Revised Action Plan for Rejuvenation of Pilakhar River Stretches

Priority –IV

1. INTRODUCTION

River Pilakhar receives water from various springs fed rivers of Bazpur area. Various small rivers Ghoganadi, Gadarinadi and Levdanadi flow through upper reaches Bazpur area and flows through agriculture fields, and joins near MilakKhanam, Uttar Pradesh. Further the river passing through agriculture fields, river Pilakhar cross the bridge of Bilaspur-Rampur highway near Bhot Thana, which is about 45 Km from Rudrapur towards Rampur (Uttar Pradesh). It is expected that wastewater from industries situated in the catchment of river Pilakhar may affect water quality.

Bazpur is a major urban settlement in the upper catchment of river Pilakhar. GhogaNadi, a tributary of Pilakhar receives major drainage of the town.

2. WATER QUALITY GOALS:

The contributing rivers are major sources of irrigation in the catchment; however, maintaining water quality for bathing class is essential in term of minimizing pollution load. Ghoganala receives industrial wastewater from pulp and paper industry as well as sugar industry. Despite of appropriate effluent treatment plants, there is possibility of discharge of untreated or partially treated water in to recipient water bodies. Therefore, it is essential to maintain wastewater discharge norms as prescribed under the Environment (Protection) Rules, 1986 as amended.

Water Quality Monitoring of River Pilakhar:

Water Quality monitoring of river Pilakhar is being carried out by theUttarakhand Environment Protection and Pollution Control Board. Data is given bellow:

Water quality characteristics of river Pilakhar:

River Pilakahr (2018)

Month	pH	BOD (mg/L)	DO (mg/L)
Jan-18	7.6	3.2	6.8
Feb-18	7.7	4.8	5.8
Mar-18	7.35	14	3.6
Apr-18	7.54	16	3
May-18	7.4	10	4.2
Jun-18	7.2	8	4.8
Jul-18	7.3	10	5.2
Aug-18	7.5	3.2	7.2
Sep-18	7.4	6.2	6.8
Oct-18	7.5	8	5.2
Nov-18	7.8	8	6.8
Dec-18	7.4	10	6.2

River Pilakahr (2019)

Month	pH	BOD (mg/L)	DO (mg/L)
Jan-19	7.6	8	6.8
Feb-19	7.3	8	6.6
Mar-19	7.7	10	6
Apr-19	7.5	7.2	5.6
May-19	7.3	7.4	5.8
Jun-19	7.5	6	4.8
Jul-19	7.3	8	5.6
Aug-19	7.6	6	4.4
Sep-19	7.5	4	4.2
Oct-19	7.9	3.6	4.8
Nov-19	7.4	6	4.6
Dec-19	7.6	8	5.4

River Pilakahr at Upstream (2020)

Month 2020	pH	BOD (mg/L)	DO (mg/L)	Total Coliforms MPN/100ml
August	7.73	4.9	6.6	300

River Pilakhar at Downstream (2020)

Month 2020	pH	BOD (mg/L)	DO (mg/L)	Total Coliforms MPN/100ml
August	8.2	5.1	6.5	500

The Google map of the Bazpur town and GhogaNala is annexed at Annexure – 01

Basis of Proposed Action Plan for rejuvenation of river Pilakhar:

The upper catchment of river Pilakhar consist various industrial activities including pulp and paper, sugar industries. Therefore, compliance of discharge norms among those industries shall be crucial in order to keep river water quality within prescribed norms. Further, Ghoganala receives municipal wastewater from Bazpur town, therefore, interception, diversion and treatment of this nala is essential to maintain designated water quality. Water quality monitoring will be carried out at upstream and downstream of Bazpur town. Further, present monitoring location falls within territory of Uttar Pradesh; therefore said monitoring station will be shifted to the downstream location of Bazpur town.

3. IDENTIFICATION OF SOURCE OF POLLUTION:

The proposed action plan for rejuvenation of river Pilakhar consisting following components:

3.1 Source Control:

Source control includes industrial pollution control and treatment and disposal of domestic sewage as detailed below:

(a) Industrial Pollution control:

i. Identification of pollution potential industries.

ii. Sector specific categorization of industries.
iii. Assessment of Water consumption and wastewater discharge and gap in treatment of industrial effluent.
iv. Provision of wastewater treatment system.
v. Regulatory regime including "Charter for Prevention and Control of Pollution on Pulp and Paper Industries- 2015".

(b) Sewage Management:

i. Estimation of quantity of sewage generated and requirement of treatment capacity.
ii. Gap analysis in terms of sewage generation, existing installed treatment capacity and required treatment capacity.
iii. Identification of municipal drains & their discharge in the catchment of river Pilakhar.
iv. Interception and diversion of municipal drains to STP.
v. Treatment and disposal of septage and controlling open defecation.

(c) Solid Waste Management:

i. Implementation of Door-to-Door collection.
ii. Source segregationas biodegradable and non-biodegradable wastes.
iii. Identification of suitable site for setting up common waste processing and secure landfill facility.
iv. Transportation, disposal and treatment facilities of municipal solid wastes generated from town in accordance of provisions of the Solid Waste Management Rules, 2016.
v. Restriction illegal disposal of solid waste along the river bank and flood plain zones.
vi. Prohibition on burning of solid wastes.
vii. Implementation of Construction and Demolition Wastes Management Rules.

The drainage map of river Pilakhar is annexed at Annexure – 02

3.1 Ground Water Quality:

i. Periodic groundwater quality assessment at strategic locations.

3.3 Flood Plain Zone.

i. Flood plain zoning.

3.4 Ecological/Environmental Flow (E-Flow)

i. Maintaining E-Flow.

4. RIVER REJUVENATION PLAN:

Following are the action plan for rejuvenation of river Pilakhar as detailed below:

4.1 Industrial Effluent Management:

The UEPPCB is vigilant on operation of effluent treatment plants particularly in grossly polluting industries (GPIs) and other red categories of water polluting industries. There are 02 GPIs operating in the catchment of river Pilakhar, however 01-GPI is presently not in operation. Details of GPIs are given as below:

SN	Industry Name	Water Consumption (KLD)	Wastewater Generation (KLD)	Compliance Status
1.	Bazpur Co-operative Sugar Factory Ltd., (Sugar Unit), Bazpur US Nagar	1950	1350	Complying
2.	Rajlakshmi Paper & Board Ltd., Tharangunj, Bazpur	755	504	Complying
3.	Bazpur Co-operative Sugar Factory Ltd., (Distillery Unit), Bazpur US Nagar	310	285	Unit closed since long.

Category wise Number of Industries Operating he areas as follows. All the unit have valid CCA and complying the norms.

S.N.	Number of Unit			Total	Compliance status
	Red	Orange	Green		
1	06	65	17	88	All the unit have their own ETP.

4.2 Industrial hazardous waste management:

Recyclable hazardous wastes, mainly used oil and contaminated barrels are being recycled through registered recyclers, while landfillable waste is being disposed thorough M/S Bharat Oil and Waste Management Pvt. Ltd. located at Laksar, Distt. Haridwar with an installed capacity of 667 MT/month landfill.and 1000 MT/month incineration capacity. Incinerable hazardous waste is either disposed through common incinerator of 1000 MT/Month capacity at TSDF or by co-processing through cement kilns.

4.3 Sewage Management:

It is estimated that about 5.94 MLD sewerage is generated from Bazpur town. Presently there is no sewerage network and individual household have made septic tanks for disposal of sewage and supernatant goes into drain. The UttarakhandPeyjal Nigam have identified Ghoganala for interception, diversion and treatment. Detail of proposed activities are as follows:

S. N.	Name of ULB	Total Sewage generation MLD		Available treatment facility	Action Plan
		Existing	Expected for 2032		
1	Nagar PalikaBazpur		5.94	No	DPR for Bio-remediation of drains of Rs. 70 Lakh send to NMCG for approval. DPR for STP and interception

					&diversion Rs. 41.46 crore send for approval to NMCG

The water quality of Ghoga drain contributing pollution to river Pilakhar is as follows:

General Parameters:

S.N.	Drain	Discharge (MLD)	pH	BOD	DO	Faecal Coliform	Faecal Streptococci
1	GhogaNala	7.15	7.01	7.9	6.4	280	140

Heavy Metals

S.N.	Drain	Cd	Ni	Cr	Zn	Fe	As
1	GhogaNala	<0.001	<0.01	0.02	0.09	1.23	<0.01

4.4Solid Waste Treatment:

About 5.5 Ton Solid Wsaste is generated from Nagar PalikaParisad,Bazpur is statuary body responsible for management of solid wastes as per provisions of Solid Waste Management Rules, 2016 as amended. The population of Bazpur town is 35582 as per census of 2011. Nagar PalikaParisad is divided into 13 wards. Door to door collection is being undertaken. Nagar PalikaParisad has approved Bye Laws for user charges and implemented. It is proposed to utilize waste processing and disposal facility of Gadarpur cluster. Land for waste processing and disposal facility for Gadarpur cluster has been identified.

S.N.	Name of ULB	No. of Wards	Quantity of Waste MTD	D-to-D collection	Source segregation	Compliance status
1	Nagar PalikaParishadBazpur	13	5.5	100%	0%	DPR for common disposal facility prepared and sent to State Government for approval. This facility is integrated with facility of Gadarpur Cluster.

4.5 C& D Waste Management

The Uttarakhand Urban Development Department has issued necessary directions to all local body for identification of site for disposal of C& D Waste. The office order issued is annexed at Annexure – 01.

4.6 Ground Water Quality:

So far contamination of groundwater is not reported in the area, however groundwater quality monitoring carried out. The analysis report is as follows: It is purpose at least twice in the year, the monitoring of ground water will be carried out.

General Parameter

Locations	Parameter (mg/L)					
	pH	EC	TDS	COD	Fluoride	Total Hardness
Upstream of River pilakhar	7.45	970	485	7.3	0.64	460
Downstream of River Pilakhar	7.46	684	342	7.4	0.36	248

Heavy Metals

Locations	Parameter (mg/L)					
	Cd	Cr	Ni	Zn	Fe	As
Upstream of River Pilakhar	0.001	0.02	0.01	1.28	1.24	0.01
Downstream of River Pilakhar	0.001	0.05	0.01	0.07	0.98	0.01

4.7 Flood Plan Zone (FPZ):

River Pilakhar is non perennial river hence no flood plain zone is required as reported by irrigation department, therefore flood plain zoning is not required for river Pilakahr.

4.8 Environmental Flow (E-Flow):

River Pilakahr is non- perennial river, however the irrigation department has initiated the measurement of flow and river by October 2020.

4.9 Monitoring of Action Plan:

The proposed Action Plan will be monitored by the River Rejuvenation Committee (RRC) constituted by Government of Uttarakhand vide Office order dated 05.12.2018, under the overall supervision and co-ordination of Principal Secretary, Forest & Environment, Govt. of Uttarakhand.

4.10 Activities wise Gap Analysis details

Municipal Solid waste

S.no.	Name of ULB	Total Solid Waste Generation (MTD)	Available facility	Gaps
1	Nagar Palika, Bazpur	5.5	No Treatment and disposal facility available	100 %

Municipal Sewage Management

S.no.	Name of ULB	Total Waste Water Generation (MID)	Available Treatment facility	Gaps
1	Nagar Palika, Bazpur	5.94	No Treatment facility available	100 %

Industrial Waste Water Management

S.no.	Name of ULB	No. of Unit				Available Treatment facility	Gaps
		Red	Orange	Green	Total		
1	Nagar PalikaBazpur	06	65	17	88	All Units have their own ETP. All the units are complying to norms	Nil

Bio-Medical Waste Management

S.no.	Name of ULB	Total No. of HCF	Total BMW Generation (KG/Day)	Available Treatment facility	Gaps
1	Nagar Palika, Bazpur	24	22	Common BWM Treatment Facility Gadarpur	Nil

5. ACTION PLAN:

Identified activities and concerned authorities for initiating actions and the time limits and budgetary requirements:

S.N.	Action plan for rejuvenation of river Pilakhar	Agency Responsible for Execution of the Action Plan	Budgetary Requirement (Rs. In Lacs)	Time Target
1. Industrial Effluent Management:				
a)	Routine /surprise inspection GPIs and Red category of industries for ensuring compliance of effluent discharge standards as prescribed under E (P) Rules, 1986, as amended.	Special Environmental Surveillance Task Force / UKPCB	Nil	Continuous activity.
b)	Strengthening of Environment Surveillance Squad (ESS) of UKPCB	UKPCB	Nil	Continuous activity.
c)	Monitoring of drains carrying industrial wastewater.	UKPCB	Nil	Continuous activity.
2. Sewage Management:				
a)	Interception and diversion of GhogaNala and construction of STP.	UttarakhandPeyjalJal Nigam	DPR of Rs. 4203 Lakh send to NMCG for approval.	Proposed activity will be completed in two year from sanction and release of fund.
b)	Installation of one STP of 8.5 MLD capacity.			
c)	Operation and Maintenance of STP for 15 years; Operation and Maintenance of I&D Works for 15 years; Land acquisition etc. expenses			
3. Solid Waste Management:				

a)	Door to door collection of solid waste in all wards of town.	Nagar PalikaParisad, Bazpur.	DPR for Rs. 1349 Lakh for treatment of disposal facility send to GoU. This facility is integrated with Gadarpur cluster.	Two year after sanction of fund
b)	Source segregation of wastes in all wards of town.			
c)	Setting up solid waste processing facilities.			
4.Groundwater Quality				
a)	Groundwater quality monitoring at during summer (May-June) and winter (December-January).	UKPCB	-	Monitoring is being carried out twice in a year.
6. Flood Plain Zone:				
a)	River Pilakhar is non-perennial water body, therefore flood plain zoning is not required for river Pilakhar.			
7. Environmental Flow:				
a)	River Pilakharis non-perennial water body. Irrigation department has initiated flow measurement from October 2020.			
8. **Catchment area treatment:**				
a)	The catchment area treatment of river is proposed by CAMPA. The work will be started from 01.01.2021.			

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Annexure – 01


Keshowala
Narayanpura
नारायनपुरा
Nandpur
Narkatopa
Ayushman
Lifecare Pvt Ltd
Nehru Park
Aman Hospital
Bazpur
Pandey Hospital
CHAKARPUR
Shiv mandir
Mundia Pistor
Dhansara
Gurudwara Bahadurganj
Google

Annexure - 02


DRAINAGE MAP OF RIVER PILAKHAR
KAMGAD SUB-WATERSHED
KUCHGAD SUB-WATERSHED
NAINI TAL DISTRICT
DABKA SUB-WATERSHED
BAGHPUR SUB-WATERSHED
BHAKRA SUB-WATERSHED
UDHAM SINGH NAGAR DISTRICT
TANDA SUB-WATERSHED
U T T A R P R A D E S H
Legend
State Boundary
District Boundary
Sub-Watershed Boundary
Micro-Watershed Boundary
Industries
Pilakhar Nadi
River Outfall
SL_No Drain_Name P_Latitude P_Longitude
1 Ghoga Nala N-29°8'41" E-79°7'59"