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EOGEPL/ CBM-RG (E)/ HSE/2022/4372
Date: 1st December 2022

To
The Regional Director
Ministry of Environment, Forests and Climate Change
Integrated Regional Office
IB-194, Sector III, Salt Lake
Kolkata-700106
West Bengal

Sub: Submission Half-yearly Compliance Report of the Environmental Clearance (Phase-III) by Essar Oil Gas Exploration and Production Limited (EOGEPL) reg.

Ref: ***Environmental Clearance of Phase-III granted by MoEF&CC vide F. No. J-11011/491/2011-IA II(I) dated 26th February, 2013 and amendment dated 9th May 2019.***

Dear Sir

We submit herewith the six monthly compliance report with respect to the stipulated conditions of prior environmental clearance vide F. No. J-11011/491/2011-IA II (I), dated 26th February, 2013 and it's amendment dated 9th May 2019 granted to EOGEPL for the Production and Development Phase (Phase-III) of CBM project activities. The period consider as April' 2022 to September' 2022.

Also, we would like to draw your kind attention that the prior environment clearance vide F. No. J-11011/491/2011-IA II (I), dated 26th February, 2013 and its amendment dated 9th May 2019 is valid up to 26th February 2024 due to one year extended validity for COVID-19 as per Notification S. O. 221 (E) dated 18th January 2021, published by MoEF&CC in the Gazette of India.

Thank you for your continued support

Warm Regards,
For Essar Oil and Gas Exploration and Production Limited

Vikram Goday
Vice President & Head- Facilities
Raniganj East, CBM Project-Durgapur

Essar Oil and Gas Exploration and Production Limited
Raniganj East CBM Project Durgapur

Enclosed: Annexure I, II, III, IV, V, VI

Copy to:

1. The Environmental Engineer, Durgapur Regional Office, WBPCB, Durgapur-713216

Essar Oil and Gas Exploration and Production Limited

RG (East)-CBM-2001/1 (Phase-III) Half Yearly Environment Clearance Compliance Report
(April' 22 to September' 22)
Ref: Environmental Clearance F.No.J-11011/491/2011-IA II (I), dated 26th February, 2013

S. No	Condition	Compliance Status
A	**Specific Conditions**	
i.	Compliance to all the environmental conditions stipulated in the environmental clearance letter nos.J-11011/660/2007-IA-II(I) dated 6th May, 2008, J-11011/351/2009-IA-II(I) dated 23.09.2011 and its subsequent amendment shall be satisfactorily implemented.	Compliance to the environmental conditions of Phase- II & II (A) are being satisfactorily implemented and the compliance reports are regularly submitted to the Regional office of the MoEF&CC.
ii.	Compensation for the land acquisition to the land oustees, if any, and also for standing crop shall be paid as per the National Resettlement and Rehabilitation Policy (NRRP) 2007 or State Government norms. It may be ensured that compensation provided shall not be less than the norms of the NRRP, 2007	Land acquisition is being directly done with the land owners and the compensation is paid as per the prevailing market rate. There is no involvement of Rehabilitation and Resettlement.
iii.	Prior permission from the Ministry of Defence shall be obtained regarding impact of proposed plant on Panagarh, if any.	Total three (3) nos. GGS and One (1) no. MCS flare stack are constructed as per the NOC obtained from the Ministry of Defence. GGS 4 is not in Operation.
iv.	As proposed, no forest land shall be used for the proposed facilities	Forest land is not being used for construction of well pads or and surface facilities for the project.
v.	Ambient Air Quality shall be monitored near the closest human settlements as per the National Ambient Air Quality Emission Standards (NAAQES) issued by the Ministry vide G.S.R No. 826(E) dated 16th November, 2009 for PM10, PM2.5, SO2, NOx, CO, CH4, VOCs, HC, Non-Methane HC etc. Efforts shall be made to improve the ambient air quality of the area.	Ambient Air Quality (AAQ) Monitoring being carried out with a NABL accredited laboratory at well sites near to the closest human settlements as per the Ambient Air Quality Emission Standards (NAAQES) issued by the Ministry vide G.S.R No. 826(E) dated 16th November, 2009 for PM10, PM2.5, SO2, NOX, CO, CH4, VOCs, HC, Non-methane HC. Please find AAQ monitoring results of last six months, i.e. April'22 to September'22 attached as **Annexure I.**

S. No	Condition	Compliance Status
vi.	Mercury shall also be analysed in air, water and drill cuttings twice during drilling period	Mercury has been analysed in produced water and ambient air. Mercury levels in ambient air quality is in below detection limits (<1ng/m3). The analysis reports for Air **(*Annexure I*)** and Water analysis report are attached as **Annexure *III***. The drilling operation was suspended for this period. Hence no drilling cutting generated and analysed.
vii.	The flare system shall be designed as per good oil field practices and Oil Industry Safety Directorate (OISD) guidelines. The company shall take necessary measures to prevent fire hazards and soil remediation as needed. At the place of ground flaring, the flare pit shall be lined with refractory bricks and efficient burning system. In case of overhead flare stacks, the stack height shall be provided as per the regulatory requirements and emission from stacks shall meet the MoEF/CPCB guidelines.	Elevated flare system has been designed as per OISD guidelines. Measures delineated in the EIA/EMP have been taken to prevent fire hazards. The overhead flaring has been installed at a height of 30 m. The following measures have been implemented to prevent fire hazards: ▪ Installation of electrical equipment as per approved hazardous zone classification as communicated to DGMS. ▪ Major facilities like GGS, MCS, and Ware House etc. are well equipped with Fire hydrant system. ▪ Dry chemical fire extinguishers are available at site. ▪ Online methane gas analysers (CH4) are available. ▪ Flame proof type lighting fixtures, push buttons and switches at the drill site facilities are used.
viii.	The company shall make the arrangement for control of noise from the drilling activity, compressor station and DG sets by providing necessary mitigation measures such as proper acoustic enclosures to DG sets and meet the norms notified by the MoEF. Height of all the stacks/vents shall be as per the CPCB guidelines.	Only CPCB approved models of silent generator sets have been installed with acoustic enclosures. Once the gas production starts at the well site, the Diesel Generator (DG) sets are replaced with Gas Generator (GG) sets. In production wells Gas Generator sets are operational. Noise monitoring is being carried out in the activity area and surrounding habitat. Please find the results of noise monitoring attached herewith as **Annexure II**.

S. No	Condition	Compliance Status
ix.	The company shall comply with the guidelines for disposal of solid waste, drill cutting and drilling fluids for onshore drilling operation notified vide GSR.546€ dated 30th August, 2005.	Drill cuttings are collected in HDPE lined pits and after that at treatment site, it is stored in RCC pit for the further treatment through Drilling Waste Processing Plant. We are in comply with the guidelines for disposal of solid waste, drill cuttings and drilling fluids for onshore drilling operation notified vide GSR.546 (E) dated 30th August, 2005.
x.	Total fresh water requirement should not exceed 125m3 for each well during drilling phase 1 m3/day for GGS/MCS. Prior permission shall be obtained from the Competent Authority and a copy submitted to the Ministry's Regional Office at Bhubaneswar	The treated RO water is reused in drilling, work over operations and other utilities. Ground water is not used & withdrawn for Industrial operation.
xi.	During well drilling, wastewater should be segregated into waste drilling fluid and drill cuttings. Drill cutting should be stored onsite impervious HDPE lined pit for solar evaporation and drying. Effluent should be properly treated and treated effluent should conform to CPCB standards. As proposed, produced water should be treated by reverse osmosis and reuse in drilling of new wells, fire hydrant system and other beneficial purposes. Domestic effluent should be disposed-off through septic tank followed by soak pit.	Drilling waste processing plant has been installed and operational where drilling fluid and drill cutting are segregated and treated. Drill cutting is collected in onsite impervious HDPE lined pit and after that at treatment site, it is stored in RCC pit for further treatment through Drilling Waste Processing Plant. Effluent is treated and conforming to CPCB standards. . Produced water is treated through Reverse Osmosis (RO) system. Treated produced water is reused in other operations. Please find the RO water analysis results attached with this report as **Annexure IV.** We submit herewith the results of sampling & analysis for the period of April'22 to September'22. The sampling and analysis was conducted by NABL accredited laboratory. Domestic effluent is disposed of through septic tank to soak pit.
xii.	Ground water quality monitoring should be done to assess if produced water storage or disposal has any effect.	The ground water monitoring carried out in Pre-Monsoon (May'22) month. The Ground water analysis results attached herewith as **Annexure V**.
xiii.	Drilling wastewater including drill cuttings, wash water shall be collected in disposal pit lined with	Drilling waste processing plant has been installed and operational where drilling fluid and drill cutting are

S. No	Condition	Compliance Status
	HDPE lining, evaporated or treated and shall comply with the notified standards for on-shore disposal on land. Proper toxicological analysis shall be done to ensure there is no hazardous material. Copy of toxicological analysis shall be submitted to Ministry's Regional Office at Bhubaneswar.	segregated and treated. Drill cutting is collected onsite impervious HDPE lined pit. After that at treatment site, it is stored in RCC pit for further treatment through Drilling Waste Processing Plant. Effluent is treated and conforming to CPCB standards.
xiv.	Water base drilling mud or synthetic based mud shall be used	Water based mud is used for drilling.
xv.	The company shall take necessary measures to prevent fire hazards, containing oil spill and soil remediation as needed. At place of ground flaring, the overhead flaring stack with knockout drums shall be installed to minimize gaseous emissions during operation.	All the precautionary measures is implemented to prevent fire hazards & Oil Spills. Overhead flaring stack is associated with knockout drums. No ground flaring is done.
xvi.	The company shall take necessary measures to prevent fire hazards and soil remediation as needed. The stacks of adequate height shall be provided to flare the gas, if required, to minimize gaseous emissions and heat load during flaring	Gas detectors & sensors available to prevent the fire hazards. Flare stack, height of 30m is maintained at Gas Gathering Stations (GGS) and 50 m at Main Compressor Stations (MCS).
xvii.	To prevent underground coal fire, preventive measures shall be taken for ingress of ambient air during withdrawal inside the coal seams by adopting technologies including vacuum suction. Gas detectors for the detection of CH4 and H2S shall be provided.	Gas detectors for Methane, H2S and other gases are provided at the Gas Gathering Station and production sites. There is not any ingress of ambient air since the well is arrested at the head with drive head and progressive cavity pump.
xviii.	The design, material of construction, assembly, inspection, testing and safety aspects of operations and maintenance of pipeline and transporting the natural gas/oil shall be governed by ASME/ANSI B 31.8/B31.4 and OISD standard 141. Pipeline wall thickness and minimum depth of burial at river crossing and casings at rails, major road crossings should be in conformity with ANSI/ASME requirements.	All the surface facilities are installed as per the applicable practices and standards.

S. No	Condition	Compliance Status
xix.	The company shall develop a contingency plan for H2S release including all necessary aspects from evacuation to resumption of normal operations. The workers shall be provided with personal H2S detectors in locations of high risk of exposure along with self-containing breathing apparatus.	H_2S is not present as per the analysis of gas tapped from the test wells & pilot wells. However all the necessary safety measures are taken as per the Emergency Response Plan. Gas detectors are kept at the Gas Gathering Station and production sites to check any presence of gases which are beyond threshold values. All workers are provided with standard PPEs according to job requirement.
xx.	Adequate well protection system shall be provided like Blow Out Preventer (BOP) or diverter systems as required based on the geological formation of the blocks.	CBM well hydrostatic pressures are found to be less than 2psi. However considering the hydrostatic pressures and sensitivity of well, Blow Out Preventers or diverter systems are provided at the well head during drilling along with other well control measures such as proper pre-well planning and drilling fluid logging to maintain the hydrostatic pressure.
xxi.	The top soil removed shall be stacked separately for reuse during restoration process.	The top soil being spread out in designated area for green belt development at project area.
xxii.	Emergency Response Plan shall be based on the guidelines prepared by OISD, DGMS and Govt. of India. Recommendations mentioned in the Risk Assessment & Consequence Analysis and Disaster Management Plan shall be strictly followed.	Emergency Response plan has been prepared as per the OISD & DGMS guidelines and sent for the DGMS approval and has been certified. The certificate has already attached with earlier compliance report.
xxiii.	Project proponent shall comply with the environment protection measures and safeguards recommended in the EIA/EMP/risk analysis report/disaster management plan	Environmental protection measures and safeguards recommended in EMP/risk analysis report/disaster management plan are implemented.
xxiv.	The company shall take measures after completion of drilling process by well plugging and secured enclosures, decommissioning of rig upon abandonment of the well and drilling site shall be restored in original condition. In the event that no economic quantity of hydrocarbon is found a full abandonment shall be implemented for the drilling site in accordance with the applicable Indian Petroleum	Wells will be abandoned and restored to natural position if found not suitable for hydrocarbon extraction. Wells will be fully abandoned in compliance with Indian Petroleum Regulations in the event of no economic quality of hydrocarbon is found.

S. No	Condition	Compliance Status
	Regulations.	
xxv.	Occupational health surveillance of the workers shall be carried out as per the prevailing Acts and Rules.	Occupational health surveillance of the workers has been carried out as per the Mines Act 1952. Periodical Occupational Health Surveillance records are being maintained.
xxvi.	Company shall adopt Corporate Environment Policy as per the Ministry's O.M.No.J-11013/41/2006-IA.II(I) dated 26th April, 2011 and implemented.	Company has framed Corporate Environment Policy which is duly implemented.
xxvii	All the commitments made to the public during the Public Hearing/Public Consultation meeting held on 24th May, 2012 shall be satisfactorily implemented and a separate budget for implementing the same shall be allocated and information submitted to the Ministry's Regional Office at Bhubaneswar.	Commitments given in the public hearing are being implemented. A separate budget has already been allocated for the FY 2022-2023 for the welfare of surrounding villages in thrust areas like Health, Education & Empowerment etc. under CSR budgetary activities.
xxviii	At least 5% of the total cost of the project should be earmarked towards the enterprise social commitment and item-wise details along with time bound action plan shall be prepared and submitted to the Ministry's Regional Office at Bhubaneswar. Implementation of such program shall be ensured after the completion of the project.	The expenditure towards enterprise social commitment showing as **Annexure VI.** The budgetary allocation has been made for the FY 2022-23 for the CBM Project which is about INR 52 Lacs. The fund is being utilized judicially for the development of villages and people in the vicinity of the project area.
B	**General Conditions**	
i.	The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board (SPCB), State Government and any other statutory authority.	We are in comply with the stipulations made by the State Pollution Control Board (SPCB), State Government and all other statutory bodies.
ii.	No further expansion or modification in the project shall be carried out without prior approval of the Ministry of Environment & Forests. In case of deviations or alterations in the project proposal from those submitted to this Ministry for clearance, a fresh reference shall be made to	We restrict to the project configuration that is described in the Environmental Clearance. For any further expansion and modification in project configuration, we would approach MoEF&CC for the prior Environmental Clearance.

S. No	Condition	Compliance Status
	the Ministry to assess the adequacy of conditions imposed and to add additional environmental protection measures required, if any.	
iii.	The project authorities must strictly comply with the rules and regulations under Manufacture, Storage and Import of Hazardous Chemicals Rules, 2000 as amended subsequently. Prior approvals from Chief Inspectorate of Factories, Chief Controller of Explosives, Fire Safety Inspectorate etc. must be obtained, wherever applicable.	We comply the rules and regulations under Manufacture, Storage and Import of Hazardous Chemicals Rules, 2000 as amended subsequently. Prior approval will be obtained from appropriate authority.
iv.	The project authorities must strictly comply with the rules and regulation with regarding to handling and disposal of Hazardous Wastes (Management, Handling and Transboundary Movement) Rules, 2008 wherever applicable. Authorization from the State Pollution Control Board must be obtained for collections/treatment/storage/ disposal of hazardous wastes.	We are in comply with the rules and regulations with regard to handling and disposal of Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016. Authorization from the West Bengal Pollution Control Board has been obtained and valid till October- 2023. The copy of the same was already enclosed with earlier report.
v.	The overall noise levels in and around the plant area shall be kept within the standards by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The ambient noise levels shall conform to the standards prescribed under EPA Rules, 1989 viz. 75dBA (daytime) and 70 dBA (night time)	Acoustic hoods, silencers, enclosures are provided to high noise generating equipment. Noise levels will be restricted to the standards prescribed under EPA Rules, 1989. Personal Protective Equipment (earmuffs and plugs) have been provided to the working personnel.
vi.	A separate Environmental Management Cell equipped with full-fledged laboratory facilities must be set up to carry out the environmental management and monitoring functions.	A dedicated environment management cell is functional for implementing the environment management plan at large. The sampling and analysis of environmental parameters is being carried out by M/s Scientific Research laboratory, Kolkata (MoEF recognized and NABL accredited).

S. No	Condition	Compliance Status
vii.	As proposed, Rs.2.80 Crore earmarked for environment pollution control measures shall be used to implement the conditions	Proposed Rs.2.80 Crore earmarked for environment pollution control measures is being utilized judiciously. The expenditure towards environmental activities for the period of April'22 to Septembetr'22 is attached as **Annexure VI**.
viii.	The Regional Office of this Ministry/Central Pollution Control Board/State Pollution Control Board will monitor the stipulated conditions. A six monthly compliance report and the monitored data along with statistical interpretation shall be submitted to them regularly.	Support is being extended to the Regional office of this Ministry/Central Pollution Control Board/State Pollution Control Board for monitoring the stipulated conditions. Six Monthly Compliance Reports is submitted regularly to MoEF&CC Regional Office and State Pollution Control Board.
ix.	A copy of clearance letter shall be sent by the proponent to concerned Panchayat, Zila Parishad/ Municipal Corporation, Urban Local Body and the local NGO, if any, from whom suggestions/ representations, if any, were received while processing the proposal. The clearance letter shall also be put on the web site of the company by the proponent.	A copy of Clearance letter has been uploaded on the company's website. The notice of obtaining environmental clearance has been published two newspapers. Also a copy of clearance has been circulated to major administrative offices.
x.	The project proponent shall upload the status of compliance for the stipulated environment clearance conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of the MoEF, the respective Zonal Office of CPCB and the WBPCB. The criteria pollutant levels namely; PM10, PM2.5, SO2, NOx, HC (Methane & Non-methane), VOCs (ambient levels as well as stack emissions) or critical sectoral parameters, indicated for the projects shall be monitored and displayed at a convenient location near the main gate of the company in the public domain.	Compliance reports is being uploaded on company's website & sent to Regional Office of the MOEF&CC, and the WBPCB at regular intervals. The ambient air quality monitoring is carried out as per revised NAAQM criteria. The criteria pollutant levels namely; SPM, RSPM, SO_2, NOx, HC (Methane & Non-methane), VOCs are monitored **(Refer Annexure I)** and stack emission also monitored periodically and displayed at the main entrance of the Gas Gathering Station.
xi.	The project proponent shall also submit six monthly reports on the status of the compliance of the stipulated environmental conditions including results of monitored data (both in hard	We are submitting the six monthly compliance reports on the status of the compliance of the stipulated environmental conditions included with the results of environmental monitoring (both in hard copies and

S. No	Condition	Compliance Status
	copies as well as by e-mail) to the Regional Office of MoEF, the respective Zonal Office of CPCB and the WBPCB. The Regional Office of this Ministry/CPCB/WBPCB shall monitor the stipulated conditions.	through e-mail) to the Regional Office of MOEF, the respective Zonal Office of CPCB and the WBPCB.
xii.	The environmental statement for each financial year ending 31st March in Form-V as is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of environmental conditions and shall also be sent to the respective Regional Offices of the MoEF by e-mail	The environmental statement for each financial year ending 31st March in Form-V is being regularly submitted to West Bengal Pollution Control Board and the same is uploaded on the company's website. The Copy of the latest Form V (FY 2021-22) has already submitted with earlier compliance report (F. No. J-11011/351/2009- IA II (I) dated 23.09.2011.
xiii.	The Project Proponent shall inform the public that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the WBPCB and may also be seen at Website of the Ministry of Environment and Forests at http:/envfor.nic.in. This shall be advertised within seven days from the date of issue of the clearance letter, at least in two local newspapers that are widely circulated in the region of which one shall be in the vernacular language of the locality concerned and a copy of the same shall be forwarded to the Regional Office.	The advertisement regarding the grant of environmental clearance has been published in two newspapers viz The Statesman (English) and Anandabazar Patrika (Bengali/Vernacular) on 28th February, 2013. A copy of the advertisement is already submitted with Half yearly compliance of Oct 12 – Mar 13 period
xiv.	Project authorities shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities and the date of commencing the land development work.	We have taken approval from concerned authorities by submitting Field Development Plan and Annual/ Revised Budget.

Note: With refer to Environmental Clearance Amendment vide **F.No.J-11011/491/2011-IA- II (I), dated 9th May, 2019,** shale gas exploration activities not started yet.

ANNEXURE I

Name of Location			MCS						GGS- 01					
Month			Apr.'22	May.'22	June'22	Jul.'22	Aug.'22	Sep.'22	Apr.'22	May.'22	June'22	Jul.'22	Aug.'22	Sep.'22
Parameter	UoM	NAAQS LIMIT												
PM 2.5	µg/m^3	60	35.94	33.65	31.12	20.74	19.53	26.34	37.26	35.59	35.02	15.81	15.19	20.28
PM 10	µg/m^3	100	77.88	73.79	64.83	50.86	56.27	65.98	79.19	71.87	70.13	59.88	57.90	58.68
Nitrogen Dioxide	µg/m^3	80	40.83	38.74	4.63	29.69	28.75	28.01	40.52	39.51	5.07	30.82	28.15	27.94
Sulphur Dioxide	µg/m^3	80	5.39	5.29	36.68	4.04	4.14	4.44	5.32	5.32	35.85	4.85	4.90	4.56
Carbon Monoxide	mg/m^3	2	0.458	0.436	0.398	0.384	0.374	0.364	0.432	0.418	0.398	0.368	0.348	0.362
Hydrocarbon	mg/m^3	NIL	1.57	1.55	1.48	1.26	1.09	1.58	1.59	1.52	1.65	1.36	1.17	1.45
Mercury	mg/m^3			< 0.002			< 0.002			< 0.002			< 0.002	
Hydrocarbon as Non Methane	mg/m^3	NIL	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
VOC's	µg/m^3			3.14			2.56			3.09			2.51	
Benzo(a)Pyrene	ng/m^3	1		0.35			0.26			0.36			0.28	
Ammonia	µg/m^3	400		30.59			25.39			31.08			26.11	
Ozone	µg/m^3	180		40.83			36.88			39.96			37.04	
Lead	µg/m^3	1		0.14			0.09			0.13			0.11	
Nickel	ng/m^3	20		15.51			9.24			14.96			9.52	
Arsenic	ng/m^3	6		1.74			1.15			1.77			1.16	
Benzene	µg/m^3	5		1.69			1.21			1.63			1.19	

ANNEXURE I

Name of Location			GGS- 02						PARULIA					
Month			Apr.'22	May.'22	June'22	Jul.'22	Aug.'22	Sep.'22	Apr.'22	May.'22	June'22	Jul.'22	Aug.'22	Sep.'22
Parameter	UoM	NAAQS LIMIT												
PM 2.5	$\mu g/m^3$	60	34.41	42.70	31.98	27.75	20.43	17.31	44.37	31.82	26.30	22.10	16.47	16.43
PM 10	$\mu g/m^3$	100	72.65	81.34	63.77	64.09	69.37	53.58	85.63	70.37	58.92	62.12	58.16	47.34
Nitrogen Dioxide	$\mu g/m^3$	80	40.53	41.31	4.51	32.92	30.47	28.25	39.63	37.56	4.65	32.74	31.48	26.26
Sulphur Dioxide	$\mu g/m^3$	80	5.24	5.48	35.25	4.84	4.56	4.39	5.52	5.82	34.90	4.72	4.52	4.24
Carbon Monoxide	mg/m^3	2	0.462	0.428	0.388	0.374	0.364	0.352	0.484	0.436	0.402	0.399	0.368	0.362
Hydrocarbon	mg/m^3	NIL	1.44	1.71	1.38	1.50	1.42	1.28	1.72	1.49	1.27	1.45	1.14	1.08
Mercury	mg/m^3			< 0.002			< 0.002			< 0.002			< 0.002	
Hydrocarbon as Non Methane	mg/m^3	NIL	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
VOC's	$\mu g/m^3$			3.26			3.05			3.09			2.54	
Benzo(a)Pyrene	ng/m^3	1		0.47			0.41			0.34			0.27	
Ammonia	$\mu g/m^3$	400		32.78			30.96			30.05			28.33	
Ozone	$\mu g/m^3$	180		43.89			41.73			39.02			38.96	
Lead	$\mu g/m^3$	1		0.19			0.15			0.13			0.12	
Nickel	ng/m^3	20		17.04			10.26			14.72			8.81	
Arsenic	ng/m^3	6		1.85			1.54			1.75			1.21	
Benzene	$\mu g/m^3$	5		1.89			1.62			1.67			1.25	

ANNEXURE I

Name of Location			SARASWATIGUNJ						PRATPPUR					
Month			Apr.'22	May.'22	June'22	Jul.'22	Aug.'22	Sep.'22	Apr.'22	May.'22	June'22	Jul.'22	Aug.'22	Sep.'22
Parameter	UoM	NAAQS LIMIT												
PM 2.5	µg/m^3	60	34.68	44.62	33.11	18.87	22.21	22.66	41.56	42.28	31.96	28.57	15.94	18.64
PM 10	µg/m^3	100	74.11	83.63	68.09	48.73	62.59	57.10	81.06	80.02	60.53	68.23	55.37	54.07
Nitrogen Dioxide	µg/m^3	80	40.27	39.65	4.84	31.78	31.73	30.08	40.61	40.51	4.83	32.85	30.39	26.60
Sulphur Dioxide	µg/m^3	80	5.31	5.65	38.12	4.22	4.77	4.40	5.76	5.46	35.55	4.63	4.82	4.52
Carbon Monoxide	mg/m^3	2	0.438	0.436	0.408	0.368	0.354	0.356	0.502	0.484	0.418	0.402	0.374	0.362
Hydrocarbon	mg/m^3	NIL	1.51	1.76	1.58	1.17	1.21	1.38	1.60	1.69	1.35	1.67	1.07	1.30
Mercury	mg/m^3			< 0.002			< 0.002			< 0.002			< 0.002	
Hydrocarbon as Non Methane	mg/m^3	NIL	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
VOC's	µg/m^3			3.45			2.77			3.21			2.44	
Benzo(a)Pyrene	ng/m^3	1		0.52			0.32			0.45			0.24	
Ammonia	µg/m^3	400		34.61			28.64			33.07			24.98	
Ozone	µg/m^3	180		45.23			39.68			43.02			36.37	
Lead	µg/m^3	1		0.22			0.11			0.18			0.08	
Nickel	ng/m^3	20		19.43			9.45			17.33			9.39	
Arsenic	ng/m^3	6		1.93			1.27			1.83			1.07	
Benzene	µg/m^3	5		1.97			1.35			1.86			1.12	

ANNEXURE I

Name of Location			BANSIA						JAMGORA					
Month			Apr.'22	May.'22	June'22	Jul.'22	Aug.'22	Sep.'22	Apr.'22	May.'22	June'22	Jul.'22	Aug.'22	Sep.'22
Parameter	UoM	NAAQS LIMIT												
PM 2.5	$\mu g/m^3$	60	32.30	36.61	26.63	20.97	18.89	17.81	41.70	37.28	27.57	27.48	19.47	17.35
PM 10	$\mu g/m^3$	100	74.90	76.49	62.92	52.75	53.27	52.96	83.45	73.38	66.74	64.14	59.69	52.96
Nitrogen Dioxide	$\mu g/m^3$	80	40.55	39.42	4.64	30.91	29.22	27.70	41.02	38.94	4.99	33.29	29.68	29.78
Sulphur Dioxide	$\mu g/m^3$	80	5.31	5.58	33.86	4.25	4.28	4.43	5.56	5.20	36.79	4.70	4.84	4.86
Carbon Monoxide	mg/m^3	2	0.464	0.434	0.410	0.348	0.366	0.346	0.462	0.434	0.388	0.412	0.392	0.352
Hydrocarbon	mg/m^3	NIL	1.49	1.62	1.41	1.31	1.01	1.19	1.68	1.57	1.55	1.53	1.23	1.22
Mercury	mg/m^3			< 0.002			< 0.002			< 0.002			< 0.002	
Hydrocarbon as Non Methane	mg/m^3	NIL	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
VOC's	$\mu g/m^3$			3.07			2.37			2.97			2.59	
Benzo(a)Pyrene	ng/m^3	1		0.41			0.23			0.38			0.31	
Ammonia	$\mu g/m^3$	400		31.65			24.09			31.97			29.17	
Ozone	$\mu g/m^3$	180		40.94			35.74			42.55			39.06	
Lead	$\mu g/m^3$	1		0.15			0.07			0.15			0.13	
Nickel	ng/m^3	20		15.78			8.18			16.07			9.03	
Arsenic	ng/m^3	6		1.79			1.01			1.82			1.25	
Benzene	$\mu g/m^3$	5		1.75			1.04			1.70			1.33	

ANNEXURE I

Name of Location			KULDIHA						JATGORIA					
Month			Apr.'22	May.'22	June'22	Jul.'22	Aug.'22	Sep.'22	Apr.'22	May.'22	June'22	Jul.'22	Aug.'22	Sep.'22
Parameter	UoM	NAAQS LIMIT												
PM 2.5	µg/m^3	60	39.98	32.60	35.16	24.16	20.43	24.61	40.31	35.32	30.83	23.79	21.23	26.32
PM 10	µg/m^3	100	83.08	68.53	71.32	65.33	60.93	63.54	81.10	78.95	66.18	58.75	73.62	68.54
Nitrogen Dioxide	µg/m^3	80	41.47	39.40	5.03	35.66	30.36	27.59	41.45	40.76	4.70	33.58	30.93	28.24
Sulphur Dioxide	µg/m^3	80	5.59	5.56	37.76	4.70	4.82	4.50	5.15	5.48	36.71	4.51	4.31	4.56
Carbon Monoxide	mg/m^3	2	0.452	0.422	0.422	0.374	0.361	0.348	0.488	0.438	0.384	0.402	0.358	0.352
Hydrocarbon	mg/m^3	NIL	1.66	1.47	1.69	1.58	1.14	1.53	1.62	1.66	1.53	1.35	1.62	1.61
Mercury	mg/m^3			< 0.002			< 0.002			< 0.002			< 0.002	
Hydrocarbon as Non Methane	mg/m^3	NIL	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
VOC's	µg/m^3			3.03			2.61			3.18			3.29	
Benzo(a)Pyrene	ng/m^3	1		0.33			0.29			0.39			0.52	
Ammonia	µg/m^3	400		28.71			27.02			32.56			34.65	
Ozone	µg/m^3	180		39.57			38.44			42.13			45.24	
Lead	µg/m^3	1		0.12			0.09			0.17			0.21	
Nickel	ng/m^3	20		14.03			9.16			16.89			10.64	
Arsenic	ng/m^3	6		1.68			1.19			1.73			1.72	
Benzene	µg/m^3	5		1.65			1.28			1.84			1.81	

ANNEXURE I

Name of Location			Gopalpur Warehouse						KANTABERIA					
Month			Apr.'22	May.'22	June'22	Jul.'22	Aug.'22	Sep.'22	Apr.'22	May.'22	June'22	Jul.'22	Aug.'22	Sep.'22
Parameter	UoM	NAAQS LIMIT												
PM 2.5	µg/m^3	60	44.89	35.93	31.94	22.91	18.17	25.09	42.22	42.75	30.38	26.45	27.19	27.28
PM 10	µg/m^3	100	82.80	74.92	64.08	63.57	54.72	62.14	84.98	82.87	60.24	62.39	71.11	72.94
Nitrogen Dioxide	µg/m^3	80	40.26	40.79	4.51	34.67	29.81	28.20	40.57	41.73	4.49	32.25	31.90	28.63
Sulphur Dioxide	µg/m^3	80	5.24	5.34	35.20	4.91	4.25	4.25	5.04	5.76	35.34	4.47	4.50	4.67
Carbon Monoxide	mg/m^3	2	0.492	0.432	0.402	0.384	0.348	0.338	0.474	0.422	0.406	0.394	0.362	0.348
Hydrocarbon	mg/m^3	NIL	1.63	1.59	1.44	1.48	1.03	1.49	1.69	1.73	1.32	1.41	1.54	1.67
Mercury	mg/m^3			< 0.002			< 0.002			< 0.002			< 0.002	
Hydrocarbon as Non Methane	mg/m^3	NIL	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
VOC's	µg/m^3			3.11			2.49			3.31			3.17	
Benzo(a)Pyrene	ng/m^3	1		0.37			0.25			0.48			0.48	
Ammonia	µg/m^3	400		30.88			24.71			33.82			32.37	
Ozone	µg/m^3	180		40.15			36.15			44.07			43.29	
Lead	µg/m^3	1		0.14			0.08			0.21			0.18	
Nickel	ng/m^3	20		15.06			8.97			18.52			11.07	
Arsenic	ng/m^3	6		1.76			1.02			1.88			1.60	
Benzene	µg/m^3	5		1.71			1.16			1.94			1.73	

ANNEXURE I

Name of Location			NACHAN						SARENGA					
Month			Apr.'22	May.'22	June'22	Jul.'22	Aug.'22	Sep.'22	Apr.'22	May.'22	June'22	Jul.'22	Aug.'22	Sep.'22
Parameter	UoM	NAAQS LIMIT												
PM 2.5	µg/m^3	60	39.39	31.22	31.30	22.29	22.06	19.13	37.21	34.23	25.82	18.86	19.65	16.84
PM 10	µg/m^3	100	76.72	68.72	67.34	60.86	65.32	55.26	77.43	78.21	56.84	50.04	57.35	51.20
Nitrogen Dioxide	µg/m^3	80	40.76	39.01	4.38	32.64	30.52	29.01	41.83	39.21	4.81	30.24	29.25	27.57
Sulphur Dioxide	µg/m^3	80	5.34	5.51	34.67	4.55	4.54	4.64	5.60	5.27	33.32	4.10	4.07	4.82
Carbon Monoxide	mg/m^3	2	0.485	0.442	0.402	0.394	0.348	0.346	0.496	0.472	0.422	0.352	0.352	0.348
Hydrocarbon	mg/m^3	NIL	1.54	1.43	1.61	1.39	1.33	1.33	1.58	1.63	1.22	1.23	1.12	1.14
Mercury	mg/m^3			< 0.002			< 0.002			< 0.002			< 0.002	
Hydrocarbon as Non Methane	mg/m^3	NIL	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003	< 0.003
VOC's	µg/m^3			2.89			2.83			3.15			2.46	
Benzo(a)Pyrene	ng/m^3	1		0.31			0.35			0.43			0.30	
Ammonia	µg/m^3	400		29.08			29.51			32.18			25.72	
Ozone	µg/m^3	180		38.81			40.12			41.76			37.95	
Lead	µg/m^3	1		0.11			0.13			0.16			0.10	
Nickel	ng/m^3	20		13.56			10.79			16.24			9.76	
Arsenic	ng/m^3	6		1.71			1.32			1.80			1.13	
Benzene	µg/m^3	5		1.62			1.47			1.82			1.17	

ANNEXURE II

Noise Monitoring Report of CBM Raniganj Project by Essar Oil and Gas Exploration and Production Ltd.

Compliance Period: April'22 to September'22

Ambient Noise Monitoring Result				
Location	**DAY TIME**		**NIGHT TIME**	
	Permissible Limit as per CPCB in dBA	**Noise Level (Leq) dBA**	**Permissible Limit as per CPCB in dBA**	**Noise Level (Leq) dBA**
KULDIHA	75	51.93	70	46.55
MCS-MALANDIGHI	75	62.11	70	57.60
AKANDARA	75	68.64	70	60.20
SARASWATIGUNJ	75	68.21	70	60.25
KHATGORIA	75	71.59	70	67.37
JAMGORA	75	69.20	70	55.82
KANTABERIA	75	65.58	70	68.07
JATGORIA	75	64.91	70	61.8
NACHAN	75	57.16	70	45.06
PARULIA	75	51.06	70	48.65
GOPALPUR WARE HOUSE	75	58.10	70	48.65
PRATAPPUR	75	57.87	70	51.57
SARENGA	75	52.10	70	48.12
BNSIA	75	52.09	70	44.04

Produced Water Analysis Report of CBM Raniganj Project of Essar Oil and Gas Exploration and Production Limited
(Compliance Period: Apr.'22 -Sep.'22)

ANNEXURE III

MONTH					Apr.'22						May'22					
S. No.	Parameter	Unit	CPCB Limit for Discharge	Onshore Discharge Standards	EDD-20 D2 (Jambon)	EDD-20 D3 (Jambon)	EDD-015-D3 (Bargoria)	EDD-404-D2 (Kalikapur)	EDC-072-D2 (Parulia)	EDH-052-D3 (Nachan)	EDN-184 D2 (Monerkonda)	EDE-043-D1 (Jhatgoria)	EDE-043-V1 (Jhatgoria)	EDD-429-D2 (Jambon)	EDD-406-D2 (Jambon)	EDE-403-D1 (Jhatgoria)
1	pH		5.5 to 9.0	5.5-9.0	6.69	6.75	6.91	6.54	6.65	6.87	7.80	8.42	8.37	8.40	8.36	8.51
2	Temperature			40 deg	35.1°C	32.4°C	36.0°C	34.4°C	33.5°C	34.3°C	35.0°C	36.3°C	37.3°C	38.9°C	36.2°C	35.8°C
3	Total Suspended Solids	mg/l	100	100	<2	7.0	5.0	112.0	46.0	16.0	85	22	8	<2	<2	2
4	Total Dissolved Solids	mg/l	---	2100	2780.0	4932.0	3112.0	2642.0	3204.0	2238.0	1148	1822	1278	810	716	916
5	Chloride	mg/l	---	600	1102.0	2020.0	1248.0	1038.0	1287.0	871.0	415	580	475	108	117	112
6	Total Hardness	mg/l	---	1000	45.0	163.0	35.0	66.0	104.0	56.0	58	40	30	22	26	20
7	Sulphate	mg/l	---	1000	6.8	7.5	5.9	5.2	6.3	4.9	5.20	6.50	4.5	4.10	<2.5	<2.5
8	Calcium	mg/l		100	10.0	42.0	8.0	15.0	25.0	12.0	13.0	8.0	7	5.0	6	4
9	Magnesium	mg/l	---	10	5.0	14.0	3.0	7.0	10.0	6.0	6	4	3	2	2.0	2
10	Dissolved Oxygen	mg/l		1.2	4.8	3.9	4.2	5.3	3.7	4.7	3.3	4.5	5.1	4.9	5.3	4
11	BOD, 3 Days at 27ºC	mg/l	30	30	<2	2	<2	<2	<2	<2	2	<2	<2	<2	<2	<2
12	COD	mg/l	250	100	<8	8.0	<8	<8	<8	<8	10.0	8.0	<8	<8	<8	<8
13	Oil & Grease	mg/l	10	10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
14	Phenolic Compounds	mg/l	1	1.2	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
15	Sulphide	mg/l	2	2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
16	Fluoride	mg/l	2	1.5	1.48	2.2	1.05	1.86	2.3	1.20	0.98	1.06	1.8	0.85	0.6	0.58
17	Total Chromium	mg/l	2	0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
18	Zinc	mg/l	---	0.1	0.018	0.022	0.015	0.022	0.029	0.018	0.019	0.026	0.021	0.011	<0.01	<0.01
19	Copper	mg/l	---	0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
20	Nickel	mg/l		3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
21	Lead	mg/l		0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
22	Mercury	mg/l	0.01	0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
23	Bicarbonate	mg/l			744	1037	952	695	866	647	397	1101	422	538	523	774
24	Sodium	mg/l	---		1210	2150	1345	1160	1370	935	490	648	534	405	310	398
25	Cyanide	mg/l	0.2	0.2	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
26	Hexavalent Chromium	mg/l	0.1		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
27	Aluminium	mg/l	.....	.....												
28	Lithium	mg/l	.....	.....												
29	Molybdenum	mg/l	.....	.....												
30	Palladium	mg/l	.....	.....												
31	Selenium	mg/l	0.05	.....												
32	Vanadium	mg/l	0.2	.....												
33	Cadmium	mg/l	2.0	.....												
34	Cobalt	mg/l	.....	.....												

Produced Water Analysis Report of CBM Raniganj Project of Essar Oil and Gas Exploration and Production Limited
(Compliance Period: Apr.'22 -Sep.'22)

ANNEXURE III

MONTH					May'22								June'22			
S. No.	Parameter	Unit	CPCB Limit for Discharge	Onshore Discharge Standards	EDD-404-D4 (Kalikapur)	EDD-407-D1 (Jambon)	EDC-072-D2 (Parulia)	EDD-052-D3 (Nachan)	EDD-020-V1 (Jambon)	EDD-009-D3 (Bargoria)	EDD-403-D5 (Bargoria)	EDD-015-D5 (Bargoria)	EDN-184 D4 (GOPALPUR)	EDN-174 (DHOWADANGA)	ED1-162-D5 (BHALUKONDA)	EDI-115-V1 (SARASWATIGUNJ)
1	pH		5.5 to 9.0	5.5-9.0	8.58	8.6	8.38	8.61	8.59	8.43	8.40	8.48	8.40	8.35	7.4	8.55
2	Temperature			40 deg	35.5°C	37.6°C	35.7°C	36.7°C	36.7°C	38.2°C	36.8°C	33.8°C	39.5°C	38.7°C	37.7°C	36.4°C
3	Total Suspended Solids	mg/l	100	100	12	4	45	36	14	<2	<2	<2	<2	<2	43	58
4	Total Dissolved Solids	mg/l	---	2100	1832	1224	3246	2892	2722	1632	1224	1568	1140	3094	624	1682
5	Chloride	mg/l	---	600	365	265.00	1260.00	940	988	238	265	310	462	1220	220	664
6	Total Hardness	mg/l	---	1000	40	26	132	60	32	13	10	13	55	141	24	78
7	Sulphate	mg/l	---	1000	<2.5	<2.5	5.8	<2.5	<2.5	4.5	3.8	4.6	4.80	5.30	3	5.90
8	Calcium	mg/l		100	9.0	5.0	32.0	15	8	3.0	2.0	4.0	13.0	31.0	6	19.0
9	Magnesium	mg/l	---	10	3	3	12	5	3	1.0	1.0	1.0	6	15	2	8
10	Dissolved Oxygen	mg/l		1.2	3.7	4.8	5.1	4.3	4.1	3.9	4.7	4.0	4.3	4.9	3.7	4.9
11	BOD, 3 Days at 27ºC	mg/l	30	30	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
12	COD	mg/l	250	100	<8	<8	<8	<8	<8	<8	<8	<8	<8	<8	9.0	8.0
13	Oil & Grease	mg/l	10	10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
14	Phenolic Compounds	mg/l	1	1.2	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
15	Sulphide	mg/l	2	2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
16	Fluoride	mg/l	2	1.5	0.65	0.48	1.48	2.6	1.65	2.49	2.15	2.64	2.2	2.65	1.08	0.95
17	Total Chromium	mg/l	2	0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
18	Zinc	mg/l	---	0.1	0.019	0.014	0.011	0.025	0.018	0.013	0.016	0.020	0.011	0.019	<0.01	0.023
19	Copper	mg/l	---	0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
20	Nickel	mg/l		3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
21	Lead	mg/l		0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
22	Mercury	mg/l	0.01	0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
23	Bicarbonate	mg/l			1417	1035	1056	1830	1387	1498	995	1382	251	444	130	628
24	Sodium	mg/l	---		740	425	1385	982	1010	625	430	550	510	1365	298	725
25	Cyanide	mg/l	0.2	0.2	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
26	Hexavalent Chromium	mg/l	0.1		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
27	Aluminium	mg/l	.....	.....									<0.01	<0.01	<0.01	<0.01
28	Lithium	mg/l	.....	.....									<0.1	<0.1	<0.1	<0.1
29	Molybdenum	mg/l	.....	.....									<0.05	<0.05	<0.05	<0.05
30	Palladium	mg/l	.....	.....									<0.5	<0.5	<0.5	<0.5
31	Selenium	mg/l	0.05	.....									<0.005	<0.005	<0.005	<0.005
32	Vanadium	mg/l	0.2	.....									<0.1	<0.1	<0.1	<0.1
33	Cadmium	mg/l	2.0	.....									<0.02	<0.02	<0.02	<0.02
34	Cobalt	mg/l	.....	.....									<0.1	<0.1	<0.1	<0.1

Produced Water Analysis Report of CBM Raniganj Project of Essar Oil and Gas Exploration and Production Limited
(Compliance Period: Apr.'22 -Sep.'22)

ANNEXURE III

MONTH					June'22								July'22			
S. No.	Parameter	Unit	CPCB Limit for Discharge	Onshore Discharge Standards	EDD-022-D3 (GOPEDANGA)	EDD-03-D2 (BANGORIA)	EDD-07-D1 (BANGORIA)	EDD-401-D1 (KHATGORIA)	EDG-077-DG (KAMALPUR)	EDG-075-V1 (PARULIA)	EDP-406-D3 (JAMGORA)	EDP-429-D1 (JAMGORA)	EDI-039-D3 (SWARASWATIGUNJ)	EDI-032-D1 (AKANDARA)	EDD-052-D5 (PRATAPPUR)	EDG-074-D2 (PARULIA)
1	pH		5.5 to 9.0	5.5-9.0	8.62	8.71	8.78	8.73	8.81	8.47	8.57	8.64	8.8	8.48	8.56	8.60
2	Temperature			40 deg	34.2°C	36.6°C	36.2°C	36.3°C	35.1°C	35.1°C	34.6°C	36.7°C	37.4°C	37.5°C	37.8°C	38.1°C
3	Total Suspended Solids	mg/l	100	100	4	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
4	Total Dissolved Solids	mg/l	---	2100	2042	2374	1248	1194	242	2038	894	904	4982	4968	2872	2610
5	Chloride	mg/l	---	600	316	470	207	224	760	611	211	193	2113	2265	604	515
6	Total Hardness	mg/l	---	1000	55	39	24	35	43	43	31	47	110	129	98	67
7	Sulphate	mg/l	---	1000	4.8	4.2	6.5	4.10	7.3	4.9	3.0	3.8	5.1	5.90	4.3	6.8
8	Calcium	mg/l		100	14	8	6	8.0	11.0	9	8	14	24	35.0	22	14
9	Magnesium	mg/l	---	10	5.0	5.0	2	4	4	5	3	3	12	10	10.0	8.0
10	Dissolved Oxygen	mg/l		1.2	4.5	5.5	5.1	5.6	4.7	6.1	5.5	5.9	4.5	2.9	4.3	4.8
11	BOD, 3 Days at 27ºC	mg/l	30	30	<2	<2	<2	<2	<2	<2	<2	<2	<2	2	<2	<2
12	COD	mg/l	250	100	<8	<8	<8	<8	<8	<8	<8	<8	<8	9.0	8.0	<8
13	Oil & Grease	mg/l	10	10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
14	Phenolic Compounds	mg/l	1	1.2	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
15	Sulphide	mg/l	2	2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
16	Fluoride	mg/l	2	1.5	1.65	1.90	0.82	0.96	1.88	1.75	0.48	0.57	2.75	3.2	1.8	1.61
17	Total Chromium	mg/l	2	0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
18	Zinc	mg/l	---	0.1	0.017	<0.01	0.015	0.012	0.022	0.017	0.010	0.013	0.025	0.024	0.019	0.033
19	Copper	mg/l	---	0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
20	Nickel	mg/l		3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
21	Lead	mg/l		0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
22	Mercury	mg/l	0.01	0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
23	Bicarbonate	mg/l			1696	1817	986	894	1367	1092	527	542	1851	1250	1964	1979
24	Sodium	mg/l	---		840	980	530	508	1080	845	382	398	1860	2020	1170	1046
25	Cyanide	mg/l	0.2	0.2	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
26	Hexavalent Chromium	mg/l	0.1		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
27	Aluminium	mg/l	.....	.....	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				
28	Lithium	mg/l	.....	.....	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1				
29	Molybdenum	mg/l	.....	.....	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05				
30	Palladium	mg/l	.....	.....	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5				
31	Selenium	mg/l	0.05	.....	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005				
32	Vanadium	mg/l	0.2	.....	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1				
33	Cadmium	mg/l	2.0	.....	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02				
34	Cobalt	mg/l	.....	.....	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1				

Produced Water Analysis Report of CBM Raniganj Project of Essar Oil and Gas Exploration and Production Limited
(Compliance Period: Apr.'22 -Sep.'22)

ANNEXURE III

MONTH					July'22								Aug.'22			
S. No.	Parameter	Unit	CPCB Limit for Discharge	Onshore Discharge Standards	EDD-053-D3 (NACHAN)	EDC-411-D1 (BANSIA)	EDD-407-D1 (JAMGORA)	EDP-429-D2 (JAMGORA)	EDD-401-D3 (KHATGORIA)	EDD-003-D6 (BARGORIA)	EDI-038 D2 (SARASWATIGUNJ)	EDI-042 D2 (GHATAKDANGA)	EDG-077-D1 (KAMALPUR)	EDG-075-D1 (PARULIA)	EDG-075-V1 (PARULIA)	EDG-074-D3 (PARULIA)
1	pH		5.5 to 9.0	5.5-9.0	8.95	8.70	8.52	8.62	8.65	8.92	8.65	8.05	8.49	8.40	8.45	8.39
2	Temperature			40 deg	40.4°C	39.7°C	39.5°C	38.2°C	37.8°C	38.1°C	37.6°C	35.9°C	37.2°C	38.7°C	39.2°C	37.9°C
3	Total Suspended Solids	mg/l	100	100	3	<2	<2	<2	<2	<2	4	10	<2	3	2	<2
4	Total Dissolved Solids	mg/l	---	2100	2670	1398	1246	784	1270	2372	5028	5934	1678	1692	1982	2634
5	Chloride	mg/l	---	600	627	214	181	242	265	353	1435	2810	494	508	544	640
6	Total Hardness	mg/l	---	1000	63	67	59	59	63	59	125	318	58	74	62	66
7	Sulphate	mg/l	---	1000	3.5	<2.5	<2.5	<2.5	3.5	5.7	6.20	7.30	4.8	5.7	4.0	4.1
8	Calcium	mg/l		100	14	16.0	16.0	13	17	16	31.0	75.0	14	17.0	16	19
9	Magnesium	mg/l	---	10	7	7	5	7	4	5	11	31	6	8	6.0	5
10	Dissolved Oxygen	mg/l		1.2	3.9	4.2	5.3	5.2	5.7	5.0	4.9	3.1	4.7	4.1	3.8	5.8
11	BOD, 3 Days at 27ºC	mg/l	30	30	<2	<2	<2	<2	<2	<2	<2	2	<2	<2	<2	<2
12	COD	mg/l	250	100	<8	<8	<8	<8	<8	<8	8.0	9.0	<8	<8	<8	<8
13	Oil & Grease	mg/l	10	10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
14	Phenolic Compounds	mg/l	1	1.2	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
15	Sulphide	mg/l	2	2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
16	Fluoride	mg/l	2	1.5	1.2	0.85	1.55	1.95	2.3	2.11	2.9	3.1	1.1	0.78	1.65	0.84
17	Total Chromium	mg/l	2	0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
18	Zinc	mg/l	---	0.1	0.025	0.018	0.012	0.012	0.021	0.270	0.029	0.037	0.018	0.027	0.022	0.033
19	Copper	mg/l	---	0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
20	Nickel	mg/l		3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
21	Lead	mg/l		0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
22	Mercury	mg/l	0.01	0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
23	Bicarbonate	mg/l			1789	1131	1051	421	928	1581	1316	402	1040	1060	1153	1769
24	Sodium	mg/l	---		1145	580	470	305	520	1190	2765	2640	622	638	810	1080
25	Cyanide	mg/l	0.2	0.2	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
26	Hexavalent Chromium	mg/l	0.1		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
27	Aluminium	mg/l	.....	.....												
28	Lithium	mg/l	.....	.....												
29	Molybdenum	mg/l	.....	.....												
30	Palladium	mg/l	.....	.....												
31	Selenium	mg/l	0.05	.....												
32	Vanadium	mg/l	0.2	.....												
33	Cadmium	mg/l	2.0	.....												
34	Cobalt	mg/l	.....	.....												

Produced Water Analysis Report of CBM Raniganj Project of Essar Oil and Gas Exploration and Production Limited
(Compliance Period: Apr.'22 -Sep.'22)

ANNEXURE III

MONTH					Aug.'22								Sep.'22			
S. No.	Parameter	Unit	CPCB Limit for Discharge	Onshore Discharge Standards	EDD-405-D5 (KALIKAPUR)	EDD-406-D2 (JAMGORA)	EDD-022-D1 (GOPEDANGA)	EDD-022-D3 (GOPEDANGA)	EDD-022-D2 (GOPEDANGA)	EDD-031-D1 (DHABANI)	EDN-162 D7 (BHALUKONDA)	EDN-162 D4 (BHALUKONDA)	EDI-115-V1 (SARASWATIGUNJ)	EDI-038-D2 (SARASWATIGUNJ)	EDH#064-Labnapara Raw Water	EDN-184 D4 (GOPALPUR)
1	pH		5.5 to 9.0	5.5-9.0	8.53	8.48	8.43	8.49	8.45	8.51	8.36	8.41	7.88	7.91	7.88	7.68
2	Temperature			40 deg	40.7°C	40.1°C	39.2°C	38.1°C	37.3°C	39.8°C	39.3°C	42.4°C	33.9°C	28.1°C	30.1°C	34.5°C
3	Total Suspended Solids	mg/l	100	100	<2	<2	<2	<2	<2	6	42	54	11	<2	54	<2
4	Total Dissolved Solids	mg/l	---	2100	1510	680	1756	1826	2218	3766	8044	12410	1948	6120	3768	1032
5	Chloride	mg/l	---	600	279	197	284	183	325	1308	3782	6823	627	3027	1674	471
6	Total Hardness	mg/l	---	1000	62	50	93	58	66	116	590	760	63	162	121	66
7	Sulphate	mg/l	---	1000	<2.5	<2.5	4.1	3.5	4.9	6.5	7.9	8.80	4.9	7.2	5.40	<2.5
8	Calcium	mg/l		100	14	12	22	16	17	28	173	221	16	41	30.0	13
9	Magnesium	mg/l	---	10	7	5	9	5	6	11	39	51	5	14	12	8.0
10	Dissolved Oxygen	mg/l		1.2	4.3	5.2	5.0	4.3	4.0	4.8	3.9	3.3	4.9	5.6	3.3	5.1
11	BOD, 3 Days at 27ºC	mg/l	30	30	<2	<2	<2	<2	<2	<2	2	3	<2	<2	7	<2
12	COD	mg/l	250	100	<8	<8	<8	<8	<8	<8	10	12	8.0	<8	28.0	<8
13	Oil & Grease	mg/l	10	10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	8.0	<5.0
14	Phenolic Compounds	mg/l	1	1.2	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
15	Sulphide	mg/l	2	2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
16	Fluoride	mg/l	2	1.5	1.13	0.95	1.4	1.93	2.05	2.6	2.95	3.11	1.45	2.55	1.98	0.65
17	Total Chromium	mg/l	2	0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
18	Zinc	mg/l	---	0.1	0.019	0.014	0.013	0.021	0.035	0.023	0.029	0.018	0.019	0.029	0.022	0.013
19	Copper	mg/l	---	0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
20	Nickel	mg/l		3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
21	Lead	mg/l		0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
22	Mercury	mg/l	0.01	0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
23	Bicarbonate	mg/l			1129	340	1365	1656	1794	1553	99	198	757	1374	1220	299
24	Sodium	mg/l	---		634	275	750	778	965	1640	3940	4565	898	2375	1432	374
25	Cyanide	mg/l	0.2	0.2	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
26	Hexavalent Chromium	mg/l	0.1		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
27	Aluminium	mg/l	.....	.....									<0.01	<0.01	<0.01	<0.01
28	Lithium	mg/l	.....	.....									<0.1	<0.1	<0.1	<0.1
29	Molybdenum	mg/l	.....	.....									<0.05	<0.05	<0.05	<0.05
30	Palladium	mg/l	.....	.....									<0.5	<0.5	<0.5	<0.5
31	Selenium	mg/l	0.05	.....									<0.005	<0.005	<0.005	<0.005
32	Vanadium	mg/l	0.2	.....									<0.1	<0.1	<0.1	<0.1
33	Cadmium	mg/l	2.0	.....									<0.02	<0.02	<0.02	<0.02
34	Cobalt	mg/l	.....	.....									<0.1	<0.1	<0.1	<0.1

Produced Water Analysis Report of CBM Raniganj Project of Essar Oil and Gas Exploration and Production Limited
(Compliance Period: Apr.'22 -Sep.'22)

ANNEXURE III

MONTH					Sep.'22								
S. No.	Parameter	Unit	CPCB Limit for Discharge	Onshore Discharge Standards	EDD-052-D5 (NACHAN)	EDD-008-D2 (JAMBON)	EDD-008-V1 (JAMBON)	EDD-404-D2 (KALIKAPUR)	EDD-017-D6 (KALIKAPUR)	EDD-049-D2 (PRATAPPUR)	EDD-053-D5 (NACHAN)	EDG-075-V1 (PARULIA)	EDG-077-D1 (PARULIA)
1	pH		5.5 to 9.0	5.5-9.0	7.75	8.58	8.51	8.1	8.62	8.41	7.96	7.70	8.43
2	Temperature			40 deg	35.2°C	32.8°C	32.9°C	32.5°C	31.7°C	32.7°C	31.6°C	34.2°C	35.1°C
3	Total Suspended Solids	mg/l	100	100	<2	<2	<2	8	<2	6	14	<2	<2
4	Total Dissolved Solids	mg/l	---	2100	3056	2580	2692	1856	3118	3986	4898	2032	1582
5	Chloride	mg/l	---	600	858	519	608	316	835	1278	1627	533	410
6	Total Hardness	mg/l	---	1000	63	55	70	48	59	74	48	44	59
7	Sulphate	mg/l	---	1000	6.1	4.7	5.80	5	6.2	7.5	8.0	4.2	3.8
8	Calcium	mg/l		100	18	15	16.0	10.0	13	21	12	12	13
9	Magnesium	mg/l	---	10	4.0	4	7	5	6	5	4	4	6
10	Dissolved Oxygen	mg/l		1.2	4.3	5.6	4.8	5.1	5.0	4.7	3.1	4.2	5.7
11	BOD, 3 Days at 27ºC	mg/l	30	30	<2	<2	<2	<2	<2	<2	8	<2	<2
12	COD	mg/l	250	100	<8	<8	<8	8.0	<8	<8	35.0	<8	<8
13	Oil & Grease	mg/l	10	10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
14	Phenolic Compounds	mg/l	1	1.2	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
15	Sulphide	mg/l	2	2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
16	Fluoride	mg/l	2	1.5	2.05	1.3	0.86	1.1	1.6	2.33	2.68	0.83	0.77
17	Total Chromium	mg/l	2	0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
18	Zinc	mg/l	---	0.1	0.026	0.018	0.022	0.029	0.018	0.027	0.032	0.015	0.022
19	Copper	mg/l	---	0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
20	Nickel	mg/l		3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
21	Lead	mg/l		0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
22	Mercury	mg/l	0.01	0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
23	Bicarbonate	mg/l			2125	1882	1877	1458	1941	2081	2479	1289	1001
24	Sodium	mg/l	---		1085	1158	1245	790	1281	1625	2015	838	648
25	Cyanide	mg/l	0.2	0.2	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
26	Hexavalent Chromium	mg/l	0.1		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
27	Aluminium	mg/l	.....	.....	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
28	Lithium	mg/l	.....	.....	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
29	Molybdenum	mg/l	.....	.....	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
30	Palladium	mg/l	.....	.....	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
31	Selenium	mg/l	0.05	.....	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
32	Vanadium	mg/l	0.2	.....	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
33	Cadmium	mg/l	2.0	.....	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
34	Cobalt	mg/l	.....	.....	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

R.O. water analysis report of CBM Raniganj Project of EOGEPL
(Compliance period: Apr.'22 to Sep.'22)

ANNEXURE IV

Date					Apr.'22						Apr.'22					
S. No.	Parameter	Unit	CPCB Limit for Discharge	Onshore Discharge Standards	GGS-01 RO			EDD-50 RO			EDH-64 RO			EDN-99 RO		
					Inlet	Outlet	Reject	Inlet	Outlet	Reject	Inlet	Outlet	Reject	Inlet	Outlet	Reject
1	pH		5.5 to 9.0	5.5-9.0	7.15	7.40	7.61	6.99	8.10	7.80	6.90	6.75	7.4	7.39	7.95	7.70
2	Temperature	deg C			35.8°C	36.6°C	35.6°C	30.4°C	31.4°C	30.3°C	30.1°C	30.1°C	29.1°C	32.1°C	32.6°C	32.4°C
3	Total Suspended Solids	mg/l	100	100	3	<2	5	6	<2	9	4	<2	5	<2	<2	4
4	Total Dissolved Solids	mg/l	---	2100	1656	1352	2394	2782	1024	3278	6466	668	7982	3264	864	5212
5	Chlorides	mg/l	---	600	795.0	615.0	1026.0	1190.0	455.0	1410.0	2986	270	3515	1320.0	380.0	2275.0
6	Total Hardness	mg/l	---	---	63.0	55.0	74.0	94.0	71.0	110.0	180.0	24.0	184.0	208.0	67.0	227.0
7	Sulphates	mg/l	---	1000	4.1	<2.5	4.9	4.9	3	5.5	6.0	3.0	7.2	5.3	<2.5	6.5
8	Calcium	mg/l			19	16	19	24	19	24	49.0	6.0	50.0	57.0	16.0	63.0
9	Magnesium	mg/l	---	---	4.0	4.0	7.0	9.0	6.0	12.0	14.0	2.0	14	16.0	7.0	17.0
10	Dissolved Oxygen	mg/l			4.8	5.30	4.0	4.5	5.9	3.7	5.8	6.0	4.5	4.3	5.0	3.2
11	BOD	mg/l	30	30	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
12	COD	mg/l	250	100	<8	<8	<8	<8	<8	<8	<8	<8	<8	<8	<8	<8
13	Oil & Grease	mg/l	10	10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
14	Phenolic Compounds	mg/l	1	1.2	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
15	Sulphides	mg/l	2	2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
16	Fluorides	mg/l	2	1.5	1.35	0.92	1.41	1.75	0.86	1.89	2.2	1.05	2.55	0.85	0.63	1.15
17	Total Chromium	mg/l	2	1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
18	Zinc	mg/l	---	---	0.013	0.021	0.033	0.019	0.011	0.022	0.016	0.012	0.024	0.022	0.017	0.034
19	Copper	mg/l	---	---	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
20	Nickel	mg/l			<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
21	Lead	mg/l			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
22	Mercury	mg/l	0.01	0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
23	Bicarbonate	mg/l			299	256	561	903	275	988	1373	226	1647	1116	214	1318
24	Sodium	mg/l	---	---	676	585	999	1065	397	1325	2810	259	3461	1270	345	2149
25	Hexavalent Chromium	mg/l	0.1		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
26	Cyanide	mg/l	0.2		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
27	Aluminum	mg/l	---	---												
28	Lithium	mg/l														
29	Molybednum	mg/l	---	---												
30	Palladium	mg/l	---	---												
31	Selenium	mg/l														
32	Vanadium	mg/l	---	---												
33	Cadmium	mg/l														
34	Cobalt	mg/l														

R.O. water analysis report of CBM Raniganj Project of EOGEPL
(Compliance period: Apr.'22 to Sep.'22)

ANNEXURE IV

Date					May'22												June'22					
S. No.	Parameter	Unit	CPCB Limit for Discharge	Onshore Discharge Standards	GGS-01 RO			EDD-50 RO			EDH-64 RO			EDN-99 RO			GGS-01 RO			EDD-50 RO		
					Inlet	Outlet	Reject	Inlet	Outlet	Reject	Inlet	Outlet	Reject	Inlet	Outlet	Reject	Inlet	Outlet	Reject	Inlet	Outlet	Reject
1	pH		5.5 to 9.0	5.5-9.0	7.25	7.90	7.11	6.75	6.97	7.20	7.33	7.80	6.92	6.60	7.20	6.93	7.23	7.80	7.60	7.08	7.55	6.95
2	Temperature	deg C			34.5°C	34.0°C	34.3°C	34.1°C	35.2°C	33.1°C	32.8°C	35.1°C	32.9°C	35.3°C	36.1°C	35.1°C	34.4°C	34.5°C	35.7°C	34.2°C	36.2°C	32.9°C
3	Total Suspended Solids	mg/l	100	100	<2	<2	<2	<2	<2	<2	4	<2	6	5	<2	9	3	<2	4	<2	<2	3
4	Total Dissolved Solids	mg/l	---	2100	2476	930	4508	3026	802	4536	6206	770	11612	5128	1124	9122	1990	798	4498	2214	1042	3048
5	Chlorides	mg/l	---	600	945	370	1968	1140	296	1896	2612	255	4860	2015	435	3260	735	290	1910	830	415	1178
6	Total Hardness	mg/l	---	---	27.0	50.0	50.0	35.0	19.0	50.0	138.0	40.0	211.0	227	52	374	51.0	39.0	67.0	63.0	47.0	78.0
7	Sulphates	mg/l	---	1000	4.3	<2.5	5.8	6.3	4.0	7.2	6.9	4.3	7.9	7.0	4.8	9.1	5.2	<2.5	6.3	4.8	3.0	5.9
8	Calcium	mg/l			6	12	11	9	5	13	38.0	9.0	58	62.0	12.0	79.0	13.0	11.0	17.0	14.0	13.0	17.0
9	Magnesium	mg/l	---	---	3.0	5.0	6.0	3.0	2.0	4.0	11.0	4.0	16.0	17.0	5.0	43.0	5.0	3.0	6.0	7.0	4.0	9.0
10	Dissolved Oxygen	mg/l			4.1	4.90	3.7	3.5	4.8	3.2	3.5	5.9	3.0	4.3	5.9	3.7	5.1	5.9	4.6	4.8	5.0	4.1
11	BOD	mg/l	30	30	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
12	COD	mg/l	250	100	<8	<8	<8	<8	<8	<8	<8	<8	<8	<8	<8	<8	<8	<8	<8	<8	<8	<8
13	Oil & Grease	mg/l	10	10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
14	Phenolic Compounds	mg/l	1	1.2	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
15	Sulphides	mg/l	2	2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
16	Fluorides	mg/l	2	1.5	0.95	0.5	1.12	1.3	0.73	1.53	1.65	0.95	2.2	1.95	1.1	2.70	0.93	0.42	1.05	1.33	0.62	1.45
17	Total Chromium	mg/l	2	1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
18	Zinc	mg/l	---	---	0.015	<0.01	0.019	0.019	0.012	0.023	0.021	0.019	0.025	0.015	0.011	0.018	0.021	0.013	0.026	0.019	0.011	0.024
19	Copper	mg/l	---	---	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
20	Nickel	mg/l			<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
21	Lead	mg/l			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
22	Mercury	mg/l	0.01	0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
23	Bicarbonate	mg/l			830	232	927	1165	256	1287	1418	248	2761	1373	323	2397	744	250	927	829	268	1037
24	Sodium	mg/l	---	---	1070	415	2035	1235	330	1940	2830	305	5170	2240	482	3572	840	360	2070	905	465	1260
25	Hexavalent Chromium	mg/l	0.1		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
26	Cyanide	mg/l	0.2		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
27	Aluminum	mg/l	---	---													<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
28	Lithium	mg/l															<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
29	Molybednum	mg/l	---	---													<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
30	Palladium	mg/l	---	---													<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
31	Selenium	mg/l															<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
32	Vanadium	mg/l	---	---													<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
33	Cadmium	mg/l															<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
34	Cobalt	mg/l															<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

R.O. water analysis report of CBM Raniganj Project of EOGEPL
(Compliance period: Apr.'22 to Sep.'22)

ANNEXURE IV

Date					June'22						July'22											
S. No.	Parameter	Unit	CPCB Limit for Discharge	Onshore Discharge Standards	EDH-64 RO			EDN-99 RO			GGS-01 RO			EDD-50 RO			EDH-64 RO			EDN-99 RO		
					Inlet	Outlet	Reject	Inlet	Outlet	Reject	Inlet	Outlet	Reject	Inlet	Outlet	Reject	Inlet	Outlet	Reject	Inlet	Outlet	Reject
1	pH		5.5 to 9.0	5.5-9.0	6.95	7.80	7.41	7.35	7.62	7.11	7.15	7.40	7.61	6.99	8.10	7.80	6.90	6.75	7.4	7.39	7.95	7.70
2	Temperature	deg C			32.9°C	33.5°C	32.3°C	33.7°C	33.7°C	30.1°C	35.8°C	36.6°C	35.6°C	30.4°C	31.4°C	30.3°C	30.1°C	30.1°C	29.1°C	32.1°C	32.6°C	32.4°C
3	Total Suspended Solids	mg/l	100	100	4	<2	6	4	<2	7	3	<2	5	6	<2	9	4	<2	5	<2	<2	4
4	Total Dissolved Solids	mg/l	---	2100	5792	596	9392	6234	1448	7572	1656	1352	2394	2782	1024	3278	6466	668	7982	3264	864	5212
5	Chlorides	mg/l	---	600	2495	210	4070	2398	509	3018	795.0	615.0	1026.0	1190.0	455.0	1410.0	2986	270	3515	1320.0	380.0	2275.0
6	Total Hardness	mg/l	---	---	184.0	67.0	223.0	372.0	102.0	463.0	63.0	55.0	74.0	94.0	71.0	110.0	180.0	24.0	184.0	208.0	67.0	227.0
7	Sulphates	mg/l	---	1000	7.0	<2.5	8.1	8.6	4.0	9.0	4.1	<2.5	4.9	4.9	3	5.5	6.0	3.0	7.2	5.3	<2.5	6.5
8	Calcium	mg/l			46.0	19.0	55.0	101.0	24.0	115.0	19	16	19	24	19	24	49.0	6.0	50.0	57.0	16.0	63.0
9	Magnesium	mg/l	---	---	17.0	5.0	21.0	30.0	10.0	43.0	4.0	4.0	7.0	9.0	6.0	12.0	14.0	2.0	14	16.0	7.0	17.0
10	Dissolved Oxygen	mg/l			4.2	4.9	3.7	4.7	5.0	3.3	4.8	5.30	4.0	4.5	5.9	3.7	5.8	6.0	4.5	4.3	5.0	3.2
11	BOD	mg/l	30	30	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
12	COD	mg/l	250	100	<8	<8	<8	<8	<8	<8	<8	<8	<8	<8	<8	<8	<8	<8	<8	<8	<8	<8
13	Oil & Grease	mg/l	10	10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
14	Phenolic Compounds	mg/l	1	1.2	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
15	Sulphides	mg/l	2	2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
16	Fluorides	mg/l	2	1.5	1.6	0.81	1.75	1.85	0.82	1.95	1.35	0.92	1.41	1.75	0.86	1.89	2.2	1.05	2.55	0.85	0.63	1.15
17	Total Chromium	mg/l	2	1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
18	Zinc	mg/l	---	---	0.030	0.022	0.039	0.019	0.015	0.024	0.013	0.021	0.033	0.019	0.011	0.022	0.016	0.012	0.024	0.022	0.017	0.034
19	Copper	mg/l	---	---	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
20	Nickel	mg/l			<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
21	Lead	mg/l			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
22	Mercury	mg/l	0.01	0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
23	Bicarbonate	mg/l			1318	220	1854	2281	464	2574	299	256	561	903	275	988	1373	226	1647	1116	214	1318
24	Sodium	mg/l	---	---	2570	258	4280	2515	612	3125	676	585	999	1065	397	1325	2810	259	3461	1270	345	2149
25	Hexavalent Chromium	mg/l	0.1		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
26	Cyanide	mg/l	0.2		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
27	Aluminum	mg/l	---	---	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01												
28	Lithium	mg/l			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1												
29	Molybednum	mg/l	---	---	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05												
30	Palladium	mg/l	---	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5												
31	Selenium	mg/l			<0.005	<0.005	<0.005	<0.005	<0.005	<0.005												
32	Vanadium	mg/l	---	---	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1												
33	Cadmium	mg/l			<0.02	<0.02	<0.02	<0.02	<0.02	<0.02												
34	Cobalt	mg/l			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1												

R.O. water analysis report of CBM Raniganj Project of EOGEPL
(Compliance period: Apr.'22 to Sep.'22)

ANNEXURE IV

Date					Aug.'22												Sep.'22					
S. No.	Parameter	Unit	CPCB Limit for Discharge	Onshore Discharge Standards	GGS-01 RO			EDD-50 RO			EDH-64 RO			EDN-99 RO			GGS-01 RO			EDD-50 RO		
					Inlet	Outlet	Reject	Inlet	Outlet	Reject	Inlet	Outlet	Reject	Inlet	Outlet	Reject	Inlet	Outlet	Reject	Inlet	Outlet	Reject
1	pH		5.5 to 9.0	5.5-9.0	7.10	7.35	6.95	6.85	7.30	7.22	7.55	8.10	7.95	7.80	8.15	7.63	8.15	7.78	7.55	7.62	8.10	7.93
2	Temperature	deg C			32.3°C	32.1°C	34.1°C	32.7°C	33.2°C	32.3°C	29.9°C	29.5°C	29.4°C	31.8°C	30.9°C	31.9°C	35.4°C	34.9°C	35.1°C	32.2°C	35.4°C	31.5°C
3	Total Suspended Solids	mg/l	100	100	<2	<2	<2	6	<2	12	4	<2	<2	<2	<2	<2	<2	<2	<2	3	<2	5
4	Total Dissolved Solids	mg/l	---	2100	1896	1362	2938	2256	1128	2794	7494	938	10214	6120	1506	9798	1962	1028	2466	2218	1510	2686
5	Chlorides	mg/l	---	600	815	540	1310	950	439	1170	3060	367	4860	2170	640	4162	810	395	987	810	610	1062
6	Total Hardness	mg/l	---	---	54.0	39.0	62.0	70.0	54.0	85.0	190.0	54.0	268.0	400	81	508	74.0	52.0	81.0	66.0	55.0	70.0
7	Sulphates	mg/l	---	1000	5.0	3.0	5.9	4.8	<2.5	5.5	5.8	3.3	6.2	6.8	3.9	7.4	3.8	<2.5	5.1	4.3	<2.5	5.2
8	Calcium	mg/l			16	9	12	19	14	22	47.0	11.0	62	101.0	17.0	126.0	21.0	15.0	18.0	18.0	10.0	15.0
9	Magnesium	mg/l	---	---	4.0	4.0	8.0	6.0	5.0	8.0	18.0	7.0	27.0	36.0	9.0	47.0	5.0	4.0	9.0	5.0	7.0	8.0
10	Dissolved Oxygen	mg/l			4.7	5.20	3.6	5.1	6.0	4.0	4.9	5.8	3.8	5.4	6.1	5.0	4.1	4.5	3.3	4.0	4.9	3.7
11	BOD	mg/l	30	30	<2	<2	<2	<2	<2	3	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
12	COD	mg/l	250	100	<8	<8	<8	<8	<8	10.0	<8	<8	<8	<8	<8	<8	<8	<8	<8	<8	<8	<8
13	Oil & Grease	mg/l	10	10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
14	Phenolic Compounds	mg/l	1	1.2	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
15	Sulphides	mg/l	2	2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
16	Fluorides	mg/l	2	1.5	0.83	0.51	0.92	1.55	0.85	1.68	1.95	0.68	2	1.35	0.70	1.65	1.15	0.95	1.2	0.73	0.48	0.9
17	Total Chromium	mg/l	2	1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
18	Zinc	mg/l	---	---	0.013	0.010	0.016	0.018	0.012	0.021	0.023	0.017	0.028	0.017	0.011	0.023	0.019	0.019	0.022	0.033	0.028	0.036
19	Copper	mg/l	---	---	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
20	Nickel	mg/l			<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
21	Lead	mg/l			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
22	Mercury	mg/l	0.01	0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
23	Bicarbonate	mg/l			354	268	637	543	311	738	1172	220	2306	1543	256	1903	647	207	744	525	525	970
24	Sodium	mg/l	---	---	875	640	1265	985	506	1230	3765	411	3960	2740	710	4480	778	415	1065	895	598	1104
25	Hexavalent Chromium	mg/l	0.1		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
26	Cyanide	mg/l	0.2		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
27	Aluminum	mg/l	---	---													<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
28	Lithium	mg/l															<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
29	Molybednum	mg/l	---	---													<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
30	Palladium	mg/l	---	---													<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
31	Selenium	mg/l															<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
32	Vanadium	mg/l	---	---													<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
33	Cadmium	mg/l															<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
34	Cobalt	mg/l															<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

Date					Sep.'22					
S. No.	Parameter	Unit	CPCB Limit for Discharge	Onshore Discharge Standards	EDH-64 RO			EDN-99 RO		
					Inlet	Outlet	Reject	Inlet	Outlet	Reject
1	pH		5.5 to 9.0	5.5-9.0	7.91	7.80	7.62	8.08	8.15	8.52
2	Temperature	deg C			29.4°C	31.6°C	29.9°C	29.8°C	30.6°C	31.5°C
3	Total Suspended Solids	mg/l	100	100	<2	<2	<2	<2	<2	<2
4	Total Dissolved Solids	mg/l	---	2100	3392	638	8514	6096	1720	8202
5	Chlorides	mg/l	---	600	1340	215	3496	2360	615	3240
6	Total Hardness	mg/l	---	---	74.0	48.0	140.0	272.0	173.0	280.0
7	Sulphates	mg/l	---	1000	5.8	3.3	6.9	7.3	4.8	8.2
8	Calcium	mg/l			16.0	10.0	31.0	84.0	49.0	78.0
9	Magnesium	mg/l	---	---	8.0	5.0	15.0	15.0	13.0	21.0
10	Dissolved Oxygen	mg/l			3.5	4.7	2.9	4.7	5.9	4.1
11	BOD	mg/l	30	30	<2	<2	<2	<2	<2	<2
12	COD	mg/l	250	100	<8	<8	<8	<8	<8	8.0
13	Oil & Grease	mg/l	10	10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
14	Phenolic Compounds	mg/l	1	1.2	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
15	Sulphides	mg/l	2	2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
16	Fluorides	mg/l	2	1.5	1.63	1.5	1.61	1.87	1.7	2.09
17	Total Chromium	mg/l	2	1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
18	Zinc	mg/l	---	---	0.015	0.018	0.021	0.039	0.040	0.043
19	Copper	mg/l	---	---	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
20	Nickel	mg/l			<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
21	Lead	mg/l			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
22	Mercury	mg/l	0.01	0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
23	Bicarbonate	mg/l			848	226	1519	2220	494	2416
24	Sodium	mg/l	---	---	1575	287	4165	2495	780	3625
25	Hexavalent Chromium	mg/l	0.1		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
26	Cyanide	mg/l	0.2		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
27	Aluminum	mg/l	---	---	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
28	Lithium	mg/l			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
29	Molybednum	mg/l	---	---	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
30	Palladium	mg/l	---	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
31	Selenium	mg/l			<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
32	Vanadium	mg/l	---	---	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
33	Cadmium	mg/l			<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
34	Cobalt	mg/l			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

Ground Water Analysis of Surrounding Areas of CBM Raniganj Project of EOGEPL
Compliance Period: Apr.'22 to Sep.'22

S. No.	Parameter	Unit	S:10500 -1991		Bansia Village	Kalikapur Village	Nachan Village	Bargoria Village	Jatgoria Village	Kantaberia Village	Dhabani Village	Akandara Village	Labnapara village	Saraswatiganj village	Ghatakdanga Village	Sarenga Village	Gopalpur Village
			Desirable limit	Permissible limit													
1	Colour	Hazen	5	15	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
2	pH Value		6.5-8.5	No relaxation	7.49	7.33	7.3	7.49	7.43	7.45	7.5	7.2	7.46	7.25	7.1	7.16	7.32
3	Turbidity, NTU	NTU	1	5	8	24	12	14	19	<1	2	<1	4	6	3	<1	42
4	Total Dissolved Solids	mg/l	500	2000	328	306	368	38	138	104	42	46	332	196	28	276	232
5	Total Suspended Solids,	mg/l	---	---	3	9	5	6	8	<2	<2	<2	<2	3	<2	<2	18
6	Total Alkalinity as $CaCO_3$	mg/l	200	600	315	290	340	16	36	28	10	12	285	96	12	204	40
7	Total Hardness	mg/l	200	600	220	212	264	13	64	44	15	22	240	80	10	228	112
8	Aluminium (as Al)	NTU	0.03	0.2	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
9	Ammonia (as total ammonia -N)	mg/l	0.5	No relaxation	0.12	0.13	0.11	0.13	0.27	0.12	0.15	0.14	0.13	0.15	0.27	0.3	0.24
10	Anionic Detergents (as MBAS)	mg/l	0.2	1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
11	Barium (as Ba)	mg/l	0.7	No relaxation	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
12	Boron (as B)	mg/l	0.5	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
13	Calcium (as Ca)	mg/l	75	200	50	45	59	4	16	12.8	4	6.4	63	25.7	2.4	56	40
14	Chloride (as Cl)	mg/l	250	1000	18	21	21	15	43	30	12	12	28	51	8	31	62
15	Copper (as Cu)	mg/l	0.05	1.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
16	Fluoride (as F)	mg/l	1	1.5	<0.05	<0.05	0.29	<0.05	<0.05	<0.05	<0.05	<0.05	0.35	0.15	<0.05	0.08	0.35
17	Free Residual Chlorine	mg/l	0.2	1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
18	Iron (as Fe)	mg/l	0.3	No relaxation	1.63	3.1	2.73	2.75	2.9	0.22	1.37	0.18	1.8	2.33	1.12	0.23	4.36
19	Magnesium (as Mg)	mg/l	30	100	23	24	28	<1	6	2.9	1.2	1.5	20.4	3.9	1	22	3.9
20	Manganese (as Mn)	mg/l	0.1	0.3	<0.05	0.086	<0.05	<0.05	<0.05	0.286	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.133
21	Mineral Oil	mg/l	0.5	No relaxation	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
22	Nitrate (as NO_3)	mg/l	45	No relaxation	2.08	<0.5	<0.5	1.99	7.93	4.12	7.35	3.06	6.56	3.19	0.85	6.6	6.73
23	Phenolic Compounds (as C_6H_5OH)	mg/l	0.001	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
24	Sulphate (as SO_4)	mg/l	200	400	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	52.5
25	Silver (as Ag)	mg/l	0.1	No relaxation	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
26	Sodium (as Na)	mg/l	---	---	42.7	33.8	44.9	6.7	35.7	32.7	8.5	9	34.7	41.5	6.8	29.8	43.7
27	Selenium (as Se)	mg/l	0.01	No relaxation	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
28	Cadmium (as Cd)	mg/l	0.003	No relaxation	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
29	Cyanide (as CN)	mg/l	0.05	No relaxation	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
30	Lead (as Pb)	mg/l	0.01	No relaxation	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
31	Mercury (as Hg)	mg/l	0.001	No relaxation	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
32	Total Arsenic (as As)	mg/l	0.01	0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
33	Polynuclear aromatic hydrocarbons (as PAH)	mg/l	0.0001	No relaxation	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
34	Pesticide Residues	mg/l	0.01	No relaxation	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
35	Total Coliform Count,	MPN/100 mL	Shall not be detectable in any 100 ml sample		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
36	Odour		Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable	Agreeable
37	Polychlorinated Biphenyls	mg/l	0.0005	No Relaxation	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable	Not Detectable
38	Chloramines	us/cm	4	No Relaxation	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
39	Molybdenum	mg/l	0.07	No Relaxation	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
40	Sulphide,mg/L	mg/l	0.05	No Relaxation	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
41	Electrical Conductivity at 25° C,	µmhos/cm	---	---	540	520	615	58	235	180	75	90	590	320	60	450	415
42	Phosphorus(as P)	mg/l	---	---	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
43	Nickel	mg/l	0.02	No Relaxation	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
44	Total Chromium	mg/l	0.05	No Relaxation	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
45	Zinc	mg/l	5	15	0.019	0.01	0.011	<0.01	<0.01	<0.01	<0.01	<0.01	0.014	<0.01	0.012	<0.01	0.014

ANNEXURE VI

Expenditure towards Corporate Social Responsibility at EOGEPL CBM Project, Raniganj
(Apr.'22 to Sep.' 22)

Thematic Area	Projects	Beneficiaries (No.)	Expenditure (INR)
HEALTH	Community Health Care Services through Mobile Medical Van	**10169**	**1,184,890.00**
EDUACATION	Basic Aminities support to 6 anganwari centre under Kanksa Block	**450**	**46,935.00**
SPORTS AND CULTURAL EVENT	Support to sports	**924**	**84,400.00**
COMMUNITY INFRASTRUCTURE DEVELOPMENT	Support to community	**12314**	**877,541.81**
TOTAL		**23857**	**2,193,766.81**