THE SINGARENI COLLIERIES COMPANY LIMITED
(A GOVERNMENT COMPANY)
Registered Office
Kothagudem Collieries (P.O) - 507 101, Bhadradri Kothagudem Dist, Telangana State
CIN: U10102TG1920SGC000571

Environment Dept., Srirampur Area
PO:Srirampur Colony-504 303, Dist. Mancherial, Telangana State

Phone No: 08736-238039.
Fax No : 08736-238222.
e-mail:env_srp@scclmines.com
website:www.scclmines.com

Ref.No: SRP/ENV/U-402/2023/349 Date: 25.11.2023.

"By Regd. Post with ACK due"

To
The Director,
Ministry of Environment, Forests & Climate Change (MoEF &CC),
Integrated Regional Office, Hyderabad.
3rd Floor, Aranya Bhawan, Opp, RBI, Saifabad,
Hyderabad- 500 004.

Sir,

Sub: Half yearly Environmental monitoring Report in respect of **RK-NT** Incline underground coal mine of SCCL for the period April,2023 to September,2023 - Reg.

Ref : MoEF Lr.No. J -11015/16/88-1AII(M), Dated:04.02.1994

******

Reference to the MoEF Environmental clearance(E.C) letter cited above, please find enclosed herewith the Half yearly Environmental Monitoring report for the period ending 30.09.2023 in respect of RK-NT Incline underground coal Mine of SCCL in the form of Soft Copy.

The report consists of Part - I which indicates the status of implementation of environmental clearance conditions and Part-II indicates the various pollution control measures, annexure and analysis data being taken.

Thanking you,

Yours faithfully,

Office of the General Manager S.C.C.L. SRIRAMPUR

General Manager,
Srirampur Area.
General Manager
SRIRAMPUR

Encl: As above.

C.C.: The Environmental Engineer,
Telengana State Pollution Control Board,
Regional Office, H.No: 6-2-166/A, Subhash Nagar,
Nizamabad - 503 002.

HALF YEARLY COMPLIANCE REPORT ON

ENVIRONMENTAL CLEARANCE CONDITIONS

AS ON 30th SEPTEMBER, 2023

FOR RAVINDRA KHANI– NEW TECH INCLINE UNDER GROUND COAL MINE

NEAR SRIRAMPUR VILLAGE, MANCHERIAL DISTRICT, TELANGANA STATE

THE SINGARENI COLLIERIES COMPANY LIMITED

(A Government Company)

SRIRAMPUR AREA

CONTENTS

_____

THE SINGARENI COLLIERIES COMPANY LIMITED

(A Government Company)
SRIRAMPUR AREA

PART- I

HALF YEARLY COMPLIANCE REPORT OF ENVIRONMENTAL CLEARANCE CONDITIONS UPTO 30th SEPTEMBER, 2023.

A. SALIENT FEATURES OF THE PROJECT:

1	**Name of the Project**		:	**Ravindrakhani -New Tech Incline**
2	Organization		:	Singareni Collieries Company Limited
3	Coalfield		:	Godavari Valley Coal Field
4	Type of Mine		:	**Under Ground Coal Mine**
5	Technology		:	Semi Mechanized (SDL & Short wall mining Tech.)
6	**Environmental Clearance**		:	
	A	Letter No & date	:	No. J -11015/16/88-1AII(M), Dated:04.02.1994
	B	Sanction capacity	:	1.0 MTPA
	C	Mining Lease Area	:	Indaram Extension Mining Lease (344.0 Ha.)
	D	Date of Public Hearing	:	N.A
7	**Location of the Project**			
	A	Village	:	Srirampur
	B	Tehasil	:	Naspur (Mandal)
	C	District	:	Mancherial
	D	State	:	Telangana State
	E	Latitude	:	N 18^0 50’ 35” to N 18^0 52’ 11”
	F	Longitude	:	E 79^0 31’ 21” to E 79^0 32’ 33”
	G	Topo Sheet	:	56 N/9
	H	Nearest railway station	:	Mancherial
	I	Nearest Airport	:	Hyderabad
	J	Nearest town	:	Mancherial
8	**Address for Correspondence**		:	
	A	Name	:	M.RAMUDU
	B	Designation	:	Agent
	C	Address	:	Agent Office, RK-7 & NT Group of Mines, Srirampur Colony (Post), Naspur Mandal, Mancherial Dist. Telangana State.
	D	Pin Code	:	504303
	F	E-mail ID	:	agt_rk7nt_srp@scclmines.com
	G	Telephone No.	:	08736-238586; Mobile No: 9491144827
	H	Fax No.	:	08736-238238
9	**Life of the Project**		:	
	A	Date of Opening		19.10.1983
	B	Total Life of the project as per EMP	:	42 years
	C	Balance Life	:	3.0 Years
10	**Seams**		:	
	A	Total Seams Present	:	2 No.s

	B	Seams being worked	:	1A seam
11	**Depth**			
	A	Minimum Depth (m)	:	35 m
	B	Maximum Depth (m)	:	315 m
	C	Present working depth (m)	:	91 m
12	**Reserves**			
	A	Total Geological Reserves	:	28.83 MT
	B	Total Extractable Reserves	:	12.19 MT
	C	Reserves already Extracted	:	10.87 MT
	D	Balance Reserves	:	1.32 MT
	E	Coal production during last six months	:	0.085 MT
13	**Land Requirement**			
	A	Total Requirement (Mine Take Area)	:	327.40 Ha.
	B	Forestland Involved	:	327.40 Ha.
	C	Non-forestland	:	0
	D	Land acquired so far (Surface rights)	:	8.96 Ha.
14	**Statutory Clearances**		:	
	A	Ground Water Clearance	:	Order No. 3324/Hg.III(2)/2005, Dtd.25.08.2005.
	B	Consent for Operation	:	Consent Order No: 210522943452, dtd.15.09.2021 valid upto 30.06.2026.
	C	Forest Clearance	:	Total forest land involved in the project is 327.40 ha of which 318.44 ha of forest land diverted for mining purpose with underground rights, (164.10 ha of forest land covered in 180.88 ha forest land diverted) vide F.No.8-108/2005-FC,dated 9th June 2009 valid up to 08.06.2029 and 154.34 ha of forest land covered in 1054.84 ha forest land diverted vide letter Nos. F. No. 8-1/2000-FC, dated 28th November 2001 Co-terminous with mining lease). Forest Land of 8.96 ha for surface rights was diverted vide F.No.8-70/90-FC, Dt.23.02.1998 Co-terminous with mining lease.
	D	Mining Lease	:	➢ 163.30 ha is covered in 2nd Renewal of Indaram Mining Lease for 2044.34 ha, obtained vide G.O.Ms. No.9, dated: 16.04.2022, valid up to 28.07.2030. ➢ Remaining area of 164.10 ha is covered in Indaram Extension Mining Lease for 199.88 ha obtained vide G.O.Ms. No. 215, dated: 18.09.2009, valid up to 08.12.2039.
	E	Others (Specify)		--
15	**R & R Involved**		:	No R&R involved.

B. COMPLIANCE STATUS OF EC CONDITIONS AS ON 30.09.2023

E. C. Cond. No:	Condition	Status as on 30.09.2023.
1)	The levels of SPM and other noxious gases within the mine lease hold area should be regularly monitored to confirm to the prescribed limits.	As per the Air Quality standards for coal mines dated: 25.09.2000 and NAAQS 2009 the parameters PM10, PM2.5, SO2 and NOx are being monitored once in every fortnight through MoEF&CC approved third party laboratory M/s Environment Protection Training and Research Institute (EPTRI), Hyderabad. The results of monitoring of Ambient Air Quality including locations, frequency and parameters are furnished in **Point No. 5 of Part-II.**
2)	The Quality of effluent discharged into the receiving water body shall confirm to the standards prescribed under notification No. GSR.422 (E), dated 19-05-1993. Adequate treatment facilities should be installed to prevent water pollution by mine discharge water due to suspended solids, hardness and TDS, Zinc, Iron & Coli forms, as dealt in the EMP.	The mine discharge water is being treated in the slow sand filter beds and after treatment it is being used for different purposes such as domestic, dust suppression and plantation etc. and the excess water is being let out into nearby streams for irrigation. The quality of this water is being monitored as per the effluent standards for Coal Mines GSR 742 (E) dated: 25.09.2000 and GSR 801 (E) dated 31.12.1993. The discharge water quality parameters were meeting the stipulated norms and analysis reports was submitted to the ministry along with half yearly reports. Water monitoring results are furnished in **Point No. 6 of Part-II.**
3)	The subsidence control measures as per the EMP and supplementary Note should be	The subsidence monitoring is being carried out regularly as per the DGMS Circular no. 4 of 1988, the subsidence

E. C. Cond. No:	Condition	Status as on 30.09.2023.
	implemented. The likely subsided area should be restored to reclamation of subsided area and subsequent plantation should be carried out.	area is being inspected regularly and the depressions/cracks if any are being filled regularly and plantation is being carried out on the subsided area. Recently a scientific study for prediction of subsidence and estimation of surface strain values by 3d numerical modelling for RK NT was carried out by IIT Kharagpur and all the measured and predicted values are within the limits. Subsidence management details are furnished in **point no. 13 of Part-II.**
4)	The CHP, Belts and fan house etc., should be designed to minimize noise level and control measures including development of green belts around potential noise sources, mine-colony interface etc., should be implemented to reduce the noise level below the standards prescribed by competent authority.	All the noise control measures such as thick Plantation around the fan house and project area has been carried to dampen the noise, provision of Evasee to main mechanical ventilator to reduce the noise from the main mechanical ventilator and height of fall of coal in the bunkers/transfer points are reduced to minimize the noise etc., Noise quality is being monitored once in every fortnight through MoEF&CC approved third party laboratory M/s Environment Protection Training and Research Institute (EPTRI), Hyderabad. The monitored noise levels are within the standards. Data being recorded properly and being submitted to RO, MoEF&CC and RO, TSPCB along with Half yearly monitoring report.
5)	Regular Monitoring of Environmental parameters should be done and recorded data furnished to ministry and its Regional Office once in Six months.	Regular monitoring of Environmental parameters is carried out and the recorded data is being furnished to the regional Office of the Ministry, Chennai in the half yearly monitoring reports.
6)	No change in methodology of working and scope of working should be made without approval of Ministry.	No change in the methodology and scope from the technology & Scope envisaged in the approved EMP. Any change in the scope or methodology, prior approval of the Ministry of Environment and Forests will be obtained. The current production schedule is being followed as per the approved calendar programme.

<table>
<tr><th>E. C. Cond. No:</th><th>Condition</th><th>Status as on 30.09.2023.</th></tr>
<tr><td></td><td></td><td>
<table>
<tr><th rowspan="2">Year</th><th colspan="2">Production in M.T</th></tr>
<tr><th>As per EMP</th><th>Actual</th></tr>
<tr><td>2021-22</td><td>1.00</td><td>0.244</td></tr>
<tr><td>2022-23</td><td>1.00</td><td>0.179</td></tr>
<tr><td>2023-24 (apr-sep)</td><td>1.00</td><td>0.083</td></tr>
</table>
The production details since inception is furnished in the Point No.1 of Part-II
</td></tr>
<tr><td>7)</td><td>The green belt around the mine and associated industrial units and Township should be provided as per the EMP. The afforestation scheme should pay special emphasis on mixed culture rather than mono-culture.</td><td>The green belt as per the above condition is being provided in a phased manner. As on date 4.02 Ha. with 10100 saplings(Survived – 6828) within the mine premises was carried out. Plantation has completed in the vacant area of the mine. Existing plantation details furnished in point no. 2 of Part-II.
 
<u>Greenbelt around Mine premises</u></td></tr>
<tr><td>8)</td><td>The project proponent should submit a detailed note on the socio economic measures taken up in adopted villages in the Buffer Zone. The Company should upgrade the welfare measures in the Buffer zone of the project.</td><td>The latest Socio-economic measures are furnished in point no. 10 of Part-II.</td></tr>
<tr><td>9)</td><td>An Environmental Management cell has to be established to carryout functions relating to Environmental Management action plans. The Head of the cell should directly report to Chief Executive.</td><td>A company level environment cell with qualified personnel headed by General Manager (Environment) who is reportable to the Director of the Company is established to monitor and guide in implementation of the environmental safeguards.

An area level environmental cell headed by qualified environmental officer is established and functioning under the control of area General Manager to monitor and guide in implementation of the environmental safeguards.

Apart from this, a unit level</td></tr>
</table>

<table>
<tr><th>E. C. Cond. No:</th><th>Condition</th><th>Status as on 30.09.2023.</th></tr>
<tr><td></td><td></td><td>Environmental Management Committee with multidisciplinary team has been constituted under the Chairmanship of SO to GM. The committee has been constituted with following members.
<table><tr><td>1.</td><td>SO to General Manager</td><td>Chairman</td></tr><tr><td>2.</td><td>Project Officer</td><td>Member</td></tr><tr><td>3.</td><td>Area Engineer (E&M)</td><td>Member</td></tr><tr><td>4.</td><td>Area Civil Engineer</td><td>Member</td></tr><tr><td>5.</td><td>Area Forest Officer</td><td>Member</td></tr><tr><td>6.</td><td>Area Estates Officer</td><td>Member</td></tr><tr><td>7.</td><td>Project Manager</td><td>Member</td></tr><tr><td>8.</td><td>Project Engineer</td><td>Member</td></tr><tr><td>9.</td><td>Project Surveyor</td><td>Member</td></tr><tr><td>10</td><td>Project Env. Officer</td><td>Member</td></tr><tr><td>11</td><td>Area Env. Officer</td><td>Secretary</td></tr><tr><td>12</td><td>Sr. Hydro Geologist</td><td>Member</td></tr><tr><td>13</td><td>Area Survey Officer</td><td>Member</td></tr></table>Details are furnished in point no. 11 of Part-II.</td></tr>
<tr><td>10)</td><td>Adequate fund provision (Capital & Recurring) should be made for implementation of all safeguard measures. As per the cost estimated based on 1992 figures Rs.199.68lakhs has been provided for EMP measures. The fund should not be diverted and should be upgraded along with project cost revisions if any.</td><td>The funds earmarked for environmental protection measures are not being diverted for any other purpose. For implementing EMP and environmental conditions, responsibilities are being assigned to the concerned unit level and area level officers.

Till now about Rs. 38.61 Lakhs was spent as environment capital expenditure and about Rs. 12.74 Crores was spent as environmental revenue expenditure.

Year wise progress of implementation of environmental protection measures is being reported to the Ministry/Regional Office along with the Six-Monthly Compliance Report. Details of Environmental capital and revenue expenditures are enclosed as The environmental protection expenditure incurred in the Project is furnished as Point No.9 of Part-II.</td></tr>
<tr><td>11)</td><td>The Ministry reserves the right to stipulate any other conditions as may be required in the interest of environmental protection. Failure to comply with environmental</td><td>Agreed to comply for any conditions required in the interest of environmental protection.</td></tr>
</table>

E. C. Cond. No:	Condition	Status as on 30.09.2023.
	stipulations as above, would result in withdrawal of clearance granted.	
12)	Environmental compliance status report vis-a-vis project progress should be submitted for scrutiny of this Ministry and Regional Office once in six months regularly.	Environmental Clearance Compliance status has been submitting to MoEF&CC, Regional Office, and Chennai every six months period regularly.
	The above conditions would be enforced inter-alia under the water (Prevention and Control of Pollution) Act, 1974, Air (Prevention and Control of Pollution) Act, 1981, Environment (Protection) Act, 1986	The above conditions are being complied as per Water (Prevention & Control of Pollution) Act 1974, The Air (Prevention & Control of Pollution) Act, 1981 The Environment (Protection) Act, 1986. CFO was obtained vide no. 210522943452 Dt: 15.09.2021 valid up to 30.06.2026. A Copy of CFO is enclosed as **Annexure.**

A periodic progress report regarding environmental protection measures till 30.09.2023 is enclosed as **Part - II.**

The Singareni Collieries Company Limited * Agent RK-7 Group of Mines *

AGENT,
RK-7&NT Group of Mines.
Agent, RK-7 Group
SCCL. SRP Area

PART – II

ENVIRONMENTAL PROTECTION MEASURES AS ON 30.09.2023

1. Production Details

Sl. No	Year	Coal (in MT)	
		As per EMP	Actual
1.	1987-88	1.00	0.0296
2.	1988-89	1.00	0.108
3.	1989-90	1.00	0.113
4.	1990-91	1.00	0.124
5.	1991-92	1.00	0.139
6.	1992-93	1.00	0.187
7.	1993-94	1.00	0.189
8.	1994-95	1.00	0.183
9.	1995-96	1.00	0.165
10.	1996-97	1.00	0.146
11.	1997-98	1.00	0.185
12.	1998-99	1.00	0.216
13.	1999-00	1.00	0.187
14.	2000-01	1.00	0.287
15.	2001-02	1.00	0.355
16.	2002-03	1.00	0.298
17.	2003-04	1.00	0.329
18.	2004-05	1.00	0.289
19.	2005-06	1.00	0.352
20.	2006-07	1.00	0.379
21.	2007-08	1.00	0.430
22.	2008-09	1.00	0.270
23.	2009-10	1.00	0.413
24.	2010-11	1.00	0.394
25.	2011-12	1.00	0.298
26.	2012-13	1.00	0.509
27.	2013-14	1.00	0.648
28.	2014-15	1.00	0.702
29.	2015-16	1.00	0.535
30.	2016-17	1.00	0.486
31.	2017-18	1.00	0.413
32.	2018-19	1.00	0.428
33.	2019-20	1.00	0.400
34.	2020-21	1.00	0.246
35	2021-22	1.00	0.244
36	2022-23	1.00	0.179
37	2023-24 (apr-sep)	1.00	0.083

2. Plantation:

1	No of plants planted during last six months/ last year	120
2	Area covered in Ha	0.12
3	Expenditure incurred in Rs.lakhs(Maintenance)	0.30
4	Total area brought under plantation so far in Ha	4.02 Ha
5	Total no of plants planted so far since inception	10100 (6828- Survived)
6	Species of plants planted	Durshanam, Kanuga, Eucalyptus, Gulmohar, Acacia, Sisoo, Neem, Pheltoform, Jamoon, Mango, Casuarinas.
7	Seeds sown so far	Nil
8	Small plants planted so far	50 No's
9	Total expenditure since inception in Rs. lakhs -	56.106

Note: Plan along with details of year wise plantation furnished as **Figure-I.**

3. Micro-meteorological Monitoring:

Micro-meteorological station was installed at General Manager's Office: The summery of monthly micro-meteorological data generated at Srirampur area from April, 2023 to September, 2023 is as follows:

Month	Wind Speed (m/s)			Temperature (ºC)			Relative Humidity (%)			Rainfall (mm)	
	Mean	Max	Calm %	Mean	Max	Min	Mean	Max	Min	Total	Hourly highest
April, 2023	2.4	6.9	14.17	25.6	46.6	33.0	35.4	79.1	8.3	0.0	0.0
May, 2023	1.8	6.1	29.97	35.0	47.8	20.9	23.7	73.0	8.2	63.5	22.3
June, 2023	1.9	6.7	22.22	32.2	45.1	23.7	48.1	93.5	18.7	76.6	18.2
July, 2023	2.1	6.0	8.33	28.6	44.3	20.2	67.1	99.5	16.4	615	52.8
August, 2023	1.7	6.1	26.48	29.9	39.8	19.3	67.4	99.7	20.8	69.2	6.0
September, 2023	1.6	5.0	15.42	28.2	40.6	18.9	46.6	99.8	19.0	194.2	23.3

Summary of micro-meteorological data generated for the study period (April, 2023 to September, 2023)

S.No	Parameter(s)	Min	Max	Mean
1.	Temperature (^{0}C)	18.9	47.8	31.2
2.	Wind Speed (m/s)	Calm (%) 17.69	6.9	1.9
3.	Relative Humidity (%)	8.2	99.8	48.0
4.	Predominant Wind direction for the entire study period	South West(SW), followed by West-South West (W-SW)		
5.	Total Rainfall (mm)	1018.5mm		

5. Ambient Air Quality Monitoring:

Parameters:

In accordance with MoEF Notification, GSR-742 (E), dt. 25.09.2000 and National Ambient Air Quality Standards, the concentration of Suspended Particulate Matter (PM_{10} and $PM_{2.5}$), Sulphur Dioxide (SO_2) and Oxides of Nitrogen (NO_x) is being monitored at work zone locations and also in nearby villages to assess the impact of mining operations on surrounding habitation.

Respirable Dust Sampler is used for monitoring of $PM_{10,}$ SO_2 and NO_x and Ambient Fine Dust Sampler is being used for monitoring of $PM_{2.5}$. SCCL is carrying out post-project environmental monitoring through EPTRI, Hyderabad, a CPCB recognized and NABL accredited laboratory. EPTRI has also established laboratories in SCCL mining areas for analyzing critical parameters in the field.

Frequency of Monitoring:

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

Monitoring Locations:

S.No.	Station Code	Name of the Stations	Latitude	Longitude
CORE ZONE				
1	CA5	RK-NT Mine	N 18°43' 55.3"	E 79° 30' 54.6"
BUFFER ZONE				
2	BA1	Mudigunta Village	N 18°51’24.7”	E 79°34’31.8”
3	BA3	Kankur Village	N 18°52’56.5”	E 79°32’40.4”
4	BA4	Srirampur Colony	N 18°51’41.6”	E 79°30’24.1”
5	BA5	RK-8 Colony	N 18°51’44.5”	E 79°30’04.5”

Monitoring Data:

The summary of the monitoring from April, 2023 to September, 2023 is as follows:

(All values in μg/m^3)

Core Zone		Min	Max	Avg	98%tile	Min	Max	Avg	98%tile	Min	Max	Avg	98%tile	Min	Max	Avg	98%tile
Coal mine standards (commenced after 25.09.2000), GSR 742(E), Dated 25.09.2000		300				-				**120**				**120**			
CA 5	RK-NT Mine	63.00	253.00	186.50	251.68	20.60	617.0	97.23	495.47	9.50	16.10	12.65	15.92	15.40	23.20	18.78	22.80

Summary of Ambient Air Data Monitoring

Location code	Name of the location	PM_{10} (μg/m^3)				$PM_{2.5}$ (μg/m^3)				SO_2 (μg/m^3)				NO_2 (μg/m^3)			
NAAQ Standards, CPCB Dated: 18.11.2009		**100**				**60**				**80**				**80**			
Buffer Zone		**Min**	**Max**	**Avg**	**98%tile**	**Min**	**Max**	**Avg**	**98%tile**	**Min**	**Max**	**Avg**	**98%tile**	**Min**	**Max**	**Avg**	**98%tile**
BA1	Mudigunta Village	35.00	86.00	70.25	85.12	16.10	45.80	34.85	45.07	7.70	14.10	9.88	13.66	12.10	19.10	14.64	18.57
BA3	Kankur Village	32.00	82.00	69.08	81.78	18.10	44.90	34.33	44.20	7.60	13.70	10.33	13.52	13.40	18.90	15.71	18.79
BA4	Srirampur Colony	46.00	89.00	76.17	88.12	20.10	48.50	38.96	48.19	8.70	12.70	10.60	12.62	15.10	19.20	16.89	19.05
BA8	RK8 Colony	37.00	83.00	67.50	82.56	17.30	43.70	32.53	42.82	8.90	11.30	9.84	11.26	14.10	14.10	15.74	17.01

The air quality data monitored at the work zone locations and surrounding residential areas indicate that PM_{10}, $PM_{2.5}$, concentration is within the stipulated limits at all locations. The SO_2 and NO_2 levels are also well within the limits at all the locations. The fortnightly air quality data monitored during six months period ending 30th September, 2023 is enclosed as **Annexure-I**.

SCCL is taking following control measures in the RK-NT Incline for air pollution control including reduction of particulate emissions:

Air Pollution Control Measures:

i) Water spraying arrangements have been made in underground at all working places, loading points and transfer points.

ii) Arrangements have been made for water spraying on the surface coal handling arrangement.

iii) The coal produced from the mine is transported to Area CHP, where effective mist spray arrangement is provided and maintained at transfer points and at loading points and the conveyor belts have been provided with covered structure.

iv) Cleaning of coal dust is being taken up regularly.

v) Coal transport route has been black topped from the mine to CHP. Internal roads have also been black topped.

vi) Avenue plantation has been developed along the Coal Transportation Road.

vii) All the transport lorries are optimally loaded for spillage of coal and covered with Tarpaulin.

Water spraying on haul roads

Water sprinkling at unloading point

Covering of Tarpaulin

CONTROL OF EMISSION OF NOXIOUS GASES:

The measures taken for mitigating the noxious gases are as follows:

i) Coal transportation trucks and other vehicles are periodically maintained.

ii) Notice boards have been displayed on the surface; advising persons to avoid burning of coal/wood/oil grease impregnated waste cotton/garbage etc., in the mine premises as a method of disposal.

iii) Blasting operations at underground is carried out with delay action detonators and ultra safe P5 explosives, which helps in mitigating the emission of gasses from explosives.

iv) Stocks of coal are not allowed to be kept on surface of the mine. If any heap has to be kept for some time, water spraying is done over it to control oxidation of coal.

v) Burning of firewood and coal for domestic purpose in colonies has been stopped due to usage of L.P Gas being distributed free of cost by the company to all the employees.

- Total manpower of the mine as on 30.09.2023 : 716

  Total L.P Gas connections to the workers as on 30.09.2023 : 592

vi) Post-project air quality monitoring is being carried out by outside agency [M/s Environment Protection Training and Research Institute (EPTRI) Hyderabad] as per the frequency stipulated by MoEF&CC vide GSR 742 (E) for coal mining industry and all the necessary precautions are being taken to maintain the concentration of critical parameters well within the stipulated standards.

6. Water Quality Monitoring:

The impact of the mining activities on the water environment was assessed by studying the quality of groundwater and surface water bodies in the study area. The sampling locations were selected considering their proximity to the project sites. A total of 8 water samples i.e., 4 samples from surface and 4 samples from groundwater were collected and analyzed for various physico-chemical and bacteriological parameters.

Post project water quality monitoring stations:

(i) Surface Water Quality Monitoring Locations:

Sl. No	Location	Zone	Latitude	Longitude	Station Code
1.	Ramaraopet Tank	Buffer	N 18° 49’ 9.0"	E 79° 31' 6.0"	SW1
2.	Indaram Tank	Buffer	N 18° 49’ 3.6"	E 79° 52' 2.4"	SW2
3	Godavari River upstream (Intake well near Sitharampalli)	Buffer	N 18° 49’ 33.5"	E 79° 28' 21.5"	SW3
4	Godavari River downstream (Near Settipalli)	Buffer	N 18° 53’ 41.8"	E 79° 40' 32.6"	SW4

(ii) Ground Water Quality Monitoring Locations:

Sl. No	Location	Zone	Latitude	Longitude	Station Code
1.	Borewell at Kankur	Buffer	N 18° 53’ 11.4"	E 79° 32' 44.4"	GW1
2.	Borewell at Mudikunta	Buffer	N 18° 53’ 08.3"	E 79° 32' 46.3"	GW2
3.	Borewell at Srirampur village	Buffer	N 18° 51’ 18.4"	E 79° 29' 28.7"	GW3
4.	Bore well at Doragaripalli	Buffer	N 18° 53’ 26.3"	E 79° 28' 29.3"	GW4

(iii) Effluents sampling locations

Sl.No.	Sample code	Name of the Location	Latitude	Longitude
1.	EW-1	RK-NT Mine discharge	N 18˚ 43’ 55.3”	E 79˚ 30’ 54.6”
2.	EW-2	Naspur Colony (STP outlet)	N 18˚ 51’ 44.7”	E 79˚ 30’ 25.7”
3.	EW-3	Area Workshop ETP outlet	N 18˚ 51’ 44.7”	E 79˚ 30’ 13.5”

Parameters:

The ground water quality results are compared with IS: 10500 standards of groundwater quality and surface water quality with IS 2296, 1982 and CPCB Water Quality Criteria, Class- A (Drinking Water Source without conventional treatment but after Disinfection), Class – B (outdoor bathing (organized) and Class – C (Drinking Water Source with

conventional treatment and after Disinfection, Class – C (Drinking Water Source with conventional treatment and after Disinfection, Class –D propagation of wild life fisheries and Class-E (Irrigation, Industrial cooling, controlled waste disposal).

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

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

Frequency of monitoring

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

Monitoring Data:

The surface water, ground water quality and effluent quality data monitored April, 2023 to September, 2023 is enclosed as **Annexure-II.** The summarized data on effluent water quality in respect of four critical parameters stipulated for coal mines is furnished hereunder.

Effluent Quality Monitoring:

The summary of the monitoring from April, 2023 to September, 2023 is as follows:

(All values in mg/l except pH)

Location	**Zone**		**Ph**			
		Min.	**Max.**	**Avg**	**98%tile**	**STD**
RK-NT'Mine discharge	Core	7.40	76.00	13.34	61.02	5.50-9.0
Location	**Zone**		**TSS (mg/l)**			
		Min.	**Max.**	**Avg**	**98%tile**	**STD**
RK-NT, Mine discharge	Core	15.00	35.00	23.08	34.12	100
Location	**Zone**		**TDS (mg/l)**			
		Min.	**Max.**	**Avg**	**98%tile**	**STD**
RK-NT,Mine discharge	Core	643.00	1121.0	852.92	1114.40	--
Location	**Zone**	**COD (mg/l)**				
		Min.	**Max.**	**Avg**	**98%tile**	**STD**
RK-NT' Mine discharge	Core	12.00	35.00	19.17	33.24	250
		BOD (mg/l)				
		Min.	**Max.**	**Avg**	**98%tile**	**STD**

RK-NT'' Mine discharge	Core	1.70	4.60	2.64	4.49	30.0
Location	**Zone**	**Oil & Grease (mg/l)**				
		Min.	**Max.**	**Avg**	**98%tile**	**STD**
RK-NT Inc. Mine discharge		1.00	1.20	1.04	1.18	10

Water Pollution Control Measures:

There is no chemical process involved, the mine discharge water may contain coal fines as such the water is being utilized for drinking and domestic purpose after treatment in slow sand filters followed by disinfections. The following control measures are being taken up at the mine to control the water pollution.

i) The mine discharge water is being utilized for dust suppression, plantation, domestic use etc. after necessary treatment.

ii) The excess mine discharge water is being treated in settling tanks before discharge into natural drains.

iii) The domestic sewage from the mine is being treated in septic tank followed by soak pit.

iv) An effective sewerage system is being maintained to treat the colony effluents by Sewage Treatment Plant at Naspur Colony of 3 MLD Capacity and other colony effluents treatment being done by septic tanks followed by soak pits.

v) Post-project water quality monitoring is being carried through an outside agency [M/s Environment Protection Training and Research Institute (EPTRI) Hyderabad] as per the frequency stipulated by MoEF&CC for coal mining industry.

STP at Naspur colony

Oil & Grease Trap (ETP) at Area Workshop

Mine discharge water per spraying

7. Phreatic surface monitoring: (Range of Water Table)

The Phreatic surface and peizometric levels monitoring is being carried out 4 times in a year pre-monsoon (May), Monsoon (August), Post monsoon (November) and winter (January) seasons in 25 existing wells and 6 peizometric wells in Srirampur Area. The Phreatic surface and peizometric levels monitoring from 2019(Winter) to 2023 (Monsoon) is enclosed as **Annexure-IV.**

Water Conservation Measures:

i. Mine water is collected in sumps in side mine and pumped out after settling.
ii. Mine water is filtered and used for washing the machinery, Plantation and Water Spraying etc,
iii. Ground Water levels are recorded seasonally in nearby villages
iv. One ETP is provided area level at Area workshop to trap 70 liters of oil and grease in a year before letting out on surface water body.
v. Ground Water levels recorded in the nearby villages is furnished in **Annexure - IV**.
vi. Details of Rain water Harvesting structures in Srirampur Area is as below:

Sl. No	**Location of the Rain water Harvesting Pits**	**No.of Rain water Harvesting pits**
1.	G.M's Office	01
2.	Area Stores	02
3.	Auto garage	02
4.	RK-8 Dispensary	01
5.	SRP Dispensary (Deccan Gramina Bank)	01
6.	SC High School, SRP(ITI College)	02
7.	CER Club, Srirampur (Pragathi Stadium)	02
8.	M&R Office, Srirampur	01
9.	MVTC, SRP	01
10.	C-2 Type Quarters, RK-8 Colony	01
11.	'C' Type Quarters, RK-8 Colony	02
12.	Dispensary, Naspur Colony	01
13.	G.T Hostel, Naspur Colony	02
14.	Community Hall, Naspur Colony	01
15.	M& R Office, Naspur Colony	02
16.	Venkateswara Temple, Naspur Colony	01
17.	Sub-station premises, Godavari Colony	01
18.	Sub-station premises, Nagarjuna Colony	01
19.	Guest House, CCC	01
20.	M & R Office, CCC	01
21.	RK-5 GLSR	01
22.	Pump House, CCC	01
23.	SRP OCP-II	03
	Total	**32**

8. Noise Level Monitoring :

The summary of the monitoring from April, 2023 to September, 2023 is as follows:

Location	**Zone**		**Day Time in dB(A)**				**Night Time in dB(A)**				
		Min.	**Max.**	**Avg.**	**98%tile**	STD	STD	**Min.**	**Max.**	**Avg.**	**98%tile**
RK-NT Mine	Core	64.30	71.0	67.767	70.846	75	70	52.100	62.70	57.192	62.502
Kankur Village	Buffer	41.20	50.30	45.525	50.256	55	45	32.10	40.20	36.508	40.046
Srirampur village	Buffer	42.10	49.60	47.142	49.490	55	45	32.50	40.50	37.517	40.434

Note: The Noise level monitoring from April, 2023 to September, 2023 is enclosed as **Annexure-III**

Noise Pollution Control Measures:

i) The mine mechanical ventilators (MV Fans) were provided with evasee to dampen the noise.

ii) To dampen the noise levels at CHP, impact rollers are provided at transfer points.

iii) Height of fall is minimized at all coal transfer points and internal lining of bins and chutes are done.

iv) In high noise intensity working areas / zones earplugs are being provided to the workmen.

v) Regular noise level monitoring is being done periodically for taking corrective action, wherever required.

vi) Extensive plantation of green belt and vegetation along the roads and around the offices to create a barrier or screen between the source and the receiver so that the noise is absorbed and the exposure level is minimized.

vii) Cushioning belt liners under the tipplers are being provided under tippler resting pads to reduce the noise while tripling the tubs.

viii) Post-project Noise quality monitoring is being carried out by outside agency [M/s Environment Protection Training and Research Institute (EPTRI) Hyderabad] at the Mine pit office and surrounding villages at a frequency of once in a fortnight as stipulated by MoEF&CC for coal mining industry.

9. Capital and Revenue Expenditure incurred on Environment Management and Pollution Control Measures:

Sl. No	Expenditure Head	Capital Expenditure (in Rs.)			Revenue Expenditure (in Rs.)		
		Up to 2022-23	2023-24 (apr-sep)	Total	Up to 2022-23	2023-24 (apr-sep)	Total
I	Air pollution (Prevention & Control)	**0**	0	**0**	98550053	3134022	**101684074**
II	Water pollution (Prevention & Control)	**0**	0	**0**	8487063	387102	**8874165**
III	Land development	**0**	0	**0**	0	0	**0**
IV	Plantation	**3857837**	0	**3857837**	453039		**453039**
V	Equipment for maintenance of environment protection	**0**	0	**0**	15989211	387101	**16376312**
VI	Consultancy Payments	**3467**	0	**3467**	0	0	**0**
VII	Environment awareness / Environment Education	0	0	**0**	0	1500	**1500**
VIII	Others	0	0	**0**	48784121	0	**0**
	Total	**3861304**	**0**	**3861304**	**123479366**	**3909725**	**127389091**

10. SOCIO-ECONOMIC MEASURES:

i) Common Central Township is provided on non-coal bearing area and it is maintained with facilities such as dispensary, schools, drinking water supply, super-bazaar, recreation clubs, parks, well lighted approach roads, dust bins at various places in the colony, etc., and it is away from the mining activity.

ii) Workmen are encouraged to undergo family planning operations by extending cash incentives and leave etc.,

iii) Weekly vaccination for Polio, DPT, BCG, Measles, DT and Hepatitis 'B' are being given at Area Hospital and dispensaries. 1019 persons were vaccinated during the above period at area level.

iv) Daily Street cleaning and sanitation works are looked after by Health & Civil departments in Srirampur Area. 1937.5 Cu.m of Garbage is removed from the colonies during the above period at area level.

v) Workmen are encouraged to participate in sports and games which are conducted in Company's Pragati Stadium at Srirampur.

vi) Existing number of quarters for this project : 580

vii) Infrastructure develo2nt is being taken up in the surrounding areas through specially designed programme called as "Surrounding Habitat Assistance Programme" (SHAPE). Rs.1258.16 Lakhs has been spent in the area from 2004-05 to 2014-15 and as on date Rs.785.14 Lakhs were spent under CSR Programme from 2015-16 onwards in the Area.

Welfare amenities provided to the S.C.C.L Employees in Srirampur Area as on 30.09.2023.

<table>
<tr><td>i)</td><td colspan="2">Existing No. of quarters in the Area</td><td>: 7146</td><td>Under construction : Nil.</td></tr>
<tr><td rowspan="6">ii)</td><td colspan="4">Roads (in K.M)</td></tr>
<tr><td colspan="2">Type of Road</td><td colspan="2">Existing length (in KM)</td></tr>
<tr><td colspan="2">A) WBM</td><td colspan="2">: 0.59</td></tr>
<tr><td colspan="2">B) Asphalt</td><td colspan="2">: 53.70</td></tr>
<tr><td colspan="2">C) Murram</td><td colspan="2">--</td></tr>
<tr><td colspan="2">D) C.C</td><td colspan="2">: 13.96</td></tr>
<tr><td rowspan="5">iii)</td><td colspan="4">Water supply</td></tr>
<tr><td>A) Individual taps</td><td>: 7146 Nos.</td><td colspan="2" rowspan="4">a) Work in progress: Nil.
b) For private houses: 800</td></tr>
<tr><td>B) Community taps</td><td>: 146 Nos.</td></tr>
<tr><td>C) Bore wells</td><td>: 162 Nos.</td></tr>
<tr><td>D) Community tanks</td><td>: 18 Nos.</td></tr>
<tr><td rowspan="4">iv)</td><td colspan="4">Sanitation:</td></tr>
<tr><td colspan="2">A) Individuel toilettes</td><td>: 7146</td><td>Under construction : Nil</td></tr>
<tr><td rowspan="2">B)</td><td>i) Community toilets at Huts Area</td><td>: 41</td><td rowspan="2">Community toilets under construction : Nil</td></tr>
<tr><td>ii) Community toilets at Mines</td><td>: 7</td></tr>
<tr><td rowspan="3">v)</td><td colspan="4">Schools and Colleges.</td></tr>
<tr><td colspan="2">A) No. of Schools</td><td colspan="2">: 01</td></tr>
<tr><td colspan="2">B) Polytechnic College</td><td colspan="2">: 01</td></tr>
<tr><td>vi)</td><td colspan="4">Hospitals / Dispensaries</td></tr>
</table>

	A) Hospitals	: 01 No
	B) Dispensaries	: 03 Nos.
vii)	**Shopping centers provided by Company.**	
	A) Shop houses	: 18 Nos.
	B) Shop rooms	: 12 Nos.
viii)	**Spots recreation & Recreation clubs**	: 04 Nos.
ix)	**Stadiums**	: 03 Nos.
x)	**Community halls**	: 03 Nos.

11. Environment Management Committee:

Unit level Environmental Management Committee has been constituted with following members.

1) Agent - Chairman.
2) Area Env. Officer - Secretary.
3) Mine Manager - Member
4) Area Civil Engineer, - Member
6) Area Survey officer - Member.
7) Area Estates Manager - Member.
8) Area Forest Officer - Member.
9) Regional Hydro geologist - Member.

13. Subsidence Management details:

(a) Total seam wise area developed (including Depillaring area) so far.

Sl. No	Seam	Area in Ha.	Depth(m)		Total Thickness (m)	Working Height(m)	Caving / Stowing
			Min.	Max			
1	1A Seam	271.63	35	315	5.60	3.0 to 4.5	Caving
2	1 Seam	200.32	48	330	5.80	1.7 to 2.8	Caving

(b) Total seam wise area depillared so far since inception.

Sl. No	Seam	Area in Ha.	Depth(m)		Total Thickness (m)	Working Height(m)	By Caving / Stowing
			Min.	Max.			
1	1A Seam	271.63	35	315	5.60	3.0 - 4.5	Caving/SW
2	1 Seam	200.32	48	330	5.80	1.7 - 2.8	Caving

(c) Total surface area affected due to subsidence so far : 246.90 Ha

- Max crack width observed so far : 0.25m
- Max subsidence occurred so far : 1.182 m
- Whether the vegetation effected if any : Nil
- If affected, give details : Not applicable

(d) Mode of treatment given to substantiate subsidence effect: Crack filling by manual

- Total man-shifts worked in subsidence area for crack filling and dozing: : 530
- Total dozer shifts worked for subsidence reclamation : Nil
- Area filled up with OB/ Subsoil material : Nil
- Quantity of OB/Subsoil dumped : Nil
- Maximum height of dump : Nil

e) (i) Expenditure incurred for subsidence treatment during six months :Rs. 2,61,820/-

(ii) Expenditure incurred for subsidence treatment so far :Rs.21,72,753/-

The Singareni Collieries Company Limited * Agent RK-7 Group of Mines *

AGENT,
RK-7&NT Group of Mines.
Agent, RK-7 Group
SCCL. SRP Area

MONITORING DATA OF RAVINDRA KHANI – NEW TECH. (RK-NT) INCLINE FOR THE PERIOD APRIL, 2023 TO SEPTEMBER, 2023

List of Annexures:

Sl.No.	Description	Annexure No.
1	Ambient Air Quality	I
2	Surface, Ground Water & Effluents Quality.	II
3	Noise	III
4	Attitude of Phreatic Surface & Piezometric Levels	IV
5	Plantation plan	Fig.I

ANNEXURE-I

POST PROJECT AMBIENT AIR QUALITY MONITORING DATA FOR THE PERIOD FROM APRIL, 2023 TO SEPTEMBER, 2023 FOR RK-NT MINE.

- Location of the Ambient Air Quality monitoring Station : RK-NT Incline Site Office.
- Direction (w.r.t. RK–NT Mine) : Besides of the project.

Sl. No.	Station Name	Date of Sampling	Parameters (µg/Cu. Mtr.)			
			PM_{10}	$PM_{2.5}$	SO_2	NO_2
1.	RK-NT Incline Site Office.	05.04.2023	239	62.1	12.8	18.4
		25.04.2023	253	61.7	14.1	19.7
		06.05.2023	247	62.9	15.3	21.3
		23.05.2023	227	64.2	12.8	20.8
		06.06.2023	234	64.6	16.1	23.2
		23.06.2023	193	53.9	12.5	18.3
		08.07.2023	124	36.9	10.3	16.5
		24.07.2023	63	20.6	14.9	17.9
		08.08.2023	148	41.2	9.5	15.4
		23.08.2023	188	46.6	13.1	21.4
		08.09.2023	160	48.5	10.8	17.1
		23.09.2023	162	48.2	9.6	15.4
	Minimum		**63.00**	**20.60**	**9.50**	**15.40**
	Maximum		**253.00**	**64.60**	**16.10**	**23.20**
	Average		**186.50**	**50.95**	**12.65**	**18.78**
	98% tile		**251.68**	**64.51**	**15.92**	**22.80**
	Coal mine standards GSR 742(E), dtd.25.09.2000 & NAAQS, Dtd.18.11.2009		**300**	**--**	**120**	**120**

- Location of the Ambient Air Quality monitoring Station : Top of Residential House, Mudikunta village.
- Direction (w.r.t. RK–NT Mine) : East of the project.

Sl. No.	Station Name	Date of Sampling	Parameters (µg/Cu.Mtr.)			
			PM_{10}	$PM_{2.5}$	SO_2	NO_2
2.	Mudikunta Village	04.04.2023	76	41.7	14.1	19.1
		24.04.2023	73	38.8	11.2	14.6
		05.05.2023	68	36.2	9.2	13.8
		22.05.2023	77	45.8	12.1	16.7
		05.06.2023	70	37.4	10.7	14
		22.06.2023	82	35.8	8.4	14.6
		07.07.2023	35	16.1	7.7	12.1
		22.07.2023	65	29.2	8.1	12.9
		07.08.2023	81	32.1	8.4	14.1
		22.08.2023	86	42.5	8.4	13.4
		07.09.2023	68	30.5	10.6	16.1
		22.09.2023	62	32.1	9.6	14.3
	Minimum		**35.00**	**16.10**	**7.70**	**12.10**
	Maximum		**86.00**	**45.80**	**14.10**	**19.10**
	Average		**70.25**	**34.85**	**9.88**	**14.64**
	98% tile		**85.12**	**45.07**	**13.66**	**18.57**
	NAAQ Standards, CPCB dtd.18.11.2009		**100**	**60**	**80**	**80**

- Location of the Ambient Air Quality monitoring Station : Top of Residential House, Kankur village.
- Direction (w.r.t. RK–NT Mine) : North- East of the project.

Sl. No.	Station Name	Date of Sampling	Parameters (µg/ Cu. Mtr.)			
			PM_{10}	$PM_{2.5}$	SO_2	NO_2
3	Kankur village	04.04.2023	73	39.2	12.9	17.8
		24.04.2023	75	40.2	13.7	18.9
		05.05.2023	79	37.8	10.1	14.7
		22.05.2023	82	44.9	11.7	15.6
		05.06.2023	71	38.1	9.6	13.5
		22.06.2023	80	36.2	11.8	18.4
		07.07.2023	32	18.1	8.6	14.2
		22.07.2023	63	30.1	10.3	16.4
		07.08.2023	62	30.1	7.6	13.7
		22.08.2023	81	41.7	10.6	16.7
		07.09.2023	63	25.4	9.4	15.2
		22.09.2023	68	30.1	7.6	13.4
	Minimum		**32.00**	**18.10**	**7.60**	**13.40**
	Maximum		**82.00**	**44.90**	**13.70**	**18.90**
	Average		**69.08**	**34.33**	**10.33**	**15.71**
	98% tile		**81.78**	**44.20**	**13.52**	**18.79**
	NAAQ Standards, CPCB dtd.18.11.2009		**100**	**60**	**80**	**80**

- Location of the Ambient Air Quality monitoring Station : Top of CER Club, Srirampur Colony
- Direction (w.r.t. RK–NT Mine) : South West of the project.

Sl. No.	Station Name	Date of Sampling	Parameters (µg/Cu. Mtr.)			
			PM_{10}	$PM_{2.5}$	SO_2	NO_2
4.	Srirampur Colony	06.04.2023	83	47.1	10.8	15.4
		26.04.2023	81	43.1	9.4	17.4
		08.05.2023	76	41.8	12.1	16.4
		24.05.2023	84	48.5	12..6	18.1
		07.06.2023	80	43.7	11.7	17.4
		24.06.2023	76	32.8	10.4	16.9
		10.07.2023	52	20.4	10	16.2
		25.07.2023	46	20.1	9.1	15.4
		09.08.2023	89	42.3	8.7	15.1
		24.08.2023	85	46.9	12.7	19.2
		09.09.2023	81	39.5	12.3	18.5
		24.09.2023	81	41.3	9.4	16.7
	Minimum		**46.00**	**20.10**	**8.70**	**15.10**
	Maximum		**89.00**	**48.50**	**12.70**	**19.20**
	Average		**76.17**	**38.96**	**10.60**	**16.89**
	98% tile		**88.12**	**48.19**	**12.62**	**19.05**
	NAAQ Standards, CPCB dtd.18.11.2009		**100**	**60**	**80**	**80**

ANNEXURE-II.

Physico-Chemical and Bacteriological Characteristics of Surface Water

Physico-Chemical and Bacteriological Characteristics of Surface Water as per CPCB Water Quality Criteria

Sl.No	Parameters	Unit	Test Method	CPCB Water Quality Criteria					RESULT			
				Class A	Class B	Class C	Class D	Class E	**SW-1** Godavari River Upstream	**SW-2** Godavari River Downstream	**SW-4** Ramaraopet Tank	**SW-5** Indaram Tank
DATE OF SAMPLING									**28.04.2023**	**28.04.2023**	**28.04.2023**	**28.04.2023**
1	pH	-	4500-H^+B	6.5-8.5	6.5-8.5	6.0 – 9.0	6.5-8.5	6.0-8.5	8.0	8.0	7.8	7.8
2	Electrical Conductivity	µmhos/ cm	2510-B	-	-	-	-	2250 µmhos/ cm	1455	1070	288	1012
3	Dissolved Oxygen (DO)	mg/L	4500-O.C	6 mg/l or more	5 mg/l or more	4 mg/l or more	4 mg/l or more	-	6.9	6.6	5.9	5.9
4	Bio chemical Oxygen Demand (3 days 27° C)	mg/L	IS: 3025	2 mg/l or less	3 mg/l or less	3 mg/l or less	-	-	1.6	2.2	3.1	3.2
5	Total Coliforms	MPN/ 100mL	9221 B	50 or less	500 or less	5000 or less	-	-	94	140	280	220
6	Free Ammonia (as N)	mg/L	4500-NH_3 –F	-	-	-	1.2 mg/L or less	-	BDL	BDL	BDL	BDL
7	Boron as B	mg/L	3120-B	-	-	-	-	Less than 2 mg/L	0.16	0.28	0.22	0.12
8	SAR	-	-	-	-	-	-	Less than 26	1.14	1.12	1.58	1.35

Physico-Chemical Characteristics of Surface Water at Selected Locations in the Study Area

S. No	Parameters	Unit	Test Method	**SW-1** Godavari River Upstream	**SW-2** Godavari River Downstream	**SW-4** Ramaraopet Tank	**SW-5** Indaram Tank
	DATE OF SAMPLING			**28.04.2023**	**28.04.2023**	**28.04.2023**	**28.04.2023**
1	Colour	Hazen	2120. B	5	5	5	10
2	Odour	TON	2150. B	No odour observed	No odour observed	No odour observed	No odour observed
3	Temperature	ºC	2550. B	25.1	25.0	25.1	25.1
4	Turbidity	NTU	2130. B	0.26	0.44	0.72	4.6
5	Total Dissolved Solids at 180º C	mg/L	2540.C	865	626	172	590
6	Total Suspended Solids at 105º C	mg/L	2540. D	17	11	9	40
7	Chemical Oxygen Demand	mg/L	5220. D	4	8	12	16
8	Chlorides as Cl^-	mg/L	4500-Cl^-.B	260	197	38	180
9	Sulphates as SO_4^{2-}	mg/L	4500-SO_4^{2-}.E	106	86	16	69
10	Fluoride as F^-	mg/L	4500-F^-.C	0.52	0.41	0.32	0.64
11	Calcium as Ca	mg/L	3500-Ca.B	84	80	14	58
12	Magnesium as Mg	mg/L	3500-Mg.B	51	47	11	48
13	Sodium as Na	mg/L	3500-Na.B	167	97	14	54
14	Potassium as K	mg/L	3500-K.B	33.7	11.8	1.1	2.6
15	Nitrites as NO_2	mg/L	4500-NO_2^-.B	BDL	BDL	0.88	15.5
16	Nitrates as NO_3	mg/L	4500-NO_3^-.B	43	10.3	6.9	4
17	Total Phosphates	mg/L	4500-P-D	BDL	BDL	0.017	0.024
18	Ammonical Nitrogen as NH_3-N	mg/L	4500-NH_3-C	BDL	BDL	BDL	BDL
19	Phenolic compounds as C_6H_5OH	mg/L	5530-D	BDL	BDL	BDL	BDL
20	Oil & Grease	mg/L	5520. B	<1	<1	<1	<1
21	Carbonates as CO_3	mg/L	2320. B	nil	nil	nil	nil
22	Bi-carbonates as HCO_3	mg/L	2320. B	180	135	95	265

S. No	Parameters	Unit	Test Method	SW-1 Godavari River Upstream	SW-2 Godavari River Downstream	SW-4 Ramaraopet Tank	SW-5 Indaram Tank
	DATE OF SAMPLING			**28.04.2023**	**28.04.2023**	**28.04.2023**	**28.04.2023**
23	Fecal Coliforms	MPN/100mL	9221 E	11	17	46	17
24	Zinc as Zn	mg/L	3120. B	0.11	0.10	0.13	0.12
25	Iron as Fe	mg/L	3120. B	0.58	0.35	0.61	0.46
26	Arsenic as As	mg/L	3120. B	BDL	BDL	BDL	BDL
27	Lead as Pb	mg/L	3120. B	BDL	BDL	BDL	BDL
28	Cadmium as Cd	mg/L	3120. B	BDL	BDL	BDL	BDL
29	Total Chromium as Cr	mg/L	3120. B	BDL	BDL	BDL	BDL
30	Nickel as Ni	mg/L	3120. B	BDL	BDL	BDL	BDL
31	Copper as Cu	mg/L	3120-B	BDL	BDL	BDL	BDL
32	Selenium as Se	mg/L	3120-B	BDL	BDL	BDL	BDL

Physico-Chemical, Bacteriological Characteristics of Groundwater Collected within the Study Area

Organoleptic and Physical Parameters

Sl. No.	Parameters	Unit	Test Method	IS: 10500 Requirement (Acceptable Limit)	IS: 10500 Permissible Limit in the absence of alternate source	RESULT	
						GW-2 Mudigunta Village	**GW-3** Ramaraopet Village
1	DATE OF SAMPLING					**28.04.2023**	**28.04.2023**
2	Colour	Hazen	2120. B	5	15	<5	<5
3	Odour	TON	2150. B	Agreeable	Agreeable	Agree.	Agree.
4	pH	-	4500-H^+B	6.5 to 8.5	No relaxation	7.4	7.5
5	Taste	FTN	2160. B	Agreeable	Agreeable	Agree.	Agree.
6	Turbidity	NTU	2130. B	1	5	0.42	0.58
7	Total Dissolved Solids at 180° C	mg/L	2540.C	500	2000	652	988

General Parameters Concerning Substances Undesirable in Excessive Amounts

Sl. No.	Parameters	Unit	Test Method	IS: 10500 Requirement (Acceptable Limit)	IS: 10500 Permissible Limit in absence of alternate source	RESULT	
						GW-2 Mudigunta Village	**GW-3** Ramaraopet Village
	DATE OF SAMPLING					**28.04.2023**	**28.04.2023**
1.	Calcium as Ca	mg/L	3500-Ca.B	75	200	54	107
2.	Magnesium as Mg	mg/L	3500-Mg.B	30	100	52	99
3.	Chlorides as Cl-	mg/L	4500-Cl-.B	250	1000	124	207
4.	Sulphates as SO42-	mg/L	4500-SO42- .E	200	400	88	104
5.	Fluoride as F-	mg/L	4500-F-.C	1.0	1.5	0.79	0.86
6.	Nitrates as NO3	mg/L	4500-NO3-.B	45	No relaxation	37	48
7.	Total Alkalinity as CaCO3	mg/L	2320. B	200	600	310	480
8.	Total Hardness as CaCO3	mg/L	2340. C	200	600	354	689
9.	Sulphide as H_2S	mg/L	4500-S2-F&D	0.05	No relaxation	BDL	BDL
10.	Total Ammonia-N	mg/L	IS 3025 (Part 34)	0.5	No relaxation	BDL	BDL
11.	Phenolic compounds as C6H5OH	mg/L	5530-D	0.001	0.002	BDL	BDL
12.	Residual free chlorine	mg/L	4500-Cl-.B	0.2	1.0	BDL	BDL
13.	Mineral oil	mg/L	IS:3025 (part 39)	0.5	No relaxation	absent	absent
14.	Anionic Detergents (as MBAS)	mg/L	IS:13428:2005K	0.2	1.0	<0.2	<0.2
15.	Aluminium as Al	mg/L	3120-B	0.03	0.2	0.08	0.10
16.	Barium as Ba	mg/L	3120. B	0.7	No relaxation	0.17	0.22
17.	Boron as B	mg/L	3120-B	0.5	2.4	BDL	0.18
18.	Iron as Fe	mg/L	3120-B	1.0	No relaxation	0.55	0.38
19.	Zinc as Zn	mg/L	3120-B	5	15	0.25	0.13
20.	Copper as Cu	mg/L	3120-B	0.05	1.5	BDL	BDL
21.	Manganese as Mn	mg/L	3120-B	0.1	0.3	BDL	BDL
22.	Selenium as Se	mg/L	3120-B	0.01	No relaxation	BDL	BDL
23.	Silver as Ag	mg/L	3120. B	0.1	No relaxation	BDL	BDL

Parameters Concerning Toxic Substances

S. No.	Parameters	Unit	Test Method	IS: 10500 Requirement (Acceptable Limit)	IS: 10500 Permissible Limit in the absence of alternate source	RESULT	
						GW-2 Mudigunta Village	GW-3 Ramaraopet Village
	DATE OF SAMPLING					**28.04.2023**	**28.04.2023**
24.	Cadmium as Cd	mg/L	3120-B	0.003	No relaxation	BDL	BDL
25.	Cyanide as CN-	mg/L	4500-CN⁻.F	0.05	No relaxation	BDL	BDL
26.	Lead as Pb	mg/L	3120-B	0.01	No relaxation	BDL	BDL
27.	Molybdenum as Mo	mg/L	3120. B	0.07	No relaxation	BDL	BDL
28.	Nickel as Ni	mg/L	3120-B	0.02	No relaxation	BDL	BDL
29.	Total Arsenic as As	mg/L	3120-B	0.01	0.05	BDL	BDL
30.	Total Chromium as Cr	mg/L	3120-B	0.05	No relaxation	BDL	BDL
31.	Mercury as Hg	µg/L	3500-Hg.B	0.001	No relaxation	BDL	BDL
32.	**Pesticides:** α–BHC, β-BHC, γ-BHC, δ-BHC, o,p-DDT, p,p' –DDT, Endosulfan, β- Endosulfan, Aldrin, Dieldrin	µg/L	6630. D	Absent	0.001	ND	ND
	2,4-D, Carboryl (Carbonate) Malathion Methyl Parathion Anilophos, Chloropyriphos	Qualitative analysis	6630. D	Absent	0.001	ND	ND
33.	**Polyaromatic Hydrocarbons (PAH's):** Acenaphthene, Acenaphthylene, Anthracene, B(a)A, B(a)P, B(b)F, B(k)F, Pyrene, Dibenz (a,h) anthracene, Fluoranthene, Fluorene, Indeno (1,2,3-(d) Pyrene, Naphthalene, Phenanthrene, Pyrene, Methyl Naphthalene	µg/L	6440.C	-	-	ND	ND

Bacteriological Quality of Drinking water

S. No.	Parameters	Unit	Test Method	IS: 10500 Requirement (Acceptable Limit)	IS: 10500 Permissible Limit in the absence of alternate source	RESULT	
						GW-2 Mudigunta Village	GW-3 Ramaraopet Village
DATE OF SAMPLING						**28.04.2023**	**28.04.2023**
1	Total Coliforms	MPN/100 mL	9221 B	-	-	<1.8	<1.8
2	Fecal Coliforms	MPN/100 mL	9221 E	-	-	<1.8	<1.8

Physico-Chemical and Bacteriological Characteristics of Surface Water

Physico-Chemical and Bacteriological Characteristics of Surface Water as per CPCB Water Quality Criteria

Sl.No	Parameters	Unit	Test Method	CPCB Water Quality Criteria					RESULT			
				Class A	Class B	Class C	Class D	Class E	**SW-1** Godavari River Upstream	**SW-2** Godavari River Downstream	**SW-4** Ramaraopet Tank	**SW-5** Indaram Tank
	Date of sampling								**02.08.2023**	**02.08.2023**	**02.08.2023**	**02.08.2023**
1	pH	-	4500-H^+B	6.5-8.5	6.5-8.5	6.0 – 9.0	6.5-8.5	6.0-8.5	8.1	8.2	7.6	7.0
2	Electrical Conductivity	µmhos/ cm	2510-B	-	-	-	-	2250 µmhos/ cm	379	348	325	258
3	Dissolved Oxygen (DO)	mg/L	4500-O.C	6 mg/l or more	5 mg/l or more	4 mg/l or more	4 mg/l or more	-	5.9	5.2	6.2	5.3
4	Bio chemical Oxygen Demand (3 days 27° C)	mg/L	IS: 3025	2 mg/l or less	3 mg/l or less	3 mg/l or less	-	-	2.2	2.4	2.4	3.4
5	Total Coliforms	MPN/ 100mL	9221 B	50 or less	500 or less	5000 or less	-	-	110	110	110	220
6	Free Ammonia (as N)	mg/L	4500-NH_3 –F	-	-	-	1.2 mg/L or less	-	BDL	BDL	BDL	BDL
7	Boron as B	mg/L	3120-B	-	-	-	-	Less than 2 mg/L	0.08	0.21	0.09	0.07
8	SAR	-	-	-	-	-	-	Less than 26	0.92	0.72	0.95	0.69

Physico-Chemical Characteristics of Surface Water at Selected Locations in the Study Area

S. No	Parameters	Unit	Test Method	SW-1 Godavari River Upstream	SW-2 Godavari River Downstream	SW-4 Ramaraopet Tank	SW-5 Indaram Tank
	Date of sampling			**02.08.2023**	**02.08.2023**	**02.08.2023**	**02.08.2023**
1	Colour	Hazen	2120. B	5	5	5	5
2	Odour	TON	2150. B	No odour observed	No odour observed	No odour observed	No odour observed
3	Temperature	ºC	2550. B	25.2	25.3	25.2	25.1
4	Turbidity	NTU	2130. B	2.5	7.3	4.5	1.95
5	Total Dissolved Solids at 180º C	mg/L	2540.C	223	204	191	152
6	Total Suspended Solids at 105º C	mg/L	2540. D	41	37	33	27
7	Chemical Oxygen Demand	mg/L	5220. D	16	20	8	16
8	Chlorides as Cl^-	mg/L	4500-Cl^-.B	31	29	30	19
9	Sulphates as SO_4^{2-}	mg/L	4500-SO_4^{2-}.E	32	30	22	23
10	Fluoride as F^-	mg/L	4500-F^-.C	0.45	0.38	0.32	0.42
11	Calcium as Ca	mg/L	3500-Ca.B	26	28	25	16
12	Magnesium as Mg	mg/L	3500-Mg.B	21	22	14	12
13	Sodium as Na	mg/L	3500-Na.B	26	21	24	15
14	Potassium as K	mg/L	3500-K.B	1.2	2.4	5.3	2.9
15	Nitrites as NO_2	mg/L	4500-NO_2^-.B	0.09	0.11	BDL	BDL
16	Nitrates as NO_3	mg/L	4500-NO_3^-.B	4.24	4.22	4.02	3.47
17	Total Phosphates	mg/L	4500-P-D	0.02	BDL	BDL	0.084
18	Ammonical Nitrogen as NH_3-N	mg/L	4500-NH_3-C	BDL	BDL	BDL	BDL
19	Phenolic compounds as C_6H_5OH	mg/L	5530-D	BDL	BDL	BDL	BDL
20	Oil & Grease	mg/L	5520. B	<1	<1	<1	<1
21	Carbonates as CO_3	mg/L	2320. B	nil	nil	nil	nil
22	Bi-carbonates as HCO_3	mg/L	2320. B	120	95	95	85
23	Fecal Coliforms	MPN/100mL	9221 E	4.5	4.5	6.8	11
24	Zinc as Zn	mg/L	3120. B	0.19	0.29	0.08	0.22

S. No	Parameters	Unit	Test Method	SW-1 Godavari River Upstream	SW-2 Godavari River Downstream	SW-4 Ramaraopet Tank	SW-5 Indaram Tank
	Date of sampling			**02.08.2023**	**02.08.2023**	**02.08.2023**	**02.08.2023**
25	Iron as Fe	mg/L	3120. B	0.61	0.58	0.32	0.49
26	Arsenic as As	mg/L	3120. B	BDL	BDL	BDL	BDL
27	Lead as Pb	mg/L	3120. B	BDL	BDL	BDL	BDL
28	Cadmium as Cd	mg/L	3120. B	BDL	BDL	BDL	BDL
29	Total Chromium as Cr	mg/L	3120. B	BDL	BDL	BDL	BDL
30	Nickel as Ni	mg/L	3120. B	BDL	BDL	BDL	BDL
31	Copper as Cu	mg/L	3120-B	BDL	BDL	BDL	BDL
32	Selenium as Se	mg/L	3120-B	BDL	BDL	BDL	BDL

Physico-Chemical, Bacteriological Characteristics of Groundwater Collected within the Study Area

Organoleptic and Physical Parameters

Sl. No.	Parameters	Unit	Test Method	IS: 10500 Requirement (Acceptable Limit)	IS: 10500 Permissible Limit in the absence of alternate source	RESULT	
						GW-2 Mudigunta Village	**GW-3** Ramaraopet Village
	Date of sampling					**02.08.2023**	**02.08.2023**
1.	Colour	Hazen	2120. B	5	15	<5	<5
2.	Odour	TON	2150. B	Agreeable	Agreeable	Agree.	Agree.
3.	pH	-	4500-H^+B	6.5 to 8.5	No relaxation	7.4	7.1
4.	Taste	FTN	2160. B	Agreeable	Agreeable	Agree.	Agree.
5.	Turbidity	NTU	2130. B	1	5	0.59	0.39
6.	Total Dissolved Solids at 180^o C	mg/L	2540.C	500	2000	761	693

General Parameters Concerning Substances Undesirable in Excessive Amounts

Sl. No.	Parameters	Unit	Test Method	IS: 10500 Requirement (Acceptable Limit)	IS: 10500 Permissible Limit in absence of alternate source	RESULT	
						GW-2 Mudigunta Village	**GW-3** Ramaraopet Village
1.	Calcium as Ca	mg/L	3500-Ca.B	75	200	97	83
2.	Magnesium as Mg	mg/L	3500-Mg.B	30	100	57	58
3.	Chlorides as Cl-	mg/L	4500-Cl-.B	250	1000	169	148
4.	Sulphates as SO42-	mg/L	4500-SO42- .E	200	400	88	49
5.	Fluoride as F-	mg/L	4500-F-.C	1.0	1.5	0.68	0.78
6.	Nitrates as NO3	mg/L	4500-NO3-.B	45	No relaxation	44	48
7.	Total Alkalinity as CaCO3	mg/L	2320. B	200	600	300	320
8.	Total Hardness as CaCO3	mg/L	2340. C	200	600	477	446
9.	Sulphide as H_2S	mg/L	4500-S2-F&D	0.05	No relaxation	BDL	BDL
10.	Total Ammonia-N	mg/L	IS 3025 (Part 34)	0.5	No relaxation	BDL	BDL
11.	Phenolic compounds as C6H5OH	mg/L	5530-D	0.001	0.002	BDL	BDL
12.	Residual free chlorine	mg/L	4500-Cl-.B	0.2	1.0	BDL	BDL
13.	Mineral oil	mg/L	IS:3025 (part 39)	0.5	No relaxation	absent	absent
14.	Anionic Detergents (as MBAS)	mg/L	IS:13428:2005K	0.2	1.0	<0.2	<0.2
15.	Aluminium as Al	mg/L	3120-B	0.03	0.2	BDL	0.09
16.	Barium as Ba	mg/L	3120. B	0.7	No relaxation	0.24	0.15
17.	Boron as B	mg/L	3120-B	0.5	2.4	0.09	0.07
18.	Iron as Fe	mg/L	3120-B	1.0	No relaxation	0.28	0.12
19.	Zinc as Zn	mg/L	3120-B	5	15	BDL	BDL
20.	Copper as Cu	mg/L	3120-B	0.05	1.5	BDL	BDL
21.	Manganese as Mn	mg/L	3120-B	0.1	0.3	BDL	BDL
22.	Selenium as Se	mg/L	3120-B	0.01	No relaxation	BDL	BDL
23.	Silver as Ag	mg/L	3120. B	0.1	No relaxation	BDL	BDL

Parameters Concerning Toxic Substances

S. No.	Parameters	Unit	Test Method	IS: 10500 Requirement (Acceptable Limit)	IS: 10500 Permissible Limit in the absence of alternate source	RESULT	
						GW-2 Mudigunta Village	GW-3 Ramaraopet Village
	Date of sampling					**02.08.2023**	**02.08.2023**
24.	Cadmium as Cd	mg/L	3120-B	0.003	No relaxation	BDL	BDL
25.	Cyanide as CN-	mg/L	4500-CN^-.F	0.05	No relaxation	BDL	BDL
26	Lead as Pb	mg/L	3120-B	0.01	No relaxation	BDL	BDL
27	Molybdenum as Mo	mg/L	3120. B	0.07	No relaxation	BDL	BDL
28	Nickel as Ni	mg/L	3120-B	0.02	No relaxation	BDL	BDL
29	Total Arsenic as As	mg/L	3120-B	0.01	0.05	BDL	BDL
30	Total Chromium as Cr	mg/L	3120-B	0.05	No relaxation	BDL	BDL
	Mercury as Hg	µg/L	3500-Hg.B	0.001	No relaxation	BDL	BDL
34.	**Pesticides: α**–BHC, β-BHC, γ-BHC, δ-BHC, o,p-DDT, p,p' –DDT, Endosulfan, β- Endosulfan, Aldrin, Dieldrin	µg/L	6630. D	Absent	0.001	ND	ND
	2,4-D, Carboryl (Carbonate) Malathion Methyl Parathion Anilophos, Chloropyriphos	Qualitative analysis	6630. D	Absent	0.001	ND	ND
35.	**Polyaromatic Hydrocarbons (PAH's):** Acenaphthene, Acenaphthylene, Anthracene, B(a)A, B(a)P, B(b)F, B(k)F, Pyrene, Dibenz (a,h) anthracene, Fluoranthene, Fluorene, Indeno (1,2,3-(d) Pyrene, Naphthalene, Phenanthrene, Pyrene, Methyl Naphthalene	µg/L	6440.C	-	-	ND	ND

Bacteriological Quality of Drinking water

S. No.	Parameters	Unit	Test Method	IS: 10500 Requirement (Acceptable Limit)	IS: 10500 Permissible Limit in the absence of alternate source	RESULT	
						GW-2 Mudigunta Village	GW-3 Ramaraopet Village
	Date of sampling					**02.08.2023**	**02.08.2023**
1	Total Coliforms	MPN/100 mL	9221 B	-	-	<1.8	<1.8
2	Fecal Coliforms	MPN/100 mL	9221 E	-	-	<1.8	<1.8

III. POST PROJECT WATER QUALITY (EFFLUENTS) MONITORING DATA FOR THE PERIOD FROM APRIL, 2023 TO SEPTEMBER, 2023 FOR RK-NT INCLINE.

❖ Location of the water
Quality monitoring Station: RK-NT incline mine discharge (filter bed outlet)

Sl. No.	Station name	Date of sampling	Concentration in mg/Liter (Except pH)					
			pH (at 25^0 C)	TSS At 105^0 C	TDS (At 180^0 C)	COD	BOD	Oil & Grease
1.	RK-NT Incline Mine discharge	15.04.2023	7.5	17	647	20	1.7	<1
		29.04.2023	7.9	15	751	12	2.2	<1
		15.05.2023	7.8	21	811	15	2.6	<1
		31.05.2023	7.4	23	986	12	2	<1
		15.06.2023	7.8	28	1091	19	1.9	1
		30.06.2023	7.8	19	873	19	2.3	<1
		15.07.2023	7.6	31	945	12	2	<1
		31.07.2023	7.7	23	714	16	2.6	1
		14.08.2023	7.4	15	890	20	2.6	1
		31.08.2023	7.6	23	763	23	4.1	<1
		15.09.2023	7.5	27	643	27	3.1	1
		29.09.2023	7.7	35	1121	35	4.6	1.2
	Minimum		**7.40**	**15.00**	**643.00**	**12.00**	**1.70**	**1.00**
	Maximum		**7.90**	**35.00**	**1121.00**	**35.00**	**4.60**	**1.20**
	Average		**7.64**	**23.08**	**852.92**	**19.17**	**2.64**	**1.04**
	98% tile		**7.88**	**34.12**	**1114.40**	**33.24**	**4.49**	**1.18**
MoEF GSR 742(E) and GSR 801(E) Effluent standards for coal mines			**5.5-9.0**	**100**	**--**	**250**	**30**	**10**
Test Method			**4500H$^+$**B	**2540-D**	**2540-C**	**5220-D**	**IS 3025**	**2540-C**

Analysis Report of monthly summary of 3.0MLD Sewage treatment Plant – Naspur Colony from April, 2023 to September, 2023.

All Values in Mg/Liter (Except pH)

Month	Description-	Characteristics of Raw Sewage				Characteristics of Aeration Water					Characteristics of Treated Water				
		pH	TSS	COD	BOD	pH	DO	MLSS	MLVSS	TDS	pH	DO	TSS	COD	BOD
april, 23	Min	7.8	205	205	205	7.4	1.7	3040	380	5	6.7	1.2	11	11	28
	Max	7.9	220	220	215	7.6	1.9	3220	399	3170	7.2	1.3	13	13	32
	Aver	7.85	214	211.33	209.17	7.53	1.84	3151.83	391.73	2318.50	6.94	1.25	11.87	11.67	29.87
MAY, 23	Min	7.7	210	205	205	7.4	1.7	2960	380	45	6.7	1.2	11	11	28
	Max	7.7	210	205	205	7.4	1.7	2960	380	45	6.7	1.2	11	11	28
	Aver	7.82	215.00	215.28	208.13	7.50	1.84	3103.63	392.00	2664.75	6.98	1.25	12.00	11.88	30.00
June,23	Min	7.7	210	210	210	7.4	1.7	2956	382	5	6.9	1.2	11	11	28
	Max	7.9	220	220	220	7.6	1.8	3264	400	3184	7.2	1.3	13	13	32
	Aver	7.80	214.06	215.33	215.00	7.46	1.75	3134.87	394.23	2728.11	6.97	1.25	12.06	12.17	29.73
July,23	Min	7.7	210	205	205	7.4	1.7	2546	382	2452	6.8	1.2	11	11	28
	Max	7.9	220	220	220	7.6	1.9	3940	400	3102	7.1	1.3	13	13	32
	Aver	7.81	215.00	214.38	212.50	7.51	1.79	2934.13	392.26	2801.13	6.95	1.25	12.00	12.33	29.38
aug, 23	Min	7.7	210	205	205	7.4	1.7	2590	300	2580	6.9	1.2	11	11	28
	Max	7.9	220	220	215	7.6	1.9	3342	400	3292	7.1	1.3	13	13	32
	Aver	7.79	213.67	213.75	210.00	7.47	1.79	3003.26	386.55	2924.00	6.97	1.25	12.33	11.83	30.40
sep,23	Min	7.7	205	205	205	7.4	1.7	2760	382	2708	6.9	1.2	11	11	28
	Max	7.9	215	220	215	7.6	1.9	3168	400	3080	7.1	1.3	13	14	32
	Aver	7.79	212.00	211.33	210.00	7.47	1.82	2951.83	392.10	2897.14	6.99	1.25	11.93	12.50	30.13
	standard	-	-	-	-	-	-	-	-	--	**5.5-9.0**	--	**100**	**30**	**250**

ANNEXURE- III

NOISE LEVEL MONITORING DATA FOR THE PERIOD FROM APRIL, 2023 TO SEPTEMBER, 2023 AROUND RK-NT INCLINE.

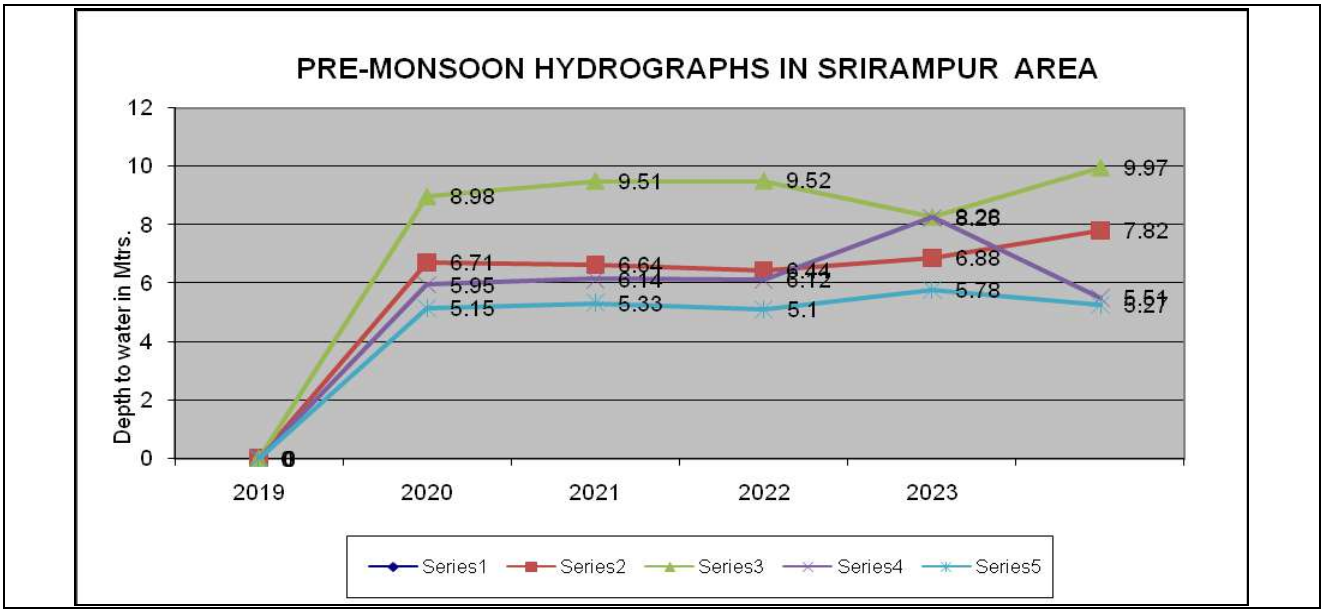
Fortnight	RK-NT Incline			Kankur village			Srirampur Village		
	Date	L_{day}	L_{night}	Date	L_{day}	L_{night}	Date	L_{day}	L_{night}
April–I	06.04.2023	68.3	57.4	05.04.2023	47.8	33.4	07.04.2023	47.6	35.5
April -II	26.04.2023	67.4	56.5	25.04.2023	44.6	36.1	27.04.2023	49.1	40.2
May-I	09.05.2023	64.9	59	08.05.2023	43.1	35.4	10.05.2023	45.9	38.7
May -II	24.05.2023	66.4	58.1	23.05.2023	41.9	34.4	25.05.2023	48	39.2
June –I	08.06.2023	67.8	57.2	07.06.2023	42.6	37.4	09.06.2023	46.2	40.1
June- II	24.06.2023	64.3	52.1	23.06.2023	45.6	39.5	26.06.2023	46.7	40.5
July–I	10.07.2023	71	62.7	08.07.2023	50.3	39.5	11.07.2023	48.1	38.4
July–II	25.07.2023	70.3	61.8	24.07.2023	46.9	38.5	26.07.2023	47.3	36.5
Aug-I	09.08.2023	65.4	52.6	08.08.2023	50.1	39.5	10.08.2023	49.6	38.6
Aug -II	24.08.2023	69.1	58.2	23.08.2023	45.1	32.1	25.08.2023	46.8	32.5
Sep-I	09.09.2023	69.1	53.9	09.09.2023	41.2	32.1	11.09.2023	42.1	33.8
Sep-II	24.09.2023	69.2	56.8	23.09.2023	47.1	40.2	25.09.2023	48.3	36.2
	Average	**67.767**	**57.192**		**45.525**	**36.508**		**47.142**	**37.517**
Limits		**75**	**70**		**55**	**45**		**55**	**45**

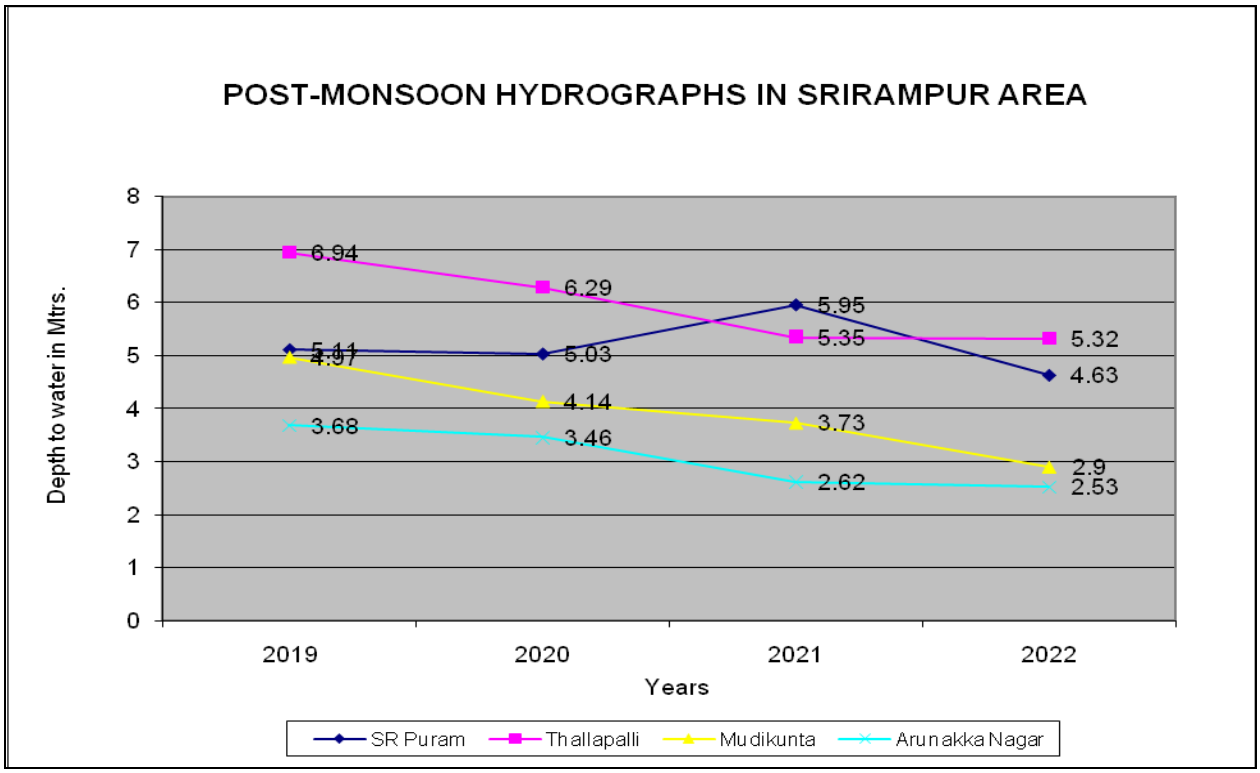
ANNEXURE-IV

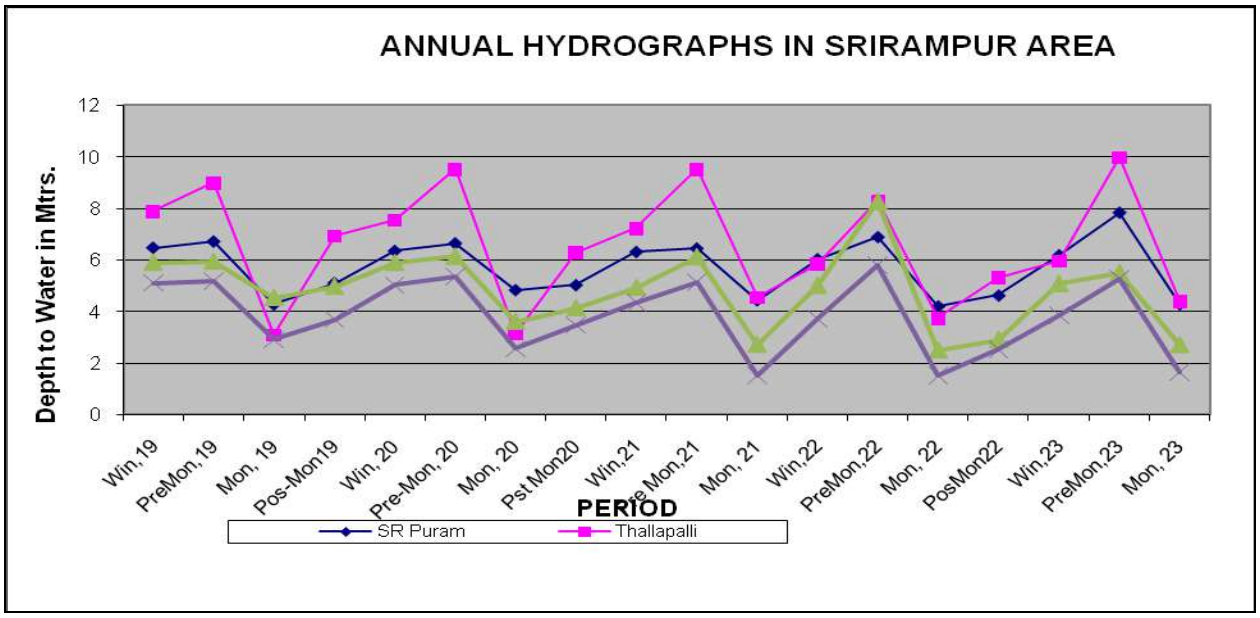
A. ATTITUDE OF PHREATIC SURFACE IN SRIRAMPUR AREA

Sl. No	Name of village	Owner's Name	Type of Well	Dimensions (M)	Total Depth (M)	Geology	Measuring point(MAGL)	Period	Depth to Water (M)				
									2019	**2020**	**2021**	**2022**	**2023**
1	Arunakka nagar near GM office	N.Lingaiah	Domestic	1.00	9.40	Barren Measures Fm	0.30	Winter	5.09	5.01	4.31	3.70	3.84
								Pre-Monsoon	5.15	5.33	5.10	5.78	5.27
								Monsoon	2.89	2.54	1.52	1.50	1.64
								Post- Monsoon	3.68	3.46	2.62	2.53	
2	RK-6 Colony	Q.No.SA-13	Domestic	1.20	10.00	Barkar Fm	0.30	Winter	2.13	2.07	2.44	1.62	1.74
								Pre-Monsoon	2.51	2.48	2.63	4.06	3.53
								Monsoon	1.14	1.19	0.84	0.74	0.81
								Post- Monsoon	1.94	1.90	1.56	1.47	
3	RK-6 Colony/Kurmawada	Karre Posham	Domestic	1.00	6.50	Barkar Fm	GL	Winter	2.53	3.05	2.93	2.83	2.96
								Pre-Monsoon	3.07	3.11	3.17	3.85	1.90
								Monsoon	2.88	1.93	1.20	1.32	1.28
								Post- Monsoon	3.01	2.71	2.10	1.55	
4	RK-6 Colony/Kurmawada	Eshwaraiah	Domestic	1.00	6.50	Barkar Fm	GL	Winter	2.51	2.44	4.50	1.96	AB
								Pre-Monsoon	2.67	2.61	4.66	3.68	--
								Monsoon	2.09	1.96	1.44	WD	--
								Post- Monsoon	2.41	2.66	1.49	AB	
5	S.R.Puram Naspur X Road	Aasami Rajamallamma/ Ippalapalli Kanakaiah	Domestic	1.2	13.50	Talchir	0.6	Winter	6.47	6.35	6.37	6.03	6.18
								Pre-Monsoon	6.71	6.64	6.44	6.88	7.82
								Monsoon	4.29	4.84	4.45	4.21	4.29
								Post- Monsoon	5.11	5.03	5.95	4.63	
6	Sitharampalli / on the way to intake well	Surimilla Lachanna	Domestic	2.5x3.5	6.90	Sullavai	0.60	Winter	7.43	7.38	7.14	2.98	2.92
								Pre-Monsoon	7.51	7.79	7.31	7.27	4.47
								Monsoon	6.18	4.34	1.75	1.63	2.23
								Post- Monsoon	7.21	4.58	2.48	2.71	
7	Sitharampalli/on the way to Thallapalli	M.Gopaiah	Domestic	1.20	11.50	Sullavai	GL	Winter	12.84	12.64	12.00	10.29	10.31
								Pre-Monsoon	12.98	13.04	12.63	12.28	13.30
								Monsoon	10.16	6.81	5.70	4.54	5.00
								Post- Monsoon	11.15	10.82	6.95	7.13	
8	Tallapalli/On the way to Intake well	Rukum. Ramaiah	Domestic	2.40	9.10	Sullavai	0.70	Winter	2.49	2.19	2.37	1.91	2.08
								Pre-Monsoon	2.70	2.67	2.73	2.93	2.17
								Monsoon	1.13	2.08	1.35	1.18	2.03
								Post- Monsoon	1.31	2.14	1.85	1.80	
9	Tallapalli/end of the village towards OC	B.Rajaiah	Domestic	1.20	10.50	Sullavai	1.10	Winter	7.89	7.56	7.22	5.85	5.97
								Pre-Monsoon	8.98	9.51	9.52	8.28	9.97
								Monsoon	3.1	3.15	4.55	3.74	4.40
								Post- Monsoon	6.94	6.29	5.35	5.32	
10	Singapuram /opp.panchayat office	Nammala Srinivasu	Domestic	2.40	7.40	Sullavai FM	0.30	Winter	3.94	4.07	5.16	3.33	3.18
								Pre-Monsoon	4.61	5.51	5.33	5.48	4.17
								Monsoon	2.13	2.71	1.70	1.30	1.83
								Post- Monsoon	2.44	2.83	2.35	2.48	
11	Singapuram /near teak plantation	Aggu Sailu	Agriculture	4.00	10.50	Sullavai	GL	Winter	AB	AB	AB	--	--
								Pre-Monsoon	AB	AB	AB	--	--
								Monsoon	AB	AB	AB	--	--
								Post- Monsoon	AB	AB	AB	--	
12	Ramaraopet /Near bridge	Gunta. Chandraiah	Domestic	1.30	5.20	Talchir FM	0.60	Winter	6.31	5.29	6.24	5.08	5.22
								Pre-Monsoon	5.38	5.72	6.28	6.92	--
								Monsoon	2.71	2.97	2.52	1.02	1.08
								Post- Monsoon	5.24	5.11	AB	3.48	
13	Guttedarpalli/Near RWS tank	R.Venkati	Domestic	2.50	8.50	Barkar Fm	0.50	Winter	Dry	Dry	AB	--	--
								Pre-Monsoon	Dry	Dry	AB	--	--
								Monsoon	Dry	Dry	AB	--	--
								Post- Monsoon	Dry	Dry	AB	AB	

Sl. No	Name of village	Owner's Name	Type of Well	Dimensions (M)	Total Depth (M)	Geology	Measuring point(MAGL)	Period	Depth to Water (M)				
									2019	**2020**	**2021**	**2022**	**2023**
14	Indaram	A.Rajamallu/ opp.BP bunk	Domestic	3x4	11.50	Barren Measures Fm	0.40	Winter	6.17	6.13	6.14	--	6.17
								Pre-Monsoon	6.89	7.37	7.35	7.54	3.60
								Monsoon	3.51	3.85	3.65	3.28	3.44
								Post- Monsoon	3.96	3.94	--	4.10	
15	Indram/ opp. Garden	M.Sankar/Podusani Bhaskar reddy	Domestic	1.00	13.00	Barren Measures Fm	0.90	Winter	AB	AB	AB	--	--
								Pre-Monsoon	AB	AB	AB	--	--
								Monsoon	AB	AB	AB	--	--
								Post- Monsoon	AB	AB	--	--	
16	Indaram/IK-1&1A X-roads	Rajanna	Agriculture	6.50	8.50	Barren Measures Fm	0.70	Winter	AB	AB	AB	--	--
								Pre-Monsoon	AB	AB	AB	--	--
								Monsoon	AB	AB	AB	--	
								Post- Monsoon	AB	AB	--		
17	Tekumatla	Rice mill/ Kamalakar	Domestic	1.60	10.50	Barren Measures Fm	0.60	Winter	9.70	9.67	9.84	--	9.74
								Pre-Monsoon	Dry	Dry	10.53	--	11.37
								Monsoon	9.21	8.22	9.00	7.81	7.68
								Post- Monsoon	9.63	9.75	--	8.10	
18	Tekumatla /behind Panchayat office	V.Ramireddy	Domestic	1.00	11.00	Barren Measures Fm	GL	Winter	2.13	3.66	2.55	3.74	3.88
								Pre-Monsoon	5.32	5.71	5.28	5.32	--
								Monsoon	1.66	2.34	2.10	1.88	3.10
								Post- Monsoon	3.64	2.41	--	2.72	
19	Indaram	Govt. Well	Domestic	2.00	9.00	Barren Measures Fm	0.50	Winter	6.79	6.68	6.34	4.76	4.86
								Pre-Monsoon	Dry	7.13	6.89	7.56	7.37
								Monsoon	Dry	3.82	3.92	3.51	3.73
								Post- Monsoon	5.44	4.95	--	--	
20	Indaram/side of HP Petrol bunk	M. Uppalaiah	Domestic	1.20	7.00	Barren Measures Fm	0.60	Winter	6.24	6.18	6.08	6.24	6.33
								Pre-Monsoon	6.61	6.74	6.57	6.84	6.40
								Monsoon	4.74	4.31	2.05	1.91	2.01
								Post- Monsoon	4.81	4.67	--	--	
21	Rasulpalli	Madhukar	Domestic	1.00	8.00	Barren Measures Fm	0.70	Winter	3.71	3.62	3.46	2.90	2.98
								Pre-Monsoon	5.14	5.54	5.22	4.37	3.05
								Monsoon	1.96	2.18	1.56	1.41	1.48
								Post- Monsoon	3.22	2.89	--	--	
22	Mudikunta	G.Rajaiah	Domestic	1.00	11.40	Barren Measures Fm	0.40	Winter	5.90	5.89	4.93	5.00	5.08
								Pre-Monsoon	5.95	6.14	6.12	8.26	5.51
								Monsoon	4.54	3.61	2.72	2.50	2.70
								Post- Monsoon	4.97	4.14	3.73	2.90	
23	Mudikunta	Ellamma temple	Domestic	1.00	4.50	Barren Measures Fm	0.40	Winter	2.98	AB	AB	--	--
								Pre-Monsoon	AB	AB	AB	--	--
								Monsoon	AB	AB	AB	--	
								Post- Monsoon	AB	AB	--	--	
24	Kankur/near school	Govt. Well /Regunta.Mallesh	Domestic	4.00	9.00/ 10.0	Barren Measures Fm	0.40/ 0.50	Winter	Dry	6.55	AB	6.75	6.82
								Pre-Monsoon	Dry	AB	7.30	7.31	2.85
								Monsoon	7.39	AB	3.83	1.00	2.00
								Post- Monsoon	7.84	AB	--	--	
25	Jaipur	Behind AE Off. Near bus stop	Domestic	1.50	12.00	Kamthi FM	0.80	Winter	3.93	3.84	4.26	2.96	2.99
								Pre-Monsoon	4.05	5.11	5.91	4.87	3.80
								Monsoon	2.34	2.18	1.50	0.81	0.88
								Post- Monsoon	2.66	3.06	--	1.08	


PRE-MONSOON HYDROGRAPHS IN SRIRAMPUR AREA
Depth to water in Mtrs.
12
10
8
6
4
2
0
2019
2020
2021
2022
2023
8.98
9.51
9.52
9.97
6.71
6.64
6.44
6.88
7.82
5.95
6.14
6.12
8.28
5.78
5.51
5.15
5.33
5.1
5.27
0
Series1
Series2
Series3
Series4
Series5


POST-MONSOON HYDROGRAPHS IN SRIRAMPUR AREA
Depth to water in Mtrs.
8
7
6
5
4
3
2
1
0
2019
2020
2021
2022
Years
6.94
6.29
5.35
5.32
5.95
5.11
5.03
4.63
4.97
4.14
3.73
2.9
3.68
3.46
2.62
2.53
SR Puram
Thallapalli
Mudikunta
Arunakka Nagar

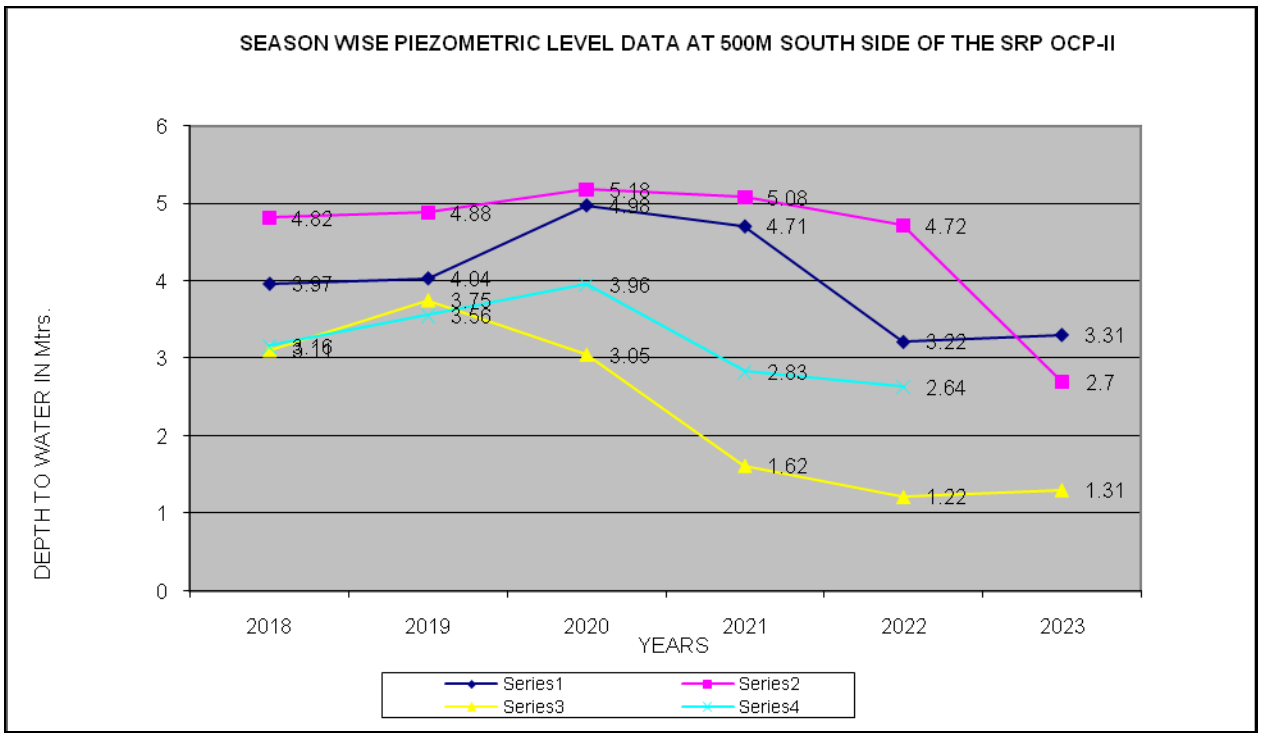


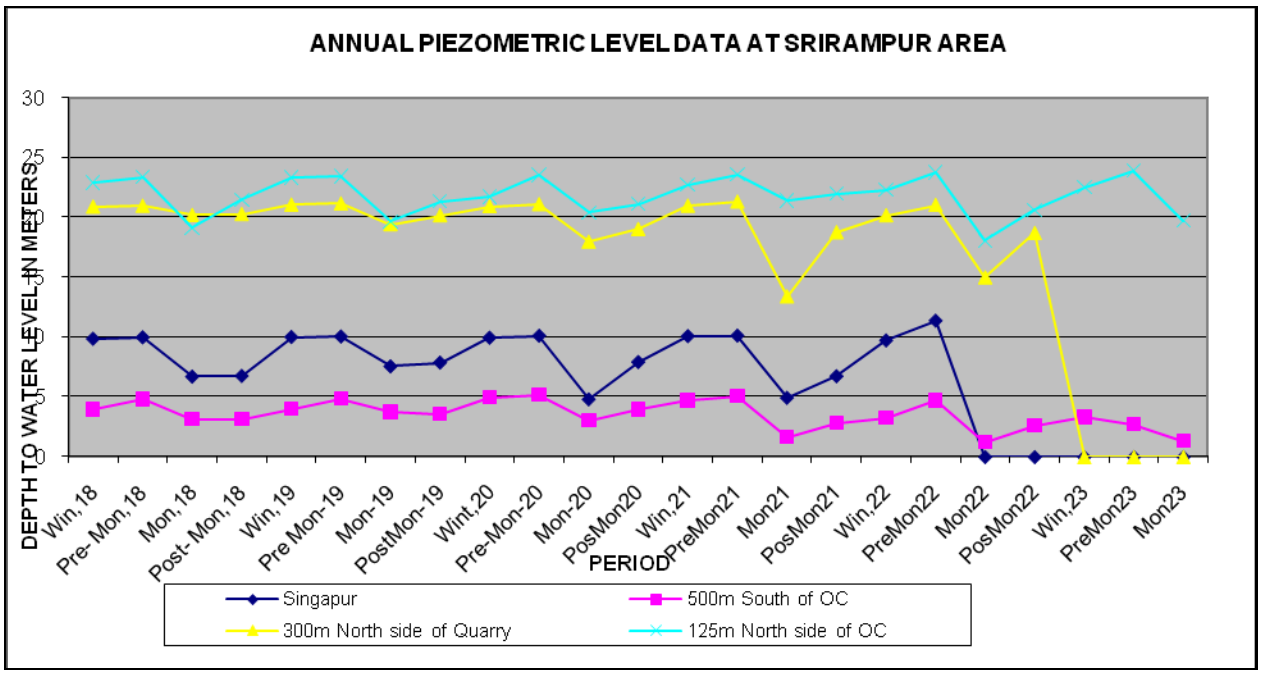
B. PIEZOMETRIC LEVEL DATA OF SRIRAMPUR AREA.

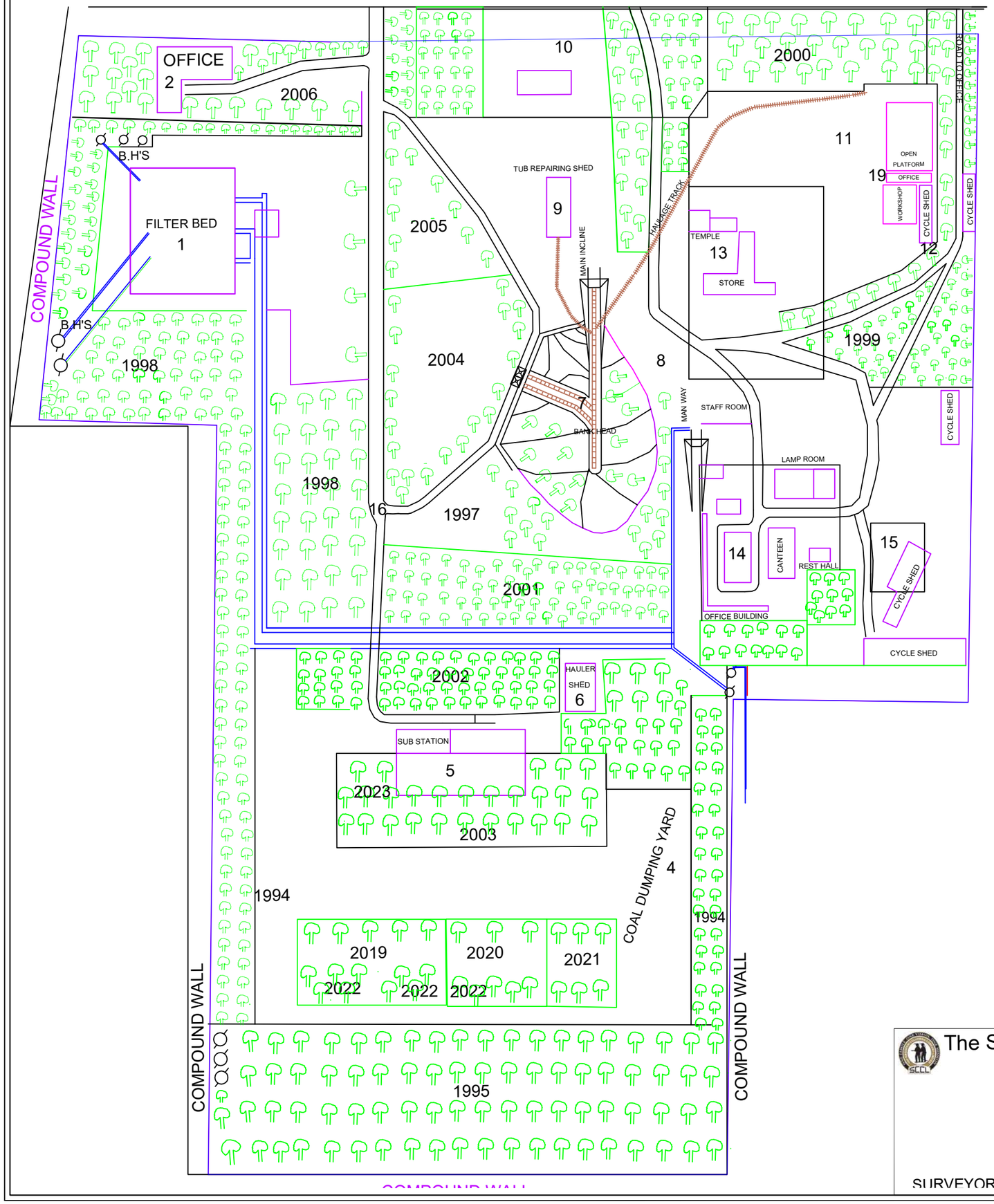
Well No.	Location	Depth (m)	Dia (m)	Measuring point (m above ground level)	Period	Depth to Water (m)					
						2018	2019	2020	2021	2022	2023
SRP_OCP.II PW-5	About 500 m south of the quarry and 150m north of Indaram Tank (N18^{0}49'35.43" – E 79^{0}30'57.60")	208	0.10	0.30	Winter	3.97	4.04	4.98	4.71	3.22	3.31
					Pre-Monsoon	4.82	4.88	5.18	5.08	4.72	2.70
					Monsoon	3.11	3.75	3.05	1.62	1.22	1.31
					Post-Monsoon	3.16	3.56	3.96	2.83	2.64	
SRP_OCP.II PW-7	Near Singapur village (N18^{0}49'46.47" – E 79^{0}30'25.52")	50	0.10	0.20	Winter	9.82	9.97	9.91	10.04	9.68	*NA
					Pre-Monsoon	9.94	10.01	10.07	10.08	11.32	AB
					Monsoon	6.68	7.53	4.79	4.92	*NA	AB
					Post-Monsoon	6.74	7.84	7.89	6.71	*NA	
SRP_OCP.II PW-8	Near Project Office sub-station. About 125m from N side of quarry surface limit. (N18^{0}51'4.12" – E 79^{0}29'39.90")	50	0.10	0.40	Winter	22.90	23.35	21.72	22.73	22.32	22.52
					Pre-Monsoon	23.41	23.43	23.57	23.62	23.75	23.90
					Monsoon	19.13	19.67	20.4	21.42	18.06	19.73
					Post-Monsoon	21.48	21.33	21.14	21.97	20.63	
SRP_OCP.II PW-10	Road to SRP bus stand, about 300m from N side of quarry surface limit (N18^{0}51'7.10" – E 79^{0}30'11.26")	50	0.1	0.50	Winter	20.90	21.07	20.94	20.99	20.19	NA*
					Pre-Monsoon	20.98	21.17	21.11	21.32	21.05	NA*
					Monsoon	20.21	19.44	17.98	13.42	15.00	NA*
					Post-Monsoon	20.28	20.19	1.03	18.77	18.70	
*SRP_CSIRO PW-11	West side External dump area, Near to Thallapalli village. (N18^{0}49'54.731" – E 79^{0}29'11.085	50	0.1	0.2	Winter	1.97	2.32	2.38	2.23	2.09	2.18
					Pre-Monsoon	2.38	2.53	2.57	2.64	3.17	2.60
					Monsoon	1.05	NA	0.91	1.15	1.05	NA*
					Post-Monsoon	2.00	2.07	2.00	1.89	1.88	
*SRP_CSIRO PW-12	West side External dump area. Near to Thallapalli village (N18^{0}49'50.573" - E 79^{0}29'06.202")	50	0.1	0.2	Winter	2.07	2.87	2.84	2.68	2.80	2.73
					Pre-Monsoon	2.28	2.91	2.93	3.01	4.65	2.80
					Monsoon	2.08	2.12	2.08	1.81	2.03	1.83
					Post-Monsoon	2.14	2.35	2.17	2.29	2.66	
*SRP_CSIRO PW-13	West side External dump area. Road to Godavari river (N18^{0}49'45.286" – E 79^{0}29'06.811")	50	0.1	0.2	Winter	2.99	3.05	3.17	3.63	3.92	3.97
					Pre-Monsoon	3.28	3.76	3.84	4.07	4.56	3.70
					Monsoon	3.11	2.98	3.08	2.97	4.21	2.83
					Post-Monsoon	3.06	3.11	3.27	3.85	4.48	

*SRP_CSIRO PW-14	West side External dump area. Road to Godavari River (N18^{0}49'32.305" – E 79^{0}28'50.154")	50	0.1	0.2	Winter	4.73	4.77	4.68	4.37	4.62	4.54
					Pre-Monsoon	5.25	4.82	4.91	5.77	6.25	5.80
					Monsoon	4.12	4.18	4.13	3.92	4.06	3.38
					Post-Monsoon	4.19	4.24	4.28	4.22	4.45	

Note : NA: Not applicable and AB: Abonded.
Piezometric well No.SRP OCP-I, PW-1,2,3,4,6&9 were abonded







TOTAL MINE TAKE AREA	327.44 Ha
AQUIRED LAND	8.96 Ha
FOREST LAND	318.48 Ha

YEAR	No OF PLANTS PLANTED	NO OF PLANTS SURVIVED	TOTAL NO OF PLANTS SURVIVED	AREA COVERED (in Hact.)	TOTAL AREA COVERED (in Hact.)
1994	200	125	125	0.065	0.065
1995	2780	1935	2060	0.818	0.883
1996	150	150	2210	DENCITY INCREASED	0.883
1997	400	50	2260	CASUALITIES	0.883
1998	1360	1250	3510	0.68	1.563
1999	220	220	3730	0.11	1.673
2000	200	200	4140	0.10	1.773
2001	350	210	4350	0.175	1.948
2002	400	210	4560	0.20	2.148
2003	900	660	5310	0.50	2.648
2004	1200	120	5430	0.40	3.048
2005	250	25	5455	0.30	3.348
2006	400	363	5818	0.20	3.548
2007	350	350	6168	GAP PLANTATION	3.548
2008	NIL	—	6168	—	3.548
2009	NIL	—	6168	—	3.548
2010	520	300	6468	GAP PLANTATION	3.548
2011	100	80	6548	GAP PLANTATION	3.548
2012	NIL	NIL	6548	NIL	3.548
2013	NIL	NIL	—	NIL	3.548
2014	NIL	NIL	—	NIL	3.548
2016	NIL	NIL	—	GAP PLANTATION	3.548
2019	110	85	6633	GAP PLANTATION	3.548
2020	90	75	6708	0.352	3.90
2021	120	100	6808	0.12	4.02
2022	100	80	6888	GAP PLANTATION	4.02
2023	120	105	6993	GAP PLANTATION	4.02

The Singareni Collieries Company Limited

(A GOVT. COMPANY)

RAVINDRA KHANI NEWTECH PLANTATION PLAN

NOT TO SCALE

SURVEYOR

MANAGER

తెలంగాణ రాష్ట్రం
Telangana State

TELANGANA STATE POLLUTION CONTROL BOARD
PARYAVARAN BHAVAN, A - 3, INDUSTRIAL ESTATE,
SANATHNAGAR, HYDERABAD - 500 018

Phone: 23887500
Fax: 040 – 23815631
Website: tspcb.cgg.gov.in

CONSENT ORDER (RENEWAL)

Consent Order No : 210522943452 **Date :15 .09.2021**

(Consent Order for Existing/New or altered discharge of sewage and/or trade effluents/outlet under Section 25/26 of the Water (Prevention & Control of Pollution) Act, 1974 and amendments thereof, Operation of the plant under section 21/22 of Air (Prevention & Control of Pollution) Act 1981 and amendments thereof.

CONSENT is hereby granted under section 25/26 of the Water (Prevention & Control of Pollution) Act, 1974, under section 21/22 of Air (Prevention & Control of Pollution) Act 1981 and amendments thereof, (hereinafter referred to as 'the Acts', `the Rules' and the rules and orders made there under to **M/s. Singareni Collieries Co. Ltd., Ravindra Khani New-Tech (RK-NT), Incline Coal Mine, Ramaraopet (V) and Mudhikunta (V) of Jaipur (M), Mancherial District** (hereinafter referred to as 'the Applicant /Industry') and the mine is authorized to operate the industrial plant to discharge the Effluents from the outlets, as detailed below,

i) Out lets for discharge of Effluents :

Outlet No.	Outlet Description	Max Daily Discharge (KLD)	Point of Disposal
1	Excess mine discharge and waste water from workshops and washings	4597.20	After treatment for dust suppression and agricultural use / gardening
2	Domestic	538.24	STP followed by on-land use / gardening

This consent order is valid for Mining of Coal in Mine lease area of 344 Ha. for the following capacity only.

S. No.	Name of the Product	Capacity
1	**Coal (under ground mining)**	**1.0 Million TPA**

This order is subject to the provisions of `the Acts' and the Rules' and amendments made thereunder and further subject to the terms and conditions incorporated in the schedule A and B enclosed to this order.

This order of Consents is valid for a period ending with the 30th day of June, 2026.

Sd/-
MEMBER SECRETARY

To
M/s. Singareni Collieries Co. Ltd.,
Ravindra Khani New-Tech (RK-NT),
Incline Coal Mine, Ramaraopet (V) and
Mudhikunta (V) of Jaipur (M),
Mancherial District

///T.C.F.B.O///

B V B Girish

SENIOR ENVIRONMENTAL ENGINEER (FAC)

SCHEDULE-A

1. The applicant shall make applications through online for renewal of Consent (under Water & Air Acts) and Authorisation under HWM Rules at least 120 days before the date of expiry of this order, along with prescribed fee under Water and Air Acts for obtaining Consent & HW Authorisation of the Board. The applicant can also apply for Auto Renewal of the CFO atleast 30 days before the expiry of this order as per the procedure and eligibility stipulated in the Board Circular dt.19.11.2015 & 08.12.2015 (available in Board's Website: http://tspcb.cgg.gov.in/Pages/Circulars.aspx).

2. This order is issued in line with Board's CFO order dt.06.08.2016. Concealing the factual data or submission of false information/ fabricated data and failure to comply with any of the conditions mentioned in this order may result in withdrawal of this order and attract action under the provisions of relevant pollution control Acts. The mine shall comply with all other conditions of CFO order dt.06.08.2016 is still applicable.

3. Any person aggrieved by an order made by the State Board under Section 25, Section 26, Section 27 of Water Act, 1974 or Section 21 of Air Act, 1981 may within thirty days from the date on which the order is communicated to him, prefer an appeal as per Andhra Pradesh Water Rules, 1976 and Air Rules 1982, to such authority (hereinafter referred to as the Appellate Authority) constituted under Section 28 of the Water (Prevention and Control of Pollution) Act, 1974 and Section 31 of the Air (Prevention and Control of Pollution) Act, 1981.

4. The mine may explore the possibility of tapping the solar energy for their energy requirements.

5. The mine shall comply with the all the directions issued by the Board from time to time.

6. The Board reserves its right to modify above conditions or stipulate any further conditions and to take action including revoke of this order in the interest of protection of public health and environment.

SCHEDULE-B

1. Total Water Consumption shall not exceed 2152.8 KLD

S. No	Purpose	Quantity (KLD)
1.	Plantation, , Workshop, washing of HEMM	1400
2.	Dust suppression	80
3.	Domestic at Mine	80
4.	Supply of water to Colonies	592.8
	Total	**2152.8**

2. The effluent discharged should not contain constituents in excess of the tolerance limits prescribed below.

Outlet No.	Parameter	Limiting Standards
1 & 2	pH	6.5 – 8.5
	Total Suspended Solids (TSS)	100 mg/l
	Oil & Grease	10 mg/l
	BOD (3 days at 27^0 C)	100 mg/l
	Chemical Oxygen Demand (COD)	250 mg/l
	Total Dissolved Solids(TDS)	2100 mg/l

3. The mine should ensure segregation of Acid Mine Discharges (AMD) from abandoned mines, coal stocks, coal handling facilities, washeries & coal waste tips etc. and should adopt adequate treatment to achieve prescribed standards for the AMD as stipulated at S.No.2 prior to disposal. The plan of action for segregation of AMD, technology of the proposed treatment and mode of disposal should be submitted to Board.

4. The mine shall comply with emission limits for DG sets upto 800 KW as per the Notification G.S.R.520 (E), dated 01.07.2003 under the Environment (Protection) Amendment Rules, 2003 and G.S.R.448(E), dated 12.07.2004 under the Environment (Protection) Second Amendment Rules, 2004. In case of DG sets more than 800 KW should comply with emission limits as per the Notification G.S.R.489 (E), dated 09.07.2002 at serial no.96, under the Environment (Protection) Act, 1986.

5. The mine shall comply with ambient air quality standards of PM_{10}(Particulate Matter size less than 10μm) - 100 μg/ m^3; $PM_{2.5}$(Particulate Matter size less than 2.5 μm) - 60 μg/ m^3; SO_2 - 80 μg/ m^3; NO_x - 80 μg/m^3, outside the factory premises at the periphery of the industry.

   Standards for other parameters as mentioned in the National Ambient Air Quality Standards CPCB Notification No.B-29016/20/90/PCI-I, dated 18.11.2009

   Noise Levels: Day time - (6 AM to 10 PM) - 75 dB (A)
   Night time - (10 PM to 6 AM) - 70 dB (A).

6. The mine has paid differential CFO fee of Rs. 22,50,000/- for a period upto 30.06.2026.

7. The mine either paying annual fee or total fee for Consented period, shall pay the balance fee as per the revised rates as applicable from time to time.

8. The mine shall not produce beyond the permitted capacity as mentioned in this order, without obtaining prior CFE & CFO of the Board. The mining capacity of the coal also shall not be increased more than IBM approved capacity.

9. The industry shall provide water meters for recording water consumption for industrial and domestic purposes within a month as committed vide lr. dt.16.08.2021 and also maintain daily records.

10. The industry shall maintain the sand filter properly for removal of suspended solids from mine discharge water.

11. The industry shall analyse the quality of excess mine discharge water being disposed outside and submit the reports to the RO, Nizamabad. The industry also shall adopt necessary treatment for excess mine discharged water, if required, to meet the discharge standards.

12. The industry shall explore the possibility for usage of ash instead of sand stowing operations.

13. The industry shall take effective measures such as covering coal transport vehicles with tarpaulins, water sprinkling, etc., to avoid fugitive emissions.

14. The industry shall maintain water mist sprayers at coal bunkers, at coal handling plant to control fugitive emissions.

15. The industry shall develop greenbelt along the haul roads and around the mine exhaust system to control air pollution.

16. The mine should undertake only wet drilling & should ensure maintenance of adequate measures to mitigate dust generation from drilling operations.

17. The mine should adopt eco-friendly mining practices. The maximum charges used for blasting should be limited to ensure vibrations created in the neighborhood area are within acceptable limits.
18. The mine should adopt blasting technique using shock tube and delay detonators. Dust collectors are to be provided for the drilling equipment. Mine should adopt fugitive dust control measure like water sprinkling near loading areas.

19. The mine should submit the detailed mine closure plan with a timeframe and pattern of reclamation in each period. The ultimate plan should show finished ground contours that will be reforested and the area that will be left open.

20. All waste material should be accommodated within the Mining Lease Area.

21. The natural drainage of water should be maintained. Dump sites should not cross any streams, water flow from the Mining Lease Area, even during the monsoon, should be free of suspended matter and conform to prescribed water quality standards.

22. Soil binding and nitrogen fixing plants should be planted in the Mining Lease Area. Biological reclamation should be done in two phases, the first phase should be plant appropriate quick growing grass and shrubs and the second phase should be slower growing native shrubs and trees.

23. Check dams and filter beds should be constructed to protect from stream runoffs.

24. The mine should undertake suitable artificial recharge measures in the project area for augmentation of ground water resources. Ground water table levels should be monitored every season. Any lowering of the ground water table in comparison to the previous season should be reported to the Board immediately. Discarded pits should be allowed to fill with water.

25. The mine shall install continuous the Ambient Air Quality in the core zone as well as in the buffer zone for monitoring of RSPM, SPM, NOx and SO2. The location of ambient air quality stations shall be decided based on metrological data, topographical features and environmentally and ecologically sensitive targets and the frequency of monitoring shall be undertaken in consultation with Regional office of the Board.

26. Vehicles should be well maintained and engine idling should be minimized. Vehicle cabs should be made dust-proof.

27. The applicant should submit Environment statement in Form V before 30th September of every year as per Rule No.14 of E(P) Rules, 1986 & amendments thereof.

28. All the rules & regulations notified by Ministry of Law and Justice, Government of India regarding Public Liability Insurance Act, 1991, should be followed.

29. The conditions stipulated in this order are without any prejudice to rights and contentions of this Board in any Hon'ble court of Law..

Sd/-
MEMBER SECRETARY

To
M/s. Singareni Collieries Co. Ltd.,
Ravindra Khani New-Tech (RK-NT),
Incline Coal Mine, Ramaraopet (V) and
Mudhikunta (V) of Jaipur (M),
Mancherial District.

///T.C.F.B.O///

SENIOR ENVIRONMENTAL ENGINEER (FAC)