झारखण्ड
JSPCB

JHARKHAND STATE POLLUTION CONTROL BOARD

ADMINISTRATION BUILDING, HEC COMPLEX, DHURWA, RANCHI 834004
0651-2400850 (Fax)/ 2400851/2400852/2401847/2400979/2400139

Ref. No....B.-1497

Ranchi, Dated....29/9/2020

From,
Rajiv Lochan Bakshi
Member Secretary

To,
The Executive Director (Technical)
River Development and Ganga rejuvenation,
National Mission for Clean Ganga , New Delhi

Sub: –Regarding submission of Monthly Progress Report (MPR)of September, 2020 for Seven polluted river stretches of Jharkhand.

Sir,

With reference to the above noted subject stated above, the monthly progress report for **Seven polluted river stretches of Jharkhand have been prepared in light of** Hon'ble NGT order dated 29.09.2019 in O.A. No. 673/2018. The copy of the Monthly Progress Report (MPR) of September 2020 is enclosed herewith for your kind perusal and necessary action.

Thanking You

Encl. A/a

Yours sincerely,

29/9/2020

[Rajeev Lochan Bakshi]
Member Secretary

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Annexure-II

National Mission for Clean Ganga

Submission of Monthly Progress Report for September, 2020 by Jharkhand State (Hon'ble NGT in the matter of O.A No. 673/2018 dated 06.12.2019)

Sl. No.	**Activity to be monitored**	**Timeline**	**Submission of Progress by State/UT-Compliance Status**
1	Ensure 100% treatment of sewage at least in-situ remediation	31.03.2020	NEERI site visit at drains was done from 03.03.2020 to 07.03.2020. Proposal to go ahead for adoption of in-situ remediation at drains is received from NEERI. Regular consultation with NEERI is in progress. Proposal for DPR Preparation and Support in Implementation is Received on 25.09.2020 Allocation of state fund for this project and Approval on selection of CSIR-NEERI on nomination basis for preparation of DPR to adopt in-situ remediation at drains at identified ULBs viz. Chas, Ranchi, Mango and involvement of CSIR – NEERI for complete implementing including tendering is under process from competent authority from approx. 98 MLD of waste water will be treated. 15 MLD STP Plant at Phusro is under process of Approval at NMGC. 50 MLD STP is under operational at Jamshedpur which is operated by JUSCO. 31.5 MLD Lagoon Based STP is under operation by Bokaro Steel Limited. There are two schemes at Chottagovindpur – 46 MLD and Bagera – 37 MLD for Water Treatment Plant designed with sludge drying pit along the banks of River Subarnarekha.(Annexure -1)

2	Commencement of setting up of STPs and connecting all the drains and other sources of generation of sewage to the STPs must be ensured	31.03.2020	Detailed status of various ongoing projects related to Sewerage /Septage Treatment at these 8 ULBs are enclosed as Annexure -2
3	Timeline for completing all steps of action plans including completion of setting up STPs and their commissioning	31.03.2021	Detailed status of various ongoing projects related to Sewerage /Septage Treatment at these 8 ULBs are enclosed as Annexure -2
5	Chief Secretaries may set up appropriate monitoring mechanism at State level • Specifying accountability of nodal authorities not below the Secretary level • Chief Secretaries may have an accountable person attached in their office for this purpose.	22.01.2020 22.01.2020	
	• Monitoring at State level must take place	Fortnightly Commencing 21.12.2019	Fortnight monitoring of 7 polluted river stretches will initiated from Sept'2020.

Sr. No.	Activity to be monitored	Timeline	Submission of Progress by State/UT-Compliance Status
6	Progress report may be furnished by the States / UTs to • Secretary, Ministry of Jal Shakti • Member Secretary, CPCB	Monthly (preferably before 20th of every month)	
6.1	Progress report may be comprised of details along with completion timelines on:		
6.1(i)	Identification of polluting sources including drains contributing to river pollution and action as per NGT order on in-situ treatment		NEERI site visit at drains was done from 03.03.2020 to 07.03.2020. Proposal to go ahead for adoption of in-situ remediation at drains is received from NEERI. Regular consultation with NEERI is in progress. Proposal for DPR Preparation and Support in Implementation is Received on 25.09.2020 Allocation of state fund for this project and Approval on selection of CSIR-NEERI on nomination basis for preparation of DPR to adopt in-situ remediation at drains at identified ULBs viz. Chas, Ranchi, Mango and involvement of CSIR – NEERI for complete implementing including tendering is under process from competent authority from approx. 98 MLD of waste water will be treated. 15 MLD STP Plant at Phusro is under process of Approval at NMGC. 50 MLD STP is under operational at Jamshedpur which is operated by JUSCO. 31.5 MLD Lagoon Based STP is under operation by Bokaro Steel Limited.

6.1(ii)	Status of STPs, I&D and Sewerage networks: Details of existing infrastructure, Gap Analysis, proposed along with completion timeline		Detailed status of various ongoing projects of STP, Sewerage network, gap analysis, timeline etc. at the identified 6 ULBs are enclosed as Annexure -2
6.1(iii)	(iii)Status of CETPs Details of Existing CETP and ETP Infrastructure, Gap Analysis, Proposed along with completion timeline, No. of industries and complying status		Details pertaining to the Status of compliance of ETPs are enclosed as Annexure - 4.
6.1(iv)	Status of Solid waste management & details of processing facilities: Details of Existing Infrastructure, Gap Analysis, Proposed along with completion timeline		Details attached as Annexure - 3(a&b)
6.1(v)	Latest water quality of polluted river, its tributaries, drains with flow details and ground water quality in the catchment of polluted river;		Details attached as Annexure - 5
6.1(vi)	Preventing dumping of waste and scientific waste management including bio-medical wastes, plastic wastes and decentralizing waste processing, including		District Magistrate has been directed to ensure that illegal dumping of waste and to promote scientific waste management practices including bio-medical wastes, plastic wastes and decentralizing waste processing. Action has been taken against the violators at the district level and Seminars/awareness programs are organized on Waste Management Rules.
6.1(vii)	Ground water regulation		Drinking water & Sanitation Dept. have identified the contaminated hand pumps and sealed those hand pumps whose water is not fit for drinking (Annexure - 6). Portable water is supplied to the Communities in the identified critical blocks through water tanker owned by local bodies and log book is maintained.

		List of polluted blocks in Jharkhand have been identified and details is annexed as Annexure - 7 Periodic assessment of 24 districts and 260 blocks of Jharkhand for ground water resources was conducted by Jharkhand in 2009, 2011, 2013 & 2017 which also covers the area related to 7 polluted stretches and based on which a comparative statement of dynamic ground water resource is prepared which is annexed as Annexure -8. As per report of CGWA, Dhanbad and Bermo are among the overexploited blocks, Patratu, Silli and Bermo are among semi critical blocks along the seven polluted river stretches. CGWA is also preparing a policy for conservation of ground water with a robust institutional mechanism for surveillance and monitoring with a view to enhance the access to ground water for drinking purpose. Water Resource Department, Govt. of Jharkhand is framing Ground Water Development and Management (Control/ Regulation) Act which is under progress which shall be completed by 6monthsandthereafterdepartmentswillcompletetheformalities for enactment of Ground Water Development and Management Control/Regulation) Act within One Year.
6.1(viii)	Adopting good irrigation practices	Details of the Irrigation Projects taken by Water Resource Department along the polluted river stretches is attached as Annexure-8 Department of Agriculture is promoting and conducting workshops for the use of organic fertilizers. Promoting micro irrigation (drip & mini irrigation) system to save the quantity of water used during agriculture.
6.1(ix)	Protection and management of Flood Plain Zones (FPZ)	District Magistrate has been directed to ensure that no encroachments in the FPZ and necessary actions are taken. Apparently, no area under seven river stretches have issues related to flood plain zone. But, for protection and management of flood plain zone - RFP

		Circulated on 17.06.2019 consultant have been appointed by 15.09.2019 and complete assignment along with the action plan (if required) which is to be submitted by them up to 30.06.2020 but the is pending due to COVID-19 Situation and will be submitted by 31.12.2020.
6.1(x)	Rain water harvesting	144 nos. of RWH structure has been sanctioned for Rs. 5.89 Cr. which is under progress and targeted to be completed by June,2020. Agreement with consultant PKS Infra Engineer Pvt. Ltd. Ghaziabad, India has been deputed to preparation of DPR regarding Geophysical survey for Ground Water recharging/ Rain Water harvesting along the sevn polluted river stretches. Based on the DPR submitted and an Action Plan has been prepared and to be submitted by 30.04.2020 but due to COVID-19 it is likely to be submitted by 31.12.2020. Jharkhand Rain Water harvesting Regulation, 2017 Notified on 23.01.17. and implementation is ongoing. 54 nos. of RWH/ground water recharging structure have been constructed at Dhanbad by CGWB and 75 nos. of RGH structures have been constructed by the State Ground Water Directorate, Jharkhand. 214 nos. of water bodies has been sanctioned for Rs. 185.08 Cr. for restoration which is under progress and targeted to be completed by March, 2021.
6.1(xi)	Maintaining minimum environmental flow of river	A study in this regard is to be done by the consultant PKS Infra under agreement no.- 03F2/19-20. And as per action plan suggested in the DPR flow up action will be taken up in the structures constructed along the polluted stretches. It is be noted that mandatorily min. 10% of Non-monsoon flow is to be maintained as e-flow in the river D/S of the structures like Dam & Barrage during Non-Monsoon period. Study has been carried out for one of the seven different river stretches. The D/S of Kanke Dam upto Kadal Bridge & has found requirement during fair weather to be 1.6 Cumecs for rest 06 stretches studies are being done by the consultant. The details are annexed as Annexure 9

6.1(xii)	Plantation on both sides of the river		
6.1(xiii)	Setting up biodiversity parks on flood plains by removing encroachment		

WTP PLANT DETAILS WITH EFFLUENT MANAGEMENT

(Chhotagovindpur MVS)

Drinking Water and Sanitation Department (DWSD) Jharkhand has formulated two independent schemes for providing 24 X 7 water supply to the settlements of Chhotagovindpur and Bagbera on the fringe of Jamshedpur city in East Singhbhum District of Jharkhand.

The project consists of design, construction, and operation of two independent 24x7 water supply schemes – Chhotagovindpur scheme serving 21 Gram Panchayats and Bagbera scheme serving 17 Gram Panchayats. This Project is being implemented under the World Bank Assisted Rural Water Supply & Sanitation Project for Low Income States (RWSSP – LIS). The two Schemes were clubbed as one Project and structured as an EPC-cum-O&M contract on DBOMT basis (Design, Build, Operate, Maintain, and Transfer), with 3 years for the design-build phase and 5 years for O&M thereafter.

In Bagbera scheme, Water treatment plant under construction which is based on Sludge management system which includes thickener & centrifuge system where sludge water will be recycled.

But in Chhotagovindpur scheme Water treatment plant system designed with sludge drying pits instead of thickener & centrifuge system, where sludge and sludge water dispose as described below.

3.1 AERATION UNIT

Aeration is necessary to promote the exchange of gases between the water and the atmosphere. In water treatment, aeration is practiced for these purposes.

i) To add of oxygen to water imparting freshness.
ii) Expulsion of CO_2, H_2S and other volatile substances causing taste and odour.
iii) To precipitate impurities like iron and manganese in certain forms.

3.2 MECHANICAL RAPID MIX (FLASH MIXER)

Rapid mixing is an operation by which the coagulant is rapidly and uniformly dispersed throughout the volume of water to create a more or less homogenous single or multiphase system. This helps in the formation of micro floes and results in proper utilization of chemical coagulant preventing localization of connection and pre mature formation of

hydroxides which lead to less effective utilization of the coagulant. The chemical coagulant is normally introduced at some point of high turbulence in the water. The source of water for rapid mixing to create the desired intense turbulence is gravitational and pneumatic.

3.3 FLOCCULATION

Flocculation is a process which clarifies the water. Clarifying means removing turbidity or color so that the water is clear and colorless. Clarification is done by causing a precipitate to form in the water which can be removed using simple physical methods. Initially the precipitate forms as very small particles but as the water is gently stirred, these particles stick together to form bigger particles. Many of the small particles that were originally present in the raw water absorb onto the surface of these small precipitate particles and so get incorporated into larger particles that coagulation produces. In this way the coagulated precipitate takes most of the suspended matter out of the water and is then filtered off, generally by passing the mixture through coarse sand filter.

3.4 CLARIFLOCCULATOR

Clariflocculator is a combination of flocculator and clarifier fabricated to attain economic and speedy construction. It has two concentric tanks where inner tank serves as a flocculation basin and the outer tank serves as clarifier. These systems are fabricated proficiently according to varied requirements. Two clariflocculators have been proposed where, the sludge settle to the bottom and the clear effluent overflows into the peripheral launder.

3.5 SLUDGE DISPOSAL

Sludge Settled on floor of Clariflocculator unit will be scrapped to Sludge channel through scrapper arms fitted with blades having rubber squeezer and hanging from rotating Scrapper Bridge. Sludge scrapped to Sludge channel will gravitate to underground sludge sump.

Sludge concentration largely depends upon the incoming load of suspended solids. Normally the sludge concentration ranges between 1 to 2%. Slow speed of Scrapper movement, closer spacing of scrapper blades and sludge storage volume has influence on sludge concentration.

Sludge consistency also depends upon under water flow withdrawal frequency and duration; nature of chemicals / coagulants added; Rate of withdrawal; frequency of withdrawal; sludge pipe size and its operating head; etc. etc. These parameters are variable in nature. Normally in designed plant while handling 100 ppm turbidity water, a maximum of approximately 1% sludge consistency may be expected while discharging sludge through

underflow pipe in controlled manner. Even to achieve this low consistency of sludge, periphery drive gear speed has to be maintained lower than 3m / mt.; adequate sludge holding volume is provided and number of scrapper blades are closely located so that sludge en route to sludge disposal channel moves at very slow speed. The clarifiers are designed keeping these essentially required design criteria's even though such provisions are cost pushing in nature.

3.6 RAPID SAND GRAVITY FILTER

After separating most of suspended particles, the water is filtered as the final step to remove remaining suspended particles and unsettled flock. Rapid sand filter is most common type of filtering unit in water treatment plant, here water moves from top to bottom vertically through sand & gravels.

3.7 BACKWASH WATER RECIRULATION SYSTEM

The back wash sump for filter backwash (SSF -94) is envisaged for recycling the back wash water from filter. It is provided with two back wash recirculation centrifugal pumps out of which one is working and the other is stand by The recycled water from the sludge sump for filter backwash (SSF) is connected to the raw water channel.(**ANNEXTURE:15** PIC-1 RECIRULATION WELL)

3.8 DISINFECTION (CHLORINATION)

Treatment method such as aeration, plain sedimentation, coagulation, sedimentation, and filtration would render the water chemically and aesthetically acceptable with some reduction in pathogenic bacterial content. However, foregoing treatment methods do not ensure 100% removal of pathogenic bacteria. Disinfection should not only remove the existing bacteria from water but also ensure their immediate killing even after wards, in the distribution system. The chemical which is used as a disinfectant must therefore be able to give the residual sterilizing effect for a long period thus affording some protection against recontamination. In addition to this, it should be harmless, unobjectionable to taste, economical and measurable by simple tests. Chlorine satisfies the above said more than any other disinfectant hence is widely used.

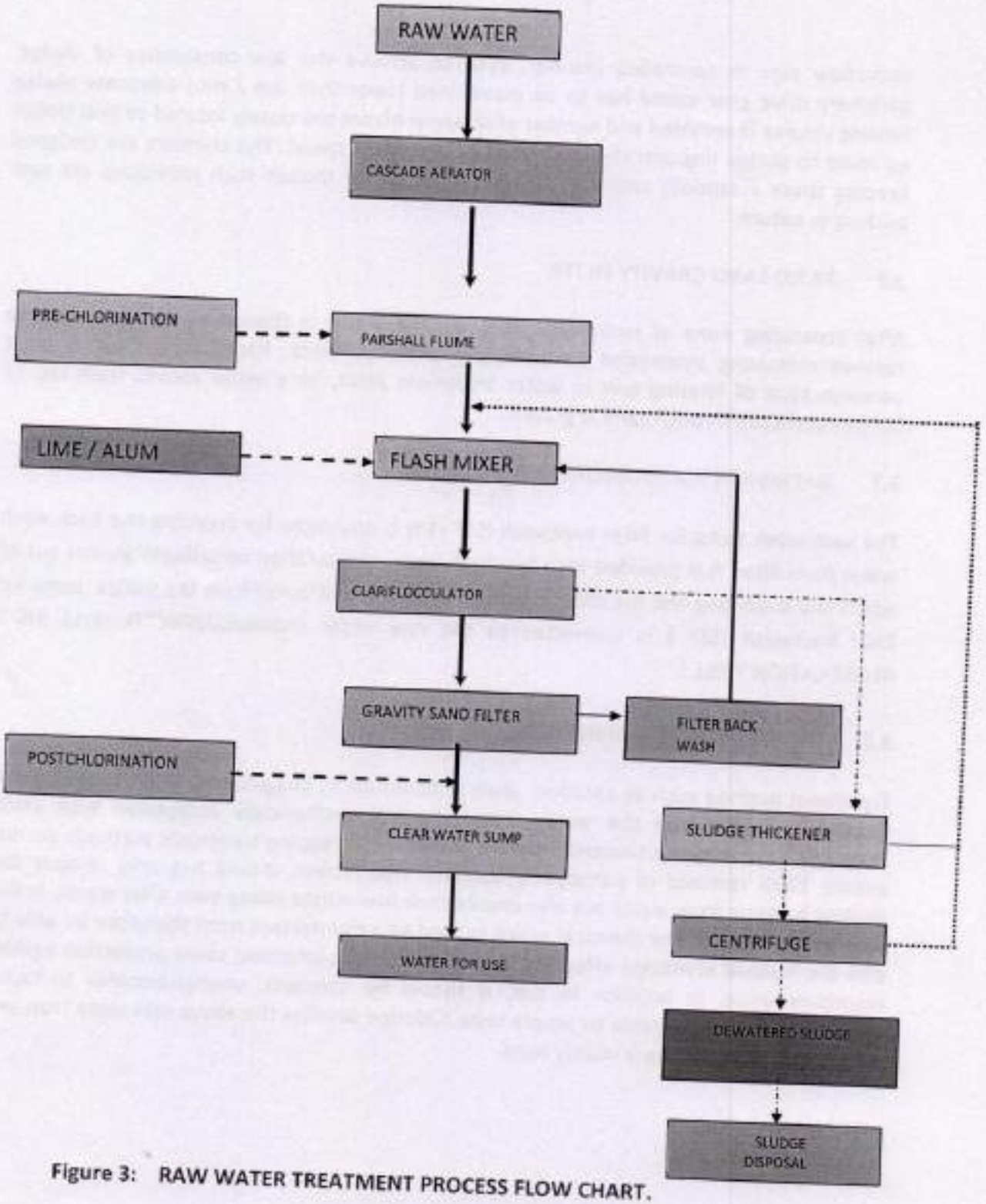

Figure 3: RAW WATER TREATMENT PROCESS FLOW CHART.

ANNEXURE-1. SLUDGE MANAGEMENT

The WTP has provision of two numbers of sludge pits of dimensions 19.8 X 7 X 6 meters each (as shown in Annexure 16–PIC-2). Currently, there is no permanent arrangement for conveying and disposing the wastewater emanating from these pits. DWSD plans to put in place a workable mechanism near WTP for handling disposal Sludge originating from these sludge pits

(Temporarily disposal sludge and waste water arrangement has been done within the premises of WTP)

This Annex gives the plan for management of sludge generated during operation of the WTP. The quarterly estimated quantity of sludge generated from the Chhotagovindpur WTP is in Table-1 below (detailed month wise sludge generation is given in Table-2 at the end of this annexure):

Table-1. Estimated quarterly sludge generation (details in Table-2)

Sl. No.	Estimated sludge Generation	
	Quarter	Qty. (Cum/Qtr)
1	Jan-Mar	10.44
2	Apr-Jun	14.66
3	Jul-Sept	165.68
4	Oct-Dec	37.2

It is observed from the above table that estimated sludge generation increases almost 5 to 8 times during the monsoon months of July to September. In view of this, the following strategy for optimal management of sludge will be adopted:

All months except July to September

Required quantity of sludge will be used for gardening at the project sites. Remaining sludge will be offered to local farmers for use as manure in their farms free of cost. Desirous farmers will have to make their own transport arrangements for transporting the sludge to their respective farm locations. In case of partial off take of sludge by farmers, remaining sludge will be transported and disposed of at the approved disposal sites, listed in the Debris Management Plan. Transport arrangement will be made by hiring tractor/ trolley from the local villagers.

July to September

Due to rainy season from July to September, there would be a substantial amount of sludge generation because turbidity is significantly higher in the rainy season as compared to other months.

Sludge Management

In view of this, the following arrangements will be made:

1. Sludge will be sack temporarily at a predetermined area/place as shown in 0 until it can be transported to the approved landfill sites for final disposal.
2. For the time being, the sludge dumping landfill site for this scheme will be the same as that of Bagbera for which, the permission has been obtained from the concerned Circle Officer (see permission attached in Doc 9.1 at the end of this Annexure).
3. Local farmers would be free to lift any quantity of sludge that they might require for use as manure.
4. Opportunities will be explored with local entrepreneurs interested in using this sludge as a business opportunity for income generation.
5. Awareness creation and sensitization of the farmers about the usefulness of the sludge as a manure would be created through interactive meetings and consultations.
6. A temporary sludge retention facility has been provided for at the WTP site and the same is included in the layout plan in 0
7. The designated landfill site earmarked for sludge disposal is located in Khasmahal area, which is about 6-7 km from the WTP site. Documentation pertaining to the permission for this site is at the end of this annexure.
8. If any major impurities such as heavy metals, etc. are detected during periodic raw water testing, the resulting sludge will also be tested and appropriate disposal mechanisms will be adopted for safe disposal. Commensurate community awareness activities will also be undertaken. Sludge test reports are given in Doc 9.2 at the end of this annexure.

Table-2. Sludge generation at CHHOTAGOVINDPUR (46 MLD) as per water sampling

MONTH	SLUDGE GENERATION (MT/Month) IN 37 MLD WATER	ALUM DOSING (PPM)	ALUM SLUDGE (MT)	TOTAL SLUDGE GENERATION- (MT/Month)	TOTAL SLUDGE GENERATION- (CUM/Month)	TOTAL SLUDGE GENERATION- (CUM/DAY)
JAN	2.484	10	3.312	5.796	3.48	0.12
FEB	2.484	10	3.312	5.796	3.48	0.12
MAR	2.484	10	3.312	5.796	3.48	0.12
APR	2.484	10	3.312	5.796	3.48	0.12
MAY	2.484	10	3.312	5.796	3.48	0.12
JUN	6.21	20	6.624	12.834	7.70	0.26
JUL	6.21	20	6.624	12.834	7.70	0.26
AUG	149.04	70	23.184	172.224	103.33	3.44
SEP	74.52	50	16.56	91.08	54.65	1.82
OCT	24.84	20	6.624	31.464	18.88	0.63
NOV	12.42	20	6.624	19.044	11.43	0.38
DEC	6.21	15	4.968	11.178	6.71	0.22
			TOTAL	379.638	227.7828	

अंचल अधिकारी का कार्यालय, जमशेदपुर, पूर्वी सिंहभूम

पत्रांक :- 3411
दिनांक :- 05.12.19

प्रेषक,

अंचल अधिकारी,
जमशेदपुर ।

सेवा में,

कार्यपालक अभियंता
सह सदस्य सचिव,
पेयजल एवं स्वच्छता प्रमण्डल,
जमशेदपुर ।

विषय : नीर निर्मल परियोजना, पूर्वी सिंहभूम, अन्तर्गत छोटागोविन्दपुर–बागबेड़ा जलापूर्ति योजना अन्तर्गत उत्पन्न Sliudge निष्पादन हेतु भूमि चिन्हित कर उपलब्ध कराने के संबंध में ।

प्रसंग : उपायुक्त, पूर्वी सिंहभूम, जमशेदपुर के पत्रांक 1448/गो0, दिनांक 16.08.2019 ।

महाशय,

उपर्युक्त विषय एवं प्रसंगाधीन पत्र के निर्देशानुसार संबंधित राजस्व कर्मचारी एवं अंचल अमीन के द्वारा जाँचोपरान्त प्रतिवेदित किया गया है कि नीर निर्मल परियोजना, पूर्वी सिंहभूम के बागबेड़ा जलापूर्ति योजना अन्तर्गत उत्पन्न Sliudge निष्पादन हेतु खासमहल अन्तर्गत टी.डी.एम. प्लॉट सं0–559 के रकबा 0.10 एकड़ भूमि उपलब्ध कराया जा सकता है ।

सूचनार्थ एवं आवश्यक कार्रवाई हेतु प्रेषित ।

विश्वासभाजन

05/12/19
अंचल अधिकारी,
जमशेदपुर

Doc 9.1: NOC for Sludge Disposal Site

ANALYTICAL AND APPLIED CHEMISTRY DIVISION
CSIR-NML, Jamshedpur-831007

TEST REPORT

Test Report No.: 4459	Customer Information
Jobsheet Receiving Date: 17-02-2020 Test Report Issue Date: 18-02-2020	5958/AAC/17022020

ANALYTICAL RESULT

Samples(s)	1	Method of Analysis
Sample Description	Sample ID - Sludge WTP (CBDWSPL)	
Sample Code	4459-1	
Aditional Information	5958/AAC/17022020	
Radicals	Result (-)	
Al , (%)	2.35	NML/AAC/ICP-OES/Gen-01
As, (%)	< 0.001	NML/AAC/ICP-OES/Gen-01
Fe, (%)	1.15	NML/AAC/ICP-OES/Gen-01
Cd, (%)	< 0.005	NML/AAC/ICP-OES/Gen-01
Cu, (%)	< 0.005	NML/AAC/ICP-OES/Gen-01
Pb, (%)	< 0.005	NML/AAC/ICP-OES/Gen-01
Ni, (%)	< 0.005	NML/AAC/ICP-OES/Gen-01
Mn, (%)	0.02	NML/AAC/ICP-OES/Gen-01
Zn, (%)	0.01	NML/AAC/ICP-OES/Gen-01

Additional information, (if any) : Test results pertain to submitted sample only (result reported as received).

18/2/2020

Authorized Signatory
with date and seal
Analytical and Applied Chemistry Division,
CSIR-NML, Jamshedpur-831007

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1. The report is not valid unless it is signed by the authorized signatory.
2. The report overleaf refers only to the particular item submitted for chemical analysis.
3. The report shall not be reproduced except in full and shall not be published without prior written permission of the issuing authority.
4. The results reported is valid at the time of and under the standard conditions of measurements/analysis.

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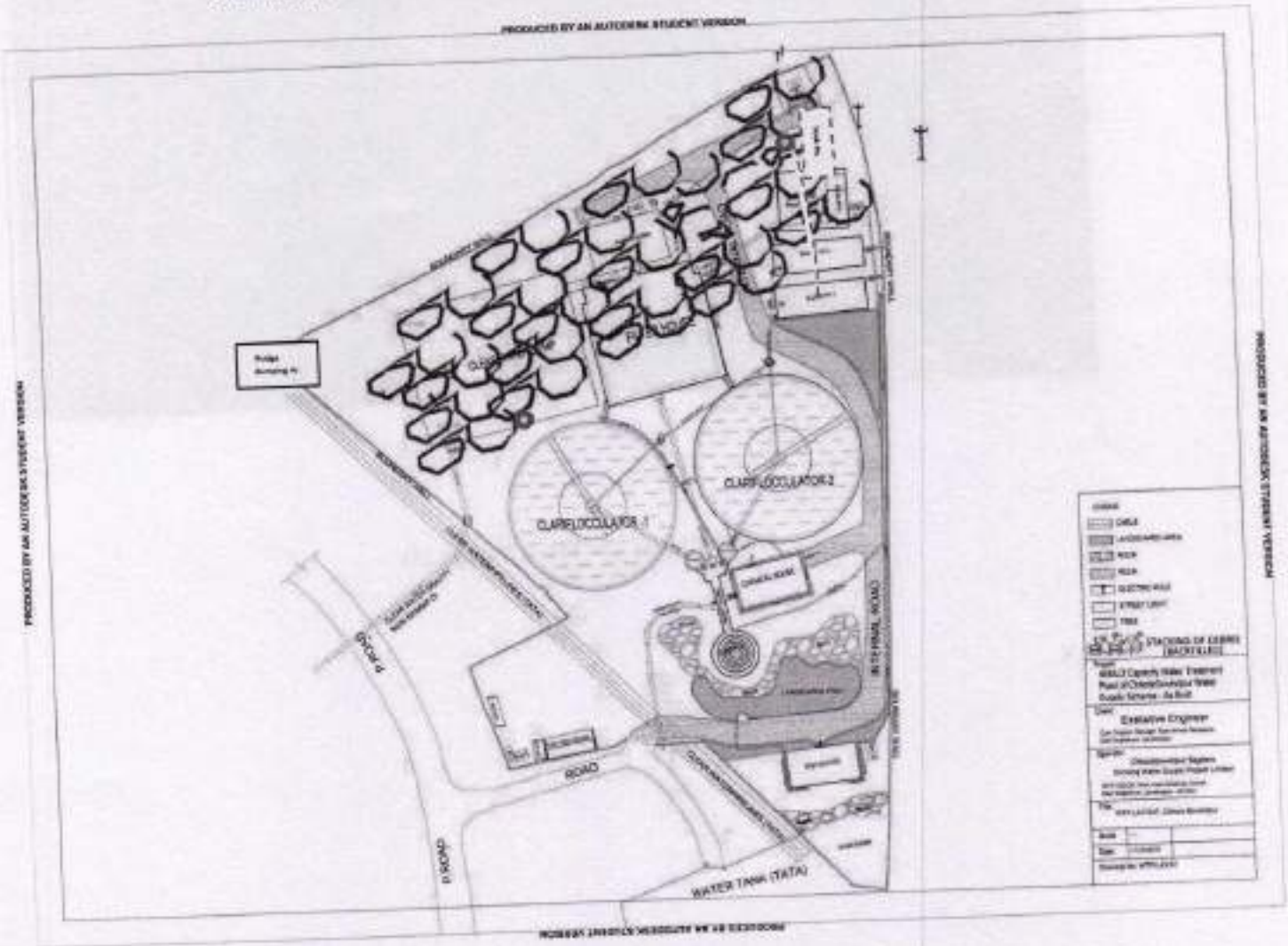
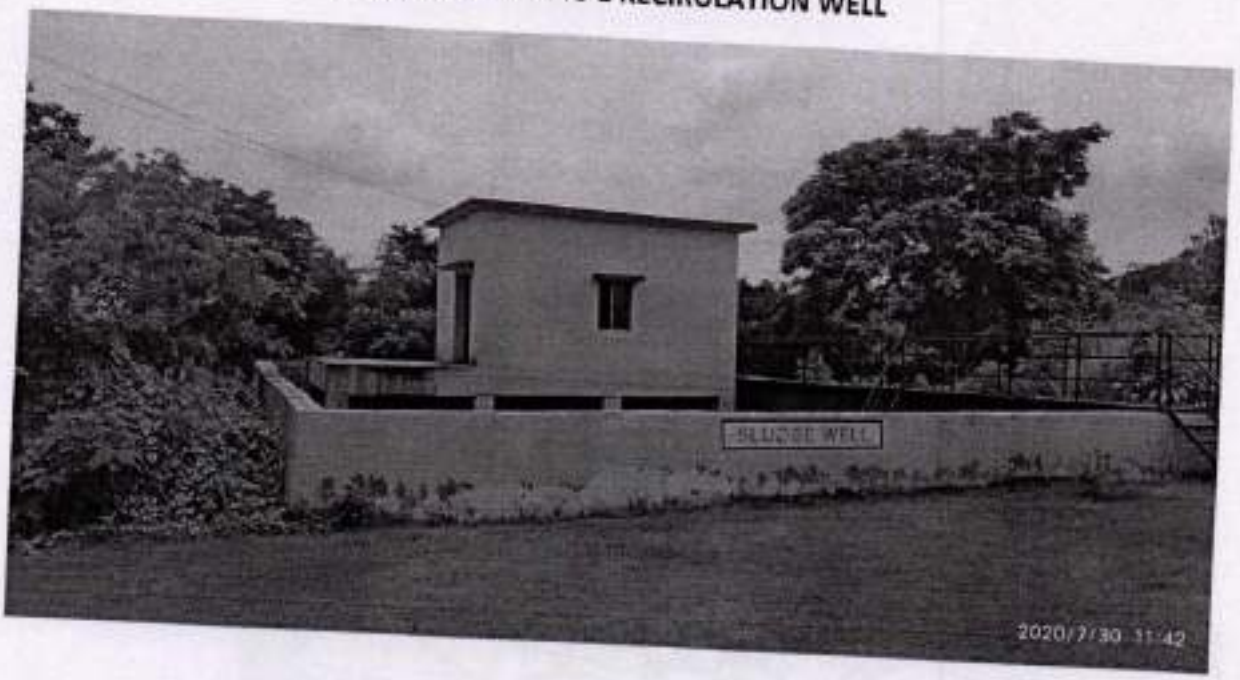
Annexure-14 LAYOUT DRAWING OF CHHOTAGOVINDPUR WTP



ANNEXTURE: 15 PIC-1 **RECIRULATION WELL**



ANNEXTURE: 16 PIC-2 Sludge pit

WTP PLANT DETAILS WITH EFFLUENT MANAGEMENT

(Bagbera MVS)

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In Chhotagovindpur scheme Water treatment plant system designed with sludge drying pits instead of thickener & centrifuge system, where sludge and sludge water being disposed.

But in Bagbera scheme, Water treatment plant under construction which is based on Sludge management system which includes thickener & centrifuge system where sludge water will be recycled. The details as described below.

The Current status of Bagbera Water Treatment Plant.

Sl no	Project Component	Current status	Remarks
1	AERATION UNIT	Civil Work completed	Details as mentioned in 3.1
2	MECHANICAL RAPID MIX (FLASH MIXER)	Civil Work completed	Details as mentioned in 3.2
3	CLARIFLOCCULATOR	Civil Work completed	Details as mentioned in 3.4
4	RAPID SAND GRAVITY FILTER	Civil Work completed	Details as mentioned in 3.6
5	BACKWASH WATER RECIRULATION SYSTEM	Civil Work completed	Details as mentioned in 3.7
6	SLUDGE THICKNER PUMP HOUSE	Civil Work completed	Details as mentioned in 3.9

3.1 AERATION UNIT

Aeration is necessary to promote the exchange of gases between the water and the atmosphere. In water treatment, aeration is practiced for these purposes.

i) To add of oxygen to water imparting freshness.
ii) Expulsion of CO_2, H_2S and other volatile substances causing taste and odour.
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3.2 MECHANICAL RAPID MIX (FLASH MIXER)

Rapid mixing is an operation by which the coagulant is rapidly and uniformly dispersed throughout the volume of water to create a more or less homogenous single or multiphase system. This helps in the formation of micro floes and results in proper utilization of chemical coagulant preventing localization of connection and pre mature formation of hydroxides which lead to less effective utilization of the coagulant. The chemical coagulant is normally introduced at some point of high turbulence in the water. The source of water for rapid mixing to create the desired intense turbulence is gravitational and pneumatic.

3.3 FLOCCULATION

Flocculation is a process which clarifies the water. Clarifying means removing turbidity or color so that the water is clear and colorless. Clarification is done by causing a precipitate to form in the water which can be removed using simple physical methods. Initially the precipitate forms as very small particles but as the water is gently stirred, these particles stick together to form bigger particles. Many of the small particles that were originally present in the raw water absorb onto the surface of these small precipitate particles and so get incorporated into larger particles that coagulation produces. In this way the coagulated precipitate takes most of the suspended matter out of the water and is then filtered off, generally by passing the mixture through coarse sand filter.

3.4 CLARIFLOCCULATOR

Clariflocculator is a combination of flocculator and clarifier fabricated to attain economic and speedy construction. It has two concentric tanks where inner tank serves as a flocculation basin and the outer tank serves as clarifier. These systems are fabricated proficiently according to varied requirements. Two clariflocculators have been proposed where, the sludge settle to the bottom and the clear effluent overflows into the peripheral launder.

3.5 SLUDGE DISPOSAL

Sludge Settled on floor of Clariflocculator unit will be scrapped to Sludge channel through scrapper arms fitted with blades having rubber squeezer and hanging from rotating Scrapper Bridge. Sludge scrapped to Sludge channel will gravitate to underground sludge sump.
Sludge concentration largely depends upon the incoming load of suspended solids. Normally the sludge concentration ranges between 1 to 2%. Slow speed of Scrapper movement, closer spacing of scrapper blades and sludge storage volume has influence on sludge concentration.

Sludge consistency also depends upon under water flow withdrawal frequency and duration; nature of chemicals / coagulants added; Rate of withdrawal; frequency of withdrawal; sludge pipe size and its operating head; etc. etc. These parameters are variable in nature. Normally in designed plant while handling 100 ppm turbidity water, a maximum of approximately 1% sludge consistency may be expected while discharging sludge through underflow pipe in controlled manner. Even to achieve this low consistency of sludge, periphery drive gear speed has to be maintained lower than 3m / mt.; adequate sludge holding volume is provided and number of scrapper blades are closely located so that sludge en route to sludge disposal channel moves at very slow speed. The clarifiers are designed keeping these essentially required design criteria's even though such provisions are cost pushing in nature.

3.6 RAPID SAND GRAVITY FILTER

After separating most of suspended particles, the water is filtered as the final step to remove remaining suspended particles and unsettled flock. Rapid sand filter is most common type of filtering unit in water treatment plant, here water moves from top to bottom vertically through sand & gravels.

3.7 BACKWASH WATER RECIRULATION SYSTEM

The back wash sump for filter backwash (SSF -94) is envisaged for recycling the back wash water from filter. It is provided with two back wash recirculation centrifugal pumps out of which one is working and the other is stand by The recycled water from the sludge sump for filter backwash (SSF) is connected to the raw water channel.(**ANNEXTURE:15** PIC-1 RECIRULATION WELL)

3.8 DISINFECTION (CHLORINATION)

Treatment method such as aeration, plain sedimentation, coagulation, sedimentation, and filtration would render the water chemically and aesthetically acceptable with some reduction in pathogenic bacterial content. However, foregoing treatment methods do not ensure 100% removal of pathogenic bacteria. Disinfection should not only remove the existing bacteria from water but also ensure their immediate killing even after wards, in the distribution system. The chemical which is used as a disinfectant must therefore be able to give the residual sterilizing effect for a long period thus affording some protection against recontamination. In addition to this, it should be harmless, unobjectionable to taste, economical and measurable by simple tests. Chlorine satisfies the above said more than any other disinfectant hence is widely used.

3.9 SLUDGE THICKNER PUMP HOUSE

In this process thickening of sludge increases its solids content and reduce the volume of free water thereby minimize the unit load on downstream processes such as digestion and dewatering. The most commonly used thickening a process includes gravity thickening, dissolved air flotation and rotary drum thickening.

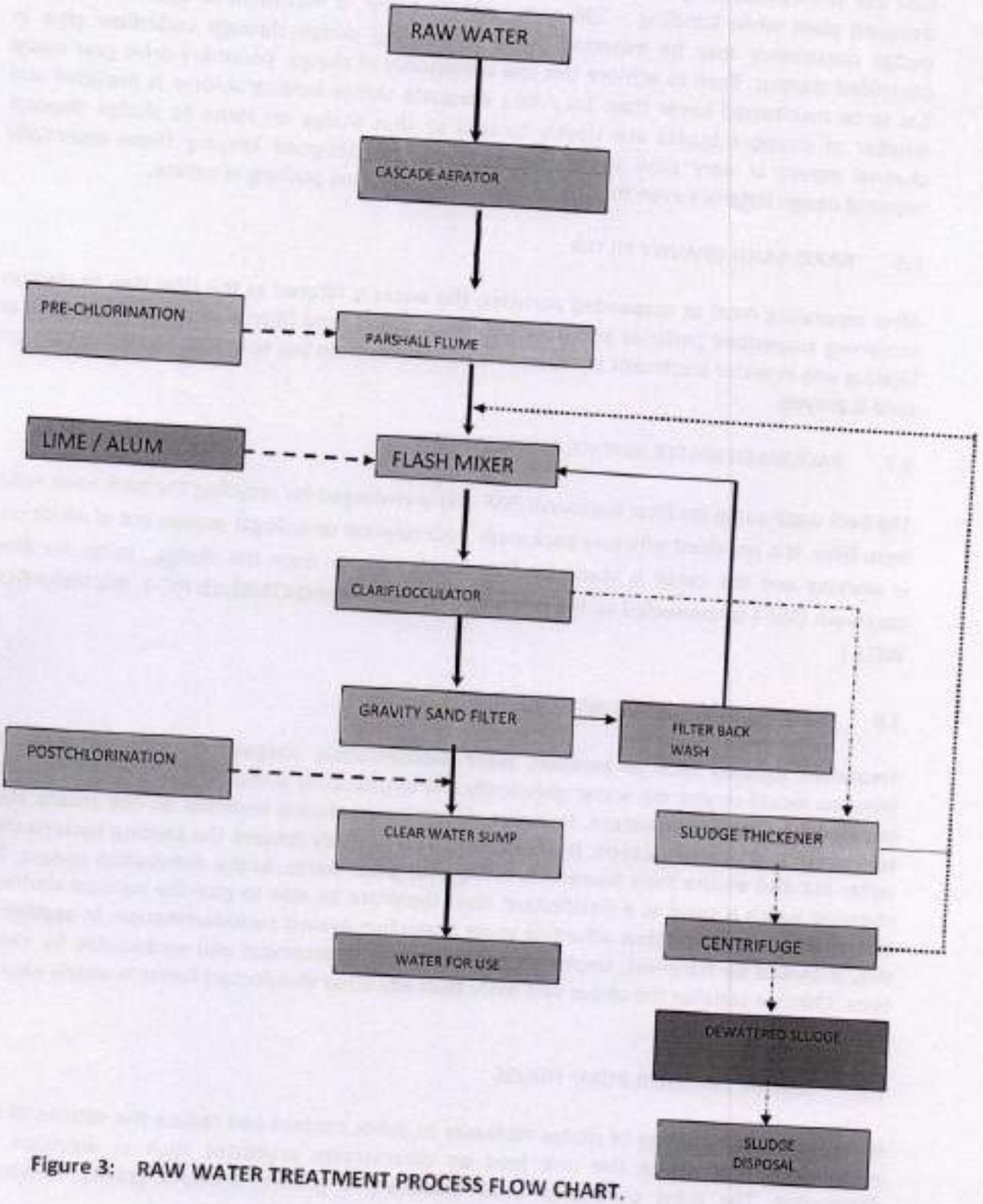


Figure 3: RAW WATER TREATMENT PROCESS FLOW CHART.

SLUDGE MANAGEMENT

ANNEXURE-1. SLUDGE MANAGEMENT

This Annex gives the plan for management of sludge generated during operation of the WTP. The quarterly estimated quantity of sludge generated from the Bagbera WTP is as below (detailed month wise table is given at the end of this annexure):

Table-1. Estimated quarterly sludge generation (details given in Table-2)

Sl. No.	Estimated sludge Generation	
	Quarter	Qty. (Cum/Qtr)
1	Jan-Mar	8.40
2	Apr-Jun	11.79
3	Jul-Sept	133.27
4	Oct-Dec	29.76

It is observed from the above table that estimated sludge generation increases almost 5 to 8 times during the monsoon months of July to September. In view of this, the following strategy for optimal management of sludge will be adopted:

All months except July to September

Required quantity of sludge will be used for gardening at the project sites. Remaining sludge will be offered to local farmers for use as manure in their farms free of cost. Desirous farmers will have to make their own transport arrangements for transporting the sludge to their respective farm locations. In case of partial offtake of sludge by farmers, remaining sludge will be transported and disposed of at the approved disposal sites, listed in the Debris Management Plan (**Error! Reference source not found.**). Transport arrangement will be made by hiring tractor/ trolley from the local villagers.

July to September

Due to rainy season from July to September, there would be a substantial amount of sludge generation because turbidity is significantly higher in the rainy season as compared to other months.

Sludge Management

In view of this, the following arrangements will be made:

1. Sludge will be sacked temporarily at a predetermined area/place until it can be transported to the approved landfill sites for final disposal.
2. The sludge dumping landfill site for this scheme has been identified for which, the permission has been obtained from the concerned Circle Officer (see permission attached at the end of this Annexure).
3. Local farmers would be free to lift any quantity of sludge that they might require for use as manure.
4. Opportunities will be explored with local entrepreneurs interested in using this sludge as a business opportunity for income generation.
5. Awareness creation and sensitization of the farmers about the usefulness of the sludge as a manure would be created through interactive meetings and consultations.

6. A temporary sludge retention facility has been provided for at the WTP site and the same is included in the layout plan in 0.
7. The designated landfill site earmarked for sludge disposal is located in Khasmahal area, which is about 6-7 km from the WTP site. Documentation pertaining to the permission for this site is at the end of this annexure.
8. If any major impurities such as heavy metals, etc. are detected during periodic raw water testing, the resulting sludge will also be tested and appropriate disposal mechanisms will be adopted for safe disposal. Commensurate community awareness activities will also be undertaken.

Table-2. Sludge generation at BAGBERA (37 MLD) as per water sampling

MONTH	SLUDGE GENERATION (MT/Month) IN 37 MLD WATER	ALUM DOSING (PPM)	ALUM SLUDGE (MT)	TOTAL SLUDGE GENERATION- (MT/Month)	TOTAL SLUDGE GENERATION- (CUM/Month)	TOTAL SLUDGE GENERATION- (CUM/DAY)
JAN	1.998	10	2.664	4.662	2.80	0.09
FEB	1.998	10	2.664	4.662	2.80	0.09
MAR	1.998	10	2.664	4.662	2.80	0.09
APR	1.998	10	2.664	4.662	2.80	0.09
MAY	1.998	10	2.664	4.662	2.80	0.09
JUN	4.995	20	5.328	10.323	6.19	0.21
JUL	4.995	20	5.328	10.323	6.19	0.21
AUG	119.88	70	18.648	138.528	83.12	2.77
SEP	59.94	50	13.32	73.26	43.96	1.47
OCT	19.98	20	5.328	25.308	15.18	0.51
NOV	9.99	20	5.328	15.318	9.19	0.31
DEC	4.995	15	3.996	8.991	5.39	0.18
			TOTAL	305.361	183.22	

अंचल अधिकारी का कार्यालय, जमशेदपुर, पूर्वी सिंहभूम

पत्रांक : 3411
दिनांक : 05.12.19

प्रेषक,

अंचल अधिकारी,
जमशेदपुर ।

सेवा में,

कार्यपालक अभियंता
सह सदस्य सचिव,
पेयजल एवं स्वच्छता प्रमण्डल,
जमशेदपुर ।

विषय : नीर निर्मल परियोजना, पूर्वी सिंहभूम, अन्तर्गत छोटागोविन्दपुर–बागबेड़ा जलापूर्ति योजना अन्तर्गत उत्पन्न Sliudge निष्पादन हेतु भूमि चिन्हित कर उपलब्ध कराने के संबंध में ।

प्रसंग : उपायुक्त, पूर्वी सिंहभूम, जमशेदपुर के पत्रांक 1448/ गो0, दिनांक 16.08.2019 ।

महाशय,

उपर्युक्त विषय एवं प्रसंगाधीन पत्र के निर्देशानुसार संबंधित राजस्व कर्मचारी एवं अंचल अमीन के द्वारा जाँचोपरान्त प्रतिवेदित किया गया है कि नीर निर्मल परियोजना, पूर्वी सिंहभूम के बागबेड़ा जलापूर्ति योजना अन्तर्गत उत्पन्न Sliudge निष्पादन हेतु खासमहल अन्तर्गत टी.के.एम. प्लॉट सं0–559 के रकबा 0.10 एकड़ भूमि उपलब्ध कराया जा सकता है ।

सूचनार्थ एवं आवश्यक कार्रवाई हेतु प्रेषित ।

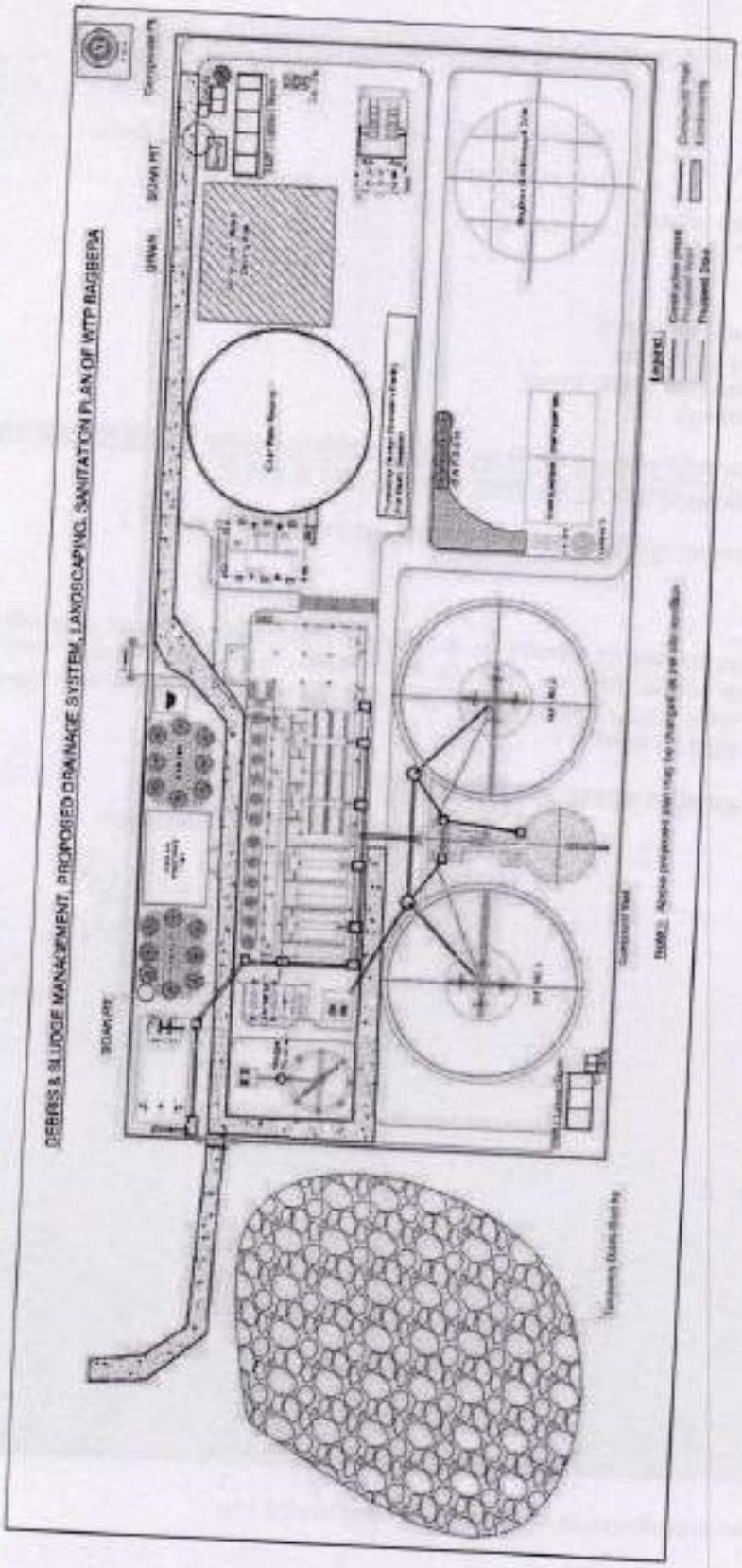
विश्वासभाजन

अंचल अधिकारी,
जमशेदपुर

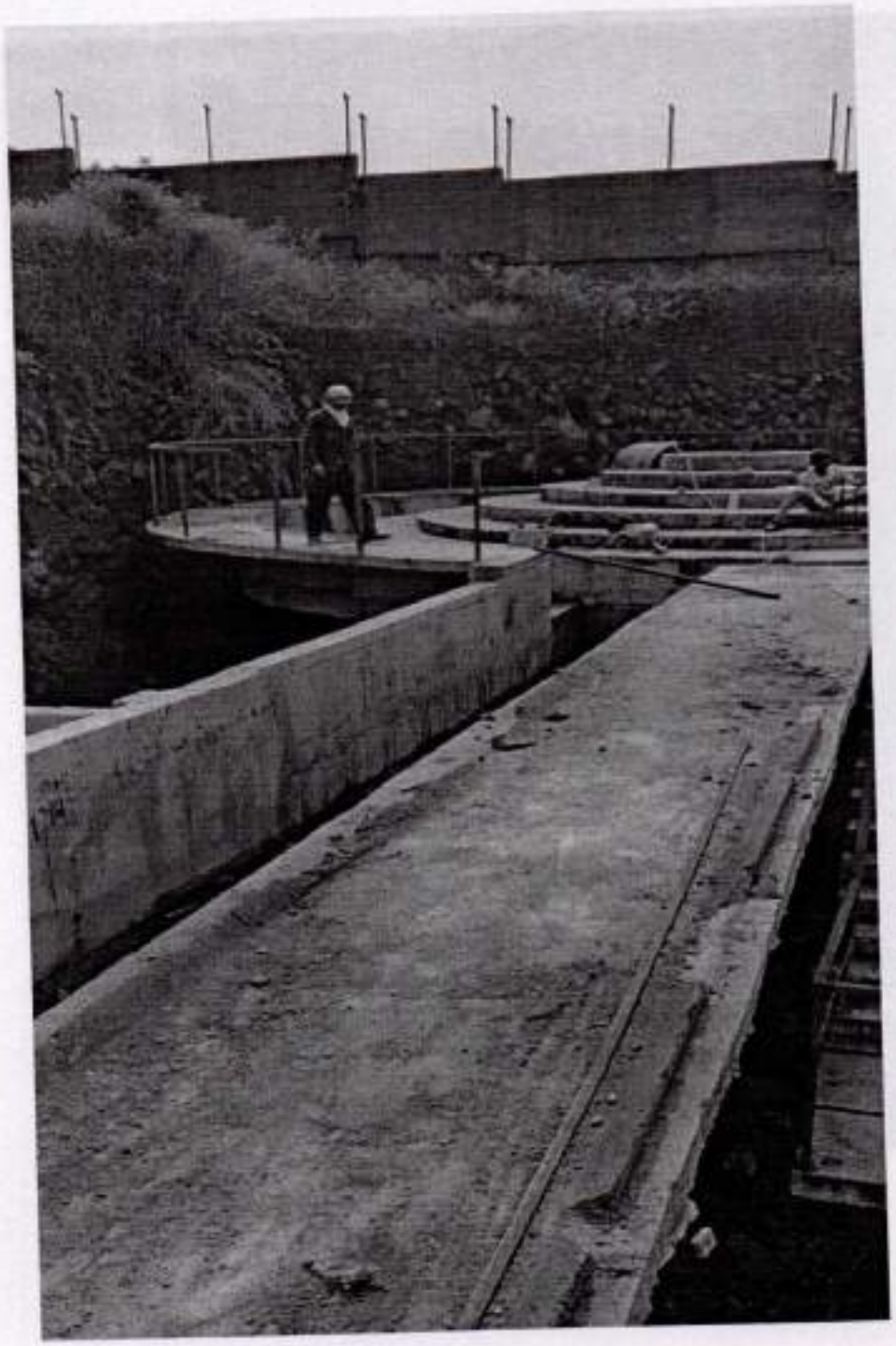
221 Z:\a_Kalyan_2019 &c

Doc 1: Permission and allocation letter for approved landfill site

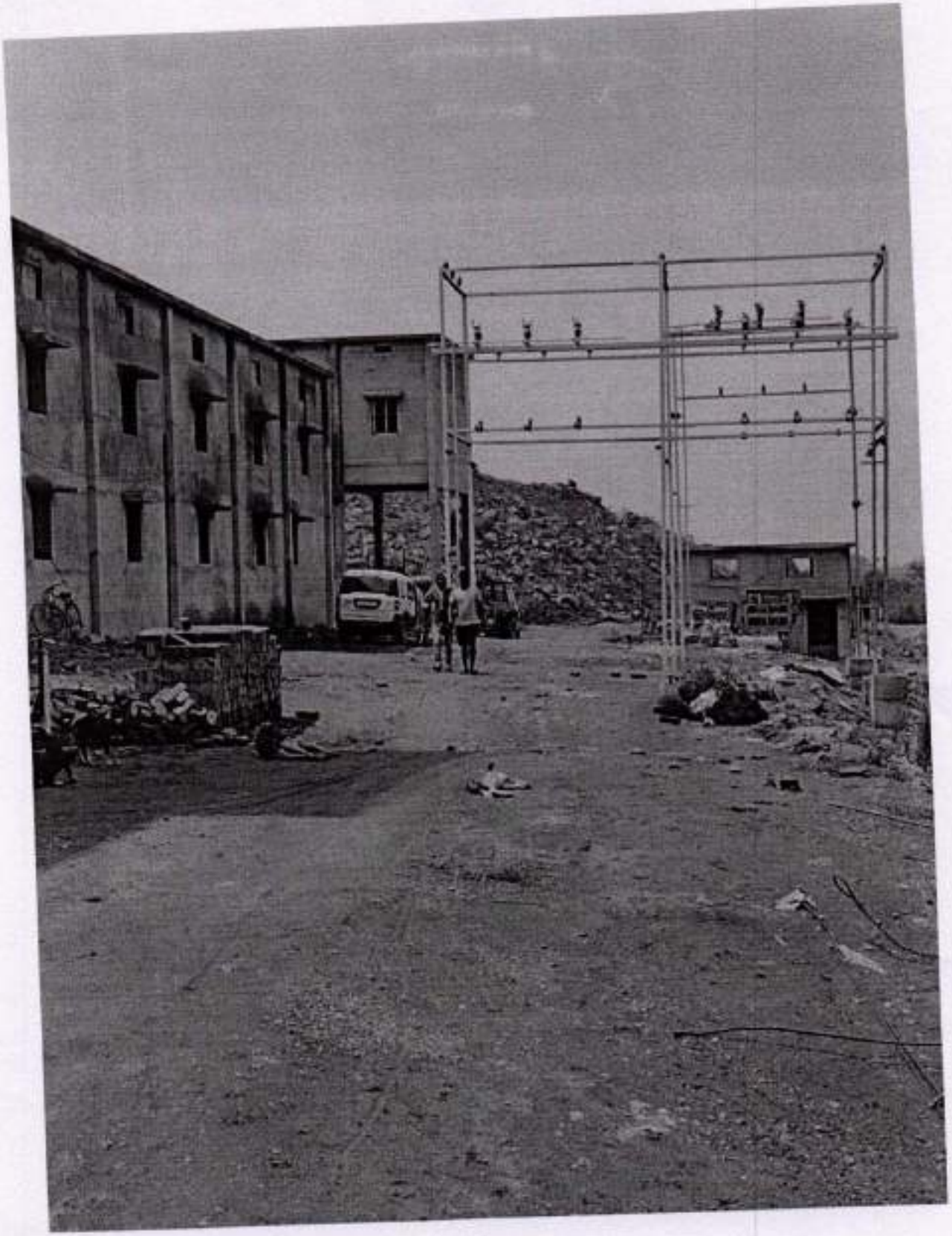
ANNEXURE-1. LAYOUT DRAWING OF BAGBERA WTP



PIC-1 AERATION UNIT



PIC-2 RAPID SAND GRAVITY FILTER UNIT



PIC-3 SLUDGE THICKNER PUMP HOUSE

TABLE -2

Details on Municipal Drains which are dischaging into the identified river stretches

Serial No.	Name of the River	River Stretch	Approx. Length of the Stretch (Kms)	No. of Villages/ Towns/ Cities along the river (Approx. 10 Kms. from the center of the identified river stretch length)	Population (as per Census 2011)	Approx Estimated Population after 15 yrs. (for year 2035)	No. of Municipal Drains falling into the main stream	Water Quality of Each Darin	Quantity of Sewage Discharged form each drain	No. of Municipal Drains divereted or intercepted before falling into the river	Existing Treatment Facility	Gap Analysis	Details on Current Method adotped to prevent discharge of untreated sewage prior to the completion of proposed project	Propsed Treatment	Tentative Budget Required	Funding Agency	Status	Timeline as per the order of Hon'ble NGT	Curent Status	Remarks	Details on Action Taken for Utilization of Treated Sewage Quantity to minimise the abstraction of Ground Water
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
1	GARGA	ALONG TALMUCHU	8	Chas Municipal Corporation	156888	243675	Please refer Annexure - 1	NA	Please refer Annexure -1	NA	NA	28.2 MLD	NA	Approx 41.50 Cr. of budget is proposed from State Fund for adoption of insitu remediation at drains for treatment of 29 MLD waste water as per NEERI Site visit report. (Budget include capex + 5 years of O&M)	41.50 Cr	State Fund	NEERI site visit at drains was done from 03.03.2020 to 07.03.2020. Proposal to goahead for adoption of insitu remediation at drains is received from NEERI. Regular consultantion with NEERI is in progress. Proposal for DPR Prepartion and Support in Implemnetaion is Recived on 25.09.2020 Allocation of state fund for this project and Approval on selection of CSIR-NEERI on nomination basis for preparation of DPR to adopt insitu remediation at drains at identified ULBs viz. Chas, Ranchi,Mangao and involvement of CSIR – NEERI for complete implementing including tendering is under process from competent authority.	31.03.2021	At Present, under AMRUT Scheme, Septage Management scheme of Chas, in which septage treatment plant of 89 KLD is under construction and expected to be completed by Dec 2021	Revised timeline of 31.03.2022 is proposed for adoption of insitu remediation at drains	UD&HD, GoJ has already issued a policy for utilization of treated waste water from STPs called as Jharkhand Waste Water Policy 2017. The utilizaiton will be done as per the policy document.

TABLE -2

Details on Municipal Drains which are dischaging into the identified river stretches

Serial No.	Name of the River	River Stretch	Approx. Length of the Stretch (Kms)	No. of Villages/ Towns/ Cities along the river (Approx. 10 Kms. from the center of the identified river stretch length)	Population (as per Census 2011)	Approx Estimated Population after 15 yrs. (for year 2035)	No. of Municipal Drains falling into the main stream	Water Quality of Each Darin	Quantity of Sewage Discharged form each drain	No. of Municipal Drains divereted or intercepted before falling into the river	Existing Treatment Facility	Gap Analysis	Details on Current Method adotped to prevent discharge of untreated sewage prior to the completion of proposed project	Propsed Treatment	Tentative Budget Required	Funding Agency	Status	Timeline as per the order of Hon'ble NGT	Curent Status	Remarks	Details on Action Taken for Utilization of Treated Sewage Quantity to minimise the abstraction of Ground Water
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
2	SANKH	KONGSERABASARTO BOLBA	10	No ULB falls under the identified stretch of River	-	-															
				Ranchi Municipal Corporation	1073427	3348023	Please refer Annexure -1	NA	Please refer Annexure -1	NA	10 MLD of nature based STP is operational at Harmu River i.e. one of the Tributary of Subarnarekha River at Ranchi.	26 MLD	Phytorid Technology based STP	Approx 20 Cr. of budget is proposed from State Fund for adoption of insitu remediation at drains for treatment of 36 MLD waste water as per NEERI Site visit report. (Budget include capex + 5 years of O&M). 16 MLD of STP of SBR Technology STP work is in progress under Ranchi Smart City Mission	20 Cr.	State Fund	NEERI site visit at drains was done from 03.03.2020 to 07.03.2020. Proposal to goahead for adoption of insitu remediation at drains is received from NEERI. Regular consultantion with NEERI is in progress. Proposal for DPR Prepartion and Support in Implemnetaion is Recived on 25.09.2020 Allocation of state fund for this project and Approval on selection of CSIR-NEERI on nomination basis for preparation of DPR to adopt insitu remediation at drains at identified ULBs viz. Chas, Ranchi,Mangao and involvement of CSIR – NEERI for complete implementing including tendering is under process from competent authority.	31.03.2021	16 MLD of STP of SBR Technology is under construction under Ranchi Smart City Mission. Tentative timline of completion of project is December 2021.	Revised timeline of 31.03.2022 is proposed for adoption of insitu remediation at drains	UD&HD, GoJ has already issued a policy for utilization of treated waste water from STPs called as Jharkhand Waste Water Policy 2017. The utilizaiton will be done as per the policy document.

TABLE -2

Details on Municipal Drains which are dischaging into the identified river stretches

Serial No.	Name of the River	River Stretch	Approx. Length of the Stretch (Kms)	No. of Villages/ Towns/ Cities along the river (Approx. 10 Kms. from the center of the identified river stretch length)	Population (as per Census 2011)	Approx Estimated Population after 15 yrs. (for year 2035)	No. of Municipal Drains falling into the main stream	Water Quality of Each Darin	Quantity of Sewage Discharged form each drain	No. of Municipal Drains divereted or intercepted before falling into the river	Existing Treatment Facility	Gap Analysis	Details on Current Method adotped to prevent discharge of untreated sewage prior to the completion of proposed project	Propsed Treatment	Tentative Budget Required	Funding Agency	Status	Timeline as per the order of Hon'ble NGT	Curent Status	Remarks	Details on Action Taken for Utilization of Treated Sewage Quantity to minimise the abstraction of Ground Water
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
3	SUBARNAREKHA	HATIA DAM TO JAMSHEDPUR	120	Adityapur Municipal Corporation	174355	326578	Please refer Annexure - 1	NA	Please refer Annexure -1	NA	NA	36 MLD	NA	Total STP of 36 MLD capacity is under construction with SBR Technology	255.15 Cr	AMRUT	Work under progress. Till date 55 % of work completed at site.	31.03.2021	Work under progress. Till date 55 % of work completed at site.	Tentative timeline for completion of projct is December 2021	UD&HD, GoJ has already issued a policy for utilization of treated waste water from STPs called as Jharkhand Waste Water Policy 2017. The utilizaiton will be done as per the policy document.
				Jamshedpur NAC	677350	1317852	Please refer Annexure - 1	Please refer Annexure - 1	Please refer Annexure -1	NA	Around 50 MLD of STP is operational under JUSCO, STP for rest 32 MLD treatment required.	32 MLD	Physiochemical treatment and Biological treatment	Approx 35.20 Cr. of budget is required for adoption of insitu remediation at drains for treatment of 32 MLD as per NEERI Site visit report. (Budget include capex + 5 years of O&M)	35.20 Cr	CSR Fund	NEERI site visit at drains was done from 03.03.2020 to 07.03.2020. Proposal to goahead for adoption of insitu remediation at drains is received from NEERI. Regular consultantion with NEERI is in progress. Approval for taking funds from TATA group under CSR fund for treatmaent of remaining 32 MLD is under progress.	31.03.2021	-	Revised timeline of 31.03.2022 is proposed for adoption of insitu remediation at drains	UD&HD, GoJ has already issued a policy for utilization of treated waste water from STPs called as Jharkhand Waste Water Policy 2017. The utilizaiton will be done as per the policy document.
				Mango Municipal Corporation	223805	388730	Please refer Annexure - 1	Please refer Annexure - 1	Please refer Annexure -1	NA	NA	33 MLD	NA	Approx 30 Cr. of budget is proposed from State Fund for adoption of insitu remediation at drains for treatment of 33 MLD waste water as per NEERI Site visit report. (Budget include capex + 5 years of O&M)	30 Cr.	State Fund		31.03.2021	-	Revised timeline of 31.03.2022 is proposed for adoption of insitu remediation at drains	UD&HD, GoJ has already issued a policy for utilization of treated waste water from STPs called as Jharkhand Waste Water Policy 2017. The utilizaiton will be done as per the policy document.

TABLE -2

Details on Municipal Drains which are dischaging into the identified river stretches

Serial No.	Name of the River	River Stretch	Approx. Length of the Stretch (Kms)	No. of Villages/ Towns/ Cities along the river (Approx. 10 Kms. from the center of the identified river stretch length)	Population (as per Census 2011)	Approx Estimated Population after 15 yrs. (for year 2035)	No. of Municipal Drains falling into the main stream	Water Quality of Each Darin	Quantity of Sewage Discharged form each drain	No. of Municipal Drains divereted or intercepted before falling into the river	Existing Treatment Facility	Gap Analysis	Details on Current Method adotped to prevent discharge of untreated sewage prior to the completion of proposed project	Propsed Treatment	Tentative Budget Required	Funding Agency	Status	Timeline as per the order of Hon'ble NGT	Curent Status	Remarks	Details on Action Taken for Utilization of Treated Sewage Quantity to minimise the abstraction of Ground Water
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
4	DAMODAR	PHUSRO ROAD BDG TO TURIO	12	Phusro Nagar Parisahd	89178	118350	Please refer Annexure - 1	Please refer Annexure - 1	Please refer Annexure -1	NA	NA	15 MLD	NA	STP of 15 MLD capacity proposed with SBR (14 MLD) and Phytorid Technology (1 MLD)	64 Cr.	NMCG	DPR to provide I&D structure and STP for drains is prepared and sent to National Mission for Clean Ganga (NMCG) New Delhi for approval on may 2019. NMCG send the DPR To IIT Roorkee for Third Party Appraisal on Jan 2020. DPR appraised by the IIT Roorkee on April 2020.	31.03.2021	29 Exective Committee (EC) of NMCG held on 28.08.2020 through Video Confercning Executive Committee (EC) resolved to defer the Proposal and take up the same in the next EC meeting due to paucity of time.	18 months timeline is proposed for Tendering , construction of STP and I&D Scheme after aporoval from NMCG	UD&HD, GoJ has already issued a policy for utilization of treated waste water from STPs called as Jharkhand Waste Water Policy 2017. The utilizaiton will be done as per the policy document.
				Dhanbad Municipal Corporation	1162472	1484520	Please refer Annexure - 1	NA	Please refer Annexure -1	NA	50 KLD of treatment facility existing	143 MLD	NA	STP of 144 MLD capacity required	381 Cr	NMCG	DPR to provide I&D structure and STP for drains is prepared and sent to National Mission for Clean Ganga (NMCG) New Delhi for approval on July 2019. NMCG send the DPR To IIT Roorkee for Third Party Appraisal on Jan 2020. DPR appraised by the IIT Roorkee is under progress.	31.03.2021	Approval awaided from NMCG	26 months timeline is proposed for Tendering , construction of STP and I&D Scheme after aporoval from NMCG	UD&HD, GoJ has already issued a policy for utilization of treated waste water from STPs called as Jharkhand Waste Water Policy 2017. The utilizaiton will be done as per the policy document.
				Ramgarh Nagar Parishad	123875	141886	Please refer Annexure - 1	NA	Please refer Annexure -1	NA	NA	40 MLD	NA	STP of 40 MLD capacity required	252 Cr	NMCG	DPR to provide I&D structure and STP for drains is prepared and sent to National Mission for Clean Ganga (NMCG) New Delhi for approval on August 2020.	31.03.2020	Approval awaided from NMCG	26 months timeline is proposed for Tendering , construction of STP and I&D Scheme after aporoval from NMCG	UD&HD, GoJ has already issued a policy for utilization of treated waste water from STPs called as Jharkhand Waste Water Policy 2017. The utilizaiton will be done as per the policy document.
5	JUMAR	KANKE DAM TO KADAL	10	Ranchi Municipal Corporation	1073427	3348023	1 no. of drains having negiligible discharge	NA	NA	NA	NA	37 MLD capacity STP construction work was under progress for Zone-1 (in which River Jumar falls) and 42% of the work completed	NA	37 MLD capacity STP construction work was under progress for Zone-1 (in which River Juamr falls) with SBR Technology	209.05 C	State Fund	Sewerage Scheme for Zone-1 Ranchi, under Ranchi Municipal Corporation (in which river Jumar falls) was started but due to the poor performance of the executing agency the agreement has been terminated on dated 14.10.2019,	31.03.2021	Tender for the construction of remaining work has been floated by the RMC. Date of opening of Tender is 01.10.2020	24 months timeline is proposed for construction of STP and laying of sewer network under Zone-I	UD&HD, GoJ has already issued a policy for utilization of treated waste water from STPs called as Jharkhand Waste Water Policy 2017. The utilizaiton will be done as per the policy document.

TABLE -2

Details on Municipal Drains which are dischaging into the identified river stretches

Serial No.	Name of the River	River Stretch	Approx. Length of the Stretch (Kms)	No. of Villages/ Towns/ Cities along the river (Approx. 10 Kms. from the center of the identified river stretch length)	Population (as per Census 2011)	Approx Estimated Population after 15 yrs. (for year 2035)	No. of Municipal Drains falling into the main stream	Water Quality of Each Darin	Quantity of Sewage Discharged form each drain	No. of Municipal Drains divereted or intercepted before falling into the river	Existing Treatment Facility	Gap Analysis	Details on Current Method adotped to prevent discharge of untreated sewage prior to the completion of proposed project	Propsed Treatment	Tentative Budget Required	Funding Agency	Status	Timeline as per the order of Hon'ble NGT	Curent Status	Remarks	Details on Action Taken for Utilization of Treated Sewage Quantity to minimise the abstraction of Ground Water
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
6	KONAR	ALONG TILAYA AND KONAR	-	No ULB falls under the identified stretch of River	-																
7	NALKARI	ALONG PATRATU	-	No ULB falls under the identified stretch of River	-																

Action Plan for 7 Polluted River Stretches of Jharkhand under Hon'ble NGT order dated, 08.04.2019 in O.A. No. 673/2019

TABLE -3

Deatials on Municipal Drains which are dischaging into the identified river stretches

Serial No.	Name of the River	River Stretch	Approx. Length of the Stretch (Kms)	No. of Villages/ Towns/ Cities along the river (Approx. 10 Kms. from the center of the identified river stretch length)	Population (as per Census 2011)	Estimated Population after 15 yrs. (for year 2035)	Approximate Quantity of Sewage Generated (City/Town/Village wise)	Propsed Treatment Facility based on estimation of population after 15 yrs. (Numbers and Capacity)	Tentative Budget Required	Funding Agency	Status	Timeline as per the order of Hon'ble NGT	Curent Status	Current Status on Networking/ Channelization including diversion of sewage generated from household/town ships/villages to sewer lines	Proposal for Networking/ Channelization including diversion of sewage generated from household/town ships/villages to sewer lines	Timeline required
1	2	3	4	5	6	7	8	15	16	17	18	19	20	21	22	23
1 2	GARGA	ALONG TAL MUCHU	8	Chas Municipal Corporation	156888	243675	29 MLD	29 MLD	41.50 Cr. for Phytorid Technology and RENEU Technology of NEERI. 89 KLD Septage treatment plant under construction under AMRUT Scheme	State Fund State+ Central	NEERI site visit at drains was done from 03.03.2020 to 07.03.2020. Proposal to goahead for adoption of insitu remediation at drains is received from NEERI. Regular consultantion with NEERI is in progress. Allocation of state fund for this project and Approval on selection of CSIR-NEERI on nomination basis for preparation of DPR to adopt insitu remediation at drains at identified ULBs viz. Chas, Ranchi, Mango and involvement of CSIR – NEERI for complete implementing including tendering is under process from competent authority.	31.03.2021	At Present, under AMRUT Scheme, Septage Management scheme of Chas, in which septage treatment plant of 89 KLD is under construction and expected to be completed by Dec 2021	NA	Approx 41.50 Cr. of budget is proposed from State Fund for adoption of insitu remediation at drains for treatment of 29 MLD waste water as per NEERI Site visit report. (Budget include capex + 5 years of O&M) NEERI site visit at drains was done from 03.03.2020 to 07.03.2020. Proposal to goahead for adoption of insitu remediation at drains is awaited from NEERI. Regular consultantion with NEERI is in progress. Allocation of state fund for this project is in progress.	Revised timeline of 31.03.2022 is proposed for adoption of insitu remediation at drains
				Ranchi Municipal Corporation	1073427	3348023	36 MLD	26 MLD :- Phytorid Technology and RENEU Technology of NEERI. 16 MLD:- 1 unit SBR technology '	20 Cr. for Phytorid Technology and RENEU Technology of NEERI. 16 MLD plant under construction under Ranchi Smart City Mission	State Fund Ranchi Smart city Mission (State + Central)	NEERI site visit at drains was done from 03.03.2020 to 07.03.2020. Proposal to goahead for adoption of insitu remediation at drains is received from NEERI. Regular consultantion with NEERI is in progress. Allocation of state fund for this project and Approval on selection of CSIR-NEERI on nomination basis for preparation of DPR to adopt insitu remediation at drains at identified ULBs viz. Chas, Ranchi, Jamshedpur and involvement of CSIR – NEERI for complete implementing including tendering is under process from competent authority. 16 MLD plant is under construction, and to be completed by Dec 2021	31.03.2021	16 MLD of STP of SBR Technology is under construction under Ranchi Smart City Mission. Tentative timline of completion of project is December 2021.	Sewerage scheme under construction	Approx 20 Cr. of budget is proposed from State Fund for adoption of insitu remediation at drains for treatment of 36 MLD waste water as per NEERI Site visit report. (Budget include capex + 5 years of O&M). 16 MLD of STP of SBR Technology STP work is in progress under Ranchi Smart City Mission NEERI site visit at drains was done from 03.03.2020 to 07.03.2020. Proposal to goahead for adoption of insitu remediation at drains is awaited from NEERI. Regular consultantion with NEERI is in progress.	Revised timeline of 31.03.2022 is proposed for adoption of insitu remediation at drains

Action Plan for 7 Polluted River Stretches of Jharkhand under Hon'ble NGT order dated, 08.04.2019 in O.A. No. 673/2019

TABLE -3

Deatials on Municipal Drains which are dischaging into the identified river stretches

Serial No.	Name of the River	River Stretch	Approx. Length of the Stretch (Kms)	No. of Villages/ Towns/ Cities along the river (Approx. 10 Kms. from the center of the identified river stretch length)	Population (as per Census 2011)	Estimated Population after 15 yrs. (for year 2035)	Approximate Quantity of Sewage Generated (City/Town/Village wise)	Propsed Treatment Facility based on estimation of population after 15 yrs. (Numbers and Capacity)	Tentative Budget Required	Funding Agency	Status	Timeline as per the order of Hon'ble NGT	Curent Status	Current Status on Networking/ Channelization including diversion of sewage generated from household/town ships/villages to sewer lines	Proposal for Networking/ Channelization including diversion of sewage generated from household/town ships/villages to sewer lines	Timeline required
1	2	3	4	5	6	7	8	15	16	17	18	19	20	21	22	23
3	SUBARNAREKHA	HATIA DAM TO JAMSHEDPUR	120	Adityapur Municipal Corporation	174355	326578	36 MLD	4 units of 36 MLD	36 MLD STP under construction under AMRUT scheme	State + Central	Work under progress. Till date 55 % of work completed at site.	31.03.2021	Work under progress. Till date 55 % of work completed at site.	Sewerage scheme under construction	Sewerage scheme under construction	Tentative timeline for completion of projct is December 2021
				Jamshedpur NAC	677350	1317852	82 MLD	32 MLD	35.20 Cr	CSR FUND	NEERI site visit at drains was done from 03.03.2020 to 07.03.2020. Proposal to goahead for adoption of insitu remediation at drains is recived from NEERI. Regular consultantion with NEERI is in progress. Approval for taking funds from TATA group under CSR fund for treatmaent of remaining 32 MLD is under progress.	31.03.2021		50 MLD of waste water is currently treated.	Approx 35.20 Cr. of budget is required for adoption of insitu remediation at drains for treatment of 32 MLD as per NEERI Site visit report. (Budget include capex + 5 years of O&M) NEERI site visit at drains was done from 03.03.2020 to 07.03.2020. Proposal to goahead for adoption of insitu remediation at drains is awaited from NEERI. Regular consultantion with NEERI is in progress.	Revised timeline of 31.03.2022 is proposed for adoption of insitu remediation at drains
				Mango Municipal Corporation	223805	388730	33 MLD	33 MLD	30 Cr.	State Fund	NEERI site visit at drains was done from 03.03.2020 to 07.03.2020. Proposal to goahead for adoption of insitu remediation at drains is received from NEERI. Regular consultantion with NEERI is in progress. Allocation of state fund for this project is in progress.	31.03.2021		NA	Approx 30 Cr. of budget is proposed from State Fund for adoption of insitu remediation at drains for treatment of 33 MLD waste water as per NEERI Site visit report. (Budget include capex + 5 years of O&M) NEERI site visit at drains was done from 03.03.2020 to 07.03.2020. Proposal to goahead for adoption of insitu remediation at drains is awaited from NEERI. Regular consultantion with	Revised timeline of 31.03.2022 is proposed for adoption of insitu remediation at drains

Action Plan for 7 Polluted River Stretches of Jharkhand under Hon'ble NGT order dated, 08.04.2019 in O.A. No. 673/2019

TABLE -3

Deatials on Municipal Drains which are dischaging into the identified river stretches

Serial No.	Name of the River	River Stretch	Approx. Length of the Stretch (Kms)	No. of Villages/ Towns/ Cities along the river (Approx. 10 Kms. from the center of the identified river stretch length)	Population (as per Census 2011)	Estimated Population after 15 yrs. (for year 2035)	Approximate Quantity of Sewage Generated (City/Town/Village wise)	Propsed Treatment Facility based on estimation of population after 15 yrs. (Numbers and Capacity)	Tentative Budget Required	Funding Agency	Status	Timeline as per the order of Hon'ble NGT	Curent Status	Current Status on Networking/ Channelization including diversion of sewage generated from household/town ships/villages to sewer lines	Proposal for Networking/ Channelization including diversion of sewage generated from household/town ships/villages to sewer lines	Timeline required
1	2	3	4	5	6	7	8	15	16	17	18	19	20	21	22	23
4		PHUSRO		Phusro Nagar Parisahd	89178	118350	15 MLD	2 Unit: SBR Technology 14 MLD 1 unit: Phytorid Technology 1 MLD	64 Cr for Phusro I&D Scheme	Namami Gange (Central fund)	DPR to provide I&D structure and STP for drains is prepared and sent to National Mission for Clean Ganga (NMCG) New Delhi for approval on may 2019. NMCG send the DPR To IIT Roorkee for Third Party Appraisal on Jan 2020. DPR appraised by the IIT Roorkee on April 2020.	31.03.2021	29 Exective Committee (EC) of NMCG held on 28.08.2020 through Video Conferncing Executive Committee (EC) resolved to defer the Proposal and take up the same in the next EC meeting due to paucity of time.	NA	DPR to provide I&D structure and STP for drains is prepared and sent to National Mission for Clean Ganga (NMCG) New Delhi for approval on may 2019. NMCG send the DPR To IIT Roorkee for Third Party Appraisal on Jan 2020. DPR appraised by the IIT Roorkee on April 2020.	18 months timeline is proposed for Tendering , construction of STP and I&D Scheme after aporoval from NMCG
				Dhanbad Municipal	1162472	1484520	144 MLD	3 units of total 144	381 Cr for Dhanbad	Namami Gange	DPR to provide I&D structure and STP for drains is prepared and sent to National Mission for Clean Ganga (NMCG) New Delhi for approval on July 2019. NMCG send the DPR To IIT Roorkee for Third Party Appraisal on Jan 2020. DPR appraised by the IIT Roorkee is under progress.	31.03.2021	Approval awaided	NA	DPR to provide I&D structure and STP for drains is prepared and sent to National Mission for Clean Ganga (NMCG) New Delhi for approval on July 2019. NMCG send the DPR To IIT Roorkee for Third Party Appraisal on Jan 2020. DPR appraised by the IIT Roorkee is under progress.	26 months timeline is proposed for Tendering , construction of STP and I&D Scheme after aporoval from NMCG

Action Plan for 7 Polluted River Stretches of Jharkhand under Hon'ble NGT order dated, 08.04.2019 in O.A. No. 673/2019

TABLE -3

Deatials on Municipal Drains which are dischaging into the identified river stretches

Serial No.	Name of the River	River Stretch	Approx. Length of the Stretch (Kms)	No. of Villages/ Towns/ Cities along the river (Approx. 10 Kms. from the center of the identified river stretch length)	Population (as per Census 2011)	Estimated Population after 15 yrs. (for year 2035)	Approximate Quantity of Sewage Generated (City/Town/Village wise)	Propsed Treatment Facility based on estimation of population after 15 yrs. (Numbers and Capacity)	Tentative Budget Required	Funding Agency	Status	Timeline as per the order of Hon'ble NGT	Curent Status	Current Status on Networking/ Channelization including diversion of sewage generated from household/town ships/villages to sewer lines	Proposal for Networking/ Channelization including diversion of sewage generated from household/town ships/villages to sewer lines	Timeline required
1	2	3	4	5	6	7	8	15	16	17	18	19	20	21	22	23
	DAMODAR	ROAD BDG TO TURIO	12	Municipal Corporation	1102472	1484920	144 MLD	MLD	I&D Scheme	(Central fund)		31.03.2021	from NMCG	NA		
				Ramgarh Nagar Parishad	123875	141886	40 MLD	2 units of total 40 MLD	252 Cr. for Ramgarh I&D Scheme	Namami Gange (Central fund)	DPR to provide I&D structure and STP for drains is prepared and sent to National Mission for Clean Ganga (NMCG) New Delhi for approval on August 2020.	31.03.2021	Approval awaided from NMCG	NA	DPR to provide I&D structure and STP for drains is prepared and sent to National Mission for Clean Ganga (NMCG) New Delhi for approval on August 2020.	26 months timeline is proposed for Tendering , construction of STP and I&D Scheme after aporoval from NMCG

Action Plan for 7 Polluted River Stretches of Jharkhand under Hon'ble NGT order dated, 08.04.2019 in O.A. No. 673/2019

TABLE -3

Deatials on Municipal Drains which are dischaging into the identified river stretches

Serial No.	Name of the River	River Stretch	Approx. Length of the Stretch (Kms)	No. of Villages/ Towns/ Cities along the river (Approx. 10 Kms. from the center of the identified river stretch length)	Population (as per Census 2011)	Estimated Population after 15 yrs. (for year 2035)	Approximate Quantity of Sewage Generated (City/Town/Village wise)	Propsed Treatment Facility based on estimation of population after 15 yrs. (Numbers and Capacity)	Tentative Budget Required	Funding Agency	Status	Timeline as per the order of Hon'ble NGT	Curent Status	Current Status on Networking/ Channelization including diversion of sewage generated from household/town ships/villages to sewer lines	Proposal for Networking/ Channelization including diversion of sewage generated from household/town ships/villages to sewer lines	Timeline required
1	2	3	4	5	6	7	8	15	16	17	18	19	20	21	22	23
5	JUMAR	KANKE DAM TO KADAL	10	Ranchi Municipal Corporation	1073427	3348023	37 MLD	1 unit of 37 MLD	209.05 Cr project cost for the Ranchi sewage scheme under Zone -1 , Tender has been floated. Date of opening of Tender is 01.10.2020	State Fund	Sewerage Scheme for Zone-1 Ranchi, under Ranchi Municipal Corporation (in which river Jumar falls) was started but due to the poor performance of the executing agency the agreement has been terminated on dated 14.10.2019. 209.05 Cr project cost for the Ranchi sewage scheme under Zone -1. Tender has been floated. Date of opening of Tender is 01.10.2020	31.03.2021	Tender for the construction of remaining work has been floated by the RMC. Date of opening of Tender is 01.10.2020	NA	Sewerage Scheme for Zone-1 Ranchi, under Ranchi Municipal Corporation (in which river Jumar falls) was started but due to the poor performance of the executing agency the agreement has been terminated on dated 14.10.2019. 209.05 Cr project cost for the Ranchi sewage scheme under Zone -1. Tender has been floated. Date of opening of Tender is 01.10.2020	24 months timeline is proposed for construction of STP and laying of sewer network under Zone-I from the date of agreement.
6	KONAR	ALONG TILAYA AND KONAR	-	No ULB falls under the identified stretch of River	-											

Action Plan for 7 Polluted River Stretches of Jharkhand under Hon'ble NGT order dated, 08.04.2019 in O.A. No. 673/2019

TABLE -3

Deatials on Municipal Drains which are dischaging into the identified river stretches

Serial No.	Name of the River	River Stretch	Approx. Length of the Stretch (Kms)	No. of Villages/ Towns/ Cities along the river (Approx. 10 Kms. from the center of the identified river stretch length)	Population (as per Census 2011)	Estimated Population after 15 yrs. (for year 2035)	Approximate Quantity of Sewage Generated (City/Town/Village wise)	Propsed Treatment Facility based on estimation of population after 15 yrs. (Numbers and Capacity)	Tentative Budget Required	Funding Agency	Status	Timeline as per the order of Hon'ble NGT	Curent Status	Current Status on Networking/ Channelization including diversion of sewage generated from household/town ships/villages to sewer lines	Proposal for Networking/ Channelization including diversion of sewage generated from household/town ships/villages to sewer lines	Timeline required
1	2	3	4	5	6	7	8	15	16	17	18	19	20	21	22	23
7	NALKARI	ALONG PATRATU	-	No ULB falls under the identified stretch of River	-											

Action Plan for 7 Polluted River Stretches of Jharkhand under Hon'ble NGT order dated, 08.04.2019 in O.A. No. 673/2019

TABLE - 4

Deatials on Municipal Solid Waste Dumped along the identified river stretches

Serial No.	Name of the River	River Stretch	Approx. Length of the Stretch (Kms)	No. of Villages/ Towns/ Cities along the river (Approx. 10 Kms. from the center of the identified river stretch length)	Population (as per Census 2011)	Estimated Population after 15 yrs.	Total Quantity of MSW Waste Generated in the town /city/village(in TPD)	Total Quantity of MSW Waste Treated (In TPD)(City/Town/Village Wise)	Quantity of MSW Treated			Type of the treatment facility Present				Gap Analysis	Details on Current Method adotped to prevent improper disposal of untreated waste prior to the completion of proposed project	Proposed Project for remaining untreated waste				Approx. Budget	Funding Agency	Current Status
									door to door collection	Segerated	Others	Recyled/ Rused/ RDF Quantity and Numbers	Composting/Biomining Quantity and Numbers	Landfilable Quantity and Numbers	Others			Number	Capacity	Technology	Other			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	26
1	GARGA	ALONGTALMUCHU	8	Chas Municipal Corporation	156888	243675	47	p	100% D2D collection at all 35 wards	91.4%	-	18.8 TPD	Material recovery facility (MRF) for segregation of waste 1 nos. Wet Waste: Windrow composting : 2 nos. Dry waste: recycled through recycler	28.2		28.2	Material recovery facility (MRF) for segregation of waste 1 nos. Wet Waste: Windrow composting : 2 nos. Dry waste: recycled through recycler	1 no waste to compost	50 MT	With intrgrated MSW solutions (Processing technology - waste to compost)	Further processing facility of the waste will be increased through concessionaire.	Capex: 21.26 Crore	PPP+State+Central + ULB Share	Concessionaire has been selected. Agreement has been done.
2	SANKH	KONGSERABASARTOBOLBA	10	No ULB falls under the identified stretch of River	-	-																		
				Ranchi Municipal Corporation	1073427	3348023	536	270	100% D2D collection at all 53 wards	100%	-	110 TPD	Material recovery facility (MRF) for segregation of waste: 9 nos. Wet Waste: Pit Compost: 40 nos. Dry waste: recycled through recycler C&D Recycle : 1 nos.	266		266	Material recovery facility (MRF) for segregation of waste: 9 nos. Wet Waste: Pit Compost: 40 nos. Dry waste: recycled through recycler C&D Recycle : 1 nos.	Biomethanation Plant is under approval.	-	Separate Collection, Transportation & Processing (Waste to Biomethanation Technology) solution	Further processing facility of the waste will be increased through PSU/CSR	Capex: 64 Crore	State+Central +ULB+PSU Share	Under approval Stage

TABLE - 4

Deatials on Municipal Solid Waste Dumped along the identified river stretches

Serial No.	Name of the River	River Stretch	Approx. Length of the Stretch (Kms)	No. of Villages/ Towns/ Cities along the river (Approx. 10 Kms. from the center of the identified river stretch length)	Population (as per Census 2011)	Estimated Population after 15 yrs.	Total Quantity of MSW Waste Generated in the town /city/village(in TPD)	Total Quantity of MSW Waste Treated (In TPD)(City/Town/Village Wise)	Quantity of MSW Treated			Type of the treatment facility Present				Gap Analysis	Details on Current Method adotped to prevent improper disposal of untreated waste prior to the completion of proposed project	Proposed Project for remaining untreated waste				Approx. Budget	Funding Agency	Current Status
									door to door collection	Segerated	Others	Recyled/ Rused/ RDF Quantity and Numbers	Composting/Biomining Quantity and Numbers	Landfilable Quantity and Numbers	Others			Number	Capacity	Technology	Other			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	26
3	SUBARNAREKHA	HATIA DAM TO JAMSHEDPUR		Adityapur Municipal Corporation	174355	326578	59.95	34	100% D2D collection at all 35 wards	100%	-	6	Material recovery facility (MRF) for segregation of waste: 1 nos Wet Waste: Pit composting - 11 nos. Dry waste: recycled through recycler	25.95		25.95	Material recovery facility (MRF) for segregation of waste: 1 nos Wet Waste: Pit composting - 11 nos. Dry waste: recycled through recycler	1 no waste to compost	300 MT	With intrgrated MSW solutions (Processing technology - waste to compost)	Further processing facility of the waste will be increased through concessionaire	Capex: 78.63 Crore In cluster (Adityapur+Jamshedpur+Mango+jugsalai+kapali)	PPP+State+Central + ULB Share	DPR under Revision
				Jamshedpur NAC	677350	1317852	214	48	100% D2D collection at all 4 zones	100%	-	6	Material recovery facility (MRF) for segregation of waste: 4 nos Wet Waste: Pit composting - 8 nos. Dry waste: recycled through recycler Biomethaneation Plant - 9 nos.	166		166	Material recovery facility (MRF) for segregation of waste: 4 nos Wet Waste: Pit composting - 8 nos. Dry waste: recycled through recycler Biomethaneation Plant - 9 nos.							
			120	Mango Municipal Corporation	223805	388730	77.81	33.1	100% D2D collection at all 3 wards	100%	-	22.5	Material recovery facility (MRF) for segregation of waste: 1 nos Wet Waste: Pit composting - 20 nos. Dry waste: recycled through recycler C&D Recycling unit -1 nos.	44.71		44.71	Material recovery facility (MRF) for segregation of waste: 1 nos Wet Waste: Pit composting - 20 nos. Dry waste: recycled through recycler C&D Recycling unit -1 nos.							

TABLE - 4

Deatials on Municipal Solid Waste Dumped along the identified river stretches

Serial No.	Name of the River	River Stretch	Approx. Length of the Stretch (Kms)	No. of Villages/ Towns/ Cities along the river (Approx. 10 Kms. from the center of the identified river stretch length)	Population (as per Census 2011)	Estimated Population after 15 yrs.	Total Quantity of MSW Waste Generated in the town /city/village(in TPD)	Total Quantity of MSW Waste Treated (In TPD)(City/Town/Village Wise)	Quantity of MSW Treated			Type of the treatment facility Present				Gap Analysis	Details on Current Method adotped to prevent improper disposal of untreated waste prior to the completion of proposed project	Proposed Project for remaining untreated waste				Approx. Budget	Funding Agency	Current Status
									door to door collection	Segerated	Others	Recyled/ Rused/ RDF Quantity and Numbers	Composting/Biomining Quantity and Numbers	Landfilable Quantity and Numbers	Others			Number	Capacity	Technology	Other			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	26
4	DAMODAR	PHUSRO ROAD BDG TO TURIO	12	Phusro Nagar Parisahd	89178	118350	41.89	17.5 (16.5+1)	100% D2D collection at all 28 wards	100%	-	0	Wet Waste: Pit composting - 2 nos.	24.39		24.39	Wet Waste: Pit composting - 2 nos.	1 no waste to compost	50 MT	With intrgrated MSW solutions (Processing technology - waste to compost)	Further processing facility of the waste will be increased through concessionaire	Capex: 13.45 Crore	PPP+State+Central+ULB Share	Concessionaire has been selected. Agreement has been done.
				Dhanbad Municipal Corporation	1162472	1484520	540	290	100% D2D collection at all 55 wards	100%		110	Material recovery facility (MRF) for segregation of waste: 55 nos Wet Waste: Pit composting - 143 nos. Dry waste: recycled through recycler C&D Recycling unit -5 nos.	250		250	Material recovery facility (MRF) for segregation of waste: 55 nos Wet Waste: Pit composting - 143 nos. Dry waste: recycled through recycler C&D Recycling unit -5 nos.	1 no waste to compost	500 MT	With intrgrated MSW solutions (Processing technology - waste to compost)	Further processing facility of the waste will be increased through concessionaire	Capex: 84 Crore	PPP+State+Central+ULB Share	Concessionaire has been selected. Agreement has been done.
				Ramgarh Nagar Parishad	123875	141886	30	24	100% D2D collection at all 32 wards	100%		0	Wet Waste: Pit composting - 32 nos. Dry waste: recycled through recycler C&D collection unit -1 nos.	6		6	Wet Waste: Pit composting - 32 nos. Dry waste: recycled through recycler C&D unit -1 nos.					Tentative Capex: 31 Crore	PPP+State+Central+ULB+ Cantonment Board Share	DPR under preparation
5	JUMAR	KANKE DAM TO KADAL	10	Ranchi Municipal Corporation	1073427	3348023	536	270	100% D2D collection at all 53 wards	100%		110 TPD	Material recovery facility (MRF) for segregation of waste: 9 nos. Wet Waste: Pit Compost: 40 nos. Dry waste: recycled through recycler C&D Recycle : 1 nos.	266		266	Material recovery facility (MRF) for segregation of waste: 9 nos. Wet Waste: Pit Compost: 40 nos. Dry waste: recycled through recycler C&D Recycle : 1 nos.	Biomethanation Plant is under approval.	-	Separate Collection, Transportation & Processing (Waste to Biomethanation Technology) solution	Further processing facility of the waste will be increased through PSU/CSR	Capex: 64 Crore	State+Central+ULB+PSU Share	Under approval Stage

TABLE - 4

Deatials on Municipal Solid Waste Dumped along the identified river stretches

Serial No.	Name of the River	River Stretch	Approx. Length of the Stretch (Kms)	No. of Villages/ Towns/ Cities along the river (Approx. 10 Kms. from the center of the identified river stretch length)	Population (as per Census 2011)	Estimated Population after 15 yrs.	Total Quantity of MSW Waste Generated in the town /city/village(in TPD)	Total Quantity of MSW Waste Treated (In TPD)(City/Town/Village Wise)	Quantity of MSW Treated			Type of the treatment facility Present				Gap Analysis	Details on Current Method adotped to prevent improper disposal of untreated waste prior to the completion of proposed project	Proposed Project for remaining untreated waste				Approx. Budget	Funding Agency	Current Status
									door to door collection	Segerated	Others	Recyled/ Rused/ RDF Quantity and Numbers	Composting/Biomining Quantity and Numbers	Landfilable Quantity and Numbers	Others			Number	Capacity	Technology	Other			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	26
6	KONAR	ALONG TILAYA AND KONAR	-	No ULB falls under the identified stretch of River	-																			
7	NALKARI	ALONG PATRATU	-	No ULB falls under the identified stretch of River	-																			

TABLE - 4

Deatials on Plastic Waste Dumped along the identified river stretches

Serial No.	Name of the River	River Stretch	Approx. Length of the Stretch (Kms)	No. of Villages/ Towns/ Cities along the river (Approx. 10 Kms. from the center of the identified river stretch length)	Population (as per Census 2011)	Estimated Population after 15 yrs.	Total Quantity of Plastic Waste Generated in the town/cily/village (in TPD)	Total Quantity of Plastic Waste Treated (In TPD)(City/Town/Village Wise)	Type of the treatment facility Present				Gap Analysis	Details on Current Method adotped to prevent improper disposal of untreated waste prior to the completion of proposed project	Proposed Project for remaining untreated waste			
									Recyled/ Rused Quantity and Numbers	RDF Quantity and Numbers	Landfilable Quantity and Numbers	Others			Number	Capacity	Technology	Other
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1	GARGA	ALONG TALMUCHU	8	Chas Municipal Corporation	156888	243675	3.46	0	3.46	0	0	Through local Scrap vendors it is send to recycler	0	All the Plastic waste is recycled through local scrap dealer	-	-	-	Further, Treatment Plant for plastic waste will be installed through concessionaire
2	SANKH	KONGSERABASARTO	10	No ULB falls under the identified stretch of River	-	-												
3	SUBARNAREKHA	HATIA DAM TO JAMSHEDPUR	120	Ranchi Municipal Corporation	1073427	3348023	70	0	70	0	0	Through local Scrap vendors it is send to recycler	0	All the Plastic waste is recycled through local scrap dealer	-	-	-	-
				Adityapur Municipal Corporation	174355	326578	5	0	4	0	1	Through local Scrap vendors it is send to recycler	1	All the Plastic waste is recycled through local scrap dealer	-	-	-	-

TABLE - 4

Deatials on Plastic Waste Dumped along the identified river stretches

Serial No.	Name of the River	River Stretch	Approx. Length of the Stretch (Kms)	No. of Villages/ Towns/ Cities along the river (Approx. 10 Kms. from the center of the identified river stretch length)	Population (as per Census 2011)	Estimated Population after 15 yrs.	Total Quantity of Plastic Waste Generated in the town/cily/village (in TPD)	Total Quantity of Plastic Waste Treated (In TPD)(City/Town/Village Wise)	Type of the treatment facility Present				Gap Analysis	Details on Current Method adotped to prevent improper disposal of untreated waste prior to the completion of proposed project	Proposed Project for remaining untreated waste			
									Recyled/ Rused Quantity and Numbers	RDF Quantity and Numbers	Landfilable Quantity and Numbers	Others			Number	Capacity	Technology	Other
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
				Jamshedpur NAC	677350	1317852	17.12	0	6	0	11.12	(Through the local Scrap vendors it is send to recycler and also used for road construction)	11.12	All the Plastic waste is recycled through local scrap dealer	-	-	-	-
				Mango Municipal Corporation	223805	388730	2	0	2	0	0	Through local Scrap vendors it is send to recycler	0	All the Plastic waste is recycled through local scrap dealer	-	-	-	-
4	DAMODAR	PHUSRO ROAD BDG TO TURIO	12	Phusro Nagar Parisahd	89178	118350	4.6	0	1.2	0	4.6	Through local Scrap vendors it is send to recycler	3.4	All the Plastic waste is recycled through local scrap dealer	-	-	-	-
				Dhanbad Municipal Corporation	1162472	1484520	43.2	0	43.2	0	0	Through local Scrap vendors it is send to recycler	0	All the Plastic waste is recycled through local scrap dealer	-	-	-	-
				Ramgarh Nagar Parishad	123875	141886	0.8	0	0.8	0	0	Through local Scrap vendors it is send to recycler	0	All the Plastic waste is recycled through local scrap dealer	-	-	-	-

TABLE - 4

Deatials on Plastic Waste Dumped along the identified river stretches

Serial No.	Name of the River	River Stretch	Approx. Length of the Stretch (Kms)	No. of Villages/ Towns/ Cities along the river (Approx. 10 Kms. from the center of the identified river stretch length)	Population (as per Census 2011)	Estimated Population after 15 yrs.	Total Quantity of Plastic Waste Generated in the town/cily/village (in TPD)	Total Quantity of Plastic Waste Treated (In TPD)(City/Town/Village Wise)	Type of the treatment facility Present				Gap Analysis	Details on Current Method adotped to prevent improper disposal of untreated waste prior to the completion of proposed project	Proposed Project for remaining untreated waste			
									Recyled/ Rused Quantity and Numbers	RDF Quantity and Numbers	Landfilable Quantity and Numbers	Others			Number	Capacity	Technology	Other
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
5	JUMAR	KANKE DAM TO KAD	10	Ranchi Municipal Corporation	1073427	3348023	70	0	70	0	0	Through local Scrap vendors it is send to recycler	0	All the Plastic waste is recycled through local scrap dealer				-
6	KONAR	ALONG TILAYA AND KONAR	-	No ULB falls under the identified stretch of River	-													
7	NALKARI	ALONG PATRATU	-	No ULB falls under the identified stretch of River	-													

TABLE - 4

Deatials on Construction & Demoliation (C&D) Waste Dumped along the identified river stretches

Serial No.	Name of the River	River Stretch	Approx. Length of the Stretch (Kms)	No. of Villages/ Towns/ Cities along the river (Approx. 10 Kms. from the center of the identified river stretch length)	Population (as per Census 2011)	Estimated Population after 15 yrs.	Total Quantity of C&DWaste Generated in the town/cily/village (in TPD)	Total Quantity of C&D Waste Treated (In TPD)(City/Town/Village Wise)	Type of the treatment facility Present			Gap Analysis	Details on Current Method adotped to prevent improper disposal of untreated waste prior to the completion of proposed project	Proposed Project for remaining untreated waste			
									Recyled/ Rused Quantity and Numbers	Landfilable Quantity	Others			Number	Capacity	Technology	Other
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	GARGA	ALONG TALMUCHU	8	Chas Municipal Corporation	156888	243675	5	-	5	0	-	0	Land filling of low lying area Construction site for Construction of PCC road	-	`	-	-
2	SANKH	KONGSERABASAR TO	10	No ULB falls under the identified stretch	-	-											
3	SUBARNAREKHA	HATIA DAM TO JAMSHEDPUR	120	Ranchi Municipal Corporation	1073427	3348023	20	-	20	0	For treatment of C&D waste, Tender was floated but due to single bidder found responsive in 1st call, tender was cancelled and	0	Land filling of low lying area Construction site for Construction of PCC road	1	50 TPD (Projected as per next 15 years)	C&D waste Recycling Plant	For treatment of C&D waste, Tender was floated but due to single bidder found responsive in 1st call, tender
				Adityapur Municipal Corporation	174355	326578	1.75		1.75	0	-		Land filling of low lying area Construction site for Construction of	-	`	-	-
				Jamshedpur NAC	677350	1317852	17.5	-	17.5	0	-		Land filling of low lying area Construction site	-	`	-	-
				Mango Municipal Corporation	223805	388730	2	-	2	0	-		Land filling of low lying area	-	`	-	-
4	DAMODAR	PHUSRO ROAD BDG TO TURIO	12	Phusro Nagar Parisahd	89178	118350	7	-	7	0	-		Land filling of low lying area	-	`	-	-
				Dhanbad Municipal Corporation	1162472	1484520	24	-	24	0	-		Land filling of low lying area Construction site	-	`	-	-
				Ramgarh Nagar Parishad	123875	141886	0.5	-	0.5	0	-		Land filling of low lying area Construction site for Construction of PCC road	-	`	-	-
5	JUMAR	KANKE DAM TO KADAL	10	Ranchi Municipal Corporation	1073427	3348023	20	-	20	0	For treatment of C&D waste, Tender was floated but due to single bidder found responsive in 1st call, tender was cancelled and retendering is under process.	0	Land filling of low lying area Construction site for Construction of PCC road	1	50 TPD (Projected as per next 15 years)	C&D waste Recycling Plant	For treatment of C&D waste, Tender was floated but due to single bidder found responsive in 1st call, tender was cancelled and retendering is under process.
6	KONAR	ALONG TILAYA AND KONAR	-														
7	NALKARI	ALONG PATRATU	-														

List of Industries present along Subarnarekha river stretch with their Name, Type/Category and Status of E.T.P. installed.

Sl. no.	Name of Industries present along the catchment basin of the defined stretches	Type/Category of Industries	Status of E.T.P. with respect to the industries present along the river stretches	Treatment Capacity of ETP
01	M/s. Heavy Engineering Corporation Ltd., Foundry Forge Plant, Dhurwa, Ranchi.	Red/ Foundry Forge Plant	E.T.P. Installed	Adequate
02	M/s. Hindalco Industries Ltd, Muri works. Po-Chhotamuri, Dist.-Ranchi.	Red/Alumina Plant without smelter	E.T.P. Installed	Adequate
03	M/s. Usha Martin Ltd., Wire rope and specialty Division, Captive Power Plant, At.-Tatisilway, Dist.-Ranchi.	Red/Wire & Wire Rope	E.T.P. Installed	Adequate
04	M/s Samridhi Rice Mill Pvt. LTD. At.-Malar, Bero, Ranchi	Orange/ Rice Mill	E.T.P. Installed	Adequate
05	M/s Hemraj Rice Products Pvt. Ltd., At.-At-Saher, Po-Nagari, Dist.-Ranchi	Orange/ Rice Mill	E.T.P. Installed	Adequate
06	M/s Sri Krishna Metcom, At. -Nagari, Dist.-Ranchi	Orange/ Rice Mill	E.T.P. Installed	Adequate
07	M/s Prateek Agro Experts (P) Ltd., Futkaltoli Simalia Ratu, Kanke Ranchi	Orange/ Rice Mill	E.T.P. Installed	Unit is not operational
08	M/s Narmada Agro Foods (P) Ltd. At.-Bandhtoli, Piska Nagari, Ranchi	Orange/ Rice Mill	E.T.P. Installed	Adequate
09	M/s Bihariji Rice Mill, At.-Tikratoli, Nagari, Ranchi.	Orange/ Rice Mill	E.T.P. Installed	Adequate
10	M/s Sri Krishna Rice Mill, At. Bandhtoli, Piska Nagari, Dist.-Ranchi	Orange/ Rice Mill	E.T.P. Installed	Adequate
11	M/s Baba rice mill, At.-Bandhtoli, Piska Nagari, Ranchi	Orange/ Rice Mill	E.T.P. Installed	Adequate
12	M/s Sharvi Rice Mill (P) Ltd., At.-Nagri, Po-Piska Nagri, Dist.-Ranchi	Orange/ Rice Mill	E.T.P. Installed	Adequate
13	M/s Satnarayan Agro Pvt. Ltd. At-Agrawal, At-Bandhtoli, Nagri, Ranchi	Orange/ Rice Mill	E.T.P. Installed	Unit is not operational

14	M/s Balajee Agrotech Industries, At-Tikratoli, Po-Piska, Nagari, Dist.-Ranchi	Orange/ Rice Mill	E.T.P. Installed	Adequate
15	M/S Chorus Agro Pvt. Ltd., At.-Tupudana Industrial Area, Dist.-Ranchi	Orange/ Rice Mill	E.T.P. Installed	Adequate
16	M/S Shree Shakambari Rice Mill Pvt. Ltd., At.-Industrial Area Tupudana, Dist.-Ranchi	Orange/ Rice Mill	E.T.P. Installed	Adequate
17	M/s Bihar State Milk Co-Operative Federation Ltd., (Ranchi Dairy) At+Mauza-Sector-2, HEC, Po-Dhurwa, Ranchi	Red/ Dairy	E.T.P. Installed	Adequate
18	M/s Hotel Raddison Blu, Kadru, Bypass Road, Ranchi	Red/ Hotel	E.T.P. Installed	Adequate
19	M/s Hotel BNR Chanakya, Railway Station Road, Ranchi	Red/ Hotel	E.T.P. Installed	Adequate
20	M/s S.M.V. Agro Products Pvt. Ltd., At.-Ara Gate, Mahilong, Angara, Ranchi	Orange/ Rice Mill	E.T.P. Installed	Adequate
21	M/s Tulsyan Rice Mill Pvt.Ltd., Tatisilway, I/A, Phase-II, Ranchi	Orange/ Rice Mill	E.T.P. Installed	Adequate
22	M/s KGVK Agro Limited (Dairy Unit), At+ Mauza- Hutup & Rukka, Dist.-Ranchi	Red/ Dairy	E.T.P. Installed	Adequate
23	M/s. Balaji food & Grains (P) Ltd. At.-Lotwa, Po- Sandi, Dist- Ranchi	Orange/ Rice Mill	E.T.P. Installed	Adequate
24	M/s Rani Sati Food Grains, Rukka,Ormanjhi, Dist-Ranchi	Orange/ Rice Mill	E.T.P. Installed	Adequate

(R.N. Kashyap)
Regional Officer
Ranchi

List of Industries present along Jumar river stretch with their Name, Type/Category and Status of E.T.P. installed.

Sl. no.	Name of Industries present along the catchment basin of the defined stretches	Type/Category of Industries	Status of E.T.P. with respect to the industries present along the river stretches	Treatment Capacity of ETP
01	M/s KGVK Agro Limited (Dairy Unit), At+ Mauza- Hutup & Rukka, Dist.-Ranchi	Red/ Dairy	E.T.P. Installed	Adequate
02	M/s. Balaji food & Grains (P) Ltd. At.- Lotwa, Po- Sandi, Dist- Ranchi	Orange/ Rice Mill	E.T.P. Installed	Adequate
03	M/s Rani Sati Food Grains, Rukka,Ormanjhi, Dist- Ranchi	Orange/ Rice Mill	E.T.P. Installed	Adequate

(R.N. Kashyap)
Regional Officer
Ranchi

List of Industries present along Jumar river stretch with their Name, Type/Category and Status of E.T.P. installed.

Sl. no.	Name of Industries present along the catchment basin of the defined stretches	Type/Category of Industries	Status of E.T.P. with respect to the industries present along the river stretches	Treatment Capacity of ETP
01	M/s KGVK Agro Limited (Dairy Unit), At+ Mauza- Hutup & Rukka, Dist.-Ranchi	Red/ Dairy	E.T.P. Installed	Adequate
02	M/s. Balaji food & Grains (P) Ltd. At.- Lotwa, Po- Sandi, Dist- Ranchi	Orange/ Rice Mill	E.T.P. Installed	Adequate
03	M/s Rani Sati Food Grains, Rukka,Ormanjhi, Dist- Ranchi	Orange/ Rice Mill	E.T.P. Installed	Adequate

(R.N. Kashyap)
Regional Officer
Ranchi

झारखण्ड राज्य प्रदूषण नियंत्रण पर्षद,

क्षेत्रीय कार्यालय–रांची–प्रयोगशाला, पो0ऑ0री0 बैंक, गटारी रोड, हजारीबाग।

Ref.....

Date.....

Details of the drain meeting in the river in R.O. Hazaribag area in the respect of writ petition(s)(Civil) no(s) 13029/1985, in the matter of M.C. Mehta Vrs. Union of India & Ors.

Sl. No.	Name of Unit & Address	River	CTO validity	Treated/Untreated
1	M/s Urimari Project, CCL At+PO- Urimari, Hazaribag	Damodar River	Till 15.02.2021	Treated through setting tank & discharge
2	M/s Birsa Project, CCL At+PO- Chirkunda, Hazaribag	Damodar River	Till 30.06.2023	Treated through setting tank & discharge
3	M/s Giridih Colliery, CCL At+PO- Giridih, Hazaribag	Damodar River	Till 31.03.2020	Treated through setting tank & discharge
4	M/s New Giddi Colliery, CCL At+PO- Giddi, Hazaribag	Damodar River	Till 31.03.2022	Treated through setting tank & discharge
5	M/s Giddi Coal Washery, CCL At+PO- Virgan, Dist-Hazaribag	Damodar River	Till 31.03.2020	Zero liquid discharge
6	M/s Rajrappa OCP, CCL At+PO- Rajrappa, Dist-Ramgarh	Damodar River	Till 30.06.2022	Treated through setting tank & discharge
7	M/s Rajrappa Washery, CCL At+PO- Rajrappa, Dist- Ramgarh	Damodar River	Till 31.03.2020	Zero liquid discharge
8	M/s Bhaskar Varanasi (p) Ltd. At Bonjatan, PO- Bharatdanga Dist. Ramgarh	Damodar River	Till 30.06.2023	CTO Issued treated effluent sent to Rajrappa pond as per land
9	M/s Kay Bimari Food Processing (p) Ltd. At- Sukrigarha PO-Ism, Ramgarh	Damodar River	Till 31.12.2020	CTO Issued. Treated effluent sent to Rajrappa pond as per land
10	M/s Kanma Open Cast Project At+PO- Kanma, Dist Ramgarh	Damodar River	Till 31.12.2022	Treated through setting tank & discharge
11	M/s Central Coal Field Ltd Sudia Washery, CCL At- Basantpur, PO-Kedla, Dist- Ramgarh	Gowai Nalah	Till 30.06.2017	Zero liquid discharge
12	M/s Argadda Colliery, CCL At+PO- Argadda, Ramgarh	Damodar River	Till 31.12.2006	Treated through setting tank & discharge
13	M/s Sirka Colliery(Sirka U/G & Sirka OC) PO CCL At+Sirka PO- Argadda, Dist Ramgarh	Damodar River	Till 31.03.2019	Treated through setting tank & discharge
14	M/s Rajrappa Colliery, CCL At- Argadda, Dist Hazaribag	Damodar River	Till 31.03.2017	Treated through setting tank & discharge
15	M/s Parnadih Open Cast Project, CCL At-Parnadih, Dist- Chatra	Damodar River	Till 31.03.2020	Treated through setting tank & discharge

Continued to page no - 2/2

16	M/s Ashoka Project, CCL. PO-Bachra, Dist- Chatra	Damodar River	Till 31.03.2020	Treated through setting tank & discharge.
17	M/s Piparwar Open Cast Project, CCL. At-Piparwar, PO Bachra, Dist- Chatra	Damodar River	Till 31.03.2020	Treated through setting tank & discharge.
18	M/s CHP/CPP, CCL., At. Piparwar, PO-Bachra, Dist- Chatra	Damodar River	Till 31.12.2007	Zero liquid discharge
19	M/s Pali Hills Breweries(p) Ltd., At- Industrial Area, PO-Patratu, Ramgarh	Nalkari River	Till 31.03.2019	ETP Installed. Treated effluent goes outside the premises
20	M/s HR Food Processing (p) Ltd., At- Industrial Area, PO Patratu, Ramgarh	Nalkari River	Till 31.03.2022	ETP Installed. Treated effluent goes outside the premises.
21	M/s Sounda D Colliery, CCL. At-Sounda, Dist-Ramgarh **(Not operative)**	Nalkari River	Till 31.12.2008	**Not operative**
22	M/s Sayal D Colliery, CCL At- PO- Sayal, Dist-Ramgarh **(Not operative)**	Damodar River	Till 31.03.2004	**Not operative**
23	M/s Central Sounda Colliery, CCL. At-Sounda,PO- Sayal, Dist- Ramgarh **(Not operative)**	Nalkari River	Till 31.12.2004	**Not operative**
24	M/s Blackunda Colliery, CCL., At. PO- Pursunda, Ramgarh	Nalkari River	Till 31.12.2019	Treated through setting tanks & discharge

Chairman

(A.K. Yadav)
Regional Officer

List of Industries present along GARGA river stretch with their Name, Type/Category and Status of E.T.P. installed.

Sl. no.	Name of Industries present along the catchment basin of the defined stretches	Type/Category of Industries	Status of E.T.P. with respect to the industries present along the river stretches	Treatment Capacity of ETP
1	M/s. Bokaro Steel Ltd., Bokaro	Red/Integrated Steel	E.T.P. Installed	Adequate
2	M/s. Bokaro Dairy, BIHAR STATE MILK COOPERATIVE FEDERATION LTD,At-SECTOR12F BOKARO STEEL CITY, PO-Chas, Dist- Bokaro	Red/ Dairy Product	E.T.P. Installed (Not functioning)	Adequate
3	M/s. Bokaro Power Supply Co. Ltd.At- B.S. City. Bokaro	Red/Thermal Power Plant	E.T.P. Installed	Adequate

JHARKHAND STATE POLLUTION CONTROL BOARD

REGIONAL OFFICE-CUM-LABORATORY, MB/15 NEW HOUSING COLONY
ADITYAPUR, JAMSHEDPUR.
Web Site- jspcb.org/ Phone– 0657-2383241/ Fax- 0657-2383905

Ref No:- ..2013 *Dated-* ..10/12/19

From,

Regional Officer
Jamshedpur.

To,

Sri Dinesh Prasad Singh
Environmental Engineer,
Jharkhand State Pollution Control Board,
Ranchi

Sub: - Regarding information on discharge of effluent & Sewage into the river of Jharkhand.

Sir,

With reference to the aforesaid subject vide H.O. Letter No.- D-1694, dt- 5.12.2019 please find enclosed herewith the required information as follows for information & necessary action.

SL	Name of River	List of Industries situated at the bank of river	List of industry which discharge their treated/ Untreated effluent directly or indirectly into the river.
1.	Kharkai	a) M/s Tata Pigment Ltd b) M/s Tata Steel Ltd.	a) M/s Tata Pigment Ltd Jamshedpur Industrial Effluent generated from industries situated in Adityapur Industrial Area sent to CETP.
2.	Sawarnrekha	a) M/s Tata Steel Ltd, Jamshedpur. b) M/s Timken India Ltd, JSR c) M/s Tinplate Co. of India Ltd. Jamshedpur. d) M/s Tata Reyerson Ltd, JSR e) M/s Tata Motors Ltd, JSR f) M/s Tata Cummins Ltd, JSR g) M/s IICL Ghatsila, JSR h) M/s Tata BlueScope Ltd. i) M/s UCIL	a) M/s Tata Steel Ltd. b) Tin Plate Co. of India Ltd. c) M/s IICL Ghatsila d) M/s Tata Motors Ltd. e) M/s Tata Cummins Ltd f) M/s Tata Blue Scope Ltd g) M/s UCIL

Yours faithfully

10/12/2019

(Suresh Paswan)
Regional Officer.

87 Eng Dkt 9

STN Code	Sampling Date	Sampling Time	Name Of Monitoring Location	Name Of WaterBody	Sub Basin	District	Temperature ©	Dissolved O2 (mg/l)	pH	BOD (mg/l)	Turbidity (mg/l)	Total Alkalinity (mg/l)	Chlorides (mg/l)	COD (mg/l)	Total Hardness (mg/l)	Calcium (mg/l)	Magnesium (mg/l)	Sulphate (mg/l)	Total Dissolved Solids (mg/l)	Total Fixed Solids (mg/l)	Total Suspended Solids (mg/l)
2382	10/08/20	11:30 AM	DAMODAR AT PHUSRO ROAD BRIDGE	DAMODAR	DAMODAR	BOKARO	34	7.6	7.5	1.6	Not Analysed	98	48	92	70	13.6	8.78	Not Analysed	536	Not Analysed	102
3557	10/08/20	12:05 PM	DAMODAR RIVER NEAR BERMO RAILWAY STATION, BOKARO	DAMODAR	DAMODAR	BOKARO	35.5	7.7	7.5	1.4	Not Analysed	112	54	88	66	12	8.74	Not Analysed	534	Not Analysed	88
3555	10/08/20	1:20 AM	DAMODAR RIVER NEAR ZARANGDIH BRIDGE, BOKARO	DAMODAR	DAMODAR	BOKARO	36	7.9	7.6	1.3	Not Analysed	100	54	80	86	13.6	11.95	Not Analysed	532	Not Analysed	84
3556	10/08/20	2:00 AM	CONFLUENCE OF BOKARO & DAMODAR RIVER NEAR ZARANGDIH BRIDGE, BOKARO	DAMODAR	DAMODAR	BOKARO	35.5	7.8	7.5	1.8	Not Analysed	112	64	96	90	15.2	12.68	Not Analysed	514	Not Analysed	112
3554	10/08/20	2:50 AM	KONAR RIVER NEAR SWANG COAL WASHERY, BOKARO	KONAR	DAMODAR	BOKARO	35	7.6	7.5	1.5	Not Analysed	122	66	100	88	14.4	12.68	Not Analysed	544	Not Analysed	104
2390	10/08/20	5:15 AM	KONAR AT TENUGHAT DAM	KONAR	DAMODAR	BOKARO	25	7.4	7.6	1.1	Not Analysed	94	38	76	70	14.4	8.29	Not Analysed	454	Not Analysed	74
23	18/08/20	2:30 AM	SUBARNAREKHA AT RANCHI, (TATISILWAI)	SUBARNAREKHA	SUBARNAREKHA	RANCHI	21	6.8	7.5	2.6	Not Analysed	86	16	44	110	28.8	9.27	Not Analysed	388	430	42
2385	18/08/20	12:40 PM	SUBARNAREKHA AT NAMKUM ROAD BRIDGE	SUBARNAREKHA	SUBARNAREKHA	RANCHI	22	6.4	6.5	2.4	Not Analysed	82	16	32	122	33.6	9.27	Not Analysed	Not Analysed	398	472
2386	19/08/20	11:30 AM	SUBARNAREKHA AT MURI ROAD BRIDGE	SUBARNAREKHA	SUBARNAREKHA	RANCHI	22	7.8	7.5	2.4	Not Analysed	86	22	28	124	36.8	7.8	Not Analysed	388	428	40
2395	18/08/20	8:40 AM	SUBARNAREKHA AT HATIA DAM	SUBARNAREKHA	SUBARNAREKHA	RANCHI	18	8.5	7.3	1.1	Not Analysed	84	18	24	118	32.4	9.03	Not Analysed	404	456	52
2396	18/08/20	10:35 AM	JUMAR AT KANKE DAM	JUMAR	DAMODAR	RANCHI	20	6.9	7.5	2.1	Not Analysed	74	16	28	122	33.6	9.27	Not Analysed	384	424	40

2397	18/08/20	4:30 AM	SUBARNAREKHA AT GATALSUD DAM	SUBARNAREKHA	SUBARNAREKHA	RANCHI	20	8.4	7.4	2	Not Analysed	82	22	32	120	30.4	10.74	Not Analysed	334	384	50
48	29/08/20	10:15 AM	SUBARNAREKHA AT CHANDIL BRIDGE	SUBARNAREKHA	SUBARNAREKHA	EAST SINGHBHUM	25.5	7.8	7.4	0.7	5	16	12	4	18	4.8	1.46	4.64	111	Not Analysed	18
4744	29/08/20	7:30 AM	ON SWARNREKHA BEFORE MEETING KHARKAI RIVER	SWARNREKHA	SUBARNAREKHA	EAST SINGHBHUM	24	7.5	7.4	1	5	18	14	4	20	4.8	1.95	6.3	112	Not Analysed	24
4746	29/08/20	7:45 AM	ON SWARNREKHA RIVER AFTER CONFLUENCE OF KHARKAI RIVER	SWARNREKHA	SUBARNAREKHA	EAST SINGHBHUM	24	6.8	7.4	2.3	7	28	18	8	38	9.6	3.41	8.63	114	Not Analysed	34
49	29/08/20	8:30 AM	SUBARNAREKHA AT D/S JAMSHEDPUR, (TATA NAGAR)	SUBARNAREKHA	SUBARNAREKHA	EAST SINGHBHUM	24.5	5.8	7.6	4	17	52	42	16	76	18.4	7.32	15.05	143	Not Analysed	76
4743	29/08/20	1:20 AM	SWARNREKHA U/S HCL GHATSHILA, E.S	SWARNREKHA	SUBARNAREKHA	EAST SINGHBHUM	28.2	7.2	7.4	1.1	6	20	14	4	30	7.2	2.92	5.64	110	Not Analysed	24
24	29/08/20	3:40 AM	SUBARNAREKHA AT JAMSHEDPUR	SUBARNAREKHA	SUBARNAREKHA	EAST SINGHBHUM	27.3	6	7.4	3.2	13	38	32	12	56	13.6	5.36	11.73	128	Not Analysed	64
4748	29/08/20	5:30 AM	SWARNKEKHA RIVER AT BAHARAGORA ROAD BRIDGE, P.O-BAHARAGORA, E.S	SWARNREKHA	SUBARNAREKHA	EAST SINGHBHUM	26.2	7	7.4	1.2	6	28	18	8	36	8.8	3.41	5.86	116	Not Analysed	36
2399	29/08/20	9:45 AM	SUBARNAREKHA AT CHANDIL DAM	SUBARNAREKHA	SUBARNAREKHA	SERAIKELA KHARSAWAN	25	7.6	7.5	0.8	5	14	10	4	16	4	1.46	3.98	107	Not Analysed	19
2387	29/08/20	1:40 AM	SUBAREKHA AT GHATISLA ROAD BRIDGE	SUBARNAREKHA	SUBARNAREKHA	RANCHI	28	7.3	7.4	1	6	20	12	4	28	7.2	2.44	5.42	106	Not Analysed	24

4749	13/08/20	2:00 AM	ON SWARNREKHA RIVER , NEAR RING ROAD BRIDGE SEMBO, NAGRI, RANCHI	SWARNREKHA	SUBARNAREKHA	RANCHI	23	8	7.5	2.8	Not Analysed	80	16	44	110	28.8	9.27	Not Analysed	424	506	82
4750	13/08/20	11:00 AM	ON SWARNREKHA RIVER NEAR INTAKE WELL HATIA RAILWAY	SWARNREKHA	SUBARNAREKHA	RANCHI	23	7.8	7.4	2.2	Not Analysed	84	18	40	112	24.8	12.2	Not Analysed	30.2	362	60
4752	13/08/20	10:05 AM	SWARNREKHA RIVER, NEAR OBERIA ROAD BRIDGE, HATIA RANCH	SWARNREKHA	SUBARNAREKHA	RANCHI	22	6	6.6	2.8	Not Analysed	88	24	44	124	36.8	7.8	Not Analysed	318	370	52
4084	18/08/20	8:00 AM	SURBARNREKHA RIVER AT HATIA ROAD BRIDGE, RANCHI	DAMODAR	DAMODAR	RANCHI	17	5.8	6.5	2.5	Not Analysed	72	22	48	116	32.4	9.03	Not Analysed	342	382	40
4085	18/08/20	3:20 AM	JUMAR RIVER AT BIT MESRA, RANCHI	DAMODAR	DAMODAR	RANCHI	20	5.6	6.6	2.6	Not Analysed	Not Analysed	Not Analysed	44	120	30.4	10.74	Not Analysed	400	452	52
2391	08/08/20	1:55 AM	DAMODAR AT PANCHET DAM	DAMODAR	DAMODAR	DHANBAD	36	7.5	7.7	1.1	Not Analysed	102	48	76	82	14.4	11.22	Not Analysed	538	Not Analysed	90
4086	19/08/20	12:40 PM	SWARNREKHA RIVER U/S HINDALCO IND LTD, MURLI WORKS, CHHOTAMURI, RANCHI	DAMODAR	DAMODAR	RANCHI	23	8.4	7.4	2.2	Not Analysed	70	24	28	122	33.6	9.27	Not Analysed	328	378	50
2384	08/08/20	1:30 AM	DAMODAR AT DOMGARH WATER WORKS D/S SINDRI	DAMODAR	DAMODAR	DHANBAD	32	7.6	7.4	1.3	Not Analysed	106	48	80	92	15.2	13.17	Not Analysed	530	Not Analysed	88
2383	08/08/20	3:00 AM	DAMODAR U/S JAMADOBA WATER WORKS	DAMODAR	DAMODAR	DHANBAD	30	7.5	7.6	1.4	Not Analysed	106	46	84	80	12.6	11.83	Not Analysed	530	Not Analysed	94

4000	08/08/20	5:05 AM	GARGA RIVER NEAR TELMUCHO BRIDGE	GARGA	DAMODAR	DHANBAD	24	6.8	6.7	4.6	Not Analysed	136	86	92	120	20.8	16.59	Not Analysed	526	Not Analysed	98
3553	08/08/20	5:35 AM	DAMODAR RIVER NEAR TELMUCHO BRIDGE	DAMODAR	DAMODAR	DHANBAD	23	7.5	7.4	1.7	Not Analysed	116	52	88	118	18.4	17.56	Not Analysed	536	Not Analysed	104

Table-LIST OF FLUORIDE AFFECTED BLOCKS IN JHARKHAND STATE as on 28.11.2013

Sl. No.	Name of the District	Name of the Block
1	Bokaro	Chas, Chandan Kiyari, Petarwar
2	Dhanbad	Jharia, Baliapur
3	Garhwa	Garhwa, Nagar Utari, Ranka, Rumkanda, Chinia, Meral, Dandai, Kandi, Manjhiyawan, Bhandariya, Bhawanathpur, Ghurki, Rmana
4	Giridih	Giridih, Tsiri
5	Godda	Godda, Boarijor, Pathargama, Mahagama, Poreyahat
6	Gumla	Chainpur, Gumla, Sisai, Ghagra, Bishunpur, Dumri
7	Koderma	Koderma, Satgawa, Chandwara, Jainagar, Markacho
8	Pakur	Pakuria, Amarpara, Littipara
9	Palamu	Bishrampur, Chainpur, Satbarwa, Chatrapur, Manatu, Haidernagar, Lesliganj, Panki, Patan, Pandu, Hariharganj, Daltonganj
10	Ranchi	Ormanji, Silli, Namkum
11	Sahebganj	Sahebganj, Barhait, Borio, Rajmahal
12	Khunti	Murhu, Karra,

LIST OF ARSENIC AFFECTED BLOCKS IN JHARKHAND

1.SAHIBGANJ
2.RAJMAHAL
3, UDHWA

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List of Blocks *other than 'Safe'* and Present Status of Blocks Categorised in 2013

District	Block	2017		2013	
		SOD %	Category	SOD %	Category
Bokaro	Bermo	160.59 %	Over Exploited	156.3 %	Over Exploited
	Chandrapura	74.70 %	Semi-Critical	71.39 %	Semi-Critical
	Chas	82.62 %	Semi-Critical	71.84 %	Semi-Critical
Dhanbad	Baghmara	91.10 %	Critical	91.74 %	Critical
	Baliapur	83.92 %	Semi-Critical	78.24 %	Semi-Critical
	Dhanbad	105.56 %	Over Exploited	107.5 %	Over Exploited
	Jharia	123.41 %	Over Exploited	127 %	Over Exploited
	Topchanchi	99.50 %	Critical	98.45 %	Critical
East Singbhum	Golmuri cum Jugsalai	79.52 %	Semi-Critical	147.42 %	Over Exploited
Ramgarh	Mandu	84.12 %	Semi-Critical	76.51 %	Semi-Critical
	Patratu	84.14 %	Semi-Critical	74.96 %	Semi-Critical
	Ramgarh	72.76 %	Semi-Critical	73.61 %	Semi-Critical
Ranchi	Kanke	71.48 %	Semi-Critical	79.53 %	Semi-Critical
	Khelari	85.98 %	Semi-Critical	77.79 %	Semi-Critical
	Silli	78.01 %	Semi-Critical	46.25 %	Safe
	Ormanjhi	65.12 %	Safe	72.92 %	Semi-Critical
	Ratu	58.68 %	Safe	70.8 %	Semi-Critical

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Comparison of the Dynamic GW Resource Estimates 2009 vs. 2011 vs. 2013 vs. 2017

Description	2009	2011	2013	2017	Change w.r.t 2013
Annual ground water recharge	5.96	6.31	6.56	6.21	-0.35
Total Natural Discharges	0.55	0.55	0.57	0.52	-0.05
Annual Extractable Ground Water Resource	5.41	5.76	5.99	5.69	-0.30
Current Annual gross GW extraction for 'Irrigation'	1.17	1.32	0.63	0.80	0.17
Current Annual gross GW extraction for 'Domestic Use'	0.44	0.52	0.50	0.56	0.06
Current Annual gross GW extraction for 'Industrial Uses'	-	-	0.22	0.22	0.00
Stage of Ground Water Extraction (%)	30 %	32.3 %	22.42 %	27.73 %	5.17 %

(in BCM)

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झारखण्ड सरकार

जल संसाधन विभाग

प्रधान सचिव, वन पर्यावरण एवं जलवायु परिवर्तन विभाग झारखण्ड की अध्यक्षता में दिनांक 29.09.2020 को Hon'ble NGT द्वारा OA 673/2018 में पारित आदेश के अनुपालन के सम्बन्ध में बैठक हेतु प्रतिवेदन

दिनांक 29-09-2020

National Mission for Clean Ganga

Format for Submission of Monthly Progress Report by States/UTs

(Hon'ble NGT in the matter of OA No. 673/2018 dated 06.12.2019)

Sl.No.	Activity to be monitored	Timeline	Submission of Progress by State/UT-Compliance Status
1	Ensure 100% treatment of sewage at least in-situ remediation		
	commencement of setting up of STPs and connecting all the drains and other sources of generation of sewage to the STPs must be ensured		
2	Timeline for completing all steps of action plans including completion of setting up STPs and their commissioning		
5	Chief Secretaries may set up appropriate monitoring mechanism at State level • Specifying accountability of nodal authorities not below the Secretary level • Chief Secretaries may have an accountable person attached in their office for this purpose.		
	• Monitoring at State level must take place		
6	Progress report may be furnished by the States/UTs to • Secretary, Ministry of Jal Shakti • Member Secretary, CPCB		
6.1	Progress Report may be comprised of details along with completion timelines on; (i) Identification of polluting		

		sources including drains contributing to river pollution and action as per NGT order on insitu treatment		
	(ii)	Status of STPs, I&D and sewerage networks Details of Existing Infrastructure, Gap Analysis, Proposed along with completion timeline		
	(iii)	Status of CETPs Details of Existing CETP and ETP Infrastructure, Gap Analysis, Proposed along with completion timeline, No. of industries and complying status		
	(iv)	Status of Solid Waste Management & Details of Processing Facilities Details of Existing Infrastructure, Gap Analysis, Proposed along with completion timeline		
	(v)	Latest water quality of polluted river, its tributaries, drains with flow details and ground water quality in the catchment of polluted river;		
	(vi)	Preventing dumping of waste and scientific waste management including bio-medical wastes, plastic wastes and decentralizing waste processing, including		

	Waste generated from hotels, ashrams, etc. (vii) Ground Water Regulation		Agreement with consultant PKS Infra Engineer Pvt. Ltd,Mahalaxmi square, Second Floor, sector-12, Vasundhara, Ghaziabad-201012, India executed vide agreement No.-04 F_2/2019-20 dated 24.10.2019 for preparation of DPR regarding Geophysical survey for Ground Water recharging/Rain Water harvesting in seven polluted river stretches of Jharkhand. Inception report has been submitted by the consultant and same has been approved by the Department. Ground Water regulation shall be effected on the basis of final Action Plan to submitted by consultant. Date of submission of Action Plan was 30.04.2020 but due to covid-19, it is likely to be further delayed.
	(viii) Good Irrigation practices		In some of the Irrigation projects under WRD like Ajay irrigation scheme, Subernarekha left Main Canal, Galudih Right Main Canal &Kanchi reservoir scheme CADWM (Command area Development & Water Management) &OFD (On Form Development) activities are to be taken up. In Majurakshi Irrigation scheme, Dumka, CADWM activity has already been carried out. In some of the irrigation schemes like Tilaya irrigation scheme, Kanhar&Subernarekha the UGPL (Underground pipe line) work is being planned to be executed as per CWC (Central Water Commission) guidelines. It will help in achieving the objectives of per drop more crop started under PMKSY (Pradhan MantriKrishiSinchayeeYojna)
	(ix) Protection and Management of Flood Plain Zones (FPZ),		Apparently no area under seven river stretches have issues related with flood . However, a consultant has been roped in to examine the things in details. Agreement with consultant PKS Infra Engineer Pvt. Ltd,Mahalaxmi square, Second Floor, sector-12, Vasundhara, Ghaziabad-201012, Indiaexecuted vide

			agreement No.-03 F_2/2019-20 dated 24.10.2019. Inception report has been submitted by the consultant and same has been approved by the Department. Dated of submission of Action Plan was 30.06.2020 but due to covid-19 submission of Action Plan is likely to be delayed by 03-04 Month.
	(x) Rain Water Harvesting		144 no. rain water harvesting structures have sanctioned for Rs. 5.89 crore which is under progress and expected to be completed by june,2021. Agreement with consultant PKS Infra Engineer Pvt. Ltd, Mahalaxmi square, Second Floor, sector-12, Vasundhara, Ghaziabad-201012, India executed vide agreement No.-04 F_2/2019-20 dated 24.10.2019 for preparation of DPR regarding Geophysical survey for Ground Water recharging/Rain Water harvesting in seven polluted river stretches of Jharkhand as mentioned in on no.-673/2018 of Hon'ble NGT, New Delhi. Inception report has been submitted by the consultant and same has been approved by the Department. Date of submission of Action Plan was 30.04.2020 but due to covid-19 it is likely to be submitted by 31.12.2020
	(xi) Maintaining minimum environmental flow of river		A study in this regard is to be done by the consultant PKS Infra under agreement no.-03F2/19-20. And as per action plan suggested in the DPR follow up action will be taken up in the structures constructed on seven most polluted stretches. It is be noted that mandatorily minimum 10% of Non-monsoon flow is to be maintained as e-flow in the river D/S of structures like Dam & Barrage during Non-monsoon period. Consultant had carried out eflow studies in one of the seven different river stretches.That is D/S of Kanke Dam uptoKadal Bridge & has found requirement during fair weather to be 1.6 Cumecs for rest 06 stretches studies are being done by the consultant.

	(xii) Plantation on both sides of the river		Not concerned with WRD
	(xiii) Setting up biodiversity parks on flood plains by removing encroachment		Not concerned with WRD

E-flow assessment along 07 Polluted River Stretches in Jharkhand

SL No	River Name	River Stretch	BOD Range/Max value (md/L)	Priority	Eflow Assessment
1	Garga	Along Talmuchu	3.7	IV	Eflow assessment report to be submitted by consultant by **31.10.2020** as assused by consultant vide letter no 181 dt. 24.09.2020
2	Sankh	Kongserabasar to Bolba	8.4	IV	Eflow assessment report to be submitted by consultant by **31.10.2020** as assused by consultant vide letter no 181 dt. 24.09.2020
3	Subernrekha	Hatia Dam to Jamshedpur	3.4-10	IV	Eflow assessment report to be submitted by consultant by **31.10.2020** as assused by consultant vide letter no 181 dt. 24.09.2020
4	Damodar	Phusro Road Bdg to Turio	3.9	V	Eflow assessment report to be submitted by consultant by **31.10.2020** as assused by consultant vide letter no 181 dt. 24.09.2020
5	Jumar	Kanke Dam to Kadal	3.3	V	**1.6 cumecs required e-flow has been assessed by the consultant, An undersluice does already exist in the Kanke dam. It has been reported by consultant that 0.5 to 1.0 cumec of flow remains in the stretch during fair weather. Some more of it is expected to be in the reach through the discharge to be released by upcoming STP from right side of the bank. Furter shortfall may be met by the existing undersluice.**
6	Konar	Along Tilaya and Konar	3.4-3.6	V	Eflow assessment report to be submitted by consultant by **31.10.2020** as assused by consultant vide letter no 181 dt. 24.09.2020
7	Nalkari	Along Patratu	3.8	V	Eflow assessment report to be submitted by consultant by **15.10.2020** as assused by consultant vide letter no 181 dt. 24.09.2020

PKS Infra Engineers
pinnacle of excellence

PKS/Jharkhand/FPZ/2020-21/181

Date: 24.09.2020

To,
The Chief Engineer
Design, Master Planning & Hydrology,
Water Resources Department,
Jal Bhawan, Room No. 203,
Doranda, Ranchi – 834002

Ref: Agreement No. 3F2 of 2019-20 dated 24.10.2019; letter No. 449 dated 04.09.2020

Sub: Schedule for Submission of Draft Action Plan and E-flow requirements for all the river stretches.

Dear Sir,
This has reference to the above cited contract agreement regarding Formulation Of Action Plan Related To The Protection And Management Of Flood Plain Zone And Assessment And Regulation Of Environmental Flow In The Selected Stretches Of Seven Rivers In The State Of Jharkhand and your letter dated 04.09.2020.

The pointwise reply to the issues raised about draft action plan of Jumar River reach has already been submitted by us vide our letter no. PKS/FPZ/2020-21/167 dated 10.09.2020. However, Dr. Subash Prasad Rai (Project In charge) shall visit Kanke Dam for further detailing of the work and to get a complete information regarding the operation and regulation of Dam and it's under sluice. A schedule for his visit shall be shared to you shortly.

In addition, it is also to be stated that, we are working on draft action plan of Nalkari river reach and is expected to be submitted to you by 15.10.2020 also, estimation of e-flow in the remaining five reaches of Garga, Konar, Damodar, Sankh and Subernrekha River is in process and shall be submitted by 31.10.2020.

Meanwhile, it is requested to kindly review and approve the draft action plan of Jumar river so that the required reports and action plans of remaining river stretches be prepared in the same pattern. In addition, we would like to express deep regret for the delay cause amidst Covid-19 and monsoon season and we shall try our best to compensate the precious time lost.

Thanks & Regards,

For M/s PKS Infra Engineers Pvt. Ltd.

PKS Infra Engineers Pvt. Ltd. Vasundhara Ghaziabad

Er. P. K. Goel
(Managing Director)

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785
15/9/2020

PKS / FPZ/2020-21/167 10.09.2020

To,
The Chief Engineer
Design, Master Planning & Hydrology
Water Resources Department
Jal Bhawan, Room No – 203
Doranda, Ranchi – 834002

Subject : Draft Action Plan Jumar River
Reference: Your Letter No- CE/DPH/79 Dt. 04.09.2020

Dear Sir,

With reference to your above letter, our submissions are as following:

1. As per section 6.4.3 of the report, we have again visited Kanka Dam and found that a pipe under sluice is existing in the dam body which can be used to release water for the E-flow. However, in case there is some difficulty in its operation or it is found insufficient the requirement can be easily met by providing pumps on the top of the body and transferring water from U/s of the dam to D/s as per requirement.

   If the water level is above the crest level of the spillway then required quantity of water can be simply released from the spillway itself.

   Further, our inspection of the river reach from Kanka dam to Kadal bridge reveals that about 0.50 to 1.00 cumecs water always remains in the river even during fair weather. The total water demand for E-flow is computed as 1.60 cumecs only. Some of it is likely to be met by upcoming STPs in the reach on the right side of the river being proposed by urban bodies.

   Under these circumstances no structural changes or modifications are proposed in the Kanka Dam.

PKS Infra Engineers Pvt. Ltd.
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