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in blasting and drilling operations, operation of HEMM, etc shall be provided with ear plugs/muffs.

(vi) Industrial wastewater (workshop and wastewater from the mine) shall be properly collected, and treated so as to conform to the standards including for heavy metals before discharge prescribed under GSR 422 (E) dated 19th May 1993 and 31st December 1993 or as amended from time to time. Oil and grease trap shall be installed before discharge of workshop effluents. Mine water shall be treated to prescribed standards in case discharged outside the premises

(vii) Vehicular emissions shall be kept under control and regularly monitored. Vehicles used for transportation of the mineral shall be covered with tarpaulins and optimally loaded.

(viii) Monitoring of environmental quality parameters shall be carried out through establishment of adequate number and type of pollution monitoring and analysis equipment in consultation with the State Pollution Control Board and data got analyzed through a laboratory recognized under EP Rules, 1986.

(ix) 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.

(x) Occupational health surveillance programme of the workers shall be undertaken periodically to observe any contractions due to exposure and to take corrective measures, if needed.

(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.

(xii) The funds carmarked for environmental protection measures shall be kept in separate account and shall not be diverted for other purposes. Year wise expenditure shall be reported to this Ministry and its Regional Office at Bhopal.

(xiii) 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 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

(xiv) A copy of the environmental clearance letter shall be marked to concerned Panchayat/Zila Parishad, Municipal Corporation or Urban Local Body and local NGO, if any, from whom any suggestion/representation has been received while processing the proposal. A copy of the clearance letter shall also be displayed on the company's website.

(xv) A copy of the clearance letter shall be displayed on the website of the concerned State Pollution Control Board. The EC letter shall also be displayed at the Regional Office, District Industry Centre and Collector's Office/Tehsildar's Office for 30 days.

(xvi) The clearance letter shall be uploaded on the company's website. The compliance status of the stipulated EC conditions shall also be uploaded by the project authorities on their website and updated at least once every six months so as to bring the same in the public domain. The monitoring data of environmental quality parameters (air, water, noise and soil) and critical pollutants such as SPM, RPM, SO_2 and NO_x (ambient and stack if any) and critical sectoral parameters shall also be displayed at the entrance of the project premises and mines office and in corporate office and on the company's website.

(xvii) The project proponent shall submit six monthly reports on the status of compliance of the stipulated environmental clearance conditions (both in hard copy and in e-mail) to the respective Regional Office of the MOEF, the respective Zonal offices of CPCB and the SPCB.

(xviii) The Regional Office of this Ministry located at Bhopal 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.

(xix) The environmental statement for each financial year ending 31st March in Form-V is mandated to be submitted by the project proponent tot the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be uploaded on the company's website along with the status of compliance of EC conditions and shall be sent to the respective Regional Offices of the MOEF by E-mail.

3. The Ministry or any other competent authority may stipulate any further condition for environmental protection.

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.

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. The proponent shall ensure to undertake and provide for the costs incurred for taking up remedial measures in case of soil contamination, contamination of groundwater and surface water, and occupational and other diseases due to the mining operations.

(Dr. T.Chandini)
Director

Copy to:

1. Secretary, Ministry of Coal, New Delhi.
2. Secretary, Department of Environment, Government of Maharashtra, 15th Floor, New Admn. Bldg., Madam Cama Road, MUMBAI -400032..
3. Chief Conservator of Forests, Regional office (EZ), Ministry of Environment & Forests, E-2/240 Arera Colony, Bhopal ? 462016.
4. Chairman, Maharashtra State Pollution Control Board, Kalapataru Point, 3rd & 4th Floors, Sion, Matunga Scheme Road No. 8, Opp. Cine Planet Cinema, Near Sion Circle, Sion (E), Mumbai ? 400002.
5. Chairman, Central Pollution Control Board, CBD-cum-Office Complex, East Arjun Nagar, New Delhi -110032.
6. Member-Secretary, Central Ground Water Authority, Ministry of Water Resources, Curzon Road Barracks, A-2, W-3 Kasturba Gandhi Marg, New Delhi.
7. Dr.R.K.Garg. Advisor, Coal India Limited, SCOPE Minar, Core-I, 4t Floor, Vikas Marg, Laxminagar, New Delhi.
8. District Collector, Nagpur, Government of Maharashtra.

10. Monitoring File 11. Guard File 12. Record File

CONTENTS

1. ENVIRONMENT CLEARANCE LETTER FROM MOEF & CC, NEW DELHI
2. CONSENT TO OPERATE FROM MPCB
3. SIX MONTHLY ENVIRONMENT COMPLIANCE REPORT
4. COMPLIANCE STATUS OF ENVIRONMENT CLEARANCE CONDITIONS
5. EXPENDITURE STATEMENT FOR PLANTATION
6. DATA SHEET OF THE PROJECT
7. ENVT. MONITORING REPORT FOR THE PERIOD FROM APRIL 19 to SEPT.2019.
8. ENVIRONMENT STATEMENT FOR F.Y 2018-19

WESTERN COALFIELDS LIMITED

ENVIRONMENTAL MONITORING REPORT

SAONER U/G UNDERGROUND PROJECT

(NAGPUR AREA)

PART – I

Sl.No	NAME OF THE PROJECT	SAONER UNDER GROUND COALMINE EXPN. PROJECT
1	**LOCATION AND ADDRESS**	SAONER SUB AREA VPO- SAONER DIST: NAGPUR, MAHARASHTRA
2	**ADDRESS FOR CORRESPONDANCE**	SAONER SUB AREA VPO-SAONER DIST: NAGPUR, MAHARASHTRA
3	**MOEF'S CLEARANCE LETTER NO. & DATE**	J-11015/332/2008-IA II (M) DATED 22.10.2010
4	**PERIOD OF STATUS REPORT**	1st APRIL 19 to 30TH SEPT.2019
5	**DATE OF LAST REPORT SUBMISSION**	May 2019.
6	**PROJECT APPROVAL BY M/S WCL**	21.08.2009

STATUS OF LAND ACQUISITION:

S.N	TYPE OF LAND	REQUIRED AS PER EMP (HA)	ACTUAL ACQUIRED (HA) AS ON 30.09.19
1	**FOREST**	NIL	NIL
2	**AGRICULTURE**	2466.89 HA.	2466.89 HA
3	**OTHER (GOVT. LAND)**	404.50 HA.	404.50HA (GOVT. LAND)
	TOTAL LAND	2871.39 HA.	2871.39 HA

As per Environment Clearance Letter:

- MINING RIGHTS: 2315.33 HA
- SURFACE RIGHTS:151.56 HA

STATUS OF LEGAL COMPLIANCES: -

S.N	PARTICULARS	STATUS
A	**CONSENT UNDER WATER (PREVENTION AND CONTROL OF POLLUTION) ACT**	CONSENT TO OPERATE GRANTED VIDE FORMAT/BO/CAC-CELL/EIC NO NG-12415-15/CAC-7755 DATED 13/07/2015 AND VALID UPTO 31.03.2018. IN 12TH CAC MEETING OF MPCB, MUMBAI APPROVED RENWAL OF CONSENT TO OPERATE UPTO 31.03.2021. HARD COPY IS YET TO RECEIVED.
B	**CONSENT UNDER WATER (PREVENTION AND CONTROL OF POLLUTION) CESS ACT**	CONSENT TO OPERATE GRANTED VIDE FORMAT/BO/CAC-Cell/EIC NO NG-12415-15/CAC-7755 DATED 13/07/2015 AND VALID UPTO 31.03.2018 & IN 12TH CAC MEETING OF MPCB, MUMBAI APPROVED RENWAL OF CONSENT TO OPERATE UPTO 31.03.2021. HARD COPY IS YET TO RECEIVED. WATER CESS HAS BEEN PAID UPTO MARCH, 12 AGAINST DEMAND RAISED BY MPCB, MUMBAI.AND SUBMITTED REGULARLY MONTHLY WISE.
C	**ENVIRONMENT (PROTECTION) ACT**	EMP APPROVED VIDE MOEF&CC LETTER DT. 22.10.2010
D	**FOREST (CONSERVATION) ACT**	NOT APPLICABLE AS NO FOREST LAND IS INVOLVED.

PART – II (STATUS OF ENVIRONMENT)

1. AIR POLLUTION CONTROL:

A	**NAME OF THE LOCATION (*)**	FOUR NOS. NEAR 1) COLLIERY MANAGER OFFICE-UG-1 -NSUA-1 2) COLLIERY MANAGER OFFICE-UG-II - NSUA-2 3) COLONY (WT PLANT) - NSUA-3 4) KOTODI VILLAGE - NSUA - 4

B	**AMBIENT AIR QUALITY STATUS FOR THE PARAMETERS PRESCRIBED BY STATE POLLUTION CONTROL BOARDS (AVERAGE 95% TIME WEIGHTED VALUES) ****	ENCLOSED– (from OCT-18 to MARCH-19) ENVIRONMENT MONITORING REPORT FROM CENTRL MINE PLANNING & DESIGN INSTITUTE, REGIONAL INSTITUTE - IV, NAGPUR WHICH INDICATES THAT THE VALUES OF VARIOUS MONITORED PARAMETERS ARE WITHIN THE PERMISSIBLE LIMITS AS SHOWN BELOW.

(**) DETAILED REPORT OF SAMPLING AND ANALYSIS OF AMBIENT AIR QUALITY CARRIED OUT AS PER STATUS THROUGH STANDARD AND APPROVED LABORATORY TO BE ENCLOSED -REPORT ENCLOSED.

PART – II

2. WATER POLLUTION CONTROL: -

A	**NO. OF STATIONS AND FREQUENCY OF MONITORING**	THERE IS ONE MONITORING STATION I.E. MINE DISCHARGE, AND FREQUENCY OF MONITORING IS FORTNIGHTLY.
B	**DESCRIPTION OF LOCATIONS (*)**	MINE WATER DISCHARGE
C	**AVERAGE CONCENTRATIONS OF MAJOR POLLUTANTS**	AS PRESCRIBED BY STATE POLLUTION ONTROL BOARD ** (FIG. IN MG/ LIT EXCEPT PH).

** DETAILED REPORT OF SAMPLING AND ANALYSIS OF EFFLUENT QUALITY AS PER STATUE THROUGH STANDARD LABORATORY TO BE ENCLOSED: - ENCLOSED.

3. NOISE POLLUTION CONTROL: -

A	**NO. OF NOISE MONITORING STATIONS**	THERE IS TWO MONITORING STATIONS I.E. MINE DISCHARGE
B	**DESCRIPTION OF LOCATION (*) AND DB(A) VALUE**	NAUN-1 & NAUN-2 DAY AND NIGHT MANNER

DETAILED REPORT OF MONITORING OF NOISE LEVEL AS PER STATUE TO BE ENCLOSED: ENCLOSED.

PART – III

STATUS OF IMPLEMENTATION OF PROVISIONS OF EMP

LAND USE STATUS: AS PER EMP

S.N	**PARTICULARS**	**CURRENT YEAR** APRIL 19 to SEPT.2019	**PROGRESSIVE**
1.	**AREA EXCAVATED (HA.)**	NOT APPLICABLE IN UNDERGROUND MINE	
2.	**TOP SOIL REMOVED (MM^3)**		
3.	**OB REMOVED (MM^3)**		

4.	**OB BACKFILLED (MM^3)**	
5.	**OB DUMPED (MM^3)**	
6.	**AREA RECOVERED FOR RECLAMATION (PHYSICAL RECLAMATION)**	
7.	**AREA RECLAIMED BIOLOGICALLY (TREE PLANTATION ON BACKFILLED AREA)**	

PRODUCTION: -

a. TARGETTED CAPACITY: 2.00 MILLION TONE/ YEAR

b. PRESENT CAPACITY: 0.611 MILLION TONE/ YEAR

AFFORESTATION:

SR.NO	LOCATION	CURRENT YEAR APRIL 19 -SEPT.2019	PROGRESSIVE
1.	**OB DUMPS & EMBANKMENTS**	NOT APPLICABLE IN UNDERGROUND MINE	
2.	**SAFETY ZONES**		
3.	**BACKFILLED AREAS**		
4.	**OTHER AREA**		

LOCATIONS ARE TO BE MARKED ON THE WORKING MINE PLAN – ENCLOSED

AREA UNDER PLANTATION (PROGRESSIVE): 99 HA

TOTAL PLANTATIONS- 2.64 LAKHS

NO. OF PLANTS PER HECTARE:2500 NOS. / HA.

SPECIES PLANTED:

AUSTRALLION BABOOL, NEEM, KARANJ, CASSIA, AWALA, SHIVAN, SISOO, RAIN TREE, EUCALYPTUS, TEAK BAHUNIA, TURMERIC.

REHABILITATION AND RESETTLEMENT:

SR.NO	PARTICULARS	SC	ST	OTHERS
1.	**NO. OF LAND OUSTEES**	NOT APPLICABLE		
2.	**NO. OF LAND OUSTEES REHABILITATED**			
3.	**NO. OF PAPS/PAFS TO BE RESETTLED**			

4.	**AREA OF NEW SITE (HA.)**	
5.	**STATUS OF DEVELOPMENT**	
6.	**CIVIC AMENITIES PROVIDED AT**	

ORGANISATIONAL SET UP AT PROJECT LEVEL

AREA LEVEL: AREA GENERAL MANAGER, NAGPUR AREA
AREA NODAL OFFICER (ENVT)
ASTT. MANAGER (ENVT)
SR. HORTICULTURIST (ENVT)

PROJECT LEVEL: SUB AREA MANAGER, SAONER SUB AREA
NODAL OFFICER (ENVT), SAONER SUB AREA

EXPENDITURE: (CAPITAL & REVENUE)

1. **CAPITAL BUDGET**

SR .NO.	**ACCOUNT HEAD**	**CURRENT YEAR** APRIL 19 to SEPT.19	**PROGRESIVE**
1.	**RECLAMATION (HEMM)**	NOT APPLICABLE TO U/G MINE	
2.	**AIR POLLUTION CONTROL**	12.60	97.6 LAKH
3.	**WATER POLLUTION CONTROL**	-----	5.00 LAKH
4.	**OTHERS**	------	18.00 LKH
TOTAL		12.60	120.6 LAKHS

REVENUE BUDGET:

SR. NO.	**ACCOUNT HEAD**	**CURRENT YEAR** APRIL 19 to SEPT.19	**PROGRESIVE**
1.	**AFFORESTATION/GARDENING**	36.45	140.95 LAKHS
2.	**MONITORING**	0.8	16.7 LAKHS
3.	**LEGAL EXPENSES / CONSENT FEE**	0.25	93.00 LAKHS
4.	**OTHERS**	26.00	187.7 LAKHS
TOTAL		63.50	438.35 LAKHS

STATUS OF IMPLEMENTATION OF EMP COMPLIANCE CONDITIONS FOR SAONER U/G COAL MINE EXPANSION PROJECT

(REF.J-11015/332/2008-IA-II (M) DT.22.10.2010)

SR	SPECIFIC CONDITIONS	COMPLIANCE
1	**Regular monitoring of subsidence movement on the surface over and around the working area & impact on natural drainage, water bodies, vegetation, structure, roads and surrounding shall be continued till movement ceases completely. In case of observation of any high rate of subsidence movement, appropriate effective corrective measures shall be taken to avoid loss of life and material. Cracks shall be effectively plugged with ballast and clayey soil/suitable materials.**	**Complying with**. Mine is doing coal production through development. During development, there is no subsidence. Depillaring is being done after taking due permission from DGMS. Monitoring of subsidence movements & necessary Control measures are being taken as per DGMS stipulations.
2	**Mining shall be carried out as per statute as a safe distance from the river and nallah flowing within the lease boundary.**	**Complied** There is no any nallah/river flowing within the lease boundary.
3	**High root density tree species shall be selected and planted over areas likely to be affected by subsidence.**	**Noted.** This is a Underground coal mine, no subsidence is observed so far .
4	**Coal extraction including depillaring shall be carried out as per statute in areas where agricultural production is continuing, areas of habitation & water bodies, roads, etc.**	**Noted.** All mining activities are being carried out as per norms of DGMS.
5	**Subsidence shall be monitored closely and if subsidence is found exceeding the permitted limits, then the landowners shall be adequately compensated with mutual agreement of the landowners.**	**Noted** This is an Underground coal mine; no subsidence is observed so far.
6	**Garland drains (size, gradient & length) around the safety areas such as mine shaft and low-lying areas and sump capacity shall be designed keeping 50% safety margin over and**	**Complying with.** Since this is a U/G mine, so, no waste rock piling will be there. However, during depillaring, necessary measures like construction of garland drains etc have been

	above the peak sudden rainfall and maximum discharge in the area adjoining the mines sites. Sump capacity shall also be provided adequate retention period to allow proper settling of silt material.	taken up as per DGMS stipulations.
7	**Water sprinkling system shall be provided to check fugitive emission from loading operations, conveyor system, haulage roads, transfer points, etc. Major approach roads shall be black topped and properly maintained.**	**Complying with.** 21 nos. of fixed sprinklers are provided & maintained in BG siding + 7 nos. sprinklers in weigh bridge at Saoner- mine.
8	**A progressive afforestation plan shall be prepared and implemented over the mine lease area and shall include areas under green belt development, areas along roads, infrastructure, along ML boundary and township outside the lease area, etc by planting native plant species in consultation with the local DFO/Agriculture Department.**	**Complying with**. For developing green belt around mine lease area, roads, etc.2.64 Lakhs Plants have already been planted. Plantation has been carried out through State Forest Agency. The density per Hectare is 2500 plants.
9	**Regular monitoring of ground water level and quality shall be carried out by, establishing a network of existing wells and construction new Piezometers. The monitoring for quantity shall be done four times in a year – pre-monsoon (May), monsoon (August), post-monsoon (November) and winter (January) seasons and for quality in May. Data thus collected should be submitted to the Ministry of Environment & Forests and to the Central Pollution Control Board quarterly within one month of monitoring. The quality of groundwater shall be randomly got analysed through laboratories recognised under the EPA Rules 1986.**	**Complying with.** At present, Central Mine Planning & Design Institute Ltd, Nagpur is carrying out well water level monitoring in every quarter and no adverse report is there. A copy of the report is enclosed.
10	**The company shall put up artificial groundwater recharge measures for augmentation of groundwater resource in case monitoring indicates a decline in water table. The project authorities should meet water requirement of nearby village (s) in case the village wells go dry due to dewatering of mine.**	**Complying with.** No declining of ground water table has been observed till date. Further, when need will arise, the project will supplement the water requirement of nearby villagers.

11	**Besides carrying out regular periodic health check up of their workers, 10% of the workers identified from workforce engaged in active mining operations shall be subjected to health check-up for occupational diseases and hearing impairment, if any, through an agency such as NIOH, Ahmadabad within a period of one year and the results reported to this Ministry and to DGMS.**	**Complied** Normally Periodical Medical Examination is done each year @ of 20% of total employees in mine. This also covers contractual workers. In addition to this 10% of workers examined by NIMH trained doctors of Central Govt. Organization. We take remedial action on report of every such examination. Report from NIMH is awaited.
12	**Activities under CSR undertaken for the neighbouring villages shall be for not less than Rs. 5 per ton of coal and the progress made thereon shall be uploaded on the company annually on the company website.**	**Complied** CSR activities is being done in nearby villages. Ground water is recharged by making check dam in Boregaon Village under Kalmeshwar tehsil in Nagpur district and then water is pumped to Overhead tank and water supply to Boregaon villagers. Two nos. class rooms completed at Z.P. School at Boregaon. One community centre has been constructed in Nillgaon also. One R.O Plant of 10,000 ltrs per day has been installed at Nilgaon village for drinking water supply to the villagers. Mine Discharged water is being used for irrigation purpose by local farmers by inserting their own electrical pumps.
13	**A final Mine Closure Plan along with details of Corpus Fund should be submitted to the Ministry of Environment and Forests within 5 years in advance of final mine closure for approval.**	**Complying with** The mine has got balance life of around years. Mine closure plan as per MOC guidelines has been prepared & duly approved by competent authority. The Escrow Account with CCO has been opened vide no 08973161002539 & deposited separately, approval for the same got by WCL Board on dt. 28.01.2013.

GENERAL CONDITIONS

S/N	S P E C I F I C C O N D I T I O N S	C O M P L I A N C E
1)	**No change in mining technology and scope of working shall be made without prior approval of the Ministry of Environment & Forests.**	**Noted.**
2)	**No change in calendar plan including quantum of mineral coal and waste shall be made.**	**Noted.**
3)	**Four ambient air quality-monitoring stations shall be established in the core zone as well as in the buffer zone for monitoring SPM, RSPM, SO_2 & NOx. Location of the stations shall be decided based on the meteorological data, topographical features and environmental and ecologically sensitive targets in consultation with the State Pollution Control Board. Monitoring of heavy metals such as Hg, As, Ni, Cd, Cr, in SPM and RSPM etc. shall be carried out at least one in six months.**	**Complied** Four monitoring stations are established in consultation with MPCB. Ambient air quality report enclosed for April 19 to Sept.19
4)	**Data or ambient air quality (SPM, RSPM, SO_2 & NOx and heavy metals such as Hg, As, Ni, Cr, etc.) shall be regularly submitted to the Ministry including its Regional Office at Bhopal and to the State Pollution Control Board and the Central Pollution Control Board once in six months. Random verification of samples through analysis from independent laboratories recognized under the EP Rules, 1986 shall be furnished as part of the compliance report.**	**Complied** Data on ambient air quality for four stations are submitted to SPCB, quarterly. The reports for April 19 to Sept.19 are enclosed herewith.
5)	**Adequate measures shall be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in blasting and drilling operations, operations of HEMM, etc. shall be provided with earplugs / muffs.**	**Complied** This is a U/G mine & no heavy earth moving machines are employed for coal mining. Entire Operation for coal extraction is carried out below ground by machines i.e. SDLs, drills, haulages, conveyors etc, duly approved by DGMS. As such, possibility of generation of high noise levels is very remote. However, haulage operators, Belt conveyor

		operators are provided with earmuffs etc. Noise monitoring is also carried out near w/shop premises. Results show that levels are within the permissible limits.
6)	**Industrial waste water (workshop and waste water from the mine) shall be properly collected, treated so as to confirm 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 water shall be treated upto the prescribed standards in case discharged outside the premises.**	**Complied** Saoner being an underground mine, there is no provision of workshop to repair/wash HEMMs, thus eliminating possibility of generating oil & grease. Hence, provision of oil & grease trap has not been made. The mine water/strata water gets accumulated in mine sumps (3Nos), which allows significant settling of suspended particles Thereafter, mine water is pumped out on surface. At surface, Sedimentation channels have been constructed at Saoner I & II with adequate retention time, for treatment of mine water discharge.
7)	**Vehicular emissions shall be kept under control and regularly monitored. Vehicles used for transportation the mineral shall be covered with tarpaulins and optimally loaded.**	**Complying with.** Vehicles used for transporting the mineral are covered with tarpaulins and optimally loaded.
8)	**Monitoring of environmental quality parameters shall be carried out through establishment of adequate number and type of pollution monitoring and analysis equipment in consultation with the Sate Pollution Control Board and data got analysis through a laboratory recognised under EP Rules, 1986**	**Complying with** CMPDIL has a well-equipped laboratory & they conduct monitoring & analysis of Air, Water and Noise for all mines of WCL including this mine.
9)	**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.**	**Complied** This being a U/G mine, generation of dust is mainly limited to U/G face workings. The dust control measures are being taken as stipulated in Coal Mines Regulation. Proper training & re-training of workers are given as per Mines Vocational Training Rules. Periodic medical examinations of workers are also done every five years.
10)	**Occupational health surveillance programme of the workers shall be undertaken periodically to observe any**	**Complied** Periodic medical examination of workers of

	contractions due to exposure to dust and to take corrective measures, if needed.	contractors is also done every five years.
11)	**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.**	T **Complied** The Environmental Management cell at corporate level is headed by GM (Envt) and assisted by a multi-disciplinary team of qualified & trained engineers under the control of Director (Tech). At Area level, the cell is headed by General Manager, Nagpur Area, assisted by Area Nodal Officer (Envt.), Nagpur Area. At project level, it is headed by Sub Area Manager; Saoner S.A. and is assisted by Nodal Officer (Envt.) of the Sub Area.
12)	**The funds earmarked for environmental protection measures shall be kept in separate account and shall not be diverted for other purpose. Year wise expenditure should be reported to the Ministry and its Regional Office at Bhopal.**	**Complying with** Funds earmarked for environmental protection works are being utilized and account maintained & no fund is being diverted for other purpose.
13)	**The project authorities should advertise at least in two local news papers 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 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 http://envfor.nic.in.**	**Complied** Necessary advertisement was issued in the following newspapers: 1) Times of India Dt. 19-11-2010 2) Sakal. (Marathi) Dt. 19.11.2010
14)	**A copy of the environmental clearance letter shall be marked to concerned Panchayat / Jillha Parishad / Municipal Corporation or Urban Local Body / local NGO, if any, from whom any suggestion / representation has been received while processing the proposal. A copy of the clearance letter shall also be displayed on the company's website.**	**Complied** Copies of the clearance letter have already been handed over to concerned village Panchayats. No suggestion / representation has been received.
15)	**A copy of the clearance letter shall be displayed on the website of the**	**Complied**

	concerned State Pollution Control Board. The EC letter shall also be displayed at the Regional Office, District Industry Center and Collector's Office / Tehsildar's Office for 30 days.	A copy of the clearance letter has already been sent to Regional Officer, MPCB, and Nagpur for the purpose.
16)	**The clearance letter shall be uploaded on the company's website. The compliance status of the stipulated EC conditions shall also be uploaded by the project authorities on their website and updated at least once every six months so as to bring the same in the public domain. The monitoring data of environmental quality parameters (air, water, noise and soil) & critical pollutants such as SPM, RPM, SO2 and Nox (ambient and stack if any) and critical parameters shall also be displayed at the entrance of the project premises and mines office and in corporate office and on the company's website**	**Complied.**
17)	**The project proponent shall submit six monthly reports on the status of compliance of the stipulated environmental clearance conditions (both in hard copy and in e-mail) to the respective Regional Office of the MOEF, the respective Zonal offices of CPCB and the SPCB.**	**Complying with** Regularly submitted to MOEF & MPCB offices.
18)	**The Regional Office of this Ministry located at Bhopal shall monitor compliance of the stipulated conditions. The project authorities shall extend full cooperation to the officer(s) of the Regional Office by furnishing the requisite data / information / monitoring reports.**	**Complied** EIA and EMP already submitted. Monitoring Data sheet and status of implementation of EC compliance conditions is being sent half-yearly to MOEF & CC.
19)	**The environmental statement for each financial year ending 31st March in form-V is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rule, 1986, as amended subsequently, shall also be uploaded on the company's website along with the**	**Complying with** Environment Statement is being submitted regularly. Copy attached for F.Y.2018-19

	status of compliance of EC conditions and shall be sent to the respective Regional Officers of the MOEF by E-mail.	
3.	**The Ministry or any other competent authority may stipulate any further condition for environment protection.**	**Noted.**
4.	**Failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under provisions of Environment (Protection) Act 1986.**	**Noted.**
5.	**The above conditions will be enforced inter-alia, under provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment Protection Act, 1986 & the Public Liability Insurance Act, 1991 along with their amendments & Rules. The proponent shall ensure to undertake and provide for the costs incurred for taking up remedial measures in case of soil contamination, contamination of groundwater and surface water and occupational and other diseases due to the mining operations.**	**Noted.**

Dy. GM(MIN)/SUB AREA MANAGER,
SAONER SUB AREA, SAONER
WCL, NAGPUR AREA

EXPENDITURE STATEMENT FOR PLANTATION AT SAONER UG

Sl. No.	Year of Plantation	No. of Plants planted	Area in Ha	Expenditure Incurred (Rs. In Lakhs)
1	**2002-2003**	**77500**	**31**	**38**
2	2003-2004	52500	21	23
3	2004-2005	40000	16	21.5
4	2008-2009	30000	12	14.4
	Total			**96.9**

MONITORING THE IMPLEMENTATION OF ENVIRONMENTAL SAFEGUARDS

MINISTRY OF ENVIRONMENT & FORESTS

REGIONAL OFFICE (WCZ), NAGPUR

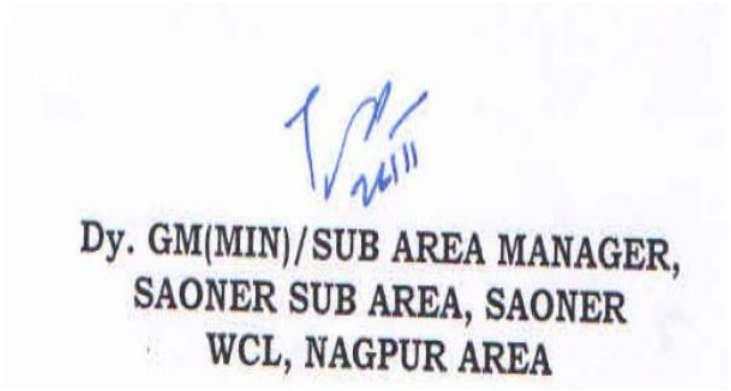
DATA SHEET

1	**Project types River-valley / Mining/ Industry/ Thermal/ Nuclear/ other (specify)**	Underground Coal Mining Project
2	**Name of the project**	Saoner Under Ground Coal Mine Expn.
3	**Clearance letter(s) / OM no. & date**	J-11015/332/2008-IA II (M) dated 22.10.2010
4	**Location:** **a) District(s)** **b) State (s)** **c) Latitude** **d) Longitude**	Nagpur. Maharashtra. 21 deg.19' 31" N - 21 deg. 21' 16" N. 78 deg. 55' 47" E - 78 deg. 58' 40" E.
5	**Address for correspondence :** **a) Address of concerned Project Chief** **Engineer (Pin Code & Telephone/fax)** **b) Address of Executive Project Engineer/** **Manager (with Pin code /Fax nos.)**	Sub-Area Manager / Project Officer, Saoner Underground Coal Mine Expn. Project Saoner Sub Area, Village-& P.O. Waghoda, Tehsil- Saoner, District Nagpur, Maharashtra. 2643352. Phone - 07113- 232276 Area General Manager, W C L, Nagpur Area, P.O. Jaripatka, Nagpur - 440 014, Maharashtra, Ph. (0712) 2643547,48, 49. FAX no. (0712) 2643352.
6	**Salient features**: a) of the project	Enclosed at Annexure - A

	b) of the environmental management plans	
7	**Break-up of the project area** a) submergence area : forest & non-forest b) others	No forest Land is involved. Agril. Land - 2466.89 Ha. Govt. Land - 404.50 Ha. Total - 2871.39Ha. Surface Right= 151.56 Ha Mining Right=2315.33_Ha
8	**Break-up of the project affected population with enumeration of those losing houses/ dwelling units only/agricultural land only, both dwelling units and agricultural land, landless labourers /artisans ; SC/ ST/ Advisees etc.(Please indicate whether these figures are based on any scientific & systematic survey carried out or only provisional figures; if a survey is carried out give details and year)**	(1) Population losing house: - Nil. (2) Population losing agri. Land -Nil (so far) (3) Population losing both house and agricultural land -- Nil. (4) Landless laborers/artisans - Nil. (5) SC/ ST/ Adivasis - Nil
9	**Financial details :** **a) Project Cost as originally planned and subsequent revised estimates and the year of price reference.** **b) Allocation made for environmental Mgmt. plans with item wise and year wise break-up** **d) Whether (c) includes the cost of Environmental management as**	Revised Project cost: 97.91lakhs. <u>Allocation for EMP(capital)- Rs. In lakhs</u> @ Rs. 3 / tone of coal for Plantation Envt. Monitoring / Auditing Socio-economic welfare measures Misc. Pollution control measures. Compliance of Statutory obligations. Yes

	shown above **e) Actual expenditure incurred on the project** **f) Actual expenditure incurred on the environmental management so far.**	1.Environmental monitoring - 8.50Lakhs 2.Legal expenses. - 6.5 lakhs 3. Plantation- 113.83 lakhs 4. Capital exp. (Settling channels etc) -12.00 lakhs 5. Others 45.00 Lakhs Total - 266.33 Lakhs 1.STP - 200.0 lakhs 2. Preparation and development of Eco-Garden-150 lakhs 3.Concreting below Bunker at Mine no.3 - 20.00 lakhs 4.Renovation of settling channels at mine no.3- 6.50lakhs 5.Dust suppression at railway siding-30 lakhs 6.Concereting at weigh bridge-16 Lakhs Total =522.50 lakhs
10	**Forest Land requirement:** **a) The status of approval for diversion of forest land for non-forestry use.** **b) The status of clearing / felling** **c) The status of compensatory afforestation** **d) Comments on the viability/ sustainability of compensatory afforestation programme in light of actual field experience so far.**	No forest land is involved in the Project. Not Applicable Not Applicable Not Applicable
11	**The status of clear felling in non-forest area (such as submergence area of reservoir, approach roads), if any, with quantitative inf.**	Nil
12	**Status of construction:** **a) Date of commencement (Actual**	Mine development & infrastructural works started in April, 2002.

	and/ or planned) **b) Date of completion (Actual and/or planned**	July, 2005
13	**Reasons for the delay if project is yet to start**	Not Applicable
14	**Dates of site visits :** **a)The dates on which the project was monitored by the Regional Office on Previous occasions, if any.** **B) Date of site visit for this monitoring reports**	The project is regularly monitored by the MPCB, Nagpur Officials



Annexure - A

SALIENT FEATURES OF THE PROJECT

SR.	PARTICULARS	DETAILS
1	**NAME OF THE PROJECT**	SAONER UG COALMINE EXPANSION PROJECT
2	**METHOD OF MINING**	BOARD & PILLAR METHOD WITH CAVING
3	**MINEABLE RESERVE**	41.91 MT (AS ON 01.04.2008)
4	**TARGET**	2.00 M.T.P.A.
5	**EXISTING COAL PRODUCTION**	1.00 M.T.P. A
6	**CAPITAL**	97.49 LAKHS
7	**BALANCE LIFE**	24 YEARS
8	**MANPOWER**	2291 NOS.
9	**LAND (AS PER EMP)** **AGRICULTURE** **FOREST** **GOVT. (WASTE LAND)** **OTHER** **TOTAL**	 2466. 89 HA. NIL 404.50 HA. NIL 2871.39 HA.
10	**MINING RIGHTS**	UPTO 2315.33 HA
11	**SURFACE RIGHTS**	UPTO 151.56 HA
12	**MODE OF COAL TRANSPORTATION**	BY ROAD & RAIL
13	**MAIN CUSTOMERS**	KHAPARKHEDA TPS, NAGPUR

Annexure-B

SALIENT FEATURES OF ENVIRONMENTAL MANAGEMENT PLANS

SR. NO	PARTICULARS	DETAILS
1	**MINE SUMPS**	03 NOS.
2	**DRINKING WATER FILTER PLANT**	02.76 MLD
3	**DUST SUPPRESSION ON COAL TRANSPORT ROAD & COAL STOCK YARD.** **A. COAL TRANSPORT ROAD- THROUGHWATER TANKER (1NO.)** **B. COAL STOCK YARD**	CAPACITY 4.5 KL MINE-1: RAIN GUNS - 2 NOS. MINE-2: RAIN GUN - 6 NO. & HOSEPIPES MINE-3: RAIN GUN - 6 NO.& HOSEPIPES
4	**BLACK TOPPING OF ROAD**	MINE-1- 1.50 KM. MINE-2 - 3.85 KM. MINE-3 - 3.85 KM.
5	**TREE PLANTATION & AREA**	2,84,100 NOS. ON 99 HA.
6	**REGULAR BROOMING & CLEANING OF COAL TRANSPORTATION ROAD**	(3.60 KM)
7	**WATER SPRINKLING THROUGH HOSEPIPES AT 660 MTR. LONG**	RAILWAY SIDING
8	**LPG IN PLACE OF DOMESTIC COAL TO ALL WORKERS.**	YES
9	**DOMESTIC SEWAGE TREATMENT THROUGH SEPTIC TANKS & SOAK PITS**	YES
10	**SETTLING CHANNELS PROVIDED IN ALL THE 3 MINES FOR TREATMENT OF MINE WATER**	YES
11	**CONCRETING AROUND WEIGH BRIDGE FOR U/G II & III**	CONCRETING AROUND WEIGH BRIDGE FOR U/G II & III
12	**ADDL. SPRINKLERS AT B.G. RLY. SIDING (21 NOS.)-RS.30.0 LAKHS**	COMPLETED & IS IN ORDER

STRICTLY RESTRICTED

FOR COMPANY USE ONLY

The information given in this report is not to be communicated either directly or indirectly to the press or to any person not holding an official position in the CIL / Government

ENVIRONMENTAL MONITORING REPORT

SAONER UG EXPN.

(NAGPUR AREA)

WESTERN COALFIELDS LTD.

(JOB No. 8000002)

APRIL -2019

Environment Laboratory

NABL Accredited vide Cert. No. TC-7102

CMPDI

REGIONAL INSTITUTE-IV, KASTURBA NAGAR,
JARIPATKA, NAGPUR, PIN – 440 014

AN ISO 9001:2015 COMPANY

INDEX

SL.NO	PARTICULARS	PAGE NO.
1.	INTRODUCTION	1-3
2.	AIR QUALITY MONITORING DATA	4-5
3.	EFFLUENT WATER QUALITY MONITORING DATA	6-7
4.	DRINKING WATER QUALITY MONITORING DATA	8-9
5.	NOISE LEVEL DATA	10

INTRODUCTION

Location :

SaonerUG mine is situated in Nagpur District of Maharashtra State and is administered by the Nagpur area of the Western Coalfields Limited. There are three projects - Saoner-I UG, Saoner -II UG and Saoner -III UG.

Communication :

These projects are well connected by all weathermetalled road. These projects are about 40 kms away from Nagpur city. Nagpur - Chhindwara road is about 5 km from the mines. Saoner - Kalmeshwar road is also very near to the projects. Saoner railway station of S.E. Railway is the nearest rail head.

Drainage : The drainage is principally controlled by Kolar river.

Climate : The area has tropical climate with very hot summer. The temperature rises as high as 46^{O}C in summer. The average annual rainfall is about 1050 mm. The monsoon period is between June to Sept.

Industry/Coal Mines :

There are a few small industries near the town. There is no major industry near to the project. The state highway and road to Kalmeshwar, which is very busy due to vehicular movement, produce lot of dust.

Pollution due to other sources :

The above-mentioned industries are also expected to contribute in increasing the pollution load of the area. The air pollution due to working of the UG mine is insignificant.

Sampling Location :

Ambient Air Quality Monitoring locations :

S.No.	Location Details		Location Code
1.	Colliery Manager Office, SaonerUG-I	-	NSUA-1
2.	Colliery Manager office, SaonerUG-II	-	NSUA-2
3.	Water Treatment Plant	-	NSUA-3
4.	Kotodi village	-	NSUA-4

Fugitive Dust Monitoring locations :

S.No.	Location Details		Location Code
1.	CHP	-	NSUAF-1
2.	Rly. Siding	-	NSUAF-2

Water Quality Monitoring locations :

S.No.	Location Details		Location Code
1.	Mine water discharge - Saoner - I UG	-	NSUW-1
2.	Mine water discharge - Saoner - II UG	-	NSUW-2
3.	Mine water discharge - Saoner - III UG	-	NSUW-3

Noise Level Monitoring locations :

S.No.	Location Details		Location Code
1.	Near CHP - Saoner - I UG	-	NSUN-1
2.	Near CHP - Saoner - II UG	-	NSUN-2
3.	Near CHP – Saoner - III UG	-	NSUN-3
4.	Colony	-	NSUN-4

Frequency of Monitoring :

Air : Frequency of monitoring is as per the Env. (Protection) Amendment Rules published vide Gazette dt. 25.9.2000.
Water : Water quality is monitored on fortnightly basis.
Noise : Noise level is monitored on fortnightly basis.

Methodology of Sampling and Analysis :

Air : 24 hourly air samples are collected Respirable Dust Sampler at selected locations to monitor ambient air quality w.r.t. Suspended particulate matter (SPM), Respirable Particulate Matter (PM-10), Sulphur di-oxide (SO_2) and Oxides of nitrogen (NO_X) etc.

SPM : Ambient air laden with suspended particulates enters the Respirable Dust Sampler through the inlet pipe of sampler by means of a high flow rate blower (1.1 to 1.5 m^3/min.). As the air passes through the cyclone, coarse, non-respirable dust (size>10 µ) is separated from the air stream by centrifugal forces acting on the solid particles. These separated particles fall through the cyclone's conical hopper and collect in the sampling bottle placed at bottom. The fine dust forming the respirable fraction (size <10 µ) of the Total Suspended Particulates passes through the cyclone and is carried by the air stream to the Glass Micro Fiber Filter Paper. The Respirable dust (PM-10) is retained by the filter and the carrier air exhausted from the system through the blower. The mass concentration (µg/m^3) of Suspended Particulate Matter (non-respirable dust and respirable dust) and Respirable Particulate Matter in the ambient air are computed by measuring the mass of collected particulates and the volume of air sampled.

PM-2.5 Ambient air enters the Fine dust sampler through an omni-directional air inlet designed to provide a clear aerodynamic cut point for particles greater than 10 microns. Particles in the air stream finer than 10 microns proceed to a second impactor that has an aerodynamic cut point at 2.5 microns. The air sample and fine particulates exiting from the PM 2.5 impactor are passed through a 47 mm diameter Teflon filter membrane that retains the PM-2.5. The mass concentrations (µg/m^3) of PM-2.5 in the ambient air are computed by measuring the mass of collected particulates and the volume of air sampled.

NO_X : Determination of oxides of Nitrogen is based on the procedure of "Jacobs and Hochheiser method". In this method the air sample is collected 24 hourly in the field and analysed in the laboratory using spectronic 20 D+ Spectrophotometer. Nitrogen oxides as Nitrogen di-oxide are collected by bubbling air through a Sodium hydroxide solution to form a stable solution of Sodium nitrite. The nitrite ion produced during sampling is determined colorimetrically (with the help of Spectrophotometer, measuring absorbance at 540 nm) by reacting the exposed absorbing reagent with Phosphoric acid, Sulphanilamide and N(1-naphthyl) ethylenediaminedihydrochloride. The interference of Sulphur di-oxide is eliminated by converting it to Sulphuric acid with Hydrogen peroxide before analysis.

SO_2 : Determination of SO_2 is based on the procedure of West and Gaeke method. Sulphur di-oxide from the air stream is absorbed in a Sodium tetrachloromercurate solution to form a stable solution of Dichlorosulphitomercurate. The amount of Sulphur dioxide is then estimated by the colour produced when P-Rosaniline hydrochloride is added to the solution. The colour is estimated by a reading of absorbance at 560 nm in the Spectrophotometer.

Water : Mine water discharge is collected on fortnightly basis in plastic zaricane and is transported to the laboratory for analysis. As per the Env. (Protection) Amendment Rules published vide Gazette dt. 25.9.2000, water samples are analysed fortnightly for the parameters - pH, TSS, Oil & Grease and COD and once in a year for all parameters as per Schedule VI, Env. Protection rule.

Noise : Noise level data are recorded fortnightly.

Environment Laboratory CMPDI, RI IV, Nagpur	**Test Report**	TC - 7102

Test Report NO :	RIN/TR/APRIL'19/A-8	Date of Issue :	15/06/2019
Name of the Customer:	WCL,Nagpur	Sampling method :	IS-5182
Customer letter Ref. No. :	WCL/HQ/ENV/17-K/520-522 DATED -18.04.19	Sample Description :	Air sample
		No. of pages :	2

Test Required : IS-5182 [PM-10(04:1999), NOx(06:2006), SO_2(02:2001)],PM-2.5 & SPM*

AIR QUALITY MONITORING DATA

NAME OF THE COMPANY : WCL YEAR : 2018
NAME OF THE AREA : NAGPUR MONTH. : APRIL
NAME OF THE PROJECT : SAONER UG

C.M.Office- Saoner -I UG					
DATE OF SAMPLING	**Parameters (24 hourly values in µg/m3)**				
	SPM*	**PM-10**	**PM-2.5**	**NOx**	**SOx**
20/04/2019	259	143	47	22	16
TLV as per Env.(Protection) Amendment Rule 2000	**600**	**300**	**60**	**120**	**120**
C.M.Office- Saoner -II UG					
DATE OF SAMPLING	**Parameters (24 hourly values in µg/m3)**				
	SPM*	**PM-10**	**PM-2.5**	**NOx**	**SOx**
20/04/2019	93	86	28	13	10
TLV as per Env.(Protection) Amendment Rule 2000	**600**	**300**	**60**	**120**	**120**
Colony -Water filter plant					
DATE OF SAMPLING	**Parameters (24 hourly values in µg/m3)**				
	SPM*	**PM-10**	**PM-2.5**	**NOx**	**SOx**
20/04/2019	79	23	8	4	3
Permissible Limits	**200**	**100**	**60**	**80**	**80**

#-AboveStd.Value

Kotodi village					
DATE OF SAMPLING	**Parameters (24 hourly values in µg/m3)**				
	SPM*	**PM-10**	**PM-2.5**	**NOx**	**SO_X**
20/04/2019	189	75	25	12	8
3Permissible Limits	**200**	**100**	**60**	**80**	**80**

#-AboveStd.Value

FUGITIVE DUS MONITORING DATA

1. CHP **(24 hourly values in µg/m^3)**

Dates of Sampling	Parameters		
	SPM	PM-10	PM-2.5
-	-	-	-

2. Raw\ilway Siding **(24 hourly values in µg/m^3)**

Dates of Sampling	Parameters		
	SPM	PM-10	PM-2.5
-	-	-	-

Deepanshu Sahu
(Scientific Assistant) ***(Authorized Signatory)***

Note: 1) This Report refers to the values related to the items tested as received.
2) This Report cannot be reproduced in part or full without written permission of the management.
3) * - Test parameter not under NABL scope.

Environment Laboratory CMPDI, RI IV, Nagpur	**Test Report**	TC - 7102

Test Report NO : RIN/TR/APRIL-19/W-8 Date of Issue : 15/06/2019
Name of the Customer: WCLI,Nagpur
Customer letter Ref. No. : WCL/HQ/ENV/17-K/520-522 DATED -18.04.19
Sample Description : Water sample
No. of pages : 2

EFFLUENT WATER QUALITY MONITORING DATA

NAME OF THE COMPANY : WCL YEAR 2019
NAME OF THE AREA : NAGPUR MONTH. APRIL
NAME OF THE PROJECT : SAONER UG

Mine water discharge (Saoner I)

Date of Sample Collection	Analysis Results			
	pH IS-3025/11:1983	COD (mg/l) APHA-Closed reflux	TSS (mg/l) IS-3025/17:1984	O & G (mg/l) IS-3025/39:1991
Below Detection Limit	0.2	4	10	2
19/04/2019	7.1	24	14	<2
TLV as per Env.(Protection) Amendment rule 2000	5.5 - 9.0	250	100	10

Mine water discharge (Saoner II)

Date of Sample Collection	Analysis Results			
	pH IS-3025/11:1983	COD (mg/l) APHA-Closed reflux	TSS (mg/l) IS-3025/17:1984	O & G (mg/l) IS-3025/39:1991
Below Detection Limit	0.2	4	10	2
19/04/2019	7.2	28	16	<2
TLV as per Env.(Protection) Amendment rule 2000	5.5 - 9.0	250	100	10

Mine water discharge (Saoner III)

Date of Sample Collection	Analysis Results			
	pH IS-3025/11:1983	COD (mg/l) APHA-Closed reflux	TSS (mg/l) IS-3025/17:1984	O & G (mg/l) IS-3025/39:1991
Below Detection Limit	0.2	4	10	2
19/04/2019	7.4	32	18	<2
TLV as per Env.(Protection) Amendment rule 2000	5.5 - 9.0	250	100	10

(Scientific Assistant) ***Deepanshu Sahu***
(Authorized Signatory)

Note: 1) This Report refers to the values related to the items tested as received.
2) This Report cannot be reproduced in part or full without written permission of the management.
3) * - Test parameter not under NABL scope.

Environment Laboratory CMPDI, RI IV, Nagpur	**Test Report**	TC - 7102

Test Report NO : RIN/TR/APRIL-19/W-8A Date of Issue : 15/06/2019
Name of the Customer: WCL,Nagpur
Customer letter Ref. No. : WCL/HQ/ENV/17-K/520-522 DATED -18.04.19
Sample Description : Water sample
No. of pages : 2

Test Required : IS 10500:2012

DRINKING WATER QUALITY MONITORING DATA

NAME OF THE COMPANY : WCL YEAR : 2019
NAME OF THE AREA : NAGPUR MONTH : APRIL
NAME OF THE PROJECT : SAONER UG Sampling Date : 19/04/2019
NAME OF LOCATION : DRINKING WATER FROM FILTER PLANT

Sl. No	**Parameters**	**Test Method**	**Limits of Detection**	**Analysis Result**	**Standard (IS : 10500 : 2012)**	
					Desirable limit	**PLV in the absence of alternate source**
1	Colour (Hz)	APHA, 22nd Edition Platinum Cobalt	1	1	5	15
2	Odour	IS 3025 /05:1983,Physical, Qualitative	Qualitative	Agreeable	Agreeable	Agreeable
3	Turbidity (NTU)	IS-3025/10:1984 Nephelometric	1.0	2	1	5
4	pH Value	IS-3025/11:1983 Electrometric	2	7.50	6.5 to 8.5	No relaxation
5	Total Hardness as $CaCO_3$ -mg/l	IS-3025/21:1983 EDTA	4.0	180	200	600
6	Iron (as Fe) -mg/l	IS-3025/53:2003 AAS-Flame	0.06	<0.06	0.3	No relaxation
7	Chlorides (as Cl)- mg/l	IS-3025/32:1988, Argentometric	2.0	42	250	1000
8	Residual Chlorine -mg/l (min.)	APHA, 22nd Edition DPD	0.02	0.02	0.2	1
9	Fluoride (as F)- mg/l	APHA, 22nd Edition SPADNS	0.02	0.52	1.0	1.5
10	TDS -mg/l	IS-3025/16:1984 Gravimetric	25.0	410	500	2000
11	Calcium (as Ca) -mg/l	IS-3025/40:1991 EDTA	1.6	33.6	75	200
12	Magnesium (as Mg) -mg/l*	IS-3025/40:1991 EDTA	3	23.328	30	100
13	Copper as(Cu) -mg/l	IS-3025/42:1992 AAS-Flame	0.03	<0.03	0.05	1.5
14	Manganese as (Mn)- mg/l	APHA, 22nd Edition AAS-Flame	0.02	<0.02	0.1	0.3
15	Sulphate (as SO_4) -mg/l	APHA, 22nd Edition Turbidity	2.0	106.16	200	400
16	Nitrates (as NO_3) - mg/l	IS-3025/34:1988Nesseler's	0.5	9.710	45	No relaxation

Test Report No: RIN/TR/APRIL-19/W-8A

Sl. No	Parameters	Test Method	Limits of Detection	Analysis Result	Standard (IS : 10500 : 2012)	
					Desirable limit	PLV in the absence of alternate source
17	Cadmium as (Cd)- mg/l	APHA, 22nd Edition AAS-GTA	0.005	<0.005	0.003	No relaxation
18	Lead as (Pb) -mg/l	APHA, 22nd Edition AAS-GTA	0.005	<0.005	0.01	No relaxation
19	Selenium (Se) –mg/l	APHA, 22nd Edition AAS-VGA	0.005	<0.005	0.01	No relaxation
20	Arsenic (Ar)-mg/l	APHA, 22nd Edition AAS-VGA	0.005	<0.005	0.05	No relaxation
21	Zinc as (Zn) -mg/l	IS-3025/49:1994 AAS-Flame	0.01	0.041	5	15
22	Total Chromium -mg/l	IS 3025 (Part 52) : 2003 AAS-Flame	0.01	<0.01	0.05	No relaxation
23	Boron as (B) -mg/l	APHA, 22nd EditionCarmine	0.2	<0.2	0.5	1.0
24	Alkalinity -mg/l	IS-3025/23:1986, Titration	4.0	276	200	600
25	Nickel-mg/l	IS 3025 (Part 54) : 2003, AAS-Flame	0.02	<0.02	0.02	No relaxation
26	Aluminum (Al)-mg/l	APHA, 22nd Edition AAS-VGA	0.005	<0.005	0.1	0.2

Deepanshu Sahu

(Scientific Assistant) ***(Authorized Signatory)***

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NOISE LEVEL DATA

NAME OF THE COMPANY : WCL YEAR : 2019
NAME OF THE AREA : NAGPUR MONTH. : APRIL
NAME OF THE PROJECT : SAONER UG

Name of the Location : Near Fan House (Saoner – I UG) - NSUN-1

Month	Date of Data collection	Noise Level in dB(A) Day Time
APRIL.2019	19/04/2019	69.1
Noise Level Standard as per Env. (Protection) Amendment rule 2000		**75**

Name of the Location : Near Fan House (Saoner – II UG) - NSUN-2

Month	Date of Data collection	Noise Level in dB(A) Day Time
APRIL.2019	19/04/2019	68.8
Noise Level Standard as per Env. (Protection) Amendment rule 2000		**75**

Name of the Location : Near Fan House (Saoner – III UG) - NSUN-3

Month	Date of Data collection	Noise Level in dB(A) Day Time
APRIL.2019	19/04/2019	69.2
Noise Level Standard as per Env. (Protection) Amendment rule 2000		**75**

Name of the Location : Colony (Saoner) - NSUN-4

Month	Date of Data collection	Noise Level in dB(A) Day Time
APRIL.2019	19/04/2019	45.4
Permissible Limit		**55**

STRICTLY RESTRICTED

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ENVIRONMENTAL MONITORING REPORT

SAONER UG EXPN.

(NAGPUR AREA)

WESTERN COALFIELDS LTD.

(JOB No. 8000002)

MAY -2019

Environment Laboratory

NABL Accredited vide Cert. No. TC-7102

CMPDI

REGIONAL INSTITUTE-IV, KASTURBA NAGAR,
JARIPATKA, NAGPUR, PIN – 440 014

AN ISO 9001:2015 COMPANY

INDEX

SL.NO	PARTICULARS	PAGE NO.
1.	INTRODUCTION	1-3
2.	AIR QUALITY MONITORING DATA	4-5
3.	EFFLUENT WATER QUALITY MONITORING DATA	6-7
4.	NOISE LEVEL DATA	8

INTRODUCTION

Location :

SaonerUG mine is situated in Nagpur District of Maharashtra State and is administered by the Nagpur area of the Western Coalfields Limited. There are three projects - Saoner-I UG, Saoner -II UG and Saoner -III UG.

Communication :

These projects are well connected by all weathermetalled road. These projects are about 40 kms away from Nagpur city. Nagpur - Chhindwara road is about 5 km from the mines. Saoner - Kalmeshwar road is also very near to the projects. Saoner railway station of S.E. Railway is the nearest rail head.

Drainage : The drainage is principally controlled by Kolar river.

Climate : The area has tropical climate with very hot summer. The temperature rises as high as 46^{O}C in summer. The average annual rainfall is about 1050 mm. The monsoon period is between June to Sept.

Industry/Coal Mines :

There are a few small industries near the town. There is no major industry near to the project. The state highway and road to Kalmeshwar, which is very busy due to vehicular movement, produce lot of dust.

Pollution due to other sources :

The above-mentioned industries are also expected to contribute in increasing the pollution load of the area. The air pollution due to working of the UG mine is insignificant.

Sampling Location :

Ambient Air Quality Monitoring locations :

S.No.	Location Details		Location Code
1.	Colliery Manager Office, SaonerUG-I	-	NSUA-1
2.	Colliery Manager office, SaonerUG-II	-	NSUA-2
3.	Water Treatment Plant	-	NSUA-3
4.	Kotodi village	-	NSUA-4

Fugitive Dust Monitoring locations :

S.No.	Location Details		Location Code
1.	CHP	-	NSUAF-1
2.	Rly. Siding	-	NSUAF-2

Water Quality Monitoring locations :

S.No.	Location Details		Location Code
1.	Mine water discharge - Saoner - I UG	-	NSUW-1
2.	Mine water discharge - Saoner - II UG	-	NSUW-2
3.	Mine water discharge - Saoner - III UG	-	NSUW-3

Noise Level Monitoring locations :

S.No.	Location Details		Location Code
1.	Near CHP - Saoner - I UG	-	NSUN-1
2.	Near CHP - Saoner - II UG	-	NSUN-2
3.	Near CHP – Saoner - III UG	-	NSUN-3
4.	Colony	-	NSUN-4

Frequency of Monitoring :

Air : Frequency of monitoring is fortnightly as per the Env. (Protection) Amendment Rules published vide Gazette dt. 25.9.2000.

Water : Water quality is monitored on fortnightly basis.

Noise : Noise level is monitored on fortnightly basis.

Methodology of Sampling and Analysis :

Air : 24 hourly air samples are collected with Respirable Dust Sampler at selected locations to monitor ambient air quality w.r.t. Suspended particulate matter (SPM), Respirable Particulate Matter (PM-10), Sulphur di-oxide (SO_2) and Oxides of nitrogen (NO_X) etc.

SPM/ PM-10 : Ambient air laden with suspended particulates enters the Respirable Dust Sampler through the inlet pipe of sampler by means of a high flow rate blower (1.1 to 1.5 m^3/min.). As the air passes through the cyclone, coarse, non-respirable dust (size>10 µ) is separated from the air stream by centrifugal forces acting on the solid particles. These separated particles fall through the cyclone's conical hopper and collect in the sampling bottle placed at bottom. The fine dust forming the respirable fraction (size <10 µ) of the Total Suspended Particulates passes through the cyclone and is carried by the air stream to the Glass Micro Fiber Filter Paper. The Respirable dust (PM-10) is retained by the filter and the carrier air exhausted from the system through the blower. The mass concentration (µg/m^3) of Suspended Particulate Matter (non-respirable dust and respirable dust) and Respirable Particulate Matter (PM-10) in the ambient air are computed by measuring the mass of collected particulates and the volume of air sampled.

:

PM2.5 Ambient air enters the Fine dust sampler through an omni-directional air inlet designed to provide a clear aerodynamic cut point for particles greater than 10 microns. Particles in the air stream finer than 10 microns proceed to a second impactor that has an aerodynamic cut point at 2.5 microns. The air sample and fine particulates exiting from the PM 2.5 impactor are passed through a 47 mm diameter Teflon filter membrane that retains the PM-2.5. The mass concentrations (µg/m^3) of PM-2.5 in the ambient air are computed by measuring the mass of collected particulates and the volume of air sampled.

Heavy Metals Heavy Metals in Air Samples like Arsenic (As), Lead (Pb), Nickel (Ni), Chromium(Cr) and Cadmium (Cd) are analysed twice a year as per CPCB's guidelines after digestion of samples in microwave digestor, with the help of Atomic Absorption Spectrophotometer (AAS) with Hydride generation system and Graphite furnace.

NO_X : Determination of oxides of Nitrogen is based on the procedure of "Jacobs and Hochheiser method". In this method the air sample is collected 24 hourly in the field and analysed in the laboratory using spectronic 20 D+ Spectrophotometer. Nitrogen oxides as Nitrogen di-oxide are collected by bubbling air through a Sodium hydroxide solution to form a stable solution of Sodium nitrite. The nitrite

ion produced during sampling is determined colorimetrically (with the help of Spectrophotometer, measuring absorbance at 540 nm) by reacting the exposed absorbing reagent with Phosphoric acid, Sulphanilamide and N(1-naphthyl) ethylenediamine dihydrochloride. The interference of Sulphur di-oxide is eliminated by converting it to Sulphuric acid with Hydrogen peroxide before analysis.

SO_2 : Determination of SO_2 is based on the procedure of West and Gaeke method. Sulphur di-oxide from the air stream is absorbed in a Sodium tetrachloromercurate solution to form a stable solution of Dichlorosulphitomercurate. The amount of Sulphur dioxide is then estimated by the colour produced when P-Rosaniline hydrochloride is added to the solution. The colour is estimated by a reading of absorbance at 560 nm in the Spectrophotometer.

Water : Mine water discharge is collected on fortnightly basis in plastic zaricane and is transported to the laboratory for analysis. As per the Env. (Protection) Amendment Rules published vide Gazette dt. 25.9.2000, water samples are analysed fortnightly for the parameters - pH, TSS, Oil & Grease and COD and once in a year for all parameters as per Schedule VI, Env. Protection rule.

Noise : Noise level data are recorded fortnightly.

Environment Laboratory **CMPDI, RI IV, Nagpur**	**Test Report**	TC - 7102

TEST REPORT NO. : RIN/TR/MAY-19/A DATE OF ISSUE : 10.07.19

NAME OF CUSTOMER: WCL, NAGPUR SAMPLE DESCRIPTION: AIR SAMPLE

CUSTOMER LETTER REF. NO. : WCL/HQ/ENV/17-K/520-522 DATED-18.04.19

NO. OF PAGES: 2

TEST REQUIRED:IS-5182 [PM-10(04:1999), NOx (06:2006), SO2 (02:2001)], SPM*, PM-2.5 (USEPA METHOD)

AIR QUALITY MONITORING DATA

NAME OF THE COMPANY : WCL YEAR : 2018
NAME OF THE AREA : NAGPUR MONTH. : MAY
NAME OF THE PROJECT : SAONER UG

C.M.Office- Saoner -I UG

DATE OF SAMPLING	**Parameters (24 hourly values in µg/m3)**				
	SPM*	**PM-10**	**PM-2.5**	**NOx**	**SO_X**
06/05/19	460	135	21	28	21
31/05/19	191	94	31	31	16
TLV	**600**	**300**	**60**	**120**	**120**

C.M.Office- Saoner -II UG

DATE OF SAMPLING	**Parameters (24 hourly values in µg/m3)**				
	SPM*	**PM-10**	**PM-2.5**	**NOx**	**SO_X**
06/05/19	332	243	53	36	24
31/05/19	362	137	44	32	18
TLV	**600**	**300**	**60**	**120**	**120**

Colony -Water filter plant

DATE OF SAMPLING	**Parameters (24 hourly values in µg/m3)**				
	SPM*	**PM-10**	**PM-2.5**	**NOx**	**SO_X**
06/05/19	294#	165#	41	31	28
31/05/19	227#	163#	55	39	12
TLV	**200**	**100**	**60**	**80**	**80**

#-AboveStd.Value

Kotodi village					
DATE OF SAMPLING	**Parameters (24 hourly values in µg/m3)**				
	SPM*	**PM-10**	**PM-2.5**	**NOx**	**SO_X**
06/05/19	231#	125#	10	37	26
31/05/19	189	76	27	37	28
TLV	**200**	**100**	**60**	**80**	**80**

#-AboveStd.Value

FUGITIVE DUS MONITORING DATA

1. CHP **(24 hourly values in µg/m³)**

Dates of Sampling	Parameters		
	SPM	PM-10	PM-2.5
-	-	-	-

2. Raw\ilway Siding **(24 hourly values in µg/m³)**

Dates of Sampling	Parameters		
	SPM	PM-10	PM-2.5
-	-	-	-

Deepanshu Sahu
(Scientific Assistant) ***(Authorized Signatory)***

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Environment Laboratory CMPDI, RI IV, Nagpur	**Test Report**	TC - 7102

TEST REPORT NO. : RIN/TR/MAY-19/ DATE OF ISSUE : 10.07.19
NAME OF CUSTOMER: WCL, NAGPUR SAMPLE DESCRIPTION: WATER SAMPLE
CUSTOMER LETTER REF. NO. : WCL/HQ/ENV/17-K/520-522 DATED-18.04.19
NO. OF PAGES: 1

EFFLUENT WATER QUALITY MONITORING DATA

NAME OF THE COMPANY : WCL YEAR 2019
NAME OF THE AREA : NAGPUR MONTH. MAY
NAME OF THE PROJECT : SAONER UG

Mine water discharge (Saoner I)

Date of Sample Collection	Analysis Results			
	pH IS-3025/11:1983	COD (mg/l) APHA-Closed reflux	TSS (mg/l) IS-3025/17:1984	O & G (mg/l) IS-3025/39:1991
Below Detection Limit	0.2	4	10	2
05/05/2019	7.90	24	14	<2
31/05/2019	7.70	36	26	<2
TLV	5.5 - 9.0	250	100	10

Mine water discharge (Saoner II)

Date of Sample Collection	Analysis Results			
	pH IS-3025/11:1983	COD (mg/l) APHA-Closed reflux	TSS (mg/l) IS-3025/17:1984	O & G (mg/l) IS-3025/39:1991
Below Detection Limit	0.2	4	10	2
05/05/2019	7.80	32	24	<2
31/05/2019	8.00	28	14	<2
TLV	5.5 - 9.0	250	100	10

Mine water discharge (Saoner III)

Date of Sample Collection	Analysis Results			
	pH IS-3025/11:1983	COD (mg/l) APHA-Closed reflux	TSS (mg/l) IS-3025/17:1984	O & G (mg/l) IS-3025/39:1991
Below Detection Limit	0.2	4	10	2
05/05/2019	8.10	24	12	<2
31/05/2019	8.10	32	24	<2
TLV	5.5 - 9.0	250	100	10

(Scientific Assistant) ***Deepanshu Sahu***
(Authorized Signatory)

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NOISE LEVEL DATA

NAME OF THE COMPANY : WCL YEAR : 2019
NAME OF THE AREA : NAGPUR MONTH. : MAY
NAME OF THE PROJECT : SAONER UG

Name of the Location : Near Fan House (Saoner – I UG) - NSUN-1

Month	Date of Data collection	Noise Level in dB(A) Day Time
MAY.2019	05/05/2019	66.8
MAY.2019	30/05/2019	69.8
TLV		75

Name of the Location : Near Fan House (Saoner – II UG) - NSUN-2

Month	Date of Data collection	Noise Level in dB(A) Day Time
MAY.2019	05/05/2019	69.2
MAY.2019	30/05/2019	67.2
TLV		75

Name of the Location : Near Fan House (Saoner – III UG) - NSUN-3

Month	Date of Data collection	Noise Level in dB(A) Day Time
MAY.2019	05/05/2019	68.7
MAY.2019	30/05/2019	68.9
TLV		75

Name of the Location : Colony (Saoner) - NSUN-4

Month	Date of Data collection	Noise Level in dB(A) Day Time
MAY.2019	05/05/2019	38.2
MAY.2019	30/05/2019	50.2
TLV		55

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ENVIRONMENTAL MONITORING REPORT

SAONER UG EXPN.

(NAGPUR AREA)

WESTERN COALFIELDS LTD.

(JOB No. 8000002)

JUNE -2019

Environment Laboratory

NABL Accredited vide Cert. No. TC-7102

CMPDI

REGIONAL INSTITUTE-IV, KASTURBA NAGAR,
JARIPATKA, NAGPUR, PIN – 440 014

AN ISO 9001:2015 COMPANY

INDEX

SL.NO	PARTICULARS	PAGE NO.
1.	INTRODUCTION	1-3
2.	AIR QUALITY MONITORING DATA	4-5
3.	EFFLUENT WATER QUALITY MONITORING DATA	6-7
4.	NOISE LEVEL DATA	8

INTRODUCTION

Location :

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Communication :

These projects are well connected by all-weather metalled road. These projects are about 40 kms away from Nagpur city. Nagpur - Chhindwara road is about 5 km from the mines. Saoner - Kalmeshwar road is also very near to the projects. Saoner railway station of S.E. Railway is the nearest rail head.

Drainage : The drainage is principally controlled by Kolar river.

Climate : The area has tropical climate with very hot summer. The temperature rises as high as 46^{O}C in summer. The average annual rainfall is about 1050 mm. The monsoon period is between June to Sept.

Industry/Coal Mines :

There are a few small industries near the town. There is no major industry near to the project. The state highway and road to Kalmeshwar, which is very busy due to vehicular movement, produce lot of dust.

Pollution due to other sources :

The above-mentioned industries are also expected to contribute in increasing the pollution load of the area. The air pollution due to working of the UG mine is insignificant.

Sampling Location :

Ambient Air Quality Monitoring locations :

S.No.	Location Details		Location Code
1.	Colliery Manager Office, Saoner UG-I	-	NSUA-1
2.	Colliery Manager office, Saoner UG-II	-	NSUA-2
3.	Water Treatment Plant	-	NSUA-3
4.	Kotodi village	-	NSUA-4

Fugitive Dust Monitoring locations :

S.No.	Location Details		Location Code
1.	CHP	-	NSUAF-1
2.	Rly. Siding	-	NSUAF-2

Water Quality Monitoring locations :

S.No.	Location Details		Location Code
1.	Mine water discharge - Saoner - I UG	-	NSUW-1
2.	Mine water discharge - Saoner - II UG	-	NSUW-2
3.	Mine water discharge - Saoner - III UG	-	NSUW-3

Noise Level Monitoring locations :

S.No.	Location Details		Location Code
1.	Near CHP - Saoner - I UG	-	NSUN-1
2.	Near CHP - Saoner - II UG	-	NSUN-2
3.	Near CHP – Saoner - III UG	-	NSUN-3
4.	Colony	-	NSUN-4

Frequency of Monitoring :

Air : Frequency of monitoring is fortnightly as per the Env. (Protection) Amendment Rules published vide Gazette dt. 25.9.2000.

Water : Water quality is monitored on fortnightly basis.

Noise : Noise level is monitored on fortnightly basis.

Methodology of Sampling and Analysis :

Air : 24 hourly air samples are collected with Respirable Dust Sampler at selected locations to monitor ambient air quality w.r.t. Suspended particulate matter (SPM), Respirable Particulate Matter (PM-10), Sulphur di-oxide (SO_2) and Oxides of nitrogen (NO_X) etc.

SPM/ PM-10 : Ambient air laden with suspended particulates enters the Respirable Dust Sampler through the inlet pipe of sampler by means of a high flow rate blower (1.1 to 1.5 m^3/min.). As the air passes through the cyclone, coarse, non-respirable dust (size>10 µ) is separated from the air stream by centrifugal forces acting on the solid particles. These separated particles fall through the cyclone's conical hopper and collect in the sampling bottle placed at bottom. The fine dust forming the respirable fraction (size <10 µ) of the Total Suspended Particulates passes through the cyclone and is carried by the air stream to the Glass Micro Fiber Filter Paper. The Respirable dust (PM-10) is retained by the filter and the carrier air exhausted from the system through the blower. The mass concentration (µg/m^3) of Suspended Particulate Matter (non-respirable dust and respirable dust) and Respirable Particulate Matter (PM-10) in the ambient air are computed by measuring the mass of collected particulates and the volume of air sampled.

:

PM2.5 Ambient air enters the Fine dust sampler through an omni-directional air inlet designed to provide a clear aerodynamic cut point for particles greater than 10 microns. Particles in the air stream finer than 10 microns proceed to a second impactor that has an aerodynamic cut point at 2.5 microns. The air sample and fine particulates exiting from the PM 2.5 impactor are passed through a 47 mm diameter Teflon filter membrane that retains the PM-2.5. The mass concentrations (µg/m^3) of PM-2.5 in the ambient air are computed by measuring the mass of collected particulates and the volume of air sampled.

Heavy Metals Heavy Metals in Air Samples like Arsenic (As), Lead (Pb), Nickel (Ni), Chromium(Cr) and Cadmium (Cd) are analysed twice a year as per CPCB's guidelines after digestion of samples in microwave digestor, with the help of Atomic Absorption Spectrophotometer (AAS) with Hydride generation system and Graphite furnace.

NO_X : Determination of oxides of Nitrogen is based on the procedure of "Jacobs and Hochheiser method". In this method the air sample is collected 24 hourly in the field and analysed in the laboratory using spectronic 20 D+ Spectrophotometer. Nitrogen oxides as Nitrogen di-oxide are collected by bubbling air through a Sodium hydroxide solution to form a stable solution of Sodium nitrite. The nitrite

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SO_2 : Determination of SO_2 is based on the procedure of West and Gaeke method. Sulphur di-oxide from the air stream is absorbed in a Sodium tetrachloromercurate solution to form a stable solution of Dichlorosulphitomercurate. The amount of Sulphur dioxide is then estimated by the colour produced when P-Rosaniline hydrochloride is added to the solution. The colour is estimated by a reading of absorbance at 560 nm in the Spectrophotometer.

Water : Mine water discharge is collected on fortnightly basis in plastic zaricane and is transported to the laboratory for analysis. As per the Env. (Protection) Amendment Rules published vide Gazette dt. 25.9.2000, water samples are analysed fortnightly for the parameters - pH, TSS, Oil & Grease and COD and once in a year for all parameters as per Schedule VI, Env. Protection rule.

Noise : Noise level data are recorded fortnightly.

Environment Laboratory **CMPDI, RI IV, Nagpur**	**Test Report**	TC - 7102

TEST REPORT NO. : RIN/TR/JUNE-19/A8 DATE OF ISSUE: 05.08.19

NAME OF CUSTOMER: WCL, NAGPUR SAMPLE DESCRIPTION: AIR SAMPLE

CUSTOMER LETTER REF. NO. : WCL/HQ/ENV/17-K/520-522 DATED-18.04.19

NO. OF PAGES: 2

TEST REQUIRED:IS-5182 [PM-10(04:1999), NOx (06:2006), SO2 (02:2001)], SPM*, PM-2.5 (USEPA METHOD)

AIR QUALITY MONITORING DATA

NAME OF THE COMPANY : WCL YEAR : 2018
NAME OF THE AREA : NAGPUR MONTH. : JUNE
NAME OF THE PROJECT : SAONER UG

C.M. Office- Saoner -I UG					
DATE OF SAMPLING	**Parameters (24 hourly values in µg/m3)**				
	SPM*	**PM-10**	**PM-2.5**	**NOx**	**SO_X**
07/06/2019	116	82	32	31	30
25/06/2019	125	95	46	34	26
TLV	**600**	**300**	**60**	**120**	**120**

C.M. Office- Saoner -II UG					
DATE OF SAMPLING	**Parameters (24 hourly values in µg/m3)**				
	SPM*	**PM-10**	**PM-2.5**	**NOx**	**SO_X**
07/06/2019	404	181	46	24	24
25/06/2019	88	44	28	24	21
TLV	**600**	**300**	**60**	**120**	**120**

Colony -Water filter plant					
DATE OF SAMPLING	**Parameters (24 hourly values in µg/m3)**				
	SPM*	**PM-10**	**PM-2.5**	**NOx**	**SO_X**
07/06/2019	276	102	41	36	21
25/06/2019	109	75	30	27	22
TLV	**200**	**100**	**60**	**80**	**80**

#-Above Std. Value

Kotodi village					
DATE OF SAMPLING	**Parameters (24 hourly values in µg/m3)**				
	SPM*	**PM-10**	**PM-2.5**	**NOx**	**SO_X**
08/06/2019	348	157	48	26	26
26/06/2019	110	85	41	36	16
TLV	**200**	**100**	**60**	**80**	**80**

#-Above Std. Value

FUGITIVE DUST MONITORING DATA

1. CHP **(24 hourly values in µg/m³)**

Dates of Sampling	Parameters		
	SPM	PM-10	PM-2.5
07/06/2019	673	275	55

2. Railway Siding **(24 hourly values in µg/m³)**

Dates of Sampling	Parameters		
	SPM	PM-10	PM-2.5
25/06/2019	105	61	45

Deepanshu Sahu
(Scientific Assistant) ***(Authorized Signatory)***

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Environment Laboratory CMPDI, RI IV, Nagpur	**Test Report**	TC - 7102

Test Report NO : RIN/TR/JUNE-19/W8 Date of Issue : 05/08/2019
Name of the Customer: WCL, Nagpur
Customer letter Ref. No. : WCL/HQ/ENV/17-K/520-522 DATED -18.04.19
Sample Description : Water sample
No. of pages : 2

EFFLUENT WATER QUALITY MONITORING DATA

NAME OF THE COMPANY : WCL YEAR 2019
NAME OF THE AREA : NAGPUR MONTH. JUNE
NAME OF THE PROJECT : SAONER UG

Mine water discharge (Saoner I)

Date of Sample Collection	Analysis Results			
	pH IS-3025/11:1983	COD (mg/l) APHA-Closed reflux	TSS (mg/l) IS-3025/17:1984	O & G (mg/l) IS-3025/39:1991
Below Detection Limit	0.2	4	10	2
08/06/2019	7.30	20	12	<2
25/06/2019	8.70	28	18	<2
TLV	5.5 - 9.0	250	100	10

Mine water discharge (Saoner II)

Date of Sample Collection	Analysis Results			
	pH IS-3025/11:1983	COD (mg/l) APHA-Closed reflux	TSS (mg/l) IS-3025/17:1984	O & G (mg/l) IS-3025/39:1991
Below Detection Limit	0.2	4	10	2
08/06/2019	7.10	36	28	<2
25/06/2019	8.30	24	14	<2
TLV	5.5 - 9.0	250	100	10

Mine water discharge (Saoner III)

Date of Sample Collection	Analysis Results			
	pH IS-3025/11:1983	COD (mg/l) APHA-Closed reflux	TSS (mg/l) IS-3025/17:1984	O & G (mg/l) IS-3025/39:1991
Below Detection Limit	0.2	4	10	2
08/06/2019	6.90	32	24	<2
25/06/2019	8.40	20	12	<2
TLV	5.5 - 9.0	250	100	10

(Scientific Assistant) ***Deepanshu Sahu***
(Authorized Signatory)

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NOISE LEVEL DATA

NAME OF THE COMPANY : WCL YEAR : 2019
NAME OF THE AREA : NAGPUR MONTH. : JUNE
NAME OF THE PROJECT : SAONER UG

Name of the Location : Near Fan House (Saoner – I UG) - NSUN-1

Month	Date of Data collection	Noise Level in dB(A)	
		Day Time	Night Time
JUNE.2019	08/06/2019	69.2	68.6
JUNE.2019	24/06/2019	69.7	68.4
TLV		75	70

Name of the Location : Near Fan House (Saoner – II UG) - NSUN-2

Month	Date of Data collection	Noise Level in dB(A)	
		Day Time	Night Time
JUNE.2019	08/06/2019	68.7	67.8
JUNE.2019	24/06/2019	68.5	67.2
TLV		75	70

Name of the Location : Near Fan House (Saoner – III UG) - NSUN-3

Month	Date of Data collection	Noise Level in dB(A)	
		Day Time	Night Time
JUNE.2019	08/06/2019	69.4	68.4
JUNE.2019	24/06/2019	70.1	68.7
TLV		75	70

Name of the Location : Colony (Saoner) - NSUN-4

Month	Date of Data collection	Noise Level in dB(A)	
		Day Time	Night Time
JUNE.2019	08/06/2019	42.4	41.2
JUNE.2019	24/06/2019	44.2	43.1
TLV		55	45

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ENVIRONMENTAL MONITORING REPORT

SAONER UG

NAGPUR AREA

WESTERN COALFIELDS LTD.

JOB NO. 8000003

AUGUST 2019

Environment Laboratory
NABL Accredited vide Cert. No. TC-7102

CMPDI

REGIONAL INSTITUTE-IV, KASTURBA NAGAR,
JARIPATKA, NAGPUR, PIN – 440 014

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INDEX

Sl. No.	PARTICULARS	PAGE NO.
1	INTRODUCTION	1 to 3
2	AIR QUALITY MONITORING DATA	4 to 5
3	WATER QUALITY MONITORING DATA	6
4	NOISE LEVEL DATA	7

INTRODUCTION

SaonerUG mine is situated in Nagpur District of Maharashtra State and is administered by the Nagpur area of the Western Coalfields Limited. There are three projects - Saoner-I UG, Saoner -II UG and Saoner -III UG.The drainage is principally controlled by Kolar river.The area has tropical climate.The above-mentioned industries are also expected to contribute in increasing the pollution load of the area. The air pollution due to working of the UG mine is insignificant.

Sampling Location:

Ambient Air Quality Monitoring locations:

SL. NO.	LOCATION DETAIL	LOCATION CODE
1	C.M. OFFICE - SAONER - I UG :	NSNUA1
2	C.M. OFFICE- SAONER- II UG :	NSNUA2
3	COLONY WATER FILTER PLANT:	NSNUA3
4	KOTODI VILLAGE :	NSNUA4

Fugitive Dust Monitoring locations:

SL. NO.	LOCATION DETAIL	LOCATION CODE
1	CHP:	NSNUF1
2	RLY. SIDING:	NSNUF2

Water Quality Monitoring location:

SL. NO.	LOCATION DETAIL	LOCATION CODE
1	MINE WATER DISCHARGE I UG:	NSNUW1
2	MINE WATER DISCHARGE II UG:	NSNUW2
3	MINE WATER DISCHARGE III UG:	NSNUW3

Noise Level Monitoring location :

SL. NO.	LOCATION DETAIL	LOCATION CODE
1	FAN HOUSE I UG:	NSNUN1
2	FAN HOUSE II UG:	NSNUN2
3	FAN HOUSE III UG:	NSNUN3
4	COLONY:	NSNUN4

Frequency of Monitoring:

AIR: Frequency of monitoring is as per the Env. (Protection) Amendment Rules published vide Gazette dt. 25.9.2000.

WATER: Water quality is monitored on fortnightly basis

NOISE: Noise level is monitored on fortnightly basis.

Environment Laboratory CMPDI RI-IV, NAGPUR	Test Report Air quality monitoring data	TC-7102

TSET REPORT NO.	RIN/TR/AUGUST-19/A4	DATE OF ISSUE	31.09.19
NAME OF CUSTOMER	WCL, NAGPUR	SAMPLE DESCRIPTION	AIR SAMPLE
CUSTOMER LETTER REFERENCE NO.	WCL/HQ/ENV/17-K/520-522 DATED: 18.04.19		
TEST REQUIRED	IS-5182 [PM-10(04:1999), NOx(06:2006), SO2(02:2001)],PM-2.5 & SPM*		
NAME OF AREA	NAGPUR AREA	YEAR	2019
NAME OF PROJECT	SAONER UG	MONTH	AUGUST

C.M. OFFICE - SAONER - I UG : NSNUA1					
DATE OF SAMPLING	PARAMETERS				
	SPM*	**PM_{10}**	**$PM_{2.5}$**	**NO_X**	**SO_2**
DETECTION LIMIT	5	5	2	6	10
02-08-19	37	22	18	16	14
20-08-19	139	88	48	22	20
TLV	**600**	**300**	**60**	**120**	**120**

C.M. OFFICE- SAONER- II UG : NSNUA2					
DATE OF SAMPLING	PARAMETERS				
	SPM*	**PM_{10}**	**$PM_{2.5}$**	**NO_X**	**SO_2**
DETECTION LIMIT	5	5	2	6	10
02-08-19	28	24	19	15	11
20-08-19	144	97	54	27	22
TLV	**600**	**300**	**60**	**120**	**120**

COLONY WATER FILTER PLANT: NSNUA3					
DATE OF SAMPLING	PARAMETERS				
	SPM*	**PM_{10}**	**$PM_{2.5}$**	**NO_X**	**SO_2**
DETECTION LIMIT	5	5	2	6	10
02-08-19	70	31	18	15	11
20-08-19	209	132	47	34	13
TLV	**200**	**100**	**60**	**80**	**80**

KOTODI VILLAGE : NSNUA4					
DATE OF SAMPLING	PARAMETERS				
	SPM*	**PM_{10}**	**$PM_{2.5}$**	**NO_X**	**SO_2**
DETECTION LIMIT	5	5	2	6	10
02-08-19	52	34	28	22	16
20-08-19	257	124	43	29	19
TLV	**200**	**100**	**60**	**80**	**80**

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FUGITIVE DUST MONITORING DATA

CHP: NSNUF1			
DATE OF SAMPLING	PARAMETERS		
	SPM*	**PM10**	**$PM_{2.5}$**
DETECTION LIMIT	5	5	2
20-08-19	115	79	33

RLY. SIDING: NSNUF2			
DATE OF SAMPLING	PARAMETERS		
	SPM*	**PM10**	**$PM_{2.5}$**
DETECTION LIMIT	5	5	2
20-08-19	99	57	35

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Environment Laboratory CMPDI RI-IV, NAGPUR	Test Report Effluent water quality monitoring data	TC-7102

TSET REPORT NO.	RIN/TR/AUGUST-19/W4	DATE OF ISSUE	31.09.19
NAME OF CUSTOMER	WCL, NAGPUR	SAMPLE DESCRIPTION	WATER SAMPLE
CUSTOMER LETTER REFERENCE NO.	WCL/HQ/ENV/17-K/520-522 DATED: 18.04.19		
TEST REQUIRED	IS 3025 (Part 11):1983, IS 3025 (Part 17):1984, IS 3025(Part 58):2006 & IS 3025(Part 39):1991		
NAME OF AREA	NAGPUR AREA	YEAR	2019
NAME OF PROJECT	SAONER UG	MONTH	AUGUST

MINE WATER DISCHARGE I UG: NSNUW1				
DATE OF SAMPLE COLLECTION	ANALYSIS RESULTS			
	pH	TSS	COD	O & G
DETECTION LIMIT	0.2	10	4	2
02-08-19	8.5	16	28	<2
19-08-19	8.4	18	28	<2
TLV	5.5 - 9.0	100	250	10

MINE WATER DISCHARGE II UG: NSNUW2				
DATE OF SAMPLE COLLECTION	ANALYSIS RESULTS			
	pH	TSS	COD	O & G
DETECTION LIMIT	0.2	10	4	2
02-08-19	8.7	26	36	<2
19-08-19	8.5	26	36	<2
TLV	5.5 - 9.0	100	250	10

MINE WATER DISCHARGE III UG: NSNUW3				
DATE OF SAMPLE COLLECTION	ANALYSIS RESULTS			
	pH	TSS	COD	O & G
DETECTION LIMIT	0.2	10	4	2
02-08-19	8.5	18	28	<2
19-08-19	8.3	16	24	<2
TLV	5.5 - 9.0	100	250	10

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NOISE LEVEL DATA

NAME OF AREA: NAGPUR AREA **YEAR: 2019**
NAME OF PROJECT: SAONER UG **MONTH: AUGUST**

FAN HOUSE I UG: NSNUN1			
MONTH	DATE OF DATA COLLECTION	NOISE LEVEL IN dB(A)	
		DAY TIME	NIGHT TIME
AUGUST 2019	02-08-19	65.7	64.9
AUGUST 2019	22-08-19	68.2	67.1
TLV		**75**	**70**

FAN HOUSE II UG: NSNUN2			
MONTH	DATE OF DATA COLLECTION	NOISE LEVEL IN dB(A)	
		DAY TIME	NIGHT TIME
AUGUST 2019	02-08-19	67.5	66.4
AUGUST 2019	22-08-19	69.4	68.3
TLV		**75**	**70**

FAN HOUSE III UG: NSNUN3			
MONTH	DATE OF DATA COLLECTION	NOISE LEVEL IN dB(A)	
		DAY TIME	NIGHT TIME
AUGUST 2019	02-08-19	68.9	67.5
AUGUST 2019	22-08-19	67.8	66.5
TLV		**75**	**70**

COLONY: NSNUN4			
MONTH	DATE OF DATA COLLECTION	NOISE LEVEL IN dB(A)	
		DAY TIME	NIGHT TIME
AUGUST 2019	02-08-19	41.2	40.1
AUGUST 2019	22-08-19	44.8	43.1
TLV		**55**	**45**

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ENVIRONMENTAL MONITORING REPORT

SAONER UG

NAGPUR AREA

WESTERN COALFIELDS LTD.

JOB NO. 8000003

JULY 2019

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INDEX

Sl. No.	PARTICULARS	PAGE NO.
1	INTRODUCTION	1 to 3
2	AIR QUALITY MONITORING DATA	4 to 5
3	WATER QUALITY MONITORING DATA	6 to 7
4	NOISE LEVEL DATA	8

INTRODUCTION

SaonerUG mine is situated in Nagpur District of Maharashtra State and is administered by the Nagpur area of the Western Coalfields Limited. There are three projects - Saoner-I UG, Saoner -II UG and Saoner -III UG.The drainage is principally controlled by Kolar river.The area has tropical climate.The above-mentioned industries are also expected to contribute in increasing the pollution load of the area. The air pollution due to working of the UG mine is insignificant.

Sampling Location:

Ambient Air Quality Monitoring locations:

SL. NO.	LOCATION DETAIL	LOCATION CODE
1	C.M. OFFICE - SAONER - I UG :	NSNUA1
2	C.M. OFFICE- SAONER- II UG :	NSNUA2
3	COLONY WATER FILTER PLANT:	NSNUA3
4	KOTODI VILLAGE :	NSNUA4

Fugitive Dust Monitoring locations:

SL. NO.	LOCATION DETAIL	LOCATION CODE
1	CHP:	NSNUF1
2	RLY. SIDING:	NSNUF2

Water Quality Monitoring location:

SL. NO.	LOCATION DETAIL	LOCATION CODE
1	MINE WATER DISCHARGE I UG:	NSNUW1
2	MINE WATER DISCHARGE II UG:	NSNUW2
3	MINE WATER DISCHARGE III UG:	NSNUW3

Noise Level Monitoring location :

SL. NO.	LOCATION DETAIL	LOCATION CODE
1	FAN HOUSE I UG:	NSNUN1
2	FAN HOUSE II UG:	NSNUN2
3	FAN HOUSE III UG:	NSNUN3
4	COLONY:	NSNUN4

Frequency of Monitoring:

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NOISE: Noise level is monitored on fortnightly basis.

Environment Laboratory CMPDI RI-IV, NAGPUR	Test Report Air quality monitoring data	TC-7102

TSET REPORT NO.	RIN/TR/JULY-19/A4	DATE OF ISSUE	31.08.19
NAME OF CUSTOMER	WCL, NAGPUR	SAMPLE DESCRIPTION	AIR SAMPLE
CUSTOMER LETTER REFERENCE NO.	WCL/HQ/ENV/17-K/520-522 DATED: 18.04.19		
TEST REQUIRED	IS-5182 [PM-10(04:1999), NOx(06:2006), SO2(02:2001)],PM-2.5 & SPM*		
NAME OF AREA	NAGPUR AREA	YEAR	2019
NAME OF PROJECT	SAONER UG	MONTH	JULY

C.M. OFFICE - SAONER - I UG : NSNUA1					
DATE OF SAMPLING	PARAMETERS				
	SPM*	**PM_{10}**	**$PM_{2.5}$**	**NO_X**	**SO_2**
DETECTION LIMIT	5	5	2	6	10
13-07-19	86	52	23	12	19
26-07-19	80	52	28	45	12
TLV	**600**	**300**	**60**	**120**	**120**

C.M. OFFICE- SAONER- II UG : NSNUA2					
DATE OF SAMPLING	PARAMETERS				
	SPM*	**PM_{10}**	**$PM_{2.5}$**	**NO_X**	**SO_2**
DETECTION LIMIT	5	5	2	6	10
13-07-19	70	35	24	21	22
26-07-19	73	49	29	17	10
TLV	**600**	**300**	**60**	**120**	**120**

COLONY WATER FILTER PLANT: NSNUA3					
DATE OF SAMPLING	PARAMETERS				
	SPM*	**PM_{10}**	**$PM_{2.5}$**	**NO_X**	**SO_2**
DETECTION LIMIT	5	5	2	6	10
13-07-19	105	70	28	19	16
26-07-19	57	32	28	13	10
TLV	**200**	**100**	**60**	**80**	**80**

KOTODI VILLAGE : NSNUA4					
DATE OF SAMPLING	PARAMETERS				
	SPM*	**PM_{10}**	**$PM_{2.5}$**	**NO_X**	**SO_2**
DETECTION LIMIT	5	5	2	6	10
13-07-19	126	91	32	14	18
25-07-19	53	32	24	18	14
TLV	**200**	**100**	**60**	**80**	**80**

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Environment Laboratory CMPDI RI-IV, NAGPUR	Test Report Effluent water quality monitoring data	TC-7102

TSET REPORT NO.	RIN/TR/JULY-19/W4	DATE OF ISSUE	31.08.19
NAME OF CUSTOMER	WCL, NAGPUR	SAMPLE DESCRIPTION	WATER SAMPLE
CUSTOMER LETTER REFERENCE NO.	WCL/HQ/ENV/17-K/520-522 DATED: 18.04.19		
TEST REQUIRED	IS 3025 (Part 11):1983, IS 3025 (Part 17):1984, IS 3025(Part 58):2006 & IS 3025(Part 39):1991		
NAME OF AREA	NAGPUR AREA	YEAR	2019
NAME OF PROJECT	SAONER UG	MONTH	JULY

MINE WATER DISCHARGE I UG: NSNUW1				
DATE OF SAMPLE COLLECTION	ANALYSIS RESULTS			
	pH	COD	TSS	O & G
DETECTION LIMIT	0.2	4	10	2
12-07-19	8.5	24	16	<2
25-07-19	7.3	28	24	<2
TLV	5.5 - 9.0	250	100	10

MINE WATER DISCHARGE II UG: NSNUW2				
DATE OF SAMPLE COLLECTION	ANALYSIS RESULTS			
	pH	COD	TSS	O & G
DETECTION LIMIT	0.2	4	10	2
12-07-19	7.5	20	14	<2
25-07-19	7.7	24	22	<2
TLV	5.5 - 9.0	250	100	10

MINE WATER DISCHARGE III UG: NSNUW3				
DATE OF SAMPLE COLLECTION	ANALYSIS RESULTS			
	pH	COD	TSS	O & G
DETECTION LIMIT	0.2	4	10	2
12-07-19	7.7	28	18	<2
25-07-19	7.3	28	24	<2
TLV	5.5 - 9.0	250	100	10

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Environment Laboratory CMPDI RI-IV, NAGPUR	Test Report Drinking water quality monitoring data	TC-7102

TSET REPORT NO.	RIN/TR/JULY-19/DW4	DATE OF ISSUE	31.08.19
NAME OF CUSTOMER	WCL, NAGPUR	SAMPLE DESCRIPTION	WATER SAMPLE
CUSTOMER LETTER REFERENCE NO.	WCL/HQ/ENV/17-K/520-522 DATED: 18.04.19		
TEST REQUIRED	IS 10500:2012		
NAME OF AREA	NAGPUR AREA	YEAR	2019
NAME OF PROJECT	SAONER UG	MONTH	JULY
DATE OF SAMPLING	12-07-19		

NAME OF LOCATION:	DRINKING WATER FROM FILTER PLANT					
SL NO.	**PARAMETER**	**TEST METHOD**	**DETECTION LIMIT**	**ANALYSIS RESULT**	**DESIRABLE LIMIT**	**PLV IN THE ABSENCE OF ALTERNATE SOURCE**
1	Colour (Hz)	IS 3025 Part-4	1	**1**	5	15
2	Odour	IS 3025 Part-5	Qualitative	Agreeable	Agreeable	Agreeable
3	Turbidity (NTU)	IS 3025 Part-10	1	2	1	5
4	pH Value	IS 3025 Part-11	2	8.1	6.5 to 8.5	No relaxation
5	Total Hardness as CaCO3 - mg/l	IS 3025 Part-21	4	272	200	600
6	Iron (as Fe) -mg/l	IS 3025 Part-53	0.06	BDL	0.3	No relaxation
7	Chlorides (as Cl)- mg/l	IS 3025 Part-32	2	**64**	250	1000
8	Residual Chlorine -mg/l	APHA, 22nd Edition DPD	0.02	0.02	0.2	1
9	Fluoride (as F)- mg/l	APHA, 22nd Edition SPADNS	0.02	**0.38**	1	1.5
10	TDS -mg/l	IS 3025 Part-16	25	390	500	2000
11	Calcium (as Ca) -mg/l	IS 3025 Part-40	1.6	**86.4**	75	200
12	Magnesium (as Mg) -mg/l*	IS-3025/40: 1991 EDTA	3	13.6	30	100
13	Copper as(Cu) -mg/l	IS 3025 Part-42	0.03	BDL	0.05	1.5
14	Manganese as (Mn)- mg/l	IS 3025 Part-59	0.02	BDL	0.1	0.3
15	Sulphate (as SO4) -mg/l	APHA (22nd Edition) 4500E Turbidity Method	2	**128.12**	200	400

16	Nitrates (as NO3) - mg/l	IS-3025/34:1988 Nesseler's method	0.5	2.95	45	No relaxation
17	Cadmium as (Cd)- mg/l	APHA, 22nd Edition AAS-GTA	0.005	**BDL**	0.003	No relaxation
18	Lead as (Pb) -mg/l	APHA, 22nd Edition AAS-GTA	0.005	BDL	0.01	No relaxation
19	Selenium (Se) –mg/l	APHA, 22nd Edition AAS-VGA	0.005	**BDL**	0.01	No relaxation
20	Arsenic (Ar)-mg/l	APHA, 22nd Edition AAS-VGA	0.005	BDL	0.05	No relaxation
21	Zinc as (Zn) -mg/l	IS 3025 Part-49	0.01	BDL	5	15
22	Total Chromium -mg/l	IS 3025 Part-52	0.01	BDL	0.05	No relaxation
23	Boron as (B) -mg/l	APHA, 22nd Edition Carmine	0.2	**BDL**	0.5	1
24	Alkalinity -mg/l	IS 3025 Part-23	4	**164**	200	600
25	Nickel-mg/l	IS 3025 Part-54	0.02	**BDL**	0.02	No relaxation
26	Aluminum (Al)-mg/l	APHA (22nd Edition) 3114B AAS-VGA	0.005	**BDL**	0.1	0.2

BDL: BELOW DETECTION LIMIT

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NOISE LEVEL DATA

NAME OF AREA: NAGPUR AREA **YEAR: 2019**
NAME OF PROJECT: SAONER UG **MONTH: JULY**

FAN HOUSE I UG: NSNUN1			
MONTH	DATE OF DATA COLLECTION	NOISE LEVEL IN dB(A)	
		DAY TIME	NIGHT TIME
JULY 2019	08-07-19	69.1	68.9
JULY 2019	25-07-19	68.4	67.2
TLV		**75**	**70**

FAN HOUSE II UG: NSNUN2			
MONTH	DATE OF DATA COLLECTION	NOISE LEVEL IN dB(A)	
		DAY TIME	NIGHT TIME
JULY 2019	08-07-19	68.8	68.1
JULY 2019	25-07-19	68.2	67.9
TLV		**75**	**70**

FAN HOUSE III UG: NSNUN3			
MONTH	DATE OF DATA COLLECTION	NOISE LEVEL IN dB(A)	
		DAY TIME	NIGHT TIME
JULY 2019	08-07-19	69.2	68.7
JULY 2019	25-07-19	68.9	68.1
TLV		**75**	**70**

COLONY: NSNUN4			
MONTH	DATE OF DATA COLLECTION	NOISE LEVEL IN dB(A)	
		DAY TIME	NIGHT TIME
JULY 2019	08-07-19	45.5	45.1
JULY 2019	25-07-19	46.2	43.8
TLV		**55**	**45**

FOR COMPANY USE ONLY
The information given in this report is not to be communicated either directly or indirectly to the press or to any person not holding an official position in the CIL / Government

ENVIRONMENTAL MONITORING REPORT

SAONER UG

NAGPUR AREA

WESTERN COALFIELDS LTD.

JOB NO. 8000003

SEPTEMBER 2019

Environment Laboratory

NABL Accredited vide Cert. No. TC-7102

CMPDI

REGIONAL INSTITUTE-IV, KASTURBA NAGAR,
JARIPATKA, NAGPUR, PIN – 440 014

AN ISO 9001:2015 COMPANY

INDEX

Sl. No.	PARTICULARS	PAGE NO.
1	INTRODUCTION	1 to 3
2	AIR QUALITY MONITORING DATA	4 to 5
3	WATER QUALITY MONITORING DATA	6 to 8
4	NOISE LEVEL DATA	9

INTRODUCTION

SaonerUG mine is situated in Nagpur District of Maharashtra State and is administered by the Nagpur area of the Western Coalfields Limited. There are three projects - Saoner-I UG, Saoner -II UG and Saoner -III UG.The drainage is principally controlled by Kolar river.The area has tropical climate.The above-mentioned industries are also expected to contribute in increasing the pollution load of the area. The air pollution due to working of the UG mine is insignificant.

Sampling Location:

Ambient Air Quality Monitoring locations:

SL. NO.	LOCATION DETAIL	LOCATION CODE
1	C.M. OFFICE - SAONER - I UG :	NSNUA1
2	C.M. OFFICE- SAONER- II UG :	NSNUA2
3	COLONY WATER FILTER PLANT:	NSNUA3
4	KOTODI VILLAGE :	NSNUA4

Fugitive Dust Monitoring locations:

SL. NO.	LOCATION DETAIL	LOCATION CODE
1	CHP:	NSNUF1
2	RLY. SIDING:	NSNUF2

Water Quality Monitoring location:

SL. NO.	LOCATION DETAIL	LOCATION CODE
1	MINE WATER DISCHARGE I UG:	NSNUW1
2	MINE WATER DISCHARGE II UG:	NSNUW2
3	MINE WATER DISCHARGE III UG:	NSNUW3

Noise Level Monitoring location :

SL. NO.	LOCATION DETAIL	LOCATION CODE
1	FAN HOUSE I UG:	NSNUN1
2	FAN HOUSE II UG:	NSNUN2
3	FAN HOUSE III UG:	NSNUN3
4	COLONY:	NSNUN4

Frequency of Monitoring:

AIR: Frequency of monitoring is as per the Env. (Protection) Amendment Rules published vide Gazette dt. 25.9.2000.

WATER: Water quality is monitored on fortnightly basis

NOISE: Noise level is monitored on fortnightly basis.

Environment Laboratory CMPDI RI-IV, NAGPUR	Test Report Air quality monitoring data	TC-7102

TSET REPORT NO.	RIN/TR/SEPTEMBER-19/A4	DATE OF ISSUE	31.10.19
NAME OF CUSTOMER	WCL, NAGPUR	SAMPLE DESCRIPTION	AIR SAMPLE
CUSTOMER LETTER REFERENCE NO.	WCL/HQ/ENV/17-K/520-522 DATED: 18.04.19		
TEST REQUIRED	IS-5182 [PM-10(04:1999), NOx(06:2006), SO2(02:2001)],PM-2.5 & SPM*		
NAME OF AREA	NAGPUR AREA	YEAR	2019
NAME OF PROJECT	SAONER UG	MONTH	SEPTEMBER

C.M. OFFICE - SAONER - I UG : NSNUA1					
DATE OF SAMPLING	PARAMETERS				
	SPM*	**PM_{10}**	**$PM_{2.5}$**	**NO_X**	**SO_2**
DETECTION LIMIT	5	5	2	6	10
12-09-19	39	21	12	8	<10
19-09-19	21	14	7	<6	<10
TLV	**600**	**300**	**60**	**120**	**120**

C.M. OFFICE- SAONER- II UG : NSNUA2					
DATE OF SAMPLING	PARAMETERS				
	SPM*	**PM_{10}**	**$PM_{2.5}$**	**NO_X**	**SO_2**
DETECTION LIMIT	5	5	2	6	10
12-09-19	33	23	13	9	<10
19-09-19	20	7	4	<6	<10
TLV	**600**	**300**	**60**	**120**	**120**

COLONY WATER FILTER PLANT: NSNUA3					
DATE OF SAMPLING	PARAMETERS				
	SPM*	**PM_{10}**	**$PM_{2.5}$**	**NO_X**	**SO_2**
DETECTION LIMIT	5	5	2	6	10
12-09-19	39	33	18	13	<10
19-09-19	32	25	14	10	<10
TLV	**200**	**100**	**60**	**80**	**80**

KOTODI VILLAGE : NSNUA4					
DATE OF SAMPLING	PARAMETERS				
	SPM*	**PM_{10}**	**$PM_{2.5}$**	**NO_X**	**SO_2**
DETECTION LIMIT	5	5	2	6	10
12-09-19	54	31	17	12	<10
19-09-19	31	18	10	7	<10
TLV	**200**	**100**	**60**	**80**	**80**

SCIENTIFIC ASSISTANT

DEEPANSHU SAHU
AUTHORIZED SIGNATORY

1. This Report refers to the values related to the items tested as received
2. This Report cannot be reproduced in part or full without written permission of the management.
3. * Test parameter not under NABL scope.

Environment Laboratory CMPDI RI-IV, NAGPUR	Test Report Effluent water quality monitoring data	TC-7102

TSET REPORT NO.	RIN/TR/SEPTEMBER-19/W4	DATE OF ISSUE	31.10.19
NAME OF CUSTOMER	WCL, NAGPUR	SAMPLE DESCRIPTION	WATER SAMPLE
CUSTOMER LETTER REFERENCE NO.	WCL/HQ/ENV/17-K/520-522 DATED: 18.04.19		
TEST REQUIRED	IS 3025 (Part 11):1983, IS 3025 (Part 17):1984, IS 3025(Part 58):2006 & IS 3025(Part 39):1991		
NAME OF AREA	NAGPUR AREA	YEAR	2019
NAME OF PROJECT	SAONER UG	MONTH	SEPTEMBER

MINE WATER DISCHARGE I UG: NSNUW1				
DATE OF SAMPLE COLLECTION	ANALYSIS RESULTS			
	pH	TSS	COD	O & G
DETECTION LIMIT	0.2	10	4	2
11-09-19	7.7	26	36	<2
18-09-19	7.6	22	28	<2
TLV	5.5 - 9.0	100	250	10

MINE WATER DISCHARGE II UG: NSNUW2				
DATE OF SAMPLE COLLECTION	ANALYSIS RESULTS			
	pH	TSS	COD	O & G
DETECTION LIMIT	0.2	10	4	2
11-09-19	6.9	16	24	<2
18-09-19	7.4	28	36	<2
TLV	5.5 - 9.0	100	250	10

MINE WATER DISCHARGE III UG: NSNUW3				
DATE OF SAMPLE COLLECTION	ANALYSIS RESULTS			
	pH	TSS	COD	O & G
DETECTION LIMIT	0.2	10	4	2
11-09-19	7.1	18	28	<2
18-09-19	7.3	24	32	<2
TLV	5.5 - 9.0	100	250	10

SCIENTIFIC ASSISTANT

DEEPANSHU SAHU
AUTHORIZED SIGNATORY

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3 * Test parameter not under NABL scope.

NOISE LEVEL DATA

NAME OF AREA: NAGPUR AREA **YEAR: 2019**
NAME OF PROJECT: SAONER UG **MONTH: SEPTEMBER**

FAN HOUSE I UG: NSNUN1			
MONTH	DATE OF DATA COLLECTION	NOISE LEVEL IN dB(A)	
		DAY TIME	NIGHT TIME
SEPT 2019	05-09-19	70.6	68.4
SEPT 2019	19-09-19	69.4	68.6
TLV		**75**	**70**

FAN HOUSE II UG: NSNUN2			
MONTH	DATE OF DATA COLLECTION	NOISE LEVEL IN dB(A)	
		DAY TIME	NIGHT TIME
SEPT 2019	05-09-19	68.6	66.8
SEPT 2019	19-09-19	68.3	67.4
TLV		**75**	**70**

FAN HOUSE III UG: NSNUN3			
MONTH	DATE OF DATA COLLECTION	NOISE LEVEL IN dB(A)	
		DAY TIME	NIGHT TIME
SEPT 2019	05-09-19	69.2	67.4
SEPT 2019	19-09-19	69.2	68.7
TLV		**75**	**70**

COLONY: NSNUN4			
MONTH	DATE OF DATA COLLECTION	NOISE LEVEL IN dB(A)	
		DAY TIME	NIGHT TIME
SEPT 2019	05-09-19	44.6	42.9
SEPT 2019	19-09-19	42.4	41.3
TLV		**55**	**45**

Maharashtra Pollution Control Board

महाराष्ट्र प्रदूषण नियंत्रण मंडळ

FORM V

Environmental Audit Report for the financial Year ending the 31st March 2019

Unique Application Number
MPCB-ENVIRONMENT_STATEMENT-0000020628

Submitted Date
28-09-2019

Company Information

Company Name
SAONER UG MINE OF M/S WESTERN COALFIELDS LTD.

Application UAN number
-

Address
WAGHODA UMRI VILLAGE, PO-WAGHODA

Plot no
105(OLD)/74-75(NEW)

Taluka
SAONER

Village
WAGHODA AND UMRI

Capital Investment (In lakhs)
9457

Scale
L.S.I

City
NAGPUR

Pincode
441107

Person Name
R. S. SINGH

Designation
DY. GENERAL MANAGER (MINING)

Telephone Number
07113232276

Fax Number
07113233135

Email
saonerugminemanager@yahoo.com

Region
SRO-Nagpur I

Industry Category
Red

Industry Type
R35 Mining and ore beneficiation

Last Environmental statement submitted online
yes

Consent Number
Yes, Approved for renewal of consent vide application unique No. 0000056629

Consent Issue Date
25.02.2019 (Minutes of 12th consent appraisal meeting of 2018-19 , copy uploaded)

Consent Valid Upto
31.03.2021

Product Information

Product Name	*Consent Quantity*	*Actual Quantity*	*UOM*
COAL	2	0.611720	MT/A

By-product Information

By Product Name	*Consent Quantity*	*Actual Quantity*	*UOM*
NOT APPLICABLE	NOT APPLICABLE	NOT APPLICABLE	CMD

1) Water Consumption in m3/day

Water Consumption for	*Consent Quantity in m3/day*	*Actual Quantity in m3/day*
Process	5000	4800
Cooling	437	430
Domestic	800	760
All others	1700	1650
Total	7937	7640

1) Effluent Generation in CMD / MLD

Particulars	Consent Quantity	Actual Quantity	UOM
TRADE EFFLUENT	10000	5170 (USED FOR ECO PARK AND NILGAON FOR RO PLANT)	CMD

2) Product Wise Process Water Consumption (cubic meter of process water per unit of product)

Name of Products (Production)	During the Previous financial Year	During the current Financial year	UOM
COAL (CUBIC METER/TONNE)	0.0212	0.0217	Ton/Ton

3) Raw Material Consumption (Consumption of raw material per unit of product)

Name of Raw Materials	During the Previous financial Year	During the current Financial year	UOM
EXPLOSIVES	0.000549	0.000527	Ton/Ton

4) Fuel Consumption

Fuel Name	Consent quantity	Actual Quantity	UOM
DIESEL	-	13.227	KL/A

Pollution discharged to environment/unit of output (Parameter as specified in the consent issued)

[A] Water

Pollutants Detail	Quantity of Pollutants discharged (kL/day)	Concentration of Pollutants discharged(Mg/Lit) Except PH,Temp,Colour	Percentage of variation from prescribed standards with reasons		
	Quantity	Concentration	%variation	Standard	Reason
Environment Monitoring Report fo AIr,Water & Noise monitoring for April ,17 to March uploaded	-	-	-	-	-

[B] Air (Stack)

Pollutants Detail	Quantity of Pollutants discharged (kL/day)	Concentration of Pollutants discharged(Mg/NM3)	Percentage of variation from prescribed standards with reasons		
	Quantity	Concentration	%variation	Standard	Reason
NO STACK MONITORING	-	-	-	-	-

HAZARDOUS WASTES

1) From Process

Hazardous Waste Type	Total During Previous Financial year	Total During Current Financial year	UOM
0	-	-	CMD

2) From Pollution Control Facilities

Hazardous Waste Type	Total During Previous Financial year	Total During Current Financial year	UOM
0	-	-	CMD

SOLID WASTES

1) From Process

Non Hazardous Waste Type	Total During Previous Financial year	Total During Current Financial year	UOM
-	-	-	CMD

2) From Pollution Control Facilities

Non Hazardous Waste Type	Total During Previous Financial year	Total During Current Financial year	UOM
-	-	-	CMD

3) Quantity Recycled or Re-utilized within the unit

Waste Type	Total During Previous Financial year	Total During Current Financial year	UOM
0	-	-	CMD

Please specify the characteristics(in terms of concentration and quantum) of hazardous as well as solid wastes and indicate disposal practice adopted for both these categories of wastes.

1) Hazardous Waste

Type of Hazardous Waste Generated	Qty of Hazardous Waste	UOM	Concentration of Hazardous Waste
0	-	CMD	-

2) Solid Waste

Type of Solid Waste Generated	Qty of Solid Waste	UOM	Concentration of Solid Waste
-	-	CMD	-

Impact of the pollution Control measures taken on conservation of natural resources and consequently on the cost of production.

Description	Reduction in Water Consumption (M3/day)	Reduction in Fuel & Solvent Consumption (KL/day)	Reduction in Raw Material (Kg)	Reduction in Power Consumption (KWH)	Capital Investment(in Lacs)	Reduction in Maintenance(in Lacs)
Impact of the pollution Control measures taken	910	1.647	145	332150	6.24 REDUCTION	-23.82

Additional measures/investment proposal for environmental protection abatement of pollution, prevention of pollution.

[A] Investment made during the period of Environmental Statement

Detail of measures for Environmental Protection	Environmental Protection Measures	Capital Investment (Lacks)
CAPITAL INVESTMENT	ENVIRONMENTAL CAPPITAL EXPENDITURE	22.20
REVENUE INVESTMENT	ENVIRONMENTAL REVENUE EXPENDITURE	49.60

[B] Investment Proposed for next Year

Detail of measures for Environmental Protection	Environmental Protection Measures	Capital Investment (Lacks)
CAPITAL INVESTMENT	CAPITAL INVESTMENT PROPOSED	5.70

Any other particulars in respect of environmental protection and abatement of pollution.

Particulars

-

Name & Designation

R. S. SINGH, DY. GENERAL MANAGER

MAHARASHTRA POLLUTION CONTROL BOARD

Phone : 4010437/4020781 /4037124/4035273
Fax : 24044532/4024068 /4023516
Email : enquiry@mpcb.gov.in
Visit At : http://mpcb.gov.in

Kalpataru Point, 3rd & 4th floor, Sion- Matunga Scheme Road No. 8, Opp. Cine Planet Cinema, Near Sion Circle, Sion (E), Mumbai - 400 022

Consent order No :- Formate1.0/ BO/CAC-Cell/EIC No NG-12415-15/*CAC-* 7755
Date- 13 */07/2015*

To,
M/s. WCL Saoner, UG Coal Mine, Saoner
Tal – Saoner, Dist – Nagpur.

Subject: Renewal of Consent under RED category.
Ref : Earlier Consent granted vide no. BO/JD(APC)/EIC No.-NG-8045-12 /R/CAC- 5889 dtd- 11/07/2013 valid upto 31.03.2015.

Your application: CR1504000424
Dated: 10/03/2015.

For: Renewal of Consent
under Section 26 of the Water (Prevention & Control of Pollution) Act, 1974 & under Section 21 of the Air (Prevention & Control of Pollution) Act, 1981 and Authorization under Rule 5 of the Hazardous Wastes (M, H & T M) Rules 2008 is considered and the consent is hereby granted subject to the following terms and conditions and as detailed in the schedule I, II ,III & IV annexed to this order:

1. The consent is granted for a period from 01.04.2015 to 31.03.2018

2. The actual capital investment of the industry is Rs. 88.68 Crs. (As per C. A. Certificate submitted by industry

3. The Consent is valid for the manufacture of –

Sr. No.	Product / By-Product Name	Maximum Quantity in MT/A
1.	Underground Coal mining over mine lease area of ..... Ha	2.0 MTPA

4. Conditions under Water (P&CP), 1974 Act for discharge of effluent:

Sr. no.	Description	Permitted quantity of discharge (CMD)	Standards to be achieved	Disposal
1.	Trade effluent	10000 m^3/Day	As per Schedule –I	On land for Gardening
2.	Domestic effluent	900 m^3/Day	As per Schedule –I	

5. Conditions under Air (P& CP) Act, 1981 for air emissions:

Sr. no.	Description of stack / source	Number of Stack	Standards to be achieved
1.	--	--	--

6. **Conditions about Non Hazardous Wastes:**

Sr. no.	Type Of Waste	Quantity & UoM	Treatment	Disposal
1.	--	--	----	--

7. **Conditions under Hazardous Waste (MH & TM) Rules, 2008 for treatment and disposal of hazardous waste:**

Sr. No.	Type Of Waste	Category	Quantity	UOM	Treatment	Disposal
1.	Used / Spent Oil	5.1	100	Ltr/Day	In House	Reprocess / Recover / Reuse

8. **The Board reserves the right to review, amend, suspend, revoke etc. this consent and the same shall be binding on the industry.**

9. **Industry shall Erect, install & Commission the sewage Treatment Plant (STP) on or before 31/12/2015**

10. **This consent should not be construed as exemption from obtaining necessary NOC/permission from any other Government authorities.**

For and on behalf of the
Maharashtra Pollution Control Board

(Dr. P Anbalagan, IAS)
Member Secretary

Received Consent fee of –

Sr. No.	Amount(Rs.)	DD. No.	Date	Drawn On
1.	900000.00	949865	27/02/2015	Oriental Bank of Commerce
2.	900000.00	949866	27/02/2015	Oriental Bank of Commerce
3.	975000.00	949867	27/02/2015	Oriental Bank of Commerce

Copy to:

1. Regional Officer – Nagpur. He is directed to forfeit BG of Rs. 5/- Lakhs obtained against installation of STP on or before 31.12.2013 as SRO reported that industry has not installed the same.
2. Sub - Regional Officer – Nagpur-I, MPCB. They are directed to ensure the compliance of the consent conditions.
3. Chief Accounts Officer, MPCB, Mumbai.
4. CC/CAC desk- for record & website updation purposes.

Schedule-I

Terms & conditions for compliance of Water Pollution Control:

1) A] As per your application, you have provided the Effluent Treatment Plant (ETP) with the design capacity not mentioned.

B] The Applicant shall operate the effluent treatment plant (ETP) to treat the trade effluent so as to achieve the following standards prescribed by the Board or under EP Act, 1986 and Rules made there under from time to time, whichever is stringent.

Sr No.	Parameters	Standards prescribed by Board (If any)
01	pH	5.5 to 9.0
02	Oil & Grease	20
03	BOD (3 days 27oC)	100
04	Total Dissolved Solids	2100
05	Phenolics (C6H5OH)	1.00
06	Suspended Solids	100
07	COD	250
08	Chloride	600
09	Sulphate	1000

C) The treated effluent shall be used for spraying mine pits to the maximum extent & excess shall be used on land for gardening

2) A.] As per your consent application, you have provided the septic tank soak pit system with the design capacity Not mentioned.

B.] The applicant shall operate the sewage treatment system to threat the sewage so as to achieve the following standards/ prescribed under EPA ct 1986 and Rules made three under from time to time, whichever is stringent.

1) Suspended Solids. Not to exceed 50 mg/1.
2) BOD 3 days 27oC. Not to exceed 30 mg/1.
3) COD. Not to exceed 100 mg/1.

C.] The treated sewage shall be disposed on land for gardening/irrigation

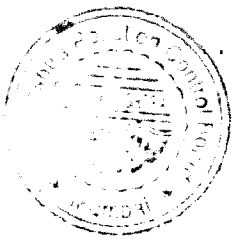
3) The Board reserves its rights to review plans, specifications or other data relating to plant setup for the treatment of waterworks for the purification thereof & the system for the disposal of sewage or trade effluent or in connection with the grant of any consent conditions. The Applicant shall obtain prior consent of the Board to take steps to establish the unit or establish any treatment and disposal system or and extension or addition thereto.

4) The industry shall ensure replacement of pollution control system or its parts after expiry of its expected life as defined by manufacturer so as to ensure the compliance of standards and safety of the operation thereof.

5) The Applicant shall comply with the provisions of the Water (Prevention & Control of Pollution) Cess Act, 1977 and as amended, by installing water meters, filing water cess returns in Form-I and other provisions as contained in the said act.

Sr. no.	Purpose for water consumed	Water consumption quantity (CMD)
1.	Domestic	1600
2.	Mine Discharge	2250
3.	Spraying, Workshop, Dust Suppression	--
4.	Sand stowing	--
5.	Other Uses like gardening Etc	1500

3) The Applicant shall provide Specific Water Pollution control system as per the conditions of EP Act, 1986 and rule made there under from time to time/ Environmental Clearance / CREP guidelines.



Schedule-II

Terms & conditions for compliance of Air Pollution Control:

1. As per your application, you have provided the Air pollution control (APC)system and also erected following stack (s) to observe the following fuel pattern-

Sr. No.	Stack Attached To	APC System	Height in Mtrs.	Type of Fuel	Quantity & UoM	S %	SO_2 Kg/Day
1	NA						

2. The Applicant shall provide Specific Air Pollution control equipments as per the conditions of EP Act, 1986 and rule made there under from time to time / Environmental Clearance / CREP guidelines. (Concern section shall mention specific control equipments)

3. The applicant shall operate and maintain above mentioned air pollution control system, so as to achieve the level of pollutants to the following standards:

Particulate matter	Not to exceed	150 mg/Nm^3.

4. The Applicant shall obtain necessary prior permission for providing additional control equipment with necessary specifications and operation thereof or alteration or replacement/alteration well before its life come to an end or erection of new pollution control equipment.
5. The Board reserves its rights to vary all or any of the condition in the consent, if due to any technological improvement or otherwise such variation (including the change of any control equipment, other in whole or in part is necessary).
6. Control Equipments
   a) Coal handling plant provided with dust collector & automatic water sprinkler shall be operated
   b) Scientific spraying of water on all working area, dump area, stock piles with the help of appropriate dust suppression system.
   c) Coal shall be properly covered during transportation.
   d) The applicant shall carry out tree plantation along road side, around dumps or compulsory afforestation as per proposal approved by Forest Department. The tree plantation programme shall be taken up well in advance of the actual mining activity, so that green belt of sufficient width & height is developed between mining area/road and surrounding environment.
   e) Black topped metal roads provided shall be well maintained to prevent dust formation.
   f) Overloading of dumpers shall be avoided to prevent spillages.
   g) Correct type & quantity of explosive shall be used to avoid excess dust formation & vibration in the surrounding area.
   h) The slope of the over burden shall have slope not more than 28 degree to the horizontal. The overburden shall be properly covered by vegetation for stabilization.
   i) Coal transportation shall be done by installing conveyors wherever possible & mechanically covered closed trucks shall be used for transportation.

7. Standards for Ambient Air Pollutants:

(i)	Suspended Particulate Matter [SPM]	Not to exceed	500 ug/m^3
(ii)	Respirable Particulate Matter [RSPM] [Size less than 10 micrometer]	Not to exceed	250 ug/m^3
(iii)	Sulphur Dioxide (SO_2)	Not to exceed	120 ug/m^3
(iv)	Oxides of Nitrogen (NOx)	Not to exceed	120 ug/m^3.

8. The applicant shall install minimum three continuous automatic ambient air and micrometeorological monitoring station at location indicated by State Board to be set up and operate at its own cost measure SO2, NOx and particulate matter as per the condition of Environmental clearance to be obtained. These CAAQMS shall also have necessary provision of networking to the Air Quality Monitoring network of MPCB.

9. **The applicant shall take adequate measures for control of noise levels from its own sources as follows:**

Sr. No	Location	Permissible Norms [in dB (a)]	Desired minimum thickness of green belt (m)
1	Along Road side	65 (Commercial Area)	20
2	In colonies	55 (Residential Area)	20
3	Near Opencast Mines	75 (Industrial Area)	10 (*40)
4	Near CHPs	75	30
5	Near Shaft	75	20
6	Near Mine exhaust fan	75	>50

***The Opencast Mine needs to be surrounded by a green belt of sufficient width as per the guidelines of Design Institute Ltd. [A subsidiary of Coal India Ltd.] if the residential complexes are very close**

10. **Other conditions:**

(i) Whenever due to any accident or other unforeseen act or even, such emissions occur or is apprehended to occur in excess standards laid down, such information shall be forthwith reported to Board, concerned Police station, office of Directorate of Health services, Dept. of explosives, Inspectorate of Factories & Local Body. In case of failure of pollution control equipments, the production process connected to it shall be stopped

(ii) If Coal Washeries are installed, then follow the conditions of the MoEF, GOI's Notification No Q15017/13/9 CPW, dtd 27.01.1999 strictly.

Maharashtra Pollution Control Board

Schedule-III
Details of Bank Guarantees

BG History

Sr. No.	Consent (C to E/O/R)	Amt of BG Imposed	Amt of BG to be forfeited from BG imposed	Purpose of BG Forfeiture
1.	C to R	Rs. 05 Lakhs	Rs. 05 Lakhs	For non erection, installation and commissioning of Sewage Treatment Plant on or before 31.12.2013

Sr. No.	Consent (C to E/O/R)	Amt of BG Imposed	Submission Period	Purpose of BG	Compliance Period	Validity Date
1	C to R	Rs. 50/- Lakhs	15 days	Erection, installation & Commissioning sewage Treatment Plant (STP) on or before 31/12/2015	6 months (i.e., 31.12.2015)	31.07.2018
2	C to R (Existing to be extended)	Rs. 5/- Lakhs	15 days	Operation and maintenance of Pollution Control System so as to achieve the consented standards.	31.03.2018	31.07.2018

Maharashtra Pollution Control Board

Schedule-IV

General Conditions:

1) The applicant shall provide facility for collection of environmental samples and samples of trade and sewage effluents, air emissions and hazardous waste to the Board staff at the terminal or designated points and shall pay to the Board for the services rendered in this behalf.
2) Industry should monitor effluent quality, stack emissions and ambient air quality monthly quarterly.
3) The applicant shall provide ports in the chimney/(s) and facilities such as ladder, platform etc. for monitoring the air emissions and the same shall be open for inspection to/and for use of the Board's Staff. The chimney(s) vents attached to various sources of emission shall be designated by numbers such as S-1, S-2, etc. and these shall be painted/ displayed to facilitate identification.
4) Whenever due to any accident or other unforeseen act or even, such emissions occur or is apprehended to occur in excess of standards laid down, such information shall be forthwith Reported to Board, concerned Police Station, office of Directorate of Health Services, Department of Explosives, Inspectorate of Factories and Local Body. In case of failure of pollution control equipments, the production process connected to it shall be stopped.
5) The applicant shall provide an alternate electric power source sufficient to operate all pollution control facilities installed to maintain compliance with the terms and conditions of the consent. In the absence, the applicant shall stop, reduce or otherwise, control production to abide by terms and conditions of this consent.
6) The firm shall submit to this office, the 30th day of September every year , the Environmental Statement Report for the financial year ending 31st March in the prescribed Form-V as per the provisions of rule 14 of the Environment (Protection) (Second Amendment) Rules, 1992.
7) The industry shall recycle/reprocess/reuse/recover Hazardous Waste as per the provision contain in the HW(MH&TM) Rules 2008, which can be recycled
8) /processed/reused/recovered and only waste which has to be incinerated shall go to incineration and waste which can be used for land filling and cannot be recycled/reprocessed etc should go for that purpose, in order to reduce load on incineration and landfill site/environment.
9) The industry should comply with the Hazardous Waste (M,H & TM) Rules, 2008 and submit the Annual Returns as per Rule 5(6) & 22(2) of Hazarsous Waste (M,H & TM) Rules, 2008 for the preceding year April to March in Form-IV by 30th June of every year.
10) An inspection book shall be opened and made available to the Board's officers during their visit to the applicant.
11) **The applicant shall make an application for renewal of the consent at least 60 days before the date of the expiry of the consent.**
12) Industry shall strictly comply with the Water (P&CP) Act, 1974, Air (P&CP) Act,1981 and Environmental Protection Act,1986 and industry specific standard under EP Rules 1986 which are available on MPCB website(www.mpcb.gov.in).
13) The industry shall constitute an Environmental cell with qualified staff/personnel/agency to see the day to day compliance of consent condition towards Environment Protection.
14) Separate drainage system shall be provided for collection of trade and sewage effluents. Terminal manholes shall be provided at the end of the collection system with arrangement for measuring the flow. No effluent shall be admitted in the pipes/sewers downstream of the terminal manholes. No effluent shall find its way other than in designed and provided collection system.
15) Neither storm water nor discharge from other premises shall be allowed to mix with the effluents from the factory.
16) The applicant shall install a separate meter showing the consumption of energy for operation of domestic and industrial effluent treatment plants and air pollution control system. A register showing consumption of chemicals used for treatment shall be maintained.
17) Conditions for D.G. Set

a) Noise from the D.G. Set should be controlled by providing an acoustic enclosure or by treating the room acoustically.

b) Industry should provide acoustic enclosure for control of noise. The acoustic enclosure/ acoustic treatment of the room should be designed for minimum 25 dB (A) insertion loss or for meeting the ambient noise standards, whichever is on higher side. A suitable exhaust muffler with insertion loss of 25 dB (A) shall also be provided. The measurement of insertion loss will be done at different points at 0.5 meters from acoustic enclosure/room and then average.

c) Industry should make efforts to bring down noise level due to DG set, outside industrial premises, within ambient noise requirements by proper sitting and control measures.

d) Installation of DG Set must be strictly in compliance with recommendations of DG Set manufacturer.

e) A proper routine and preventive maintenance procedure for DG set should be set and followed in consultation with the DG manufacturer which would help to prevent noise levels of DG set from deteriorating with use.

f) D.G. Set shall be operated only in case of power failure.

g) The applicant should not cause any nuisance in the surrounding area due to operation of D.G. Set.

h) The applicant shall comply with the notification of MoEF dated 17.05.2002 regarding noise limit for generator sets run with diesel

18) The industry should not cause any nuisance in surrounding area.

19) The industry shall take adequate measures for control of noise levels from its own sources within the premises so as to maintain ambient air quality standard in respect of noise to less than 75dB(A) during day time and 70dB(A) during night time. Day time is reckoned in between 6 am and 10 pm and night time is reckoned between 10 pm and 6 am

20) The applicant shall maintain good housekeeping.

21) The applicant shall bring minimum 33% of the available open land under green coverage/ plantation. The applicant shall submit a statement on available open plot area, number of trees surviving as on 31st March of the year and number of trees planted by September end, with the Environment Statement.

22) The non-hazardous solid waste arising in the factory premises, sweepings, etc. be disposed of scientifically so as not to cause any nuisance / pollution. The applicant shall take necessary permissions from civic authorities for disposal of solid waste.

23) The applicant shall not change or alter the quantity, quality, the rate of discharge, temperature or the mode of the effluent/emissions or hazardous wastes or control equipments provided for without previous written permission of the Board. The industry will not carry out any activity, for which this consent has not been granted/without prior consent of the Board.

24) The industry shall ensure that fugitive emissions from the activity are controlled so as to maintain clean and safe environment in and around the factory premises.

25) The industry shall submit quarterly statement in respect of industries' obligation towards consent and pollution control compliance's duly supported with documentary evidences (format can be downloaded from MPCB official site).

26) The industry shall submit official e-mail address and any change will be duly informed to the MPCB.

27) The industry shall achieve the National Ambient Air Quality standards prescribed vide Government of India, Notification dt. 16.11.2009 as amended.

28) The project authorities shall obtain consent for their railway siding operation.

29) The project authorities shall submit an action plan for using closed coal conveyor belt system in place of truck transportation, wherever the coal transportation distance is less than 3 Kms initially, within 3 months.

30) This consent is valid along with the Environmental Clearance granted to the mine.

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