### F. No. J-11011/223/2016-IA-II(I)

Government of India

Ministry of Environment, Forest and Climate Change (Impact Assessment Division)

Indira Paryavaran Bhawan Jor Bagh Road, Aliganj, New Delhi - 110003 E-mail: sharath.kr@gov.in

Tel: 011-24695319

Dated: 11th October, 2018

To.

The Uranium Corporation of India Limited, Rangamatiya and Batia, Mosabani, East Singhbam District, Jharkhand – 832102.

Subject: Uranium recovery plant from Copper tailing at Mosabani for the

capacity of 0.9 MTPA by M/s Uranium Corporation of India Limited located at Mosabani. East Singhbam District, Jharkhand -

Environmental Clearance - reg.

Sir,

This has reference to your online application vide proposal no. IA/AP/IND/75307/2017 dated 3/7/2018 along with the copies of EIA/EMP seeking Environmental Clearance under the provisions of the EIA Notification, 2006 for the above mentioned proposed project. The proposed project activity is listed at SI. No. 2(b) Mineral Beneficiation under Category "A" EIA Notification, 2006 and the proposal is appraised at Central level. The proposal cited above was considered during the 34th meeting of Expert Appraisal Committee [EAC] (Industry-I) held on 6-7th August, 2018. The EAC proceedings of the proposal cited above is given as below.

# Details of the proposal as per the submission of the project proponent:

- 2.0 The EIA-EMP Report for Proposed Uranium Recovery Plant from Copper Tailings at Mosabani of M/s Uranium Corporation of India Limited (UCIL) located in Village Rangamatiya and Badia, Tehsil Mosabani, District East-Singhbhum District of, State, Jharkhand was initially received in the Ministry on 22.08.2016 for obtaining Terms of Reference (ToR) as per EIA Notification, 2006. The project was appraised by the Expert Appraisal Committee (Industry) [EAC(I)] during its 10<sup>th</sup> meeting held on during 29.08.2016 to 31.08.2016 and prescribed ToRs to the project for undertaking detailed EIA study for obtaining environmental clearance. Accordingly, the Ministry of Environment, Forest and Climate Change had prescribed ToRs to the project on 25.10.2016 vide Letter No. F. No. J-11015/141/2016-IA.II(M).
- 3.0 The project of M/s UCIL located in Rangamatiya and Badia Village, Mosabani Tehsil, East Singhbhum District, Jharkhand State is for setting up of a new Uranium Recovery Plant from Copper Tailings at Mosabani for production of 0.9 MTPA of uranium bearing material.
- 4.0 The total land required for the project is 4.158 ha, out of which 0.907 ha private land (already in possession) and is 3.251 ha others (Government Land). No forest land involved. The entire 0.907 ha private land has been acquired for the project. No River passes through the project area. It has been reported that no water body exist around the project and





modification/diversion in the existing natural drainage pattern at any stage has not been proposed.

- 5.0 The total Plant Area of 4.158 ha comes under Rangamatiya village (4.061 ha) and Badia village (0.097 ha). The project area comprises of 3.251 ha government land and 0.907 ha private land. Out of the total project area, 0.907 ha of private land has already been acquired by UCIL. There is no proposal to acquire any additional private land and hence no R&R issue. Moreover, no forest land is involved in the proposed project, hence no forestry clearance is required. Earlier Hindustan Copper Limited (HCL) had transferred ~1.214 ha (3 acres) of land to UCIL on lease basis. However, later on, HCL surrendered the lease including this ~1.214 ha (3 acres) land to Government. In view of this, an application has been made by UCIL requesting Govt. of Jharkhand to transfer the same land to UCIL. Based on the application on Nov. 2017, State Govt. of Jharkhand instructed UCIL to deposit Rs. 13.90 lakh and UCIL vide letter no. UCIL/P.O.(mill)/19/2018 on 30.04.2018 deposited the amount by demand draft
- The topography of the area is <u>flat</u> and reported to lies between <u>22°30'50.79"</u> to <u>22°30'58.60"</u> N Latitude and <u>86°27'48.30"</u> to <u>86°27'57.44"</u> E Longitude in Survey of India Topo sheet No. <u>F4516</u> (old topo-sheet no. <u>73J/6</u>), at an elevation of <u>100m</u> AMSL. The ground water table reported to ranges between <u>1.7</u> to <u>10.7</u> m below the land surface during the post-monsoon season. The present project will not intersect ground water table during operational phase. No ground water will be utilized for the proposed project
- 7.0 No National Park/Wildlife Sanctuary/Biosphere Reserve/Tiger Reserve etc. are reported to be located in the core and buffer zone of the project. The area also does not report to form corridor for Schedule-I fauna. The proposed Plant is located in the East Singhbhum district of Jharkhand. The entire district of East Singhbhum, West Singhbhum and Saraikela-Kharsawan have been declared as Singhbhum Elephant Reserve. The nearest elephant corridor is Dumriya-Kundalika-Murakanjia Elephant Corridor and lies at a distance of ~8.0 km South south-west of the Plant.
- 8.0 The proposed Plant will beneficiate the tailings by pipeline system from HCL's Copper Concentrator Plant and will extract uranium bearing material. The uranium content of the tailing will be raised to certain amount by Wilfley Tabling method of mineral extraction methodology. In this method, horizontal surfaces like tables are used for mineral extraction which moves backward and forward (reciprocate) in a straight line. These horizontal surfaces are designed in such a way that they can provide ample surface area and residence time for the feed material to get separated into desired materials. After recovery of uranium bearing material, the remaining tailings will be pumped back to HCL's Copper Concentrator Plant.
- 9.0 The targeted production capacity of the Uranium Recovery Plant from Copper Tailings at Mosabani is 0.105 million TPA. The tailings for the plant would be procured from HCL's Copper Concentrator Plant (linkages Annexure- 2.1 of EIA). The ore transportation will be done through slurry pipeline (Rail/Road/Conveyor/Slurry Pipeline).
- 10.0 The water requirement of the project is estimated as 816 m³ /day, out of which766 m³/day of fresh water requirement will be obtained by tapping water from the existing water pipe line of Mosabani Copper Concentrator Plant of HCL. which draws water from Subarnarekha River and the remaining requirement of 50 m³ /day will be met from the recycling water. UCIL has submitted an application vide no. UCIL/Mill/708/215/2017 dated 25.03.2017 to Water Resource Department (WRD), Jharkhand for tapping of 766 m³/d of water.
- 11.0 The power requirement of the project is estimated as 1.2 MW, out of which 1.2 MW will be obtained from Jharkhand Bijli Bitran Nigam Limited.



- 12.0 Baseline Environmental Studies were conducted during Post Monsoon 2016 season i.e. from 01.10.2016 to 31.12.2016. Ambient air quality monitoring has been carried out at 8 locations during 01.10.2016 to 29.12.2016 and the data submitted indicated: PM10 (48 to  $98\mu g/m^3$ ), PM2.5 (26 to 54  $\mu g/m^3$ ), SO2 (3.3 to 20.2  $\mu g/m^3$ ) and NOx (7.9 to 37.5  $\mu g/m^3$ ). The results of the modeling study indicates that the maximum increase of GLC for the proposed project is  $0.55\mu g/m^3$  with respect to the PM<sub>10</sub>.
- 13.0 Ground water quality has been monitored in 8 locations in the study area and analyzed. pH: 7.2 to 7.7, Total Hardness: 120 to 572mg/l, Chlorides: 20 to 424 mg/l, Fluoride: 0.1 to 0.45 mg/l. Heavy metals are within the limits. Surface water samples were analyzed from8 locations. pH: 7.2 to 7.4; DO: 5.5 to 6.2 mg/l and BOD: 3 to 4mg/l.
- 14.0 Noise levels are in the range of 39.3 to 64.8 dB(A) for daytime and 37.2 to 51.4 dB(A) fortnight time.
- 15.0 No R&R is involved in the project.
- 16.0 The main waste expected to be generated from proposed Plant is in the form of residual tailings left after the recovery of uranium bearing material and will be to the tune of @0.80 Mt/yr. All residual tailings will be pumped backed to HCL's Concentrator Plant through pipeline as per the agreement between HCL and UCIL. Thus no waste handling is envisaged for the present proposal
- 17.0 The Public hearing of the project was held on 13.04.2018 at project site under the chairmanship of Shri Subodh Kumar, (ADM, Law & Order, Jamshedpur, Jharkhand) for production of 0.9 million TPA of uranium bearing material of M/s UCIL for setting up of Uranium Recovery Plant from Copper Tailings at Mosabani, under Village Rangamatiya and Badia, Tehsil Mosabani, District East-Singhbhum District of, State Jharkhand. The issues raised during public hearing are mainly related to employment of local people, arrangement for drinking water, medical camp, tree plantation preventive measure due to radiation and environment pollution. The Statement of main issues raised by the public and response of the project proponent with action plan is as follows:

	Issues/		Action I	Plan	
SI. No	Demand during public hearing	Reply/ Action Plan by UCIL	Budget allocation (Rs.)	Time Frame	
1	Employment to locals	Priority will be given to locals for employment. Indirect employment will be generated by providing support to dairy farming for SHG, providing tailoring centre, support to animal husbandry for SHG (Goat & Piggery farming), assistance in self-employment by providing tools.	25,00,000	36 month	
2	Training for Skill Development for Women	Dairy farming for women, Tailoring centre for women.	5,00,000	12 months	
3	Education, Computer training & English coaching	Computer training classes for rural youth, Career counselling and completive exam coaching including English, dual desk for schools in surrounding villages, study materials and stationaries to Aagan Bari Kendra in surrounding villages. Library materials to all surroundings clubs, financial	20,00,000	12 months	





	Issues/		Action Plan		
SI. No	Demand during public hearing	Reply/ Action Plan by UCIL	Budget allocation (Rs.)	Time Frame	
		art, furniture for surroundings existing clubs will be provided.			
4	Drinking water / Deep Boring	Overhead drinking water tank, tube well installation along with bathroom in surrounding villages, tube wells repairing/maintenance in surrounding village will be done.	15,00,000	12 months	
5	Health facility: Medical camp	ENT check-up camps, Eye check-up camps, bleaching powder distribution, general medical check-up camp in surroundings village will be done.	10,00,000	12 months	
6	Agricultural support	Encouragement & assistance will be provided in agriculture means by training the farmers, agricultural assistance to surrounding farmers, lift irrigation facility to surrounding farmers, renovation of lift irrigation facility etc.	23,00,000	24 months	
7	Tree Plantation	5000 tree plantation will be carried out within and outside the plant.	10,00,000	24 months	
8	CSR initiative	Encourage and promote rural sports talents like football, coaching program for rural youths, organizing rural sports meets for surrounding sports talents, distribution of sports materials to sports clubs, sponsorship of sports program organized in surrounding villages and development of rural infrastructure like community/ club hall, football ground development, Jahersthan maintenance, and providing furniture to surrounding existing clubs.	72,00,000	12 months	
9	Information on impact after operation of plant	Health Physics Unit of BARC will carry out radiological monitoring around the project. Awareness program will conducted in consultation with BARC.	10,00,000	12 months	
10	Maintenance of existing sewage of Musabani	Not under scope of UCIL			
11	Stop discharge of HCL water	Not under scope of UCIL			
	Grand Total (Rs.)		1,90,00,000		
	Total Investme	95,00,00,000			
	% of proposed	investment	2.00		

<sup>18.0</sup> An amount of 190 Lakhs (2 % of Project cost) has been earmarked for Enterprise Social Commitment based on public hearing issues. The details of ESC proposed are as follows:





SI. No.	Enterprise Social Commitment Activities	Year 1	Year 2	Year 3	en .	 Total
1.	Training for Skill Development for Women  Education, Computer training & English coaching Drinking water / Deep Boring Health facility: Medical camp CSR initiative Information on impact after operation of plant	1,32,00,000				1,32,00,000
2.	<ul><li>Agricultural support</li><li>Tree Plantation</li></ul>		33,00,000			33,00,000
3.	Employment to locals			25,00,000		25,00,000
	Total	1,32,00,000	33,00,000	25,00,000		1,90,00,000

19.0 The capital cost of the project is Rs 95 Crores and the capital cost for environmental protection measures is proposed as Rs 55 Lakhs. The annual recurring cost towards the environmental protection measures is proposed as Rs. 45 Lakhs. The employment generation from the proposed project / expansion is estimated to be 80. The details of capital cost for environmental protection measures and annual recurring cost towards the environmental protection measures is as follows:

SI. No.	Description	Capital cost (Rs. Lakhs)	Recurring cost (Rs. Lakhs /y)
1.	Pollution control	10	15
2.	Baseline monitoring (laboratory)	15	15
3.	Occupational safety	10	5
4.	Green belt& plantation	20	10
	Total	55	45

- 20.0 Greenbelt will be developed in 1.37 Ha which is about 33% of the total acquired area. 15 to 20 m wide greenbelt all around the project site, consisting of at least 3 tiers around plant boundary (depending on the available space) will be developed as greenbelt and green cover as per CPCB/MoEF&CC, New Delhi guidelines. Local and native species will be planted with a density of 1200 trees per hectare. Total no. of 1650 saplings will be planted and nurtured in 1.37 hectares in 5 to 7 years.
- 21.0 The proponent has mentioned that there is no court case or violation under EIA Notification to the project or related activity.
- 22.0 EIA Consultant: The Mecon India Ltd.





### Observations of the committee:

23.0 After detailed presentation by the project proponent, the Committee noted the following:

1) It is proposed to extract uranium from the copper tailings which is the waste generated from the copper ore beneficiation process.

 The water requirement for the beneficiation process can be met from the water recovered from the processed tailings.

3) The existing vegetation cover/greenbelt is inadequate.

4) The PP has prepared the wildlife conservation plan and submitted to the state forest department for the approval.

5) The PP has made application for drawl of surface water from Suvarna Rekha River.

6) The revised fund allocation for Corporate Environment Responsibility along with time frame which covers major issues raised during public hearing. During the presentation, the PP has submitted the revised CER as below:

Issues/Demands during public hearing	Fund (Rs.)	Time Frame
Infrastructure support to dairy farming (SHG), tailoring centre, animal husbandry (Goat and piggery farming) etc.	25,00,000	36 months
Training to locals in Industrial Training Centres (ITC) of UCIL	10,00,000	24 months
Training Centres for Skill Development for Women	5,00,000	24 months
Education, Computer training and English coaching centres	10,00,000	24 months
Drinking water facilities / Deep boring establishment	15,00,000	12 months
Health facility: Infrastructure support to nearby medical centres	20,00,000	24 months
Agricultural support: Awareness to local farmers to increase yield of crop, crop protection in consultation with Agricultural Institutes	25,00,000	36 months
Avenue plantation and plantation in community areas	20,00,000	48 months
Infrastructure for sanitation facilities (toilets) in nearby areas	20,00,000	24 months
Installation of Solar Lights in nearby areas	20,00,000	36 months
Rainwater harvesting in nearby villages	10,00,000	36 months
Awareness programme in consultation with Health Physics unit of BARC on radiological information	10,00,000	12 months
Grand Total	1,90,00,000	-
Total Capital Investment	95,00,00,000	sone
CER- as per MoEFCC OM dated 01.05.2018	1,90,00,000	2% of capita investigation

#### Recommendations of the committee:

24.0 The proposal was considered in the 34th meeting of Expert Appraisal Committee (Industry-I held during 6-7th August, 2018. After detailed deliberations, the committee recommended for grant of Environmental Clearance with specific conditions and general conditions.

25.0 The Ministry of Environment, Forest and Climate Change has considered the application based on the recommendations of the Expert Appraisal Committee (Industry-I) and hereby decided to grant Environmental Clearance for the proposed "Uranium recovery



plant from Copper tailing at Mosabani for the capacity of 0.9 MTPA by M/s Uranium Corporation of India Limited located at Mosabani, East Singhbam District, Jharkhand" under the provisions of EIA Notification, 14<sup>th</sup> September, 2006, as amended, subject to strict compliance of the following Specific and General Conditions:



### A. Specific Conditions:

- The project proponent shall reuse the recovered water from tailings from tabling circuit in the process and reduce the water drawl from Suvarna Rekha River.
- ii. The PP shall under take greenbelt development in 1.5 ha with total no. of 3500 trees of local species.
- iii. Handling and transportation of radioactive material shall be as per the guide lines of Atomic Energy Regulatory Board.
- iv. The recommendations of the approved Site-Specific Wild life Conservation Plan/Wildlife Management Plan shall be implemented in consultation with the State Forest Department. The implementation report shall be furnished along with the sixmonthly compliance report.
- v. The PP shall incorporate a system of reporting non-compliance to the board of directors in the Environmental Policy and submit the same to the Ministry.
- vi. The PP shall submit the water drawl permission from competent authority to the Ministry.
- vii. The project authority shall undertake sample survey to generate data on pre-project community health status within a radius of 1km from the proposed plant site. The data so collected shall be made available to the general public, if required.
- viii. Monitoring of background radiation levels within 10km radius in water, ambient air and soil should be carried out periodically in the study area and proper records maintained thereof. The data so collected shall be made available to the general public, if required.
- ix. The plants growing in the area, soil invertebrates and local agricultural produce shall be analyzed to check the buildup of radio activity levels, if any. The data so collected shall be made available to the general public, if required.
- x. The Company shall establish full-fledged environmental surveillance laboratory at the project site and undertake comprehensive environmental surveillance for radiological parameters periodically in the study area and proper records maintained thereof.

#### B. General Conditions:

#### Statutory compliance:

 The project proponent shall obtain Consent to Establish / Operate under the provisions of Air (Prevention & Control of Pollution) Act, 1981, and the Water (Prevention & Control of Pollution) Act, 1974 from the concerned State pollution Control Board/ Committee.

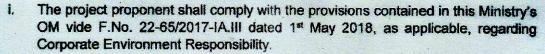


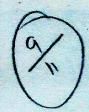


- ii. The project proponent shall obtain authorization under the Hazardous and other Waste Management Rules, 2016 as amended from time to time
- II. Air quality monitoring and preservation
  - i. The project proponent shall install system to carryout Continuous Ambient Air Quality monitoring for common/criterion parameters relevant to the main pollutants released (e.g. PM<sub>10</sub> and PM<sub>2.5</sub> in reference to PM emission, and SO<sub>2</sub> and NOx in reference to SO<sub>2</sub> and NOx emissions) within and outside the plant area at least at four locations (one within and three outside the plant area at an angle of 120°each), covering upwind and downwind directions. (case to case basis small plants: Manual;)
- III. Water quality monitoring and preservation
  - i. The project proponent shall monitor regularly ground water quality at least twice a year (pre and post monsoon) at sufficient numbers of piezometers/sampling wells in the plant and adjacent areas through labs recognised under Environment (Protection) Act, 1986 and NABL accredited laboratories.
  - ii. Adhere to 'Zero Liquid Discharge'
  - iii. Sewage Treatment Plant shall be provided for treatment of domestic wastewater to meet the prescribed standards.
  - iv. The project proponent shall practice rainwater harvesting to maximum possible extent.
- IV. Noise monitoring and prevention
  - Noise level survey shall be carried as per the prescribed guidelines and report in this
    regard shall be submitted to Regional Officer of the Ministry as a part of six-monthly
    compliance report.
  - ii. The ambient noise levels should conform to the standards prescribed under E(P)A Rules, 1986 viz. 75 dB(A) during day time and 70 dB(A) during night time.
- V. Energy Conservation measures
  - Provide solar power generation on roof tops of buildings, for solar light system for all common areas, street lights, parking around project area and maintain the same regularly;
  - ii. Provide LED lights in their offices and residential areas.
- VI. Waste management
  - The waste oil, grease and other hazardous waste shall be disposed of as per the Hazardous & Other waste (Management & Transboundary Movement) Rules, 2016
  - ii. Kitchen waste shall be composted or converted to biogas for further use.(to be decided on case to case basis depending on type and size of plant)
- VII. Public hearing and Human health issues
  - Emergency preparedness plan based on the Hazard identification and Risk Assessment (HIRA) and Disaster Management Plan shall be implemented.
  - Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act.



## VIII. Corporate Environment Responsibility





- ii. The company shall have a well laid down environmental policy duly approve by the Board of Directors. The environmental policy should prescribe for standard operating procedures to have proper checks and balances and to bring into focus any infringements/deviation/violation of the environmental / forest /wildlife norms/ conditions. The company shall have defined system of reporting infringements / deviation / violation of the environmental / forest / wildlife norms / conditions and / or shareholders / stake holders. The copy of the board resolution in this regard shall be submitted to the MoEF&CC as a part of six-monthly report.
- iii. A separate Environmental Cell both at the project and company head quarter level, with qualified personnel shall be set up under the control of senior Executive, who will directly to the head of the organization.
- iv. Action plan for implementing EMP and environmental conditions along with responsibility matrix of the company shall be prepared and shall be duly approved by competent authority. The year wise funds earmarked for environmental protection measures shall be kept in separate account and not to be diverted for any other purpose. Year wise progress of implementation of action plan shall be reported to the Ministry/Regional Office along with the Six Monthly Compliance Report.
- v. Self-environmental audit shall be conducted annually. Every three years third party environmental audit shall be carried out
- vi. All the recommendations made in the Charter on Corporate Responsibility for Environment Protection (CREP) for the Mineral Beneficiation plants shall be implemented.

### X. Miscellaneous

- i. The project proponent shall make public the environmental clearance granted for their project along with the environmental conditions and safeguards at their cost by prominently advertising it at least in two local newspapers of the District or State, of which one shall be in the vernacular language within seven days and in addition this shall also be displayed in the project proponent's website permanently.
- ii. The copies of the environmental clearance shall be submitted by the project proponents to the Heads of local bodies. Panchayats and Municipal Bodies in addition to the relevant offices of the Government who in turn has to display the same for 30 days from the date of receipt
- iii. The project proponent shall upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and update the same on half-yearly basis.
- iv. The project proponent shall monitor the criteria pollutants level namely; PM<sub>10</sub>, SO<sub>2</sub>, NOx (ambient levels as well as stack emissions) or critical sectoral parameters, indicated for the projects and display the same at a convenient location for disclosure to the public and put on the website of the company.



- v. The project proponent shall submit six-monthly reports on the status of the compliance of the stipulated environmental conditions on the website of the ministry of Environment, Forest and Climate Change at environment clearance portal.
- vi. The project proponent shall submit the environmental statement for each financial year in Form-V to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules. 1986, as amended subsequently and put on the website of the company.
- vii. The project proponent 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, commencing the land development work and start of production operation by the project.
- viii. The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board and the State Government.
- ix. The project proponent shall abide by all the commitments and recommendations made in the EIA/EMP report, commitment made during Public Hearing and also that during their presentation to the Expert Appraisal Committee.
- x. No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment, Forests and Climate Change (MoEF&CC).
- xi. Concealing factual data or submission of false/fabricated data may result in revocation of this environmental clearance and attract action under the provisions of Environment (Protection) Act, 1986.
- xii. The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.
- xiii. The Ministry reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner shall implement these conditions.
- xiv. The Regional Office of this Ministry shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data / information/monitoring reports.
- xv. The above conditions shall be enforced, inter-alia under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 and the Public Liability Insurance Act, 1991 along with their amendments and Rules and any other orders passed by the Hon'ble Supreme Court of India / High Courts and any other Court of Law relating to the subject matter.
- xvi. Any appeal against this EC shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.

This issues with approval of Competent Authority.

(Sharath Kumar Palleria) Scientist 'F' / Director Copy to:-

- The Secretary, Department of Environment, Government of Jharkhand, Secretariat, Ranchi.
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- The Additional Principal Chief Conservator of Forests (C), Ministry of Environment and Forest, Regional Office (ECZ), Bungalow No. A-2, Shyamali Colony, Ranchi-834002.
- The Chairman, Central Pollution Control Board, Parivesh Bhawan, CBD-cum-Office Complex, East Arjun Nagar, Delhi-110032.
- .4. The Chairman, Jharkhand State Pollution Control Board, T.A. Division Building (Ground Floor), HEC Campus, P.O. Dhurwa, Ranchi 834004, Jharkhand.
- 5. The Member Secretary, Central Ground Water Authority, A2, W3 Curzon Road Barracks, K.G. Marg, New Delhi-110001.
- 6. The District Collector, East Singhbham District, Jharkhand.
- 7. Guard File / Record File / Monitoring File.
- 8. MoEF&CC Website.

(Sharath Kumar Palleria) Scientist 'F'/Director