Draft

Action Plan for Clean River Beas

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Directorate of Environment and Climate Change,
Department of Science, Technology and Environment,
Government of Punjab

Contents

Chapter 1 - Introduction

1.1. Background

1.1.1. The word Punjab is a compound of two Persian words, panj ("five") and āb ("water"), thus signifying the land of five waters. The erstwhile Punjab State had fiver rivers namely Beas, Chenab, Jhelum, Ravi, and Sutlej. However after the partition of India in 1947, only two rivers, the Sutlej and the Beas, lie within Punjab's territory, while the Ravi flows only along part of its western border.

1.1.2. The rivers in the Statehave been used as a source of irrigation, drinking purpose especially in sourthern Punjab, development of hydro-electric projects to meet the energy requirements in the State and various activities including industrial purposes. The rivers have played a significant role in the socio-economic and industrial development of the State.

1.1.3. The rapid growth of urbanization and industrialization during the last few decades has adversely impacted the environment of the State. The quantum of sewage andsullage generated from the habitation areas has significantly increased and finding its way into natural drains, eventually leading to riverine system of the State. In the rural areas, due to increase in the population, the capacity of most of the ponds has been exhausted due to which this sewage andsullage has also started flowing into the natural drains and finally becoming a part of river waters.

1.1.4. Therefore, the quality of water flowing in the water bodies has deteriorated as these water lack sufficient assimilation capacity for self purification not only due to increase in the quantum of discharge of untreated sewage/ sullage, but, also due to decrease in the quantum of water in the water bodies owing to construction of check dams on the upstream side.

1.2. About River Beas

1.2.1. Beas is an important contributory river of the lndus System. It is 460 km long originates from two sources, Beas Kund (4060 m asl) on the South and, Beas Rishi on the right of Rohtang Pass within North-Western Himalaya. The two streams meet atPalchan village, 10 km north of Manali to form river Beas.

1.2.2. After leaving Pong Dam in Himachal Pardesh, the river enters plains of Punjab at Talwara (District Hoshiarpur) where it is immediately subjected to further manipulation for Irrigation by carving a Shah Nehar Canal where in water in the range of 4170-8611 cusecs is diverted, depending uponthe season. The river with depleted water resources takes a loop like course to reache Mirthal (District Gurdaspur).

1.2.3. In district Gurdaspur, river Beas regains some water resources made available from river Ravi through another Ravi Beas Link Canal originating from Madhopur and a tributary Chakki coming from north side joining it around Mirthal. The river regains its resources fully at village Terrikein (District Hoshiarpur) through reinduction of Shah Nehar Canal. Thereafter river flows unrestricted for approximately 100 km and in between it receives many small

Nallas amongst which the important one is Holy Bein (Kali or West Bein) around its culmination point at Harike, to its culmination with River Sutlej near Village Lohian at Hari-Ke-Pattan.The length of River Beas in the area of jurisdiction of State of Punjab is about 165 Km.

1.2.4. Govt of Punjab, Deptt of Forest and Wildlife Preservation (Forest Branch) due to the ecological floral and faunal significance of River Beas and for the purpose of protecting, propgating and developing wild life and aquatic fauna and its environment has declared the area of River Beas from 52 head Talwara to Harike Barrage as "**CONSERVATION RESERVE**" under the Wildlife (Protection) Act, 1972 vide notification no: 34/13/2017-FT-5/1052756/1 dated 29.08.2017.

1.3. State's efforts to control pollution in River Beas

1.3.1. Keeping in view the scenario of River Beas with regards to its water quality, Government of Punjab (GOP) from the year 2008, started taking action to identify the sources of its pollution in coordination with Punjab Pollution Control Board (PPCB). In this regard, meetings were regularly held under the chairmanship of Hon'ble Chief Minister, Punjab from the year, 2008 onward. Meetings have been held by the higher authorities of the State of Punjab, UT Chandigarh and Himachal Pradesh.

1.3.2. The State Government is serious to control the pollution in River Beas. With the proactive role of Govt. of Punjab, the concerned departments have already identified the sources of wastewater falling into the River Beas at various towns and cities located in the catchment area of the river. As of now, out of 10 towns, which are discharging their wastewater into River Beas, a total of 11 STPs need to be installed out of which 10 STPs have already been installed, and remaining 01is under various stages of planning for establishment.

1.4. Directions Issued byNational Green Tribunal

1.4.1. National Green Tribunal (NGT) in application no 916/2018, 344/2018 and 345/2018 regarding the pollution of River Satluj and River Beas onaccount of discharge of untreatedpollutants, which is impacting eight districts of Rajshathan apart fromLudhiana and Jalandhar districts of State of Punjab has taken note of following main issues:

(i). The industries and local Bodies failed to install and make functional the requisite treatment plants, 35 Municipal Corporation/Nagar Panchyat are discharging sewage with heavy metal and BOD loads in the Rivers.

(ii). As per the standards of Punjab Pollution Control Board and Punjab Water Supply Sewerage Board regarding installation of the STPs and taking other steps. But inspite of the steps, the water quality did not meet the laid down standards.

(iii). It was noted that sludge generated from STPs was not being pretreated, STPs were not having stand-by arrangement during maintenance, STPs are bye-passing the untreated sewage into drains and do not have adequate capacity, industrial effluents are mixed up with the domestic sewage resulting in damage to the STPs.

1.4.2. NGT vide its order dated 14.11.2018 in the application no: 916/2018directed that the Secretary, Local Bodies, Punjab, the Municipal Commissioners of Ludhiana and Jalandhar, PWSSB to jointly take responsibility for taking further steps to prevent any further damage and to take remedial steps so that the quality of water in the affected areas of rivers Sutlej and Beas is brought within the prescribed standards within 6 months.The nodal officer for coordinating all actions will be the Secretary, Local Bodies.

1.4.3. NGT vide another order dated 20.09.18 passed in OA no. 673/2018 titled as news item published in "The Hindu" authored by Shri. Jacob Kosuhy titled "More river stretches are now critically polluted: CPCB" has directed to prepare Action Plans within two months for bringing all the polluted river stretches to be fit at least for bathing purposes (i.e BOD <3 mg/l and FC< 500MPN/100 ml) within six months from the date of finalization of the action plans.

1.4.4. There are 4 number of polluted river stretches falling under the jurisdiction of State of Punjab as per the details given in the judgement:

(i). River Ghaghar (Sardulgarh to Mubarkpur)
(ii). Sutlej (Roopnagar to Harike bridge)
(iii). Kali Bein (SultanpurLodhi to Confluence point to Beas)
(iv). River Beas (along Mukerian)

1.4.5. The action plans may be prepared by four-member Committee comprising Director, Environment; Director, Urban Development; Director Industries; Member Secretary, State Pollution Control Board of concerned State. This Committee will also be the Monitoring Committee for execution of the action plan. The Committee may be called "River Rejuvenation Committee" (RRC). The RRC will function under the overall supervision and coordination of Principal Secretary, Environment. The Chief Secretaries of the State and Administrators / Advisors to Administrators of the Union Territories will be personally accountable for failure to formulate action plan, as directed.

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Chapter 2 –Vision, Mission and Strategy

2.1 Overarching Vision of the State - Mission Tandarust Punjab

The Government of Punjab has launched Mission Tandurast Punjab to make Punjab a healthy State with healthy people by ensuring the quality of air, water, food and a good living Environment.

2.2 Vision for Clean River Beas

To restore the quality of water in River Beas to prescribed standards to ensure ecological balance and socio-economic well being of the people.

2.3 Mission Clean River Beas

To prepare and implement a comprehensive action plan for clean River Beas:

(i). Creating awareness about the adverse impact of water pollution
(ii). Identifying the sources of water pollution
(iii). Setting up facilities for treating the pollutants
(iv). Ensuring effective operations of the facilities
(v). Ensuring effective monitoring of the quality of water
(vi). Mitigating adverse impact on health of the people in the surrounding areas

2.4 Strategy for Clean River Beas

2.4.1 Identification of the Stakeholders

The State of Punjab envisages a comprehensive plan for cleaning of River Beasby involving all the Stakeholders namely:

(i). Department of Science, Technology and Environment
  (a). Directorate of Environment and Climate Change
  (b). Punjab Pollution Control Board

(ii). Department of Water Resources
  (a). Chief Engineer, Drainage

(iii). Department of Local Government
  (a). Muncipal Corporations/ Municipal Councils/ Nagar Panchayats
  (b). Punjab Water Supply and Sewerage Board

(iv). Department of Housing and Urban Development
  (a). Jalandhar Development Authority

(v). Department of Rural Development and Panchayat
  (a). Direcorate of Rural Development and Panchayat

  (b). District/ Block Development and Panchayat Officers and Village Panchayats

(vi). Department of Industries and Commerce
  (a). Punjab Small Industries and Export Corporation

(vii). Department of Agricultrue
  (a). Directorate of Soil and Water conservation

(viii). Department of Forest and Wildlife Conservation
  (a). Principal Chief Conservator of Forest (WL) and Chief Wilflife Warden

(ix). Department of Health and Family Welfare

(x). District Administration

(xi). Director Fisheries Punjab

(xii). Military Engineering Services, Govt of India for Pathankot and Kapurthala.

2.4.2 Nodal Department

The Department of Science, Technology and Environment will be the nodal department for coordinating and monitoring activites of the plan.

2.4.3 Integration of Departmental plans

The Nodal Department will integrate plans of individual departments for control of pollution from various sources and prepare a comprehensive plan and will coordinate its execution by tracking the progress through a centralized IT platform.

2.4.4 Monitoring and Governance

(i). There will be rigorous monitoring of implementation of the comprehensive plan:
  (a). Monitoring of physical and financial progress of works being executed
  (b). Monitoring of operations and management of facilities set up
  (c). Monitoring of quality of water
  (d). Monitoring of health and diseases in the surrounding areas
  (e). Monitoring of awareness campaign

(ii). Setting up of IT platform for tracking progress and analysis.

(iii). The monitoring will be done at the District level, State Level and Executing Committee set up by NGT

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Chapter 3 – Current Status and Trends of Water Quality in River Beas

3.1 Monitroing Locations

The water quality of river Beas is being monitored at 10 locations,starting from Beas at Talwara H/W upto Beas at harike on monthlybasis under NationalWater Quality MonitoringProgramme(NWMP):

(i). Beas at Talwara H/W
(ii). Beas at Mirthal Bridge Gurdaspur
(iii). U/s Pathankot
(iv). D/s Pathankot
(v). Beas 1km D/S effluent discharge point at Mukerian
(vi). Beas Bridge at village Bheate Patan Tehsil Batala Distt.Gurdaspur (w.e.f July 2018)
(vii). Beas at G.T. Road, under Bridge Near Kapurthala
(viii). Beas at U/s Goindwal
(ix). Beas at D/s Goindwal
(x). Beas at Harike

3.2 CPCB's Norms for designated Best use

The Central Pollution Control Board has laid down criteria fordesignated best use class of water of the water bodies, which is as mentioned below:

S.N.	**Constituent Parameters**	**Designated Best Use Class**					
		A	B	C	D	E	Below E
1.	Total Coliforms Organism, MPN/100ml, Max	50	500	5000	-	-	Not meeting A, B, C, D & E criteria
2.	pH value	6.5-8.5	6.5-8.5	6-9	6.5-8.5	6-8.5	
3.	Dissolved Oxygen, mg/l, Min	6	5	4	4	-	
4.	Biochemical Oxygen Demand, mg/l, 5 days 20C, Max	2	3	3	-	-	
5.	Free Ammonia (as N) mg/l, Max	-	-	-	1.2	-	

6.	Sodium absorption Ratio, Max	-	-	-	-	26	
7.	Electrical Conductivity at 25C micro mhos/cm, Max	-	-	-	-	2250	
8.	Boron, mg/l, Max	-	-	-	-	2	

Note:

Class A: Drinking Water Source without conventional treatment but after disinfection
Class B: Outdoor bathing (Organised)
Class C: Drinking water source after conventional treatment and disinfection
Class D: Propagation of Wild life and Fisheries
Class E: Irrigation, Industrial Cooling, Controlled Waste disposal

3.3 Current status of quality of water in River Beas

3.3.1 The representative quality of water of river Beas at various locations for themonthof December, 2018 is given in **Annexure A**. The river Beasenters in Punjab at Talwara from Himachal Pradesh. The quality of river Beas at Talwara is 'B Class'. The BOD of Beas varies from 1.0 mg/l to 2.1 mg/l. The Dissolved oxygen varies from 7.3 mg/l to 8.3 mg/l for the month of December 2018. The quality of Beas at 1 km from discharge point at Mukerian upto Harike is of 'Class C' due to the pollutant Total coliformsOrganism(T.Coli).The permissible limit of T.Coli MPN/100 ml for 'Class B' is 500 or less butT.Colivariesfrom 580 to 840 at above mentioned stretch/points of river Beas.

3.3.2 The details of analysis results of surface water monitoring underNWMP for the year2016-17, 2017-18 and 2018-19 (upto Dec, 2018) are given in **Annexure B**.

3.3.3 It is evident that Class- B quality of water enters the State of Punjab, the water quality remains in class-B and in class-C at some of the location in jurisdiction of State of Punjab.

3.3.4 Thus, to improve the water quality of River Beas, there is need toidentify all theoutletsthrough which the untreatedwastewater is discharged into river Beas either directlyor indirectly and to install adequate arrangements to treatthe wastewater ofthese outletseither by installing separate STPs or by divertingthese outletstotheexisting STPs having sufficient capacityto accommodatetheadditional hydraulic loading of these outlets. Also, thereisneed to improve upon the quality of treated wastewater of the present STPs by upgrading them.

3.3.5 Keeping in view the current and future scenario of pollution of water of River Beas and their usage, this action plan has been prepared to control the pollution of water of river Beas so as to ensure that all the outlets carrying wastewater directly or indirectly into river Beas must conform to the prescribed standards.

Chapter 4 –Sources of Water Pollution in River Beas

4.1 Major Drains

4.1.1 There are 13 major drains/choes/nallahs which are directly discharging wastewater into the River Beas. The details of these drains/choes/ nallahs are given in **Annexure C(1)**. The water quality of the 13 major drains has also being carried out by the PPCB and the details are given in **Annexure C(2)**. There are 22 creeks/nallahs which are discharging into 02 major drains namely Kahnuwan Swamp Drain and Holy Bein. Details are given in **Annexure D**.

4.1.2 The list of urban and rural habitation discharging wastewater directly into River Beas is given in **Annexure-E.** The list of urban and rural habitation discharging wastewater indirectly through various drain/nallahs/creeks leading to River Beas is given in **Annexure F.**

4.1.3 There are following major sources polluting the River Beas:

(i) Sewage/ sullage generated from Urban Areas
(ii) Sewage/ sullage generated from Rural Areas
(iii) Industrial Sources

4.2 Sewage/sullage generated from Urban Areas

There are 16 local bodies which are discharging their wastewater either directly or indirectly into River Beas. In addition, 6 MES authorities, 2 Industrial Focal Points, 01 Jalandhar Development Authority and one Industrial Complex of Himachal Pardesh are also discharging directly or indirectly into River Beas. Out of 16 local bodies, 11 STPs have been installed in 11 towns and 10 new STPs are proposed to be installed in the 7 towns and 1 STP is proposed to be upgraded in one of the towns. The details of STPs installed, STPs under installation, new STPs proposed to be installedare given in **Annexure G(1) & Annexure G(2)**.

4.3 Sewage/sullage generated from Rural Areas

4.3.1 There are 75 villages, which are discharging wastewater through various creeks and drains into River Beas. The details of these villages are given in the **Annexur E & Annexure F** and the dischargewise details of the villages is as below:

(i) 17 Villages are having discharge more than 300 KLD
(ii) 43 Villages having discharge between 100 KLD and 300 KLD
(iii) 15 Villages having discharge less than 100 KLD

4.4 Industrial Sources in the Catchment Area of River Beas

4.4.1 Industrial units located at Pathankot, Gurdaspur, Mukerian and Dasuya Area in the Catchment Area of River Beas

There are 12water polluting industries in the catchment area of River Beas at Pathankot, Gurdaspur, Mukerian and Dasuya. None of the industries is allowed to discharge the untreated / treated wastewater into the drains/ choes leading to River Beas. A list of these

industries is as per **Annexure H(1) and Annexure H(2).** The brief detail about these industries is as under:

Sr. No.	Type of industry	No. of units	No. of industries installed ETPs	No. of industries installed online continous monitoring system
1)	Brewery	1	1	_
2)	Distillery unit	5	5	-
3)	Sugar Mill	3	3	3
4)	Paper/Board Mill	2	2	-
5)	Gluten	1	1	-

However, the screening plants of Pathankot are partly discharging their wastewater into River Beas. But their wastewater neither contains any organic materials contributing BOD/ COD nor any chemicals. Therefore, the PPCB envisaged to pursue the industries to devise a mechanism for 100% recirculation of the wastewater generated from the washing of river bed material.

4.4.2 Industrial units located at Goindwal Sahib, Beas& Kapurthala Area in the Catchment Area of River Beas

There are9water polluting industries in Goindwal Sahib, Beas and Kapurthalain the catchment area of River Beas. A list of these industries is attached herewith as **Annexure I (1) & Annexure I(2)**. The break-up of these industries is as under:

Sr. No.	Type of industry	No. Of units	No. Of industries installed ETPs	No. Of industries installed online continous monitoring system
1	Thermal Plant	1	1	-
2	Food Industries	1	1	-
3	Pharmaceuticals (Formulation)	1	1	-

4	Vanaspati	1	1	-
5	Educational Institutions	1	1	-
6	Health Care Facilites (HCF)	1	1	-
7	Dera Beas	1	1	-
8	Miscellaneous	2	2	-

Since, all these industries are located near the bank of Goindwal Sahibdrain, Beas River & Holy Bein, as such, there is need to monitor all these industries in odd hours to rule out the possibility for discharge of wastewater into said drains during odd hours.

4.4.3 Industrial Complex located at Sansarpur-Terrace, Distt Kangra (Himachal Pardesh)

AnIndustrial Cluster under the name of Industrial Complex, Sansarpur-Terrace, Distt Kangra located near to Talwara Headworks (Punjab) and the waste water disposal of this industrial complex is in the Swan Choe leading to River Beas at Talwara Headworks.

Sr. No.	**Type of industry**	**No. of units**	**No. of industries installed ETPs**	**No. of industries installed online continous monitoring system**
1	Industrial Complex	15	Not Available	Not Available

It is proposed to request Government of HP to take following action:

(i) As the wastewater of the Industrial Complex, Terrace-Sansarpur, Distt Kangra, H.P is being discharged into Swan Khad leading to River Beas. There is immediate need to direct the Govt of Himachal Pardesh to provide adequate treatment facility for the treatment of wastewater generated from the Industrial Complex and also to utilizethe treated wastewater, such that neither untreated or nor treated wastewater is discharged into Swan Khad.

(ii) It is proposed that a Continous Surface Water Monitoring Equipment alongwith CCTV Camera may be installed by Govt of Himachal Pardesh at the outlet of the Complex and connect it with website of CPCB, PPCB and HPPCB for the 24x7 monitoring of the discharge of wastewater into Swan Khad.

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Chapter 5 –Other Sources of Pollution and their Managment

5.1 Bio Medical Waste

5.1.1 The bio-medical waste of all the Healthcare Facilities in the State is collected, transported, treated and disposed of by 4 authorized Common Bio-Medical Waste Treatment Facilities (CBWTF) located at Ludhiana, SAS Nagar, Amritsar and Pathankot. The Bio-Medical Waste generation in the State is in the range of 14-15 tons per day (TPD) depending upon patient load. The status of HCFs operating in towns falling in catchment areas of River Beas is given in **Annexure-J**

5.1.2 The collection vehicles of the CBWTF operators are equipped with Global Positioning System (GPS) with access to Punjab Pollution Control Board (PPCB).The CBWTF operators are using Bar-code based software system for collection of bio-medical waste from Healthcare Facilities since 2012 and the data of collection of bio-medical waste from the healthcare facility is sent online to server within 1-2 minutes and the access of same is available with PPCB.CCTV cameras are also installed in the processing areas of all the 4 CBWTF operators with access to PPCB to monitor the working of the facility.

5.1.3 The stack of the incinerator installed in all the 4 CBWTFs have been provided with Online Continuous Emission Monitoring System and the data is transferred online to PPCB and CPCB. This system helps in observing/monitoring the emissionsdischarged while treatment of bio-medical waste is being done.

5.1.4 Since, the Bio-Medical Waste generated in the catchment area of River Beas is handled and managed in proper manner through the Common Bio-Medical Waste Treatment Facilities (CBWTF), as such, there is no impact of this waste on the water quality of River Beas.

5.2 Hazardous Waste

5.2.1 The Government of India has framed Hazardous and Other Wastes (Management and Trans-boundary Movement) Rules, 2016 for the scientific handling of hazardous waste. The occupier of the facility is to apply for authorization for handling, generation, collection, storage, packaging, transportation, use, treatment, processing, recycling, recovery, pre-processing, co-processing, utilization, offering for sale, transfer or disposal of the waste to the Board. A pass book is issued along-with authorization to the actual user of the hazardous waste.

5.2.2 As per the interim order dt. 14-10-2003 of Hon’ble Supreme Court in Writ Petition (Civil) No. 657 of 1995, regarding handling of hazardous waste and development of common treatment, storage and disposal facility, a Common Treatment, Storage and Disposal Facility (CTSDF) at Village Nimbuan, Tehsil DeraBassi, Distt. SAS Nagar was constructed by M/s Nimbuan Green Field Punjab Limited (NGPL) and commissioned in October, 2007.

5.2.3 The facility has been designed for 15 years capacity considering the generation of storable quantity of hazardous waste as 36,000MTA based on the assessment study carried out by M/s Tetratech India Limited. The total capacity of the facility is 5,40,000 MT.The capacity to

store hazardous waste in the existing CTSDF is sufficient upto year 2030 at the present rate of generation. The vehicles used by the common facility operator for transportation of hazardous waste are equipped with GPS system.

5.2.4 At present no common incinerator has been installed at CTSDF and the same is under planning. All the major industries generating incinerable hazardous waste have installed captive incinerator in their premises for disposal of incinerable waste. Eighteen such captive incinerators are in operation for the disposal of incinerable waste. In addition to the above, the incinerable waste from the remaining industries is received by the operator of CTSDF and is incinerated at the incinerator installed by the CTSDF at its another unit at Kanpur.

5.2.5 Since, the Hazardous Waste generated by the industries in the catchment area of River Beas is handled and managed in proper manner through the Common Treatment, Storage & Disposal Facility installed at Vill. Nimbuan, Tehsil DeraBassi, Distt. SAS Nagar, as such, there is no impact of this waste on the water quality of River Beas.

5.3 E-Waste

5.3.1 Government of India has framed E-Waste (Management & Handling) Rules, 2016 as amended on 22.3.2018. PPCB has granted NOC/ 'Consent to Operate' to one dismantling facility, M/s Ramky Enviro Engineers Limited, Vill. Nimbua, Tehsil DeraBassi, Distt. SAS Nagar with capacity to handle 4 TPD of E-waste.

5.3.2 PPCB has granted 'Consent to Establish' to two industries i.e. M/s Black Diamond Cements Pvt. Ltd., Tehsil DeraBassi, district SAS Nagarand M/s Spreco Recycling, Tehsil Raikot, District Ludhiana to establish E-Waste recycling facility of capacities 30 TPD and 0.8 TPD respectively. These said industries have yet not commissioned the said facility. One party naming M/s K.J Recyclers, Plot no C38, Sanjay gandhi nagar, industrial Area Jalandhar has been issued NOC for setting up E-Waste Recycling facility and the other one party in Amritsar hasalso been given go ahead by PPCB for setting up of the E-Waste recycling facility.

5.3.3 Although, the channelization of E-Waste has recently been started, disposal of such waste has never been noticed in the River Beas.

5.4 Solid Waste

5.4.1 The Department of Local Government (DLG) vide notification dated 09.07.2018 has notified the Punjab State Solid Waste Management Policy, 2018. In view of the past experience, it has been decided to adopt both decentralized and centralized solid waste management approach depending upon the profile of the locality.

5.4.2 Further, in compliance to the orders of the Hon'ble Punjab and Haryana High Court in CWP No. 7039 of 2010, a Common Action Plan containing 10 points was prepared in 2012 for viable alternative measures for disposal of garbage till setting up of Solid Waste Management Plants. The Directorate of Local Government is the implementing agency for this Action Plan and PPCB is monitoring the status of compliance.Out of 167 Urban Local

Bodies (ULBs), 113 ULBs are partially complying with the Common action plan and remaining 54 ULBs are yet to comply with the same.

5.4.3 The Ministry of Environment and Forests, GOI has notified Solid Waste Management Rules, 2016. Implementation of these Rules is being monitored by the Board.As per Rule 24 of the Solid Waste Management Rules, 2016, the local body shall submit its annual report to the Board on or before the 30th day of June every year. Further, the Board is required to submit the consolidated annual report to the Central Pollution Control Board and Ministry of Urban Development by the 31st day of July of each year. The same are regularly uploaded on the official website of the Board also.

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Chapter 6 – Utilization of Treated Wastewater

6.1 The State Treated Waste Policy

6.1.1 The Department of Local Govt. has notified "The State Treated Waste Policy -2017" to promote the recycling and reusing the treated sewage for non-potable applicationsand to make sewage project economical and environmentally sustainable.

6.1.2 The policy envisages to tackle the issues pertaining to the provisions of adequate wastewater collection and treatment facilities, consideration of treated effluents as resource for reuse in irrigation/industrial/other fields and thereby improvement of the socio-economic conditions in the areas to served by the proposed systems.

6.1.3 The Department of Soil and Water Conservation, Punjab is executing projects for utilization of treated wastewater for irrigation of various towns/cities across the State by laying network of underground pipelines in agricultural fields.

6.2 Utilization of treated wastewater in the catchment area of River Beas

6.2.1 The Department of Soil and Conservation has already commissioned irrigation projects for 09 STPs in 09 towns to utilize the treated wastewater of the STPs located in the catchment area of River Beas. The details are given in **Annexure-K(2)**.

6.2.2 The Department has also prepared irrigation management plans for the two towns namely Pathankot and Tanda where STPs have been commissioned but irrigatin network is yet to be laid. The details is as per **Annexure-K(1) and K(2).**

6.2.3 The Department has also prepared irrigation management plans for the 09 towns, where 11 STPs are proposed to be installed and accordingly 11 schemes have been prepared. The details is as per **Annexure-K(1) and K(2).**

6.2.4 The MES Authorites are also operating 5 STPs at Pathankot and discharging their wastewater into drains leading to River Chakki and one STP is being installed at Kapurthala. The wastewater of Kapurthala is also being discharged into MC Sewer leading to Holy Bein But, no irrigation management plan has been prepared by MES Authorites for any of the STPs. The details is as per **Annexure-K(1) and K(2).**

6.2.5 The PSIEC Authorites have proposed two STPs of 2MLD capacity each for Industrial Growth Centre Pathankot and Industrial Focal Point Goindwal Sahib. The irrigation network in these areas is yet to be laid. The timeline and financial requirement for the same are indicated in **Annexure K(1) and K(2).**

6.2.6 From the experience of using STP's treated wastewater for irrigation purposes, following issues emerge, which need to be addressed:

(i) In case of STPs based on SBR technology, the discharge of treated wastewater is not continuous and for the gap period of about 45 minutes, the pump through which the treated wastewater is pumped for utilization onto land for irrigation is required to

be shutdown, which discourages the farmers to utilize the treated wastewater. Therefore, there is a need to provide a storage tank of sufficient capacity for treated wastewater so that without shutting down the pumping station, the wastewater can be made available to the farmers.

(ii) The payment of electricity bill is required to be regulated by fixing the responsibility of the concerned department and funds for this purpose need to be made available with the operating agency.

(iii) The farmers need to be educated and made aware about the advantages of use of treated wastewater for irrigation purpose.

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Chapter 7– Measures for Control of Pollution and Timelines

7.1 Setting up of new Treatment Facilities

The existing treatment facilities are not adequate. In order to completely stop the untreated waste being discharged directly or indirectly into river Beas, additional new facilities and upgradation of existing facilities is required. The action plan envisages the following facilities to be set up/ upgraded to meet the challenges of pollution in River Beas:

(i) Setting up of Sewage Treatment Plants in Urban areas
(ii) Setting up of treatment facilities for sewage/sullage in Rural areas
(iii) Setting up of facilities for reuse of treated wastewater
(iv) Setting up treatment facilities in Industrial Areas
(v) Cleaning of Holy Bein

7.2 Setting up of Online Effluent Monitoring Systems for STPs and ETPs

It has also been observed that the treatment facilities have not been operated as per norms and therefore there is strong need to effectively monitor the treatment facilities. In order to ensure effective monitoring, it is envisaged to install online systems for monitoring:

(i) Setting up of online system for monitoring STPs
(ii) Setting up online system for monitoring of industrial effluents

7.3 Timelies for Projects

Each project will have timelines for various stages of the project. Following stages have been identified to monitor the progress:

Name of the Project			
Brief Scope of the Project			
Sno.	**Stage**	**Start Date**	**Completion Date**
1	Preparation of DPR		
2	Financial Closure		
3	Tendering of the Work including allotment		
4	Commencement of Work		

5	Quarterly Milestones during the construction Stage		
6	Completion and Commissioning		

7.4 Timelines for Setting up of Sewage Treatment Plants in Urban areas

7.4.1 Department of Local Government/Jalandhar Development Authority

The Department of Local Government & Jalandhar Development Authority have chalked out plans for setting up of new STPs, upgrading STPs and laying down sewerage system for left out areas. The details are given in **Annexure L.**

7.4.2 Military Engineering Service, Pathankot and Kapurthala

Militatry Engineering Service(MES), Pathankot has installed 5 no: STP's out of which one is of 3 MLD capacity and remaining 4 are 2 MLD capacity each and the wastewater is being discharged into Nallahs leading to River Chakki and ultimately River Beas. MES Kapurthala is discharging its wastewater into the sewerage system of MC Kapurthala and MES Kapurhtala is installing 1 STP of capacity 1 MLD. The details is as per **Annexure M**.

7.4.3 Department of Industries and Commerce/ Punjab Small Industries and Export Corporation

The Department of Industries and Commerce through Punjab State Industries & Export Corporation (PSIEC) needs to execute two projects of installation of STPs in Industrial Focal Points of Pathankot and Goindwal Sahib for domestic sewage. The details are given in **Annexure N**.

7.5 Timelines for Setting up of treatment facilities for sewage/sullage in Rural areas

The Department of Rural Development and Panchayat has to prioritise the villages for setting up of treatment facilities. The complete list of villages identified is given in **Annexure 0**. The Department has yet to finalize the treatment technology to be adopted in rural areas.

7.6 Timelines for setting up of projects for reuse of treated wastewater

The Department of Soil and Conservation has given the timelines for setting up of reuse of trearedwastewarer. The details are given in **Annexure K(1) and Annexure K(2).**

7.7 Timelines for setting up of treatment facilities in Industrial Areas

No Common Effluent Treatment Plants (CETPs) have been proposed. PPCB will ensure upgradation of individual ETPs wherever required.

7.8 Cleaning of Holy Bein

7.8.1 The Holy Bein, one of the major drain carrying wastewater from urban/rural areas and having confluence with the River Beas generally carries lot of silt. Due to eutrophication, there is lot of growth of water hyacinth, which chokes the flow of Water in some of the stretchs of Holy Bein. The Department of Water Resources, should regularly clean the Holy Bein as major drain and remove silt and water hyacinth so that unrestricted flow of water is maintained in the Holy Bein.

7.8.2 The State Government has allowed intake of 350 cusecs of water from mukeria hydel channel to be released into Bein to maintain the water quality and to regulate the flow of Water in Holy. The Department of Water Resources, Punjab will ensure that the water from Mukerian Hydel Channel is released into Holy Bein regularly.

7.9 Timelines for installing online continuous monitoring system for STPs

In order to get real time data of the quality of treated wastewater, there is need to install Online Continuous Monitoring System with facility of flow meter at the outlet of all the STPs of the towns / cities located in the catchment area of River Beas and this system should be attached with server of the concerned department as well as PPCB so that quality of treated wastewater can be put in the public domain. Further CCTV cameras will be installed to monitor the operation of STPs.The timelines for installing online systems and CCTVs is given in **Annexure P(1) and Annexure P(2)**.

7.10 Timelines for installing online continuous monitoring system byIndustries

7.10.1 All the 17 categories of industries have installed online continuous monitoring system, which are attached with server of CPCB as well as PPCB. Therefore, out of 14industries,3 industries, which are falling in the list of 17 categories of industries, have already installed online continuous monitoring system.

7.10.2 PPCB has now mandated that all industries having discharge of trade effluent 50 KLD or more are required to install Online Continuous Monitoring System with facility of flow meter at the outlet of their ETPs for Industries in the catchment area of rivers.The time schedule for installing online system is given in **Annexure Q(1)**.

7.11 Timelines for installing Real Time Water Quality Monitoring Station at River Beas

PPCB being the nodal agency for the rejuvenation of River Beas in the case of incidence of M/s Chaddha Sugar Mills, Kiri Afgana has decided to install Real Time Water Quality Monitoring Stationby PPCB at River Beas. The time schedule for installing Real Time Water Quality Monitoring Station by PPCB at River Beas is given in **Annexure Q(2).**

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Chapter 8–Monitoring Requirements and Formats

8.1 Monitoring Requirements

There are following key components of monitoring

(i) Monitoring of progress of projects for setting up of new/upgraded facilities
(ii) Monitoring of operations and management of STPs
(iii) Monitoring of ETPs and Industrial Effluents
(iv) Monitoring of Quality of Water of River Beas
(v) Monitoring of adverse impact on health of the people in surrounding areas due to water pollution
(vi) Monitoring of Awareness campaign
(vii) Monitoring of other violations of laws/ regulations

8.2 Monitoring of Progress of projects for setting up of new/up graded facilities

In order to ensure that the stakeholder departments adheres to the timelines given for setting up of new/upgraded treatment facilities, the department shall submit progress of the project on monthly basis in the proforma attached as **Annexure R** for monitoring.

8.3 Monitoring of operations and management of STPs

To ensure proper functioning of the STPs, regular availability of funds for operation and maintenance has to be ensured. All the STPs should also have standby source of power. The O&M contracts shall have the responsibilities of the Operator clearly defined.Monthly reports as per **Annexure S &Annexure T** will be submitted for monitoring.

8.4 Monitoring of ETP's and Industrial Effluents

Punjab Pollution Control Board shall visit the industries located in the catchment area of River Beas as per protocol regarding frequency of visit to the industries to carry out monitoring of Effluent Treatment Plants & ground water and maintain proper record of all these visit. PPCB will submit report as per the proforma given in **Annexure U(1).**

8.5 Monitoring of Wastewater generation from Industrial Complex, H.P.

Joint Committee of Officers of PPCB, HPPCB and Department of Irrigation(PB) shall visit the Industrial Complex and monitor the status of disposal of the wastewater into the Swan Khad on fortnightly basis and submit the report to the Member Secretary, PPCB and Member Secretary HPPCB. As per **Annexure U(2)**

8.6 Monitoring of Quality of Water of River Beas

The Punjab Pollution Control Board shall continue to monitor the quality of water of River Beas at 10 locations under National Water Monitoring Programme and shall report to State Level Special Task Force on monthly basis in the proforma as per **Annexure V**.

8.7 Monitoring of adverse impact on health of the people in surrounding areas

The District Level Special Task Force shall get organized / conducted the health check up camps of the people in the catchment area of River Beas and shall submit the monthly report in proforma as per **Annexure W**, which will be reviewed by State Level Special Task Force and the Executing Committee.

8.8 Monitoring of Awareness campaign

The PPCB will organizeawareness programme in partnership with the Department of Health & Family Welfare and other stakeholders in the habitation area falling in the catchment area in River Beas to educate them about the harmful effect of water pollution. The PPCB shall submit monthly report in the proforma as per **Annexure X**.

8.9 Monitoring of other violations of laws/ regulations

The PPCB will monitor any violation not covered above and shall take appropriate action against the violator and report in this regard to the State Level Task Force and Executing Committee.

Chapter 9–Governance and Supervision

9.1 Three Tier Monitoring

9.1.1 Monitoring will be done by the Departments concerned, which are executing or responsible for particular activities. In addition, there will be three level of Committees to review and monitor the status:

(i) District Level Task Force
(ii) River Rejuvenation Committee
(iii) State Level Task Force /Executing Committee

9.1.2 PPCB will set up a dedicated team for supporting coordination and monitoring of the Action Plan. The team will coolate and analyse data from all theconcerned agenciesand escalate the issues and challenges to the appropriate level for resolution. It will also develop suitable IT platform for monitoring purposes.

9.2 District Level Special Task Force (DLSTF)

9.2.1 The mandate of this task force as per order dated 14.11.2018 issued by the Govt. of Punjab, Deptt. of Science, Technology & Environment is as under:

(i) It shall identify all persons responsible for violation of law and normsrelating to pollution in River Beasriver and the drains joining it.
(ii) It shall review action by the Competent Authority w.r.t. Civil and Criminal action against the violators as well as those who fail to perform their duties in this regard.
(iii) It shall submit a monthly report on all actions taken by it to the State Level Special Task Force (SLSTF), by first week of every month.
(iv) It shall assist the SLSTF in preparation of the action plan and finalizing the timelines.
(v) It shall involve Civil Society Organizations and public participation in preparing the action plan in all the relevant areas.
(vi) It shall ensure periodic sampling of river water as well as ground water to check water quality.

9.3 River Rejuvenation Committee

The River Rejuvenation Committee will monitor the Status of implementation of the Action Plan at the State Level. It will also be responsible for River Rejuvenation Plan Monitoring as well as Endowment Fund. It may invite any special invitee as may be required.

9.4 State Level Task Force

The mandate of this task force as per order dated 14.11.2018 issued by the Govt. of Punjab, Deptt. of Science, Technology & Environment is as under:

(i) It shall finalize the Action Plan with firm timelines and review the same.
(ii) It shall submit quarterly report on action taken during the quarter to the Central Pollution Control Board.

(iii) It will also ensure that the quarterly Action Taken Reportsare uploaded on the website of Punjab Pollution ControlBoard.

(iv) It shall Co-ordinate with the Executing Committee,appointed by NGT

(v) The State Level Task Force will accordingly hold regular meetings to review the progress and taken necessary action against the defaulters.

9.5 Executing Committee

The National Green Tribunal (NGT) has constituted an 'Executing Committee' with the following mandate:

(i) The Committee is entitled to issue appropriate directions to concerned authorities for ensuring compliance of the orders of the Hon'ble Tribunal.

(ii) The target of the Committee will be to restore the standard of water quality in the river to the prescribed level.

(iii) The Committee may carry out personal visits, if necessary or call for information or reports.

(iv) The Committee may also consider need for getting organised health camps and need for providing clean drinking water for the affected inhabitants.

(v) The sampling of ground water may also be done apart from the sampling of the river water periodically.

(vi) Submit fortnightly basis report to the Hon'ble NGT through e-mail i.e.filing.ngt@gmail.com

(vii) The Executive Committee will accordingly review the progress from time to time and issue necessary directions to the concerned authorities.

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Chapter 10–Risk Mitigation Plan

10.1 Identification of Major Risks in the Action Plan

The Action Plan to clean River Beas and restore the quality of water to the prescribed standards is a complex multi sectoral and multi agency action plan. Successful implementation would face many challenges. Following major risks have been identified

(i) Accuracy and completeness of Baseline Data
(ii) Accuracy and completeness of Project Timelines
(iii) Financial closure and timely releases of Funds
(iv) Discharge from unapproved Habitation Areas
(v) Tracking the Progress and Program Management
(vi) Resolution of Administrative and Technical Issues

10.2 Mitigation Plan for identified Risks

It is important to devise strategies and plans to mitigate the identified risks. Action plan will remain on paper if the bottlenecks and the risks are not dealt satisfactorily. Mitigation plan for each of the identified risk has been prepared in the following paras.

10.3 Accuracy and completeness of Baseline Data

Due to paucity of time, the information about the sources of pollution, current treatment facilities, quantity and quality of discharges etc. could not be properly validated and there could be gaps in the same, which may lead to substantial alterations in the plans. In order to ensure accuracy and compleness of baseline data, another round of validation of the same would be got done through the respective Administrative Departments and Action plan updated accordingly. This will be completed in 30 days.

10.4 Accuracy and completeness of Project timelines

Due to paucity of time, the information about the project timelines could not be properly validated and deliberated and there could be gaps in the same. In order to ensure accuracy and comletness of Project timelines, each Administrative Department would be aksed to validate the project timelines carefully after taking into account all the relevant factors. thIn order to overcome the Risks identified above, the following plan would be followed. The needful will be done in 45 days in parallel to the activity in para 10.2.1 and Action plan updated accordingly.

10.5 Discharge from unapproved habitation areas

There are certain unapproved colonies or villages, which have come under municipal limit, which are currently not covered in the plans but are discharging their untreated sewage directly or indirectly into river Beas. The concerned authroities for urban and rural areas will be asked to identifysuch localities and plan for their connectivitiy with the main sewer or development of the sewer system shall be worked out.

10.6 Financial closure and timely releases of funds

Availability of funds for completing the projets on time is a major risk. Some of the projects have still not achieved financial closure. It has also been observed that the release of funds is often not regular even though the project had appropriate financial approval. In case of operation and maintenance of the facilities, substantial blame has been apportioned to lack of regular release of funds for maintenance, which resulted in failure of STPs to treat the wastewater and as a result untreated water has been discharged in the drain. In order to overcome the challenges, efforts will be made towards:

(i) Seeking a firm commitment of Department of Finance to release the funds for the projects on priority.

(ii) In case of operation and maintenance, seeking firm commitment of ULBs/ Department of Local Government to treat this as committed expenditure according it highest priority and release the funds regularly. Further, arrangement may be worked out with the Administrative Department and Department of Finance that in case of default of ULB to pay to the operator, funds will be deducted from the grant to be released to ULB and paid directly to the Operator.

10.7 Tracking the Progress and program management

The action plan for clean Beas is a complex, multi department and multi agency program and the current capacity and skill sets in PPCB are not adequate to track the progress of various milestones and carry out effective program management for succesfuly implementing the program. In order to mitigate the risk, a dedicated team with requisite Program Management and IT skills will be positioned to collate data, analyse the same, prepare status updates, escalate issues and assist various committees in review and issue resolution.

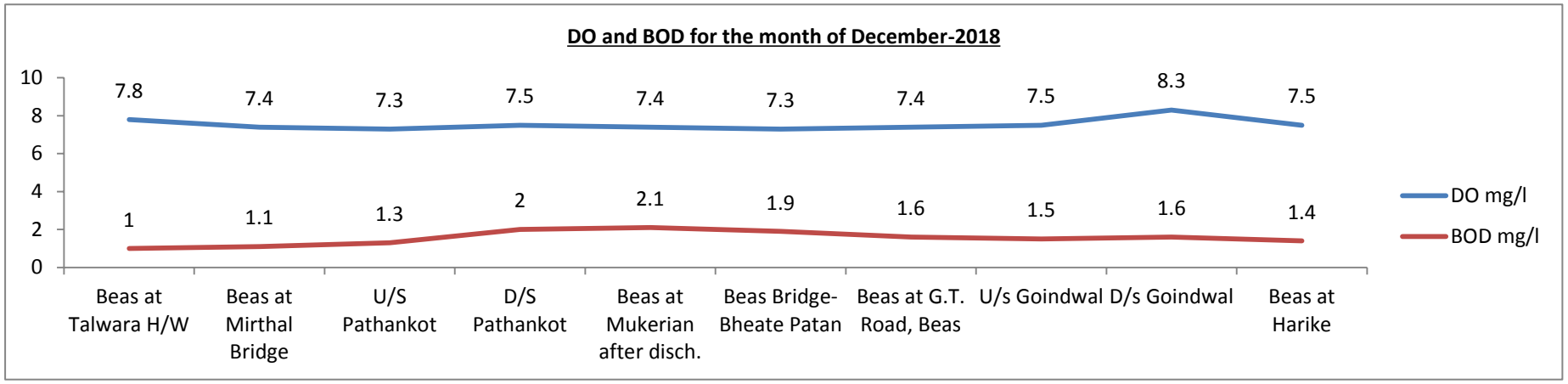
10.8 Resolution of Administrative and Technical Issues

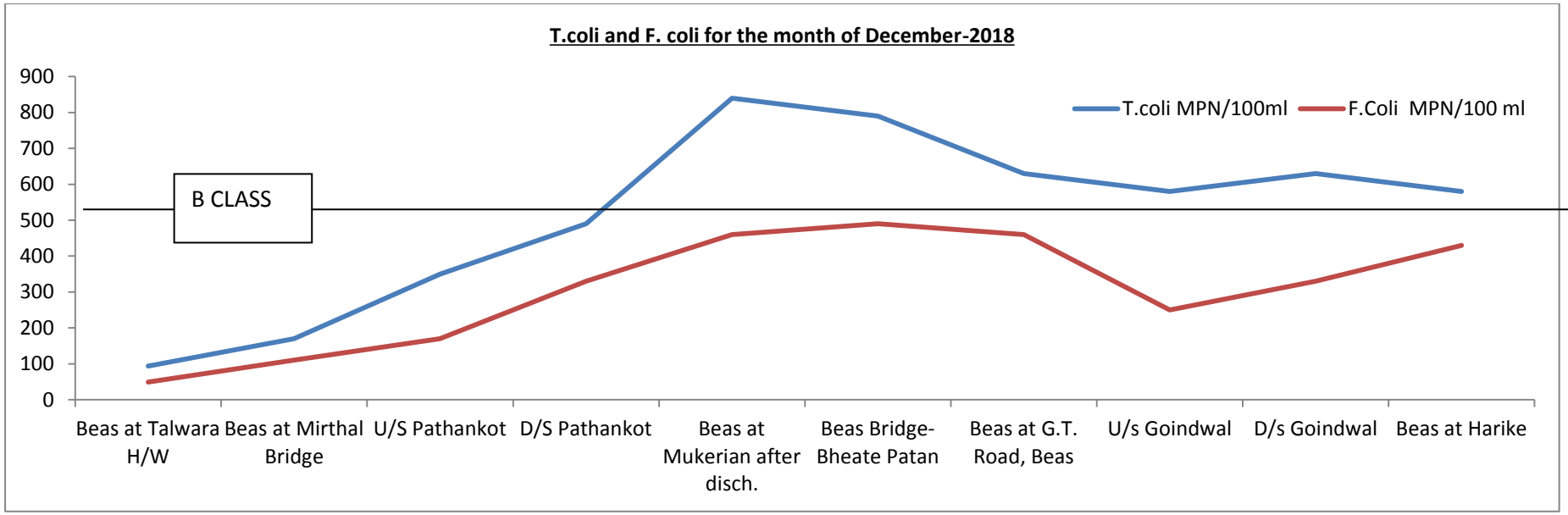
Some of issues such as acquisition of land, design parameters or treatment technologies can hold up the progress of the implementation of the Action Plan. The Program management team will continuous track and identify such issues and escalate to the appropriate level. The three tier monitoring and review system will help in resolving the issues.

ANNEXURE A – Representative Quality Of Water of River Beas for December, 2018

S.No.	Point of Sample Collection	pH	DO mg/l	COD mg/l	BOD mg/l	T.Coli MPN/100 ml	F.Coli MPN/100 ml	DBU Classification
1.	Beas at Talwara H/W	7.8	7.8	08	1.0	94	49	B
2.	Beas at Mirthal Bridge Gurdaspur	8.2	7.4	08	1.1	170	110	B
3.	U/S Pathankot	8.3	7.3	12	1.3	350	170	B
4.	D/S Pathankot	8.0	7.5	16	2.0	490	330	B
5.	Beas 1km D/S effluent discharge point at Mukerian	7.7	7.4	18	2.1	840	460	C
6.	Beas Bridge at village Bheate Patan Tehsil Batala Distt. Gurdaspur	7.9	7.3	17	1.9	790	490	C
7.	Beas at G.T. Road, under Bridge Near Kapurthala	7.8	7.4	16	1.6	630	460	C
8.	U/s Goindwal	7.9	7.5	14	1.5	580	250	C
9.	D/s Goindwal	7.9	8.3	15	1.6	630	330	C
10.	Beas at Harike	7.6	7.5	12	1.4	580	430	C

ANNEXUE A(1) - Graphical Representation of parameters w.r.t Designated Best Use





ANNEXURE B - Analysis Results Of Surface Water Monitoring Under NWMP

S.No.	Points at River Beas	2016-17	2017-18	2018-19	2016-17	2017-18	2018-19	2016-17	2017-18	2018-19	2016-17	2017-18	2018-19	2016-17	2017-18	2018-19
		DO			pH			BOD			T Form			DBU		
1.	Beas at Talwara H/W	7.6	7.9	7.6	7.5	7.3	7.5	BDL	BDL	1.0	151	84	94	B	B	B
2.	Beas at Mirthal Bridge Gurdaspur	7.2	7.4	7.6	7.2	7.3	7.6	1.2	1.1	1.2	272	127	193	B	B	B
3.	U/S Pathankot	7.4	7.6	7.4	7.2	7.1	7.6	0.8	1.0	1.3	251	120	340	B	B	B
4.	D/S Pathankot	7.3	7.5	7.2	7.4	7.2	7.5	1.1	1.1	1.7	357	156	490	B	B	B
5.	Beas 1km D/S at Mukerian	5.8	6.4	7.1	7.2	7.4	7.6	2.8	1.9	1.8	602	379	750	C	B	C
6.	Beas Bridge at village Bheate Patan	-	-	7.2	-	-	7.6	-	-	1.6	-	-	715	-	-	C
7.	Beas at G.T. Road, Beas	7.5	7.5	7.3	7.3	7.4	7.6	1.2	2.3	1.5	277	226	387	B	B	B
8.	U/s Goindwal	7.3	7.5	7.5	7.4	7.2	7.6	1.2	1.2	1.3	289	193	337	B	B	B
9.	D/s Goindwal	7.3	7.4	7.4	7.3	7.3	7.6	1.2	1.4	1.5	302	220	407	B	B	B
10.	Beas at Harike	7.6	7.7	7.6	7.2	7.2	7.6	1.1	1.3	1.4	229	214	453	B	B	B

Note 1. 2015-16- Quarterly sampling. 2. Station at SR. NO. 6 started from July 2018

ANNEXURE C(1)- List of 13 Major Drains Directly Discharging Wastewater Into River Beas

S.N	Name of the Drain	Identification ID	Point of Origin	Approx. Length (in Km)	Location at which it meets River Beas	Approx. Discharge (MLD)
1.	Swan Khadh	IN:1.0	Sansarpur-Terrace (Kangra, H.P)	7	Near Headworks Talwara	2
2.	Chak Phandian Drain	IN:2.0	Vill Chak Phandian	40	Vill Khanpur	12.2
3.	Bhangala Drain	IN:3.0	Village Chak Sarwani	15.5	Vill Kalichpur Kalota	2
4.	Gazi Drain	IN:4.0	Village Landey	8.5	Talluwal	1
5.	Nikas Mansar Drain	IN:5.0	Village Baghowal Nikas	6.88	Taggar Kalan	2.5
6.	Tanda Ram Sahai Drain	IN:6.0	Village Muradpur	8.2	Near Dhanoa Bridge	4
7.	River Chakki	IN:7.0	Himachal Pardersh	40	Vill Bianpur	20
8.	Gaddi Nallah	IN:8.0	Village Bhagwanpur	18.89	Vill Taragarh, Mukerian	934
9.	Kahnuwan Swamp Drain	IN:9.0	Village Pandori Bainsan	39.32	Bhait Pattan Near Vill Kiri Afgana	1651
10.	Dhirowal Drain	IN:10.0	Village Santosh Nagar	6.10	Near Shri Hargobind Pur Bridge	367
11.	Open Channel Near Industrial Estate, Goindwal Sahib*	IN:11.0	Focal Point, Goindwal Sahib	1.5	Vill Khakh	2
12.	Holy Bein	IN:12.0	Vill Dhanoa, Dasuya Distt Hoshiarpur	120	Vill Mand Fatehpur	30,000
13.	Open Nallah along Shah Nehar Canal leading to River Beas	IN:13.0	Talwara Town	2	Vill Bhera	2

*Presently whole water from Focal Point Goindwal Sahib is getting stagnated in an open pond, however during rainy season, the River Beas water gets mix up with the stagnated water of the Goindwal Sahib Town and that of the Industrial Estate Goindwal Sahib

ANNEXURE C(2) – Analysis of 13 Major Drains Directly Discharging Wastewater Into River Beas

S.N	Name of the Drain	Identification ID	pH	COD (mg/L)	BOD (mg/L)	TSS (mg/L)	TDS (mg/L)
1.	Swan Khadh	IN:1.0	8.2	36	10	42	412
2.	Chak Phandial Drain	IN:2.0	8.3	28	7.0	20	205
3.	Bhangala Drain	IN:3.0	7.2	20	05	10	272
4.	Gazi Drain	IN:4.0	7.8	52	19	12	398
5.	Nikas Mansar Drain	IN:5.0	7.4	52	18	12	420
6.	Tanda Ram Sahai Drain	IN:6.0	7.2	32	10	10	310
7.	River Chakki	IN:7.0	8.1	20	3.0	14	210
8.	Gaddi Nallah	IN:8.0	7.2	20	3.0	13	232
9.	Kahnuwan Swamp Drain	IN:9.0	7.9	36	10	36	238
10.	Dhirowal Drain	IN:10.0	Sample Not Collected				
11.	Open Channel Near Focal Point, Goindwal Sahib	IN:11.0	Sample Not Collected				
12.	Holy Bein	IN:12.0	7.6	28	4.4	26	384
13.	Open Nallah along Shah Nehar Canal leading to River Beas	IN:13.0	Sample not Collected				

Note:- Results of Sr. No. 1 Metals are Cr.=0.32, Zn.= 0.10, As.,Pb.,Hg.,Ni.,Cd., Oil And Grease = BDL

All results are in (mg/l) except pH , BDL (Below Detection Limit)

*

ANNEXURE D - List of Creeks/Drains/Nallah/Khadh Leading to Major Drains

Sr No	Name of Major Drain		Identification I.D
1	Kahnuwan Swamp Drain		IN:9.0
	Sr No	Creeks/Drains/Nallah/Khadh	
	1	Bhaini Mian Khan Drain	IN: 9.1
	2	Fatehpur Drain	IN: 9.2
	3	Kot Khan Mohommad Drain	IN: 9.3
	4	Gunupur Drain	IN: 9.4
	5	Kotli Harchanda Drain	IN: 9.5
	6	Kokla Drain	IN: 9.6
2	Holy Bein		IN:12.0
	Sr No	Creeks/Drains/Nallah/Khadh	
	1	Sadarpur Drain	IN:12.1
	2	Nangal Sehgo Drain	IN:12.2
	3	Safdar Drain	IN:12.3
	4	Kurala Drain	IN:12.4
	5	Tanda Drain	IN:12.5
	6	Mehangrewal Choe	IN:12.7
	7	Begowal Drain	IN:12.8
	8	Kingranwala Choe	IN:12.9
	9	Raipur Peer Bakash Drain	IN:12.10
	10	Ramgarh Drain	IN:12.11
	11	Beas Pind Rahimpur Drain	IN:12.12
	12	Nizampur Drain	IN:12.13
	13	Wadala Drain	IN: 12.14
	14	Bhulana Drain	IN:12.15
	15	Khane & Khane Extension Drain	IN:12.16
	16	Sultanpur Drain	IN: 12.17

Note: 12.6 and 12.18 identification has been given to Villages/MCs discharging its wastewater directly into Holy Bein.

ANNEXURE E – List Of Urban/ Rural Areas Discharing Directly Into River Beas

1. Swan Khad (IN:1.0)						
Sr No	**Name of the Source**	**Identification mark**	**Location of the outfall into drain**	**Coordinates at the outfall into the drain**	**Apprx. Discharge (KLD)**	**Present treatment facility installed, if any.**
1.	Sansarpur-Terrace Industrial Complex (Himachal Pardesh)	IN:1.1	Vill. Changrwan	31^0 26'94" N $75^0$62'00" E	2000	No Treatment Provided
2. Chak Pandial Drain (IN:2.0)						
1.	**BBMB Talwara**	**IN:2.1**	**Vill Chak Paelian**	**31^0 94'38" N $75^0$88'86" E**	**8000**	**Yes**
2.	Vill Handwal	IN:2.2	Near Phirni of Vill Handwal	31^0 97'06" N $75^0$81'03" E	350	No Treatment Provided
3.	Vill Sathwan	IN:2.3	Near Left side of Canal	31^0 96'65" N $75^0$82'28" E	400	No Treatment Provided
4.	Vill Chaggravan	IN:2.4	Near temple of Vill Chaggravan	31^0 96'17" N $75^0$86'96" E	425	No Treatment Provided
3. Bhangala Drain (IN:3.0)						
1.	Vill Kalota	IN:3.1	Near Shani Mandir Road	$31^0$99'61" N $75^0$56'08" E	100	No Treatment Provided
2.	Vill Salaraian Kalan	IN:3.2	Near Kalota Road towards North- West of the Salerian Kala to Kalota Road	$32^0$00'15" N $75^0$56'70" E	100	No Treatment Provided
3.	Vill Palaki, Mojowal	IN:3.3	Near Panchvati Dham	$32^0$01'79"N $75^0$58'19"E	150	No Treatment Provided
4.	Vill Bhangala	IN:3.4	Near Manjpur Road	$32^0$01'74"N $75^0$60'29"E	500	No Treatment Provided
5.	Vill Purana Bhangala	IN:3.5	East side of the road Village Purana Bhangala	$32^0$01'02"N $75^0$61'97"E	350	No Treatment Provided

6.	Vill Dhaula Kehra	IN:3.6	North side of the vill. Dahula Kehra	$30^0$00'02"N $75^0$63'75"E	150	No Treatment Provided
7.	Vill Chak Sarwani	IN:3.7	Near Nagal road from Vill. Chak Sarwani	$31^0$99'60"N $75^0$65'29"E	30	No Treatment Provided
8.	Vill Mehtabpur	IN:3.8	North side of the road Vill Mehtabpur	$31^0$03'13" N $75^0$56'93" E	250	No Treatment Provided
4. Gaji Drain (IN: 4.0)						
S.N.	**Name of the Source**	**Identification mark**	**Location of the outfall into drain**	**Coordinates at the outfall into the drain**	**Apprx. Discharge (KLD)**	**Present treatment facility installed, if any.**
1.	Vill Landey, Musahibpur	IN: 4.1	Near NH44	$31^0$99'25"N $75^0$61'44"E	300	No treatment provided
2.	Vill Budhpur Colony & Budhpur Pind	IN:4.2	Near Hoshiarpur- Kalota Road	$31^0$98'47"N $75^0$58'91"E	150	No treatment provided
5. Nikas Mansar Drain (IN:5.0)						
1.	**M.C Mukerian**	**IN:5.1**	**Near Railway Crossing of Vill. Attalgarh**	**$31^0$94'97" N $75^0$60'50" E**	**1000**	**STP Provided for sewage of M.C. Mukerian, but this effluent is bypassed and discharged into drain without any treatment**
2.	**M.C Mukerian**	**IN:5.2**	**Partially treated effluent is used for irrigation and partillay treated is discharged into Nikas Manser Drain**	**$31^0$94'96" N $75^0$59'88" E**	**3000**	**STP Provided of capacity 5 MLD MMBB Technology.**
3.	Vill Attalgarh	IN:5.3	North side of Vill. Attalgarh, 100 mtr. North of Attlagarh-Kalsan Road.	$31^0$94'90" N $75^0$60'30"E	200	No treatment provided
4.	Vill Golra	IN:5.4	100 mtr. North of Golra's from vill. Main Abadi/ Lal Lakir	$31^0$94'79"N $75^0$58'04" E	200	No treatment provided
5.	Vill Ghallian	IN:5.5	North side of the village (West of Pallian to Purika road.)	$31^0$95'14" N $75^0$57'04"E	150	No treatment provided

6.	Vill Taggar Kalan	IN:5.6	North side of the Vill. Phirni.	$31^0$95’24”N $75^0$54’20”E	300	No treatment provided
6. Tanda Ram Sahai Drain (IN:6.0)						
S.N.	**Name of the Source**	**Identification mark**	**Location of the outfall into drain**	**Coordinates at the outfall into the drain**	**Apprx. Discharge (KLD)**	**Present treatment facility installed, if any.**
1.	Vill Muradpur Awana	IN:6.1	East side of Vill. Muradpur Awana Phirni	$31^0$93’41”N $75^0$65’33”E	450	No Treatment Provided
2.	Vill Doogri Colony	IN:6.2	East side of Vill. Salrian Khurd – Tanda Ram Sahai Road.	$31^0$91’91”N $75^0$62’25”E	350	No Treatment Provided
3.	Vill Dugri Rajputtan, Salrian Khurd	IN:6.3	East side of Vill. Salrian Khurd – Tanda Ram Sahai Road.	$31^0$92’23”N $75^0$60’00”E	400	No Treatment Provided
4.	Vill Tanda Ram Sahai	IN:6.4	Near Radhe Krishna Mandir	$31^0$92’84”N $75^0$58’28”E	500	No Treatment Provided
5	Vill Barota	IN:6.5	South side of village Abdulapur.	$31^0$93’58”N $75^0$57’53”E	250	No Treatment Provided
6.	Vill Abdulapur	IN:6.6	Near Bridge of Vill. Abadulapur	$31^0$93’63”N $75^0$57’03”E	325	No Treatment Provided
7.	Vill Mauli	IN:6.7	Near Abdulapur – Mauli Road	$31^0$93’58”N $75^0$54’86”E	400	No Treatment Provided
8.	Vill Bagrohi	IN:6.8	West side phirni of Bagrohi Vill.	$31^0$92’37”N $75^0$54’87”E	250	No Treatment Provided
9.	Vill Amirpur Jattan	IN:6.9	West side of vill Amripur Jattan	$31^0$91’71”N $75^0$56’70”E	350	No Treatment Provided

7. Pipeline from STP of Sri Hargobindpur (IN:6A)						
S.N.	**Name of the Source**	**Identification mark**	**Location of the outfall into drain**	**Coordinates at the outfall into the drain**	**Apprx. Discharge (KLD)**	**Present treatment facility installed, if any.**
1.	**MC Hargobindpur**	**IN:6A.1**	**Near STP of Sri Hargobindpur**	**$31^0$41'26"N $75^0$28'20"E**	**1000**	**Yes**
8. Pond of MC Dhilwan near the Bank of River Beas (IN:6B)						
S.N.	**Name of the Source**	**Identification mark**	**Location of the outfall into drain**	**Coordinates at the outfall into the drain**	**Apprx. Discharge (KLD)**	**Present treatment facility installed, if any.**
1.	**MC Dhilwan**	**IN:6B.1**	**Pond along River Beas**	**$31^0$30'36"N $75^0$20'07"E**	**2500**	**STP Proposed**
9. Open Nallah along Shah Nehar Canal leading to River Beas **(IN:13.0)**						
S.N.	**Name of the Source**	**Identification mark**	**Location of the outfall into drain**	**Coordinates at the outfall into the drain**	**Apprx. Discharge (KLD)**	**Present treatment facility installed, if any.**
1.	**MC Talwara**	**IN:13.1**	**Near Old Talwara Road adjoining Mukerian Hydel Canal**	**31^0 57'03" N $75^0$53'16" E**	**4000**	**STP Proposed**

ANNEXURE F – List Of Urban/ Rural Areas Discharing In-directly Into River Beas

1. **Chakki River (IN:7.0)**						
S.N.	**Name of the Source**	**Identification mark**	**Location of the outfall into drain**	**Coordinates at the outfall into the drain**	**Apprx. Discharge (KLD)**	**Present treatment facility installed, if any.**
1	**MC Pathankot**	**IN: 7.1**	**Bianpur**	**32° 16' 9''N 75° 38' 3''E**	**30200**	**STP of 27 MLD exist and 02 STPs of 2 MLD and 1.2 MLD proposed**
2	Pathankot Industrial Focal Point of PSIEC	IN: 7.2	Haler Khadh	32° 19'31''N 75° 37' 55''E	2000	No
3	**MC Sujanpur**	**IN: 7.3**	**Near Bridge no.5, Sujanpur**	**32° 18' 46''N 75° 36' 7''E**	**3500**	**STP Proposed**
4	Garrison Engineer (Air Force)	IN: 7.4	Near Madhopur Beas Link	32° 16' 47''N 75° 43' 06''E	3000	Yes
5	Garrison Engineer (South)	IN: 7.5	Near Madhopur Beas Link	32° 16' 47''N 75° 43' 06''E	2000	Yes
6	Garrison Engineer(West)	IN: 7.6	Near Madhopur Beas Link	32° 16' 47''N 75° 43' 06''E	2000	Yes
7	Garrison Engineer(Mammon)	IN: 7.7	Near Madhopur Beas Link	32° 16' 47''N 75° 43' 06''E	2000	Yes
8	Garrison Engineer(North)	IN: 7.8	Near Madhopur Beas Link	32° 16' 47''N 75° 43' 06''E	2000	Yes
2. Gaddi Nallah (IN:8.0)						
It carries the water of the catchment area comprising mainly of sub-surface water.						
3. Kahnuwan Swamp Drain (IN:9.0)						
3.1 Bhani Mian Khan Drain(IN:9.1)						
1	Vill Pakhowal	IN:9.1.1	Village Pakhowal	32°2’52”N 75°31’25”E	160	No
2	Vill Chandar Bhan	IN:9.1.2	Village Chandar Bhan	32° 1' 31''N 75° 30' 38''E	205	No
3	Vill Nanowal Jinder	IN:9.1.3	Village Nanowal Jinder	31° 50' 44''N 75° 29' 48''E	220	No
4	Vill Nadala 647	IN:9.1.4	Near Bau Ram Karyana	31° 32' 41'N	53	No

			Store	75° 26' 19''E		
5	Vill Gurudwara Ghallu Ghara	IN:9.1.5	Near Gurudwara Sahib	31° 57' 48'N 75° 28' 14''E	50	No
6	Vill Bhaini Mian Khan	IN:9.1.6	Near House of Chaman Lal Sarpanch	31° 52' 22'N 75° 31' 03''E	291	No
7	Vill Ghookla	IN:9.1.7	Near Karnail Singh and Madan Lal Haveli	31° 51' 58'N 75° 28' 46''E	44	No
8	Vill Nanowal Khurad	IN:9.1.8	Near Bridge of Vill Nanowal Khurad	31°51' 47'N' 75° 30' 10''E	98	No
3.2 **Fatehpur Drain(IN:9.2)**						
1	Vill Darapur	IN:9.2.1	Village Darapur	31° 54' 28''N 75° 26' 8''E	150	No
2	Vill Kot Bhalla	IN:9.2.2	Village Kot Bhalla	32° 4' 26''N 75° 29' 46''E	85	No
3.3 **Fatehpur Drain(IN:9.3)**						
1	Vill Gunopur	IN:9.3.1	Village Gunopur	31° 57' 18''N 75° 29' 16''E	75	No
2	Vill Kahnuwan	IN:9.3.2	Village Kahnuwan	31° 54' 22''N 75° 26' 39''E	210	No
3.4 **Gunupur Drain(IN:9.4)**						
S.N.	**Name of the Source**	**Identification mark**	**Location of the outfall into drain passing near area**	**Coordinates at the outfall into the drain**	**Apprx. Discharge (KLD)**	**Present treatment facility installed, if any.**
1	Vill Chawa	IN:9.4.1	Village Chawa	31° 59' 57''N 75° 28' 12''E	120	No
3.5 **Kotli Harchanda Drain(IN:9.5)** : No village is discharging wastewater in this drain.						
3.6 **Kokla Drain(IN:9.6)**						
1	Vill Bham	IN:9.6.1	Village Bham	31° 45' 55''N 75° 27' 5''E	615	No
2	Vill Bhorian	IN:9.6.2	Village Bhorian	31° 54' 14''N 74° 58' 4''E	90	No
3	Vill Kotli Harchanda	IN:9.6.3	Village Kotli Harchanda	31° 53' 0''N	185	No

				75° 29' 21''E		
4. Dhirowal Drain (IN:10.0)						
S.N.	**Name of the Source**	**Identification mark**	**Location of the outfall into drain passing near area**	**Coordinates at the outfall into the drain**	**Apprx. Discharge (KLD)**	**Present treatment facility installed, if any.**
1	Vill Kiri Afgana Distt Gurdaspur	IN:10.1	Near Vill Kiri Afgana	31° 46'17''N 75° 31'20''E	299	No
5. Open Channel Near Industrial Estate Goindwal Sahib (IN:11.0)						
1	Indusrial Estate (PSIEC)	IN:11.1	Vill Khakh	31° 21' 01''N 75° 08' 26''E	2000	STP Proposed
2	**MC Goindwal Sahib**	**IN:11.2**	**Pond adjoining River Beas**	**31° 21' 19''N 75° 08' 52''E**	**1300**	**STP installed but not yet commissioned**
9.0 Holy Bein (IN:12.0)						
6.1 Holy Bein (Hoshiarpur Area)						
6.1.1 Sadarpur Drain (IN:12.1)						
1.	Vill Sadarpur Nagra	IN:12.1.1	Near pong main canal	31°84’58” N 75°59’48” E	200	No Treatment Provided
6.1.2 Nangal Sehgo Drain(IN:12.2)						
1.	Vill Sehge	IN:12.2.1	Along the road from sehge to NH 44	31°84’96”N 75°63’25”E	200	No Treatment Provided
6.1.3 Safdarpur Drain (IN:12.3)						
1	Vill Buchhan	IN:12.3.1	Directly into the drain	31°77’54”N 75°58’70”E	500	No Treatment Provided
2	Vill Chak Bamu	IN:12.3.2	Directly into the drain	31°75’88”N 75°58’57”E	200	No Treatment Provided
3	Vill Alampur	IN:12.3.3	Directly into the drain	31°74’35”N 75°58’31”E	500	No Treatment Provided
4	Vill Kahlwan	IN:12.3.4	Directly into the drain	31°73’54”N 75°58’15”E	500	No Treatment Provided

5	Vill Gilzian	IN:12.3.5	Directly into the drain	31°72'32"N 75°58'58"E	700	No Treatment Provided
6	Vill Ibrahimpur	IN:12.3.6	Directly into the drain	31°72'85"N 75°58'64"E	300	No Treatment Provided
7	Vill Mada	IN:12.3.7	Directly into the drain	31°71'26"N 75°58'87"E	150	No Treatment Provided
6.1.4 Kurala Drain (IN:12.4)						
1	Vill Kadari Chak	IN:12.4.1	Directly into the drain	31°70'24" N 75°59'78"E	100	No Treatment Provided
6.1.5 Tanda Drain (IN:12.5)						
1	Vill Kotli	IN:12.5.1	Near chauhan Palace	31°68'04"N 75°61'52"E	200	No Treatment Provided
6.1.6 Villages/MCs directly discharging into Holy Bein (IN:12.6)						
1	**MC Tanda**	**IN:12.6.1**	**Into Holy Bein through pipeline**	**$31^0$40'57.06"N $75^0$35'25.49" E**	**3150**	**STP Provided**
2	**MC Dasuya**	**IN:12.6.2**	**No outfall**	**$31^0$46'48" N $75^0$37'57"E**	**4000**	**STP Provided**
6.1 Holy Bein (Jalandhar Area)						
6.2.1 Mehangrowal Choe (IN:12.7)						
1	**MC Hariana**	**IN 12.7.1**	**Opposite Hoshiarpur Road**	**31°62'26" N 74°84'65"E**	**2000**	**STP Proposed**
6.2.2 Begowal Drain (IN:12.8)						
1.	**MC Begowal**	**IN 12.8.1**	**Near STP Begowal**	**31° 36' 16''N 75° 31' 35''E**	**2500**	**STP**
6.2.3 Kingrawalan Choe (IN:12.9)						
1	**MC Sham Chaurasi**	**IN 12.9.1**	**After STP**	**31° 49' 91''N 75° 75' 17''E**	**1000**	**STP (WSP)**
6.2.4 Raipur Peer Baksh Drain (IN:12.10)						
1	Vill Bhadas	IN 12.10.1	Vill Bhadas	31° 35' 10''N 75° 30' 24''E	300	No
6.2.5 Ramgarh Drain(IN:12.11)						

1	Vill Littan	IN:12.11.1	Near Mobile Tower	31° 30' 19''N 75° 29' 12''E	258	No
6.2.6	**Beas Pind Rahimpur Drain (IN:12.12)**					
1.	Vill Bhikhan Nangal	IN:12.12.1	Vill Bhikhan Nangal	31° 28' 03''N 75° 28' 22''E	66	No
2	Vill Cheema	IN:12.12.2	Cheema Rahimpur Colony	30° 26' 42''N 75° 31' 48''E	120	No
3	Vill Ambgarh	IN:12.12.3	Near Church	31° 26' 26''N 75° 32' 33''E	170	No
4	**MC Kartarpur**	**IN:12.12.4**	**Beas Pind Drain**	**31° 43' 58''N 75° 50' 09''E**	**4000**	**STP Proposed**
6.2.7	**Nizampur Drain (IN:12.13)**					
1	Vill Bamuwal	IN:12.13.1	Vill Bamuwal	31°30'10"N 75°26'12"E	277	No
2	Vill Muddowal	IN:12.13.2	Vill Muddowal	31°29'57"N 75°24'58"E	143	No
3	Vill Tajpur	IN:12.13.3	Vill Tajpur	31°29'26"N 75°24'27"E	90	No
4	Vill Ramidi	IN:12.13.4	Vill Ramidi	31°28'36"N 75°23'42"E	263	No
6.2.8	**Wadala Drain (IN:12.14)**					
1.	**MC Kapurthala**	**IN:12.14.1**	**Near Pulli**	**31°23'20"N 75°22'18"E**	**25000**	**STP**
2.	Sunder Nagar	IN:12. 14.2	Near Markfed	31°22'39"N 75°22'26"E	90	Various Colonies within
3.	Model Town	IN:12.14.3	Bimla Enclave pipeline	31°23'22"N 75°22'30"E	860	
4.	Guru Nanak Nagar	IN:12.14.4	Near Guru Nanak Nagar houses	31°23'22"N 75°22'30"E	670	

5.	Police Line	IN:12.14.5	Near Gurudwara Sahib	31°23'24"N 75°23'05"E	540	MC Kapurthala Area shall be connected with the existing STP of 25 MLD Capacity, MC Kapurthala
6.	Suriya Enclave and Grover Colony	IN:12.14.6	Pully opp. Green Wood Works	31°23'41"N 75°23'27"E	980	
7.	New Ajit Nagar	IN:12.14.7	Near residential area	32°23'34"N 75°23'32"E	585	
8.	Mohalla Seenpur	IN:12.14.8	Near Jhugies	32°23'33"N 75°23'34"E	330	
9.	New Court Complex	IN:12.14.09	Near pump house	31°23'13"N 75°25'23"E	240	
10.	New Colony (Ajit Nagar)	IN:12.14.10	Backside of Ajit Nagar	31°23'34"N 75°24'08"E	260	
11.	Vill Daburji and Kadupur	IN:12.14.11	Pullynear Gurudwara Sahib	31°23'25"N 75°24'38"E	283	No
12.	Vill Mainwan	IN:12.14.12	Near Jhugies	31°23'05"N 75°26'15"E	101	No
13.	Vill Kot Krar Khan	IN:12.14.13	Near house of Sh. Jarnail Singh	31°23'10"N 75°28'15"E	200	No
14.	Vill Chuharwal	IN:12.14.14	Near old house	31°23'34"N 75°23'44"E	140	No
6.2.9 Bhulana Drain (IN:12.15)						
1	Vill Bhulana	IN:12.15.1	Near Gurudwara Sahib	31°19'06"N 75°19'13"E	152	No
6.2.10 Khane & Khane Extension drain (IN:12.16)						
1	Vill Tudarwal	IN:12.16.1	Near Govt School	31°20'10"N 75°15'00"E	52	No
6.2.11 Sultanpur Drain(IN:12.17)						
1	Vill Malian	IN:12.17.1	Malian	31°15'48"N 75°18'11"E	185	Pond
6.2.12 List of Villages discharging diretly into Holy Bein (IN:12.18)						

1	Vill Chanchok, Tehsil Bholath, Kapurthala	IN:12.18.1	Backside pucca houses near bein	31°34'20"N 75°30'55"E	47	No
2	Vill Dhogarwal, tehsil & Distt, Kapurthala	IN:12.18.2	Near overhead water tank	31°28'53"N 75°24'55"E	175	No
3	Vill Nanakpura, Tehsil, Kaputhala	IN:12.18.3	Near Shamshan Ghat	31°23'15"N 75°20'04"E	101	No
4	Vill Talwara, Tehsil Bholath, Distt. Kapurthala	IN:12.18.4	Near Atta Chaki	31°32'13"N 75°27'34"E	128	No
5	Vill Talwandi Purdal, Tehsil Bholath, Distt. Kapurthala	IN:12.18.5	Near Shamshan Ghat	31°31'28"N 75°27'23"E	101	No
6	Rawal and Colonies Tehsil and Distt. Kapurthala	IN:12.18.6	Near Gurdwara	31°18'57"N 75°19'07"E	845	STP of 1.0 MLD proposed by Jalandhar Development Authority
7	**MC Bholath**	**IN:12.18.7**	**Near STP**	**31°32'32"N 75°30'20"E**	**4000**	**Yes**
8	**MC Sultanpur Lodhi**	**IN:12.18.8**	**Near STP**	**31°12'50"N 75°11'43"E**	**5600**	**Existing STP of 2.6 MLD to be replaced with proposed 4.0 MLD STP and another 1.0 MLD STP Proposed**
9	Garrison Engineering, Kapurthala	IN:12.18.9	Near Kanjali	31°22'47"N 75°22'47"E	2000	STP Proposed

ANNEXURE G(1)- Local Bodies Which Have Installed STPs of Full Capacities

Sr. No	Name of Town	Sewage Generation in MLD (present)	Capacity of STP (MLD)	Technology of STP
1.	Talwara (BBMB)	4.0	8.0	SBR
2.	Pathankot	18.0	27.0	SBR
3.	Shri Hargobindpur	1.0	1.0	WSP
4.	Mukerian	4.0	5.0	MBBR
5.	Dasuya	3.0	4.0	WSP
6.	Tanda	3.0	4.0	MBBR
7.	Begowal	1.5	2.5	SBR
8.	Bholath	1.5	4.0	WSP
9.	Kapurthala	24.0	25.0	UASB
10.	Sultanpur Lodhi	3.24	2.6	WSP
11.	Sham Chuarasi	1.0	1.0	WSP

ANNEXURE G(2)- List of Partially Completed STPs/ ULBs/JDA/MES/PSIEC have not Installed STPs

Sr. No.	Name of the Town	Disposal	Capacity of the STP proposed to be installed/ commissioned (MLD)
A	**Local Bodies**		
1	MC Sultanpur Lodhi	Into Holy Bein	4.0
2	MC Sultanpur Lodhi	Into Holy Bein	1.0
3	MC Kapurthala (Upgradation of Technology)	Into Holy Bein	-
4	MC Kartarpur	Into Holy Bein	4.0
5	MC Dhilwan	Wastewater discharged into Pond adjoining River Beas which remain stagnated and carry discharge in Monsoon Season to River Beas	2.5
6	MC Pathankot	Into Chakki River	2.0
7	MC Pathankot	Into Chakki River	1.2
8	MC Hariana	Into Holy Bein	2.0
9	MC Sujanpur	Near Bridge no.5, Sujanpur	5.5
10	Talwara Town	Near Old Talwara Road from Mukerain Hydel Canal	4.0
11	Goindwal Sahib	Wastewater discharged into Pond adjoining River Beas which remain stagnated and 47arrying discharge in Monsoon Season to River Beas	1.3
12	Jalandhar Development Authority (JDA)	Wastewater generated from Vill Rawal and adjoining Colonies of Distt Kapurthala	1.0
13	MES	Garrison Engineering Services Kapurethala	1.0
14	PSIEC	Industrial Growth Centre Pathankot	2.0
15	PSIEC	Industrial Focal Point Goindwal Sahib	2.0

ANNEXURE H(1) - List of Industries in Mukerian and Dasuya inCatchment Area of River Beas

S. No.	Name and Address of industry	Type of industry	Water consumption (KLD)	Effluent discharge (KLD)		ETP component	Mode of Disposal of treated wastewater
				Trade (KLD)	Domestic (KLD)		
1	M/s AB Sugar Ltd.(Sugar Division), Village Randhawa, Dasuha, Distt. Hoshiarpur	Sugar Mill	2590	2800	30	Anaerobic followed by aerobic biological treatment	Onto land for plantation
2	M/s AB Sugar Ltd.(Distillery Division), Village Randhawa, Dasuha, Distt. Hoshiarpur	Distillery	Common with sugar division	ZLD	Common STP with Sugar Division as mentioned in Sr. No.1	Not Required	Not Applicable
3	Indian Sucrose Ltd., Mukerian, Distt. Hoshiarpur	Sugar Mill	428	2000	25	Anaerobic followed by aerobic biological treatment	Onto land for plantation

ANNEXURE H(2)-List of Industries in Pathankot and Hoshiarpur Area of River Beas

Sr. No.	Name and Address of industry	Type of industry	Water consumption (KLD)	Effluent discharge (KLD)		ETP component	Mode of Disposal of treated wastewater
				Trade (KLD)	Domestic (KLD)		
1	Chadha Sugar and Industries (P) Ltd, Village-Kiri-Afgana, Tehsil-Batala, Distt-Gurdaspur	Sugar Mill	1850	450	50	Screen Bar, Oil & Grease trap, Equalization Tank, Primary Clarifier, Aeration Tank, Secondary Clarifier & Treated effluent storage tank	Onto land for plantation
2	A.B. Grain Spirits Private Limited, Village-KiriAfgana, Tehsil Batala, Distt. Gurdaspur	Distilery	1392	1128	10	Lagoon, Primary Aeration Tank, Primary Clarifier, Secondary Aeration tank and Seccondary Clarifier	Onto land for plantation
3	Pioneer Industries Ltd (Distillery Division), Industrial Growth Centre, Defence Road, VPO Ranipur, Pathankot.	Distilery	1360	678	18	ZLD	Onto land for plantation
4	Pioneer Industries Ltd (Gluten Division), Industrial Growth Centre, Defence Road, VPO Ranipur, Pathankot.	Gluten Unit	450	311	10	Collection Tank- Aeration Tank- Clarifier- Collection Tank	Onto land for plantation
5	Chadha Sugar and Industries (P) Ltd, (Grain Based Distilery) Village-Kiri-Afgana, Tehsil-Batala, Distt-Gurdaspur.	Distillery	305	67	10	Not Required	Onto land for plantation
6	Chadha Sugar and Industries (P) Ltd, (Molasses Based Distilery) Village-Kiri-Afgana, Tehsil-Batala, Distt-Gurdaspur.	Distillery	659	93	10	Not Required	Onto land for plantation

7	Adie Broswon Breweries (P) Ltd., Village-KiriAfgana, Tehsil-Batala, District-Gurdaspur.	Brewery	1000	700	12.5	Collection Tank-Preclarifier-Buffer Tank- Final Clarifier-Aeration Tank-Digester	Onto land for plantation
8	Friends Paper Mill, IGC,Pathankot	Paper Mill	635	35	4	Collection Tank, Chemical Dosing, Primary Clarifier, Holding Tank, Spray Filter, Outlet for Recirculation	Recirculation cum Onto land for plantation
9	Aarav Board Mill, IGC, Pathankot	Board Mill	10	Nil	0.2	-	Recirculation

ANNEXURE I(1) - List of Industries in Sri Goindbal Sahib & Beas Area of River Beas

S. No.	Name and Address of industry	Type of industry	Water consumption (KLD)	Effluent discharge (KLD)		ETP component	Mode of Disposal of treated wastewater
				Trade (KLD)	Domestic (KLD)		
1	GVK Power (Goindwal Sahib) Ltd., 2x270 MW, Coal Based Thermal Power Plant Project, Goindwal Sahib, Tarn Taran	Thermal Power Plant	56612	652	140	Physico chemical followed by aerobic biological treatment and tertiary treatment	Onto land for plantation
2	G.D. Food Manufacturing (India) Pvt. Ltd (Old Name Punjab Processed Foods (P) Ltd), Village & Tehsil- Khadoor Sahib, Distt- Tarn Taran	Food Processing	225	102	1.8	Physico-Chemical followed by Biological	PSIEC Sewer
3	Regal Laboratories, Plot No. 119, Industrial Complex, Goindwal Sahib, Tarn Taran	Pharmaceutical Unit	6	5	0.6	Physico-Chemical followed by Biological	PSIEC Sewer
4	Goindwal Sahib Vanaspati Mills 409 Industrial ComplexGoindwal Sahib, Distt- Tarn Taran	VanaspatiGhee	50	45	2.0	Physiochemical	PSIEC Sewer
5	BHEL Goindwal Sahib,Distt. TaranTaran	Industrial Valves	120	Nil	100	Biological	Partially into PSIEC sewer and Partially for horticulture
6	JawaharNavodyaVidayalya, Goindwal Sahib, Distt. Tarn Taran	Boarding School	10	Nil	9	Septic Tank	PSIEC Sewer
7	M/s MaharajSawan Singh Charitable HospitalG.T. Road Beas, Distt. Amritsar, Punjab	Hospital	256	-	230	Biological	Onto land for plantation
8	RadhaSoamiSatsang Beas, P.O. Dera Baba Jaimal Singh, Teh. Baba Bakala, Distt. Amritsa	Dera	1210	-	1200	Oxidation Ponds	Onto land for plantation/irrigation

ANNEXURE I(2) - List of Industries located in Kapurthala Area of River Beas

S. No.	Name and Address of industry	Type of industry	Water consumption (KLD)	Effluent discharge (KLD)		ETP component	Mode of Disposal of treated wastewater
				Trade (KLD)	Domestic (KLD)		
1	Rail Coach Factory, Hussainpur, Kapurthala	Coach Factory	1700	22	1662	ETP based on physico chemical treatment technology	Onto land for plantation

ANNEXURE J - Status of HCFs operating in Catchment Areas of Beas

Sr. No	**Name of the town**	**No. of HCFs covered**	**No. of bedded HCFs**	**No. of non-bedded HCFs**	**No. of HCFs not made agreement with CBWTF**
1	Mukerian	31	17	14	NIL
2	Tanda	25	14	11	NIL
3	Dasuya	30	12	18	NIL
4	Beas	04	03	01	NIL
5	Goindwal Sahib	06	03	03	NIL
6	Nadala	19	9	10	NIL
7	Sultanpur Lodhi	23	8	15	NIL
8	Dhilwan	4	1	3	NIL
9	Kapurthala	24	9	15	NIL
10	Pathankot	24	22	2	NIL

ANNEXURE K(1) – Timelines for Irrigation Schemes for reuse of Water

The phase wise time lines are given as under:

1. Installation of Irrigation Scheme from STP Pathankot: 27 MLD , Distt Pathankot			
Brief Scope of Work		**Laying of Underground pipeline based irrigation system from STP to supply treated water for irrigation**	
S.No.	**Stage**	**Start Date**	**Completion Date**
1	Preparation of DPR	Under Progress	30.6.2019
2	Financial Closure	Funds to be tied up (675.00 lakh)	T
3	Tendering of the work including allotment	T +1 month	T +3 month
4	Commencement of work	T + 4 month	T + 18 month
5	Quarterly milestones during the construction stage	-	-
6	Completion and commissioning	T + 18 month	T + 21 month
2. Installation of Irrigation Scheme from STP Tanda: 4 MLD Distt Jalandhar			
	Brief Scope of Work	**Laying of Underground pipeline based irrigation system from STP to supply treated water for irrigation**	
S.No.	**Stage**	**Start Date**	**Completion Date**
1	Preparation of DPR	Under Progress	30.6.2019
2	Financial Closure	Funds to be tied up (Rs. 145.00 lakh)	T
3	Tendering of the work including allotment	T +1 month	T +3 month
4	Commencement of work	T + 4 month	T + 18 month
5	Quarterly milestones during the construction stage	-	-
6	Completion and commissioning	T + 18 month	T + 21 month
3. Installation of Irrigation Scheme from STP Sultanpur Lodhi: 4 MLD, Distt Jalandhar			
Brief Scope of Work		**Laying of Underground pipeline based irrigation system from STP to supply treated water for irrigation**	
S.No.	**Stage**	**Start Date**	**Completion Date**
1	Preparation of DPR	Under Progress	30.6.2019

2	Financial Closure	Funds to be tied up (117.00 lakh)	T
3	Tendering of the work including allotment	T +1 month	T +3 month
4	Commencement of work	T + 4 month	T + 18 month
5	Quarterly milestones during the construction stage	-	-
6	Completion and commissioning	T + 18 month	T + 21 month
4. Installation of Irrigation Scheme STP Sultanpur Lodhi: 1 MLD, Distt Kapurthala			
Brief Scope of Work		**Laying of Underground pipeline based irrigation system from STP to supply treated water for irrigation**	
S.No.	**Stage**	**Start Date**	**Completion Date**
1	Preparation of DPR	Under Progress	30.6.2019
2	Financial Closure	Funds to be tied up (34.00 lakh)	T
3	Tendering of the work including allotment	T +1 month	T +3 month
4	Commencement of work	T + 4 month	T + 18 month
5	Quarterly milestones during the construction stage	-	-
6	Completion and commissioning	T + 18 month	T + 21 month
5. Installation of Irrigation Scheme from STP Kartarpur: 4 MLD, Distt Jalandhar			
Brief Scope of Work		**Laying of Underground pipeline based irrigation system from STP to supply treated water for irrigation**	
S.No.	**Stage**	**Start Date**	**Completion Date**
1	Preparation of DPR	Under Progress	30.6.2019
2	Financial Closure	Funds to be tied up (109.00 lakh)	T
3	Tendering of the work including allotment	T +1 month	T +3 month
4	Commencement of work	T + 4 month	T + 18 month
5	Quarterly milestones during the construction stage	-	-
6	Completion and commissioning	T + 18 month	T + 21 month

6. **Installation of Irrigation Scheme from STP Dhilwan: 2.5 MLD, Distt Jalandhar**			
Brief Scope of Work		**Laying of Underground pipeline based irrigation system from STP to supply treated water for irrigation**	
S. No.	**Stage**	**Start Date**	**Completion Date**
1	Preparation of DPR	Under Progress	30.6.2019
2	Financial Closure	Funds to be tied up (62.50 lakh)	T
3	Tendering of the work including allotment	T +1 month	T +3 month
4	Commencement of work	T + 4 month	T + 18 month
5	Quarterly milestones during the construction stage	-	-
6	Completion and commissioning	T + 18 month	T + 21 month
7. **Installation of Irrigation Scheme from STP Pathankot: 2 MLD, Distt Pathankot**			
Brief Scope of Work		**Laying of Underground pipeline based irrigation system from STP to supply treated water for irrigation**	
S.No.	**Stage**	**Start Date**	**Completion Date**
1	Preparation of DPR	Under Progress	30.6.2019
2	Financial Closure	Funds to be tied up (75.00 lakh)	T
3	Tendering of the work including allotment	T +1 month	T +3 month
4	Commencement of work	T + 4 month	T + 18 month
5	Quarterly milestones during the construction stage	-	-
6	Completion and commissioning	T + 18 month	T + 21 month
8. **Installation of Irrigation Scheme from STP Pathankot: 1.2 MLD, Distt Pathankot**			
Brief Scope of Work		**Laying of Underground pipeline based irrigation system from STP to supply treated water for irrigation**	
Sr.No.	**Stage**	**Start Date**	**Completion Date**
1	Preparation of DPR	Under Progress	30.6.2019
2	Financial Closure	Funds to be tied up (38.00 lakh)	T
3	Tendering of the work including allotment	T +1 month	T +3 month

4	Commencement of work	T + 4 month	T + 18 month
5	Quarterly milestones during the construction stage	-	-
6	Completion and commissioning	T + 18 month	T + 21 month
9. Installation of Irrigation Scheme from STP Hariana: 2.0 MLD, Distt Hoshiarpur			
Brief Scope of Work		**Laying of Underground pipeline based irrigation system from STP to supply treated water for irrigation**	
S. No.	**Stage**	**Start Date**	**Completion Date**
1	Preparation of DPR	Under Progress	30.6.2019
2	Financial Closure	Funds to be tied up (58.00 lakh)	T
3	Tendering of the work including allotment	T +1 month	T +3 month
4	Commencement of work	T + 4 month	T + 18 month
5	Quarterly milestones during the construction stage	-	-
6	Completion and commissioning	T + 18 month	T + 21 month
10. Installation of Irrigation Scheme from STP Sujanpur: 4 MLD, Distt Pathankot			
Brief Scope of Work		**Laying of Underground pipeline based irrigation system from STP to supply treated water for irrigation**	
S.No.	**Stage**	**Start Date**	**Completion Date**
1	Preparation of DPR	Under Progress	30.6.2019
2	Financial Closure	Funds to be tied up (135.00 lakh)	T
3	Tendering of the work including allotment	T +1 month	T +3 month
4	Commencement of work	T + 4 month	T + 18 month
5	Quarterly milestones during the construction stage	-	-
6	Completion and commissioning	T + 18 month	T + 21 month
11. Installation of Irrigation Scheme STP Talwara town: 4 MLD, Distt Hoshiarpur			
Brief Scope of Work		**Laying of Underground pipeline based irrigation system from STP to supply treated water for irrigation**	
S. No.	**Stage**	**Start Date**	**Completion Date**

1	Preparation of DPR	Under Progress	30.6.2019
2	Financial Closure	Funds to be tied up (95.00 lakh)	T
3	Tendering of the work including allotment	T +1 month	T +3 month
4	Commencement of work	T + 4 month	T + 18 month
5	Quarterly milestones during the construction stage	-	-
6	Completion and commissioning	T + 18 month	T + 21 month
12. Installation of Irrigation Scheme from STP GE,Air Force, MES, Pathankot: 3 MLD, Distt Pathankot			
Brief Scope of Work		**Laying of Underground pipeline based irrigation system from STP to supply treated water for irrigation**	
S. No.	**Stage**	**Start Date**	**Completion Date**
1	Preparation of DPR	Under Progress	30.6.2019
2	Financial Closure	Funds to be tied up (90.00 lakh)	T
3	Tendering of the work including allotment	T +1 month	T +3 month
4	Commencement of work	T + 4 month	T + 18 month
5	Quarterly milestones during the construction stage	-	-
6	Completion and commissioning	T + 18 month	T + 21 month
13. Installation of Irrigation Scheme from STP GE,South, , MES, Pathankot: 2 MLD, Distt Pathankot			
Brief Scope of Work		**Laying of Underground pipeline based irrigation system from STP to supply treated water for irrigation**	
S. No.	**Stage**	**Start Date**	**Completion Date**
1	Preparation of DPR	Under Progress	30.6.2019
2	Financial Closure	Funds to be tied up (60.00 lakh)	T
3	Tendering of the work including allotment	T +1 month	T +3 month
4	Commencement of work	T + 4 month	T + 18 month
5	Quarterly milestones during the construction stage	-	-
6	Completion and commissioning	T + 18 month	T + 21 month

14. Installation of Irrigation Scheme from STP GE,West, , MES, Pathankot 2 MLD, Distt Pathankot			
Brief Scope of Work		**Laying of Underground pipeline based irrigation system from STP to supply treated water for irrigation**	
S. No.	**Stage**	**Start Date**	**Completion Date**
1	Preparation of DPR	Under Progress	30.6.2019
2	Financial Closure	Funds to be tied up (60.00 lakh)	T
3	Tendering of the work including allotment	T +1 month	T +3 month
4	Commencement of work	T + 4 month	T + 18 month
5	Quarterly milestones during the construction stage	-	-
6	Completion and commissioning	T + 18 month	T + 21 month
15. Installation of Irrigation Scheme from STP GE(Mammon) Pathankot 2 MLD, Distt Pathankot			
Brief Scope of Work		**Laying of Underground pipeline based irrigation system from STP to supply treated water for irrigation**	
S. No.	**Stage**	**Start Date**	**Completion Date**
1	Preparation of DPR	Under Progress	30.6.2019
2	Financial Closure	Funds to be tied up (62.00 lakh)	T
3	Tendering of the work including allotment	T +1 month	T +3 month
4	Commencement of work	T + 4 month	T + 18 month
5	Quarterly milestones during the construction stage	-	-
6	Completion and commissioning	T + 18 month	T + 21 month
16. Installation of Irrigation Scheme from STP GE,North, , MES, Pathankot 2 MLD, Distt Pathankot			
Brief Scope of Work		**Laying of Underground pipeline based irrigation system from STP to supply treated water for irrigation**	
S. No.	**Stage**	**Start Date**	**Completion Date**
1	Preparation of DPR	Under Progress	30.6.2019
2	Financial Closure	Funds to be tied up (65.00 lakh)	T
3	Tendering of the work including allotment	T +1 month	T +3 month

4	Commencement of work	T + 4 month	T + 18 month
5	Quarterly milestones during the construction stage	-	-
6	Completion and commissioning	T + 18 month	T + 21 month
17. Installation of Irrigation Scheme from STP GE,MES, Kapurthala 1 MLD, Distt Kapurthala			
Brief Scope of Work		**Laying of Underground pipeline based irrigation system from STP to supply treated water for irrigation**	
Sr.No.	**Stage**	**Start Date**	**Completion Date**
1	Preparation of DPR	Under Progress	30.6.2019
2	Financial Closure	Funds to be tied up (35.00 lakh)	T
3	Tendering of the work including allotment	T +1 month	T +3 month
4	Commencement of work	T + 4 month	T + 18 month
5	Quarterly milestones during the construction stage	-	-
6	Completion and commissioning	T + 18 month	T + 21 month
15. Installation of Irrigation Scheme from STP Pathankot-PSIEC, 2 MLD, Distt Pathankot			
Brief Scope of Work		**Laying of Underground pipeline based irrigation system from STP to supply treated water for irrigation**	
Sr.No.	**Stage**	**Start Date**	**Completion Date**
1	Preparation of DPR	Under Progress	30.6.2019
2	Financial Closure	Funds to be tied up (67.00 lakh)	T
3	Tendering of the work including allotment	T +1 month	T +3 month
4	Commencement of work	T + 4 month	T + 18 month
5	Quarterly milestones during the construction stage	-	-
6	Completion and commissioning	T + 18 month	T + 21 month
19. Installation of Irrigation Scheme from STP Goindwal Sahib-PSIEC, 2 MLD			
Brief Scope of Work		**Laying of Underground pipeline based irrigation system from STP to supply treated water for irrigation**	
Sr.No.	**Stage**	**Start Date**	**Completion Date**

1	Preparation of DPR	Under Progress	30.6.2019
2	Financial Closure	Funds to be tied up (65.00 lakh)	T
3	Tendering of the work including allotment	T +1 month	T +3 month
4	Commencement of work	T + 4 month	T + 18 month
5	Quarterly milestones during the construction stage	-	-
6	Completion and commissioning	T + 18 month	T + 21 month
20. Installation of Irrigation Scheme from STP to be set by Jalandhar Development Authority, 1.0 MLD			
Brief Scope of Work		**Laying of Underground pipeline based irrigation system from STP to supply treated water for irrigation**	
Sr.No.	**Stage**	**Start Date**	**Completion Date**
1	Preparation of DPR	Under Progress	30.6.2019
2	Financial Closure	Funds to be tied up (65.00 lakh)	T
3	Tendering of the work including allotment	T +1 month	T +3 month
4	Commencement of work	T + 4 month	T + 18 month
5	Quarterly milestones during the construction stage	-	-
6	Completion and commissioning	T + 18 month	T + 21 month

ANNEXURE K(2) – List of Towns where Irrigation Projects Commissioned/ under progress/to be taken up						
STP no.	**Name of Town**	**Capacity of STP (MLD)**	**Technology of STP**	**Irrigation system (Rs. In Lakh)**		**Remarks**
				(yes or no),	**if no then cost)**	
A	**STPs COMMISSIONED**					
	Irrigation Projects Commissioned					
1	BBMB Talwara	8	SBR	Yes	-	Irrigation Project Commissioned by BBMB
2	Sri Hargobindpur	1	WSP	Yes		Irrigation Project Commissioned
3	Mukerian	5	MBBR	Yes		Irrigation Project Commissioned
4	Dasuya	4	WSP	Yes		Irrigation Project Commissioned
5	Begowal	2.5	SBR	Yes/Extension being done		Irrigation Project Commissioned, Extension of project underway, Funds available with Deptt
6	Bholath	4	WSP	Yes		Irrigation Project Commissioned
7	Kapurthala	25	UASB	Yes/Extension being done		Irrigation Project Commissioned, Extension of Pipeline underway, Funds available with Deptt
8	Sultanpur Lodhi	2.6	WSP	Yes/Extension being done		Irrigation Project Commissioned, Extension of project underway, Funds available with Deptt
9	Sham Churasi	1	WSP	Yes		Irrigation Project Commissioned
	Irrigation Projects not Installed (STPs Commissioned)					
1	Pathankot (AMRUT)	27	SBR	No	875.00	Funds to be tied up, Proposed under NABARD-RIDF-24
2	Tanda	4	MBBR	No	145.00	Funds to be Tied up
	STP's PROPOSED TO BE CONSTRUCTED					
	Funds Required for Irrigation Projects					

1	Sultanpur Lodhi	4	SBR	No	117.00	Funds for irrigation to be tied up
2	Sultanpur Lodhi	1	SBR	No	34.00	Funds for irrigation to be tied up
3	Kartapur	4	SBR	No	109.00	Funds for irrigation to be tied up
4	Dhilwan	2.5	SBR	No	62.50	Funds for irrigation to be tied up
5	Pathankot	2	SBR	No	75.00	Funds for irrigation to be tied up
6	Pathankot	1.2	SBR	No	38.00	Funds for irrigation to be tied up
7	Hariana	2	SBR	No	58.00	Funds for irrigation to be tied up
8	Sujanpur	5.5	SBR	No	135.00	Funds for irrigation to be tied up
9	Talwara Town	4	SBR	No	95.00	Funds for irrigation to be tied up
10	Rawal and Colonies	1	SBR	No	34.00	Funds for irrigation to be tied up
	Funds Requirement for Irrigation Projects from STPs Installed by MES					
1	GE,Air Force, MES, Pathankot	3	WSP	No	90.00	*Detailed Irrigation scheme proposal shall be prepared within 6 months
2	GE,South, , MES, Pathankot	2	WSP	No	60.00	--do----
3	GE,West, , MES, Pathankot	2	WSP	No	60.00	--do----
4	GE(Mammon) Pathankot	2	WSP	No	62.00	--do----
5	GE,North, , MES, Pathankot	2	WSP	No	65.00	--do----
6	GE,MES, Kapurthala	1	SBR	No	35.00	--do----(STP is yet to be commissioned)

	PSIEC					
1	Industrial Growth Centre Pathankot	2	MBBR	No	67.00	Funds for irrigation to be tied up
2	Industrial Focal Point, Goindwal Sahib	2	SBR	No	65.00	Funds for irrigation to be tied up

ANNEXURE L- Timelines for setting up of Sewerage Treatment Facilities by Local Bodies

1. Name of the Project: Providing Sewerage & Construction of STP of Capacity of 04 MLD STP at Bhagorahian Road,Sultanpur Lodhi.			
Brief Scope of Work		**Scope : 04 MLD STP**	
Sr. No	**Stage**	**Start Date**	**Completion Date**
1	Land Acquisition	Public notice issued 30.01.2019	-
2	Preparation of DPR	Being Prepared	-
3	Financial Closure	Provision of Funds from 550thyear Gurpurab Celebration Account	
4	Tendering of the work including allotment	Land being finalized and tendering will be started after possession of land-T	T+6 months
5	Commencement of work	T+6 months	T+18 months
6	Quarterly milestones during the construction stage	25%	-
7	Completion and commissioning	T+18 months	T+21 months
2. Name of the Project: Providing Sewerage & Construction of 01 MLD STP at ChaldhanRoad, SultanpurLodhi.			
Brief Scope of Work		**Scope : 01 MLD STP**	
1	Land Acquisition	Land Acquired	-
2	Preparation of DPR	Prepared	Approved
3	Financial Closure	Funds being tied up under HUDCO loan	
4	Tendering of the work including allotment	01.04.2019	31.05.2019
5	Commencement of work	01.06.2019	31.03.2020
6	Quarterly milestones during the construction stage	25%	-
7	Completion and commissioning	01.04.2020	30.06.2020
3. Name of the Project: Up-gradation of Existing STP of 25 MLD Capacity of Kapurthala			
Brief Scope of Work		**Scope : 25 MLD STP**	
1	Land Acquisition	Land Available	-
2	Preparation of DPR	Being prepared	31.03.2019
3	Financial Closure	Funds to be provided by MC Kapurthala	
4	Tendering of the work including allotment	01.04.2019	30.06.2019
5	Commencement of work	01.07.2019	31.12.2019
6	Quarterly milestones during the construction stage	-	-
7	Completion and commissioning	01.01.2020	31.03.2020
4. Name of the Project: Providing Sewerage and Construction of 4 MLD STP at Bholath Road Kartarpur			
Brief Scope of Work		**Scope : 04 MLD STP**	
1	Land Acquisition	MC Land Identified	-
2	Preparation of DPR	Prepared for Rs. 6.49 crore	Approved
3	Financial Closure	Funds tied up from HUDCO Loan	
4	Tendering of the work	Started	31.07.2019

	including allotment		
5	Commencement of work	01.08.2019	31.07.2020
6	Quarterly milestones during the construction stage	-	-
7	Completion and commissioning	01.08.2020	31.10.2020
5. Name of the Project: Providing Sewerage and Construction of 2.5 MLD STP at Dhilwan			
Brief Scope of Work		**Scope : 2.5 MLD STP**	
Sr. No.	**Stage**	**Start Date**	**Completion Date**
1	Land Acquisition	Not Acquired, Notice Issued	-
2	Preparation of DPR	Prepared for Rs. 15 crore	Approved
3	Financial Closure	Funds tied up under HUDCO loan	
4	Tendering of the work including allotment	Land being finalized and tendering will be started after possession of land-T	T+6 months
5	Commencement of work	T+6 months	T+18 months
6	Quarterly milestones during the construction stage	25%	-
7	Completion and commissioning	T+18 months	T+21 months
6. Name of the Project: Providing Sewerage & Construction of 02 MLD STP at Kothi Pandita, Pathankot.			
Brief Scope of Work		**Scope : 02 MLD STP**	
1	Land Acquisition	Land Acquired	-
2	Preparation of DPR	Being Prepared	
3	Financial Closure	Funds from AMRUT scheme	
4	Tendering of the work including allotment	01.02.2019	30.04.2019
5	Commencement of work	01.05.2019	28.02.2020
6	Quarterly milestones during the construction stage	-	-
7	Completion and commissioning	01.03.2020	31.05.2020
7. Name of the Project: Providing Sewerage & Construction of 1.2 MLD STP at Adarsh Nagar, Pathankot.			
Brief Scope of Work		**Scope : 1.2 MLD STP**	
1	Land Acquisition	Land Acquired	-
2	Preparation of DPR	Being Prepared	-
3	Financial Closure	Funds from AMRUT scheme	
4	Tendering of the work including allotment	01.02.2019	30.04.2019
5	Commencement of work	01.05.2019	28.02.2020
6	Quarterly milestones during the construction stage	-	-
7	Completion and commissioning	01.03.2020	31.05.2020
8. Name of the Project: Providing Sewerage & Construction of STP of Capacity of 02 MLD STP at Vill. Sikri Road, Hariana.			
Brief Scope of Work		**Scope : 02 MLD STP**	
1	Land Acquisition	Land Acquired	
2	Preparation of DPR	Prepared	Already Approved

3	Financial Closure	Funds tied up under HUDCO loan	
4	Tendering of the work including allotment	Started	31.07.2019
5	Commencement of work	01.08.2019	31.07.2020
6	Quarterly milestones during the construction stage	25%	-
7	Completion and commissioning	01.08.2020	31.10.2020

9. Name of the Project: Providing Sewerage & Construction of STP of Capacity of 5.5 MLD STP at Sujanpur Distt Pathankot

Brief Scope of Work		**Scope : 5.5 MLD STP**	
1	Land Acquisition	Not acquired	
2	Preparation of DPR	14.01.2019	31.03.2019
3	Financial Closure	Funds to be tied up-T	
4	Tendering of the work including allotment	T+3 months	T+6 months
5	Commencement of work	T+6 months	T+18 months
6	Quarterly milestones during the construction stage	25%	-
7	Completion and commissioning	T+18 months	T+21 months

10. Name of the Project: Providing Sewerage & Construction of STP of Capacity of 4.0 MLD STP at Talwara Town, Distt Hoshiarpur

Brief Scope of Work		**Scope : 4.0 MLD STP**	
1	Land Acquisition	Not acquired	
2	Preparation of DPR	14.01.2019	31.03.2019
3	Financial Closure	Funds to be tied up-T	
4	Tendering of the work including allotment	T+3 months	T+6 months
5	Commencement of work	T+6 months	T+18 months
6	Quarterly milestones during the construction stage	25%	-
7	Completion and commissioning	T+18 months	T+21 months

11. Name of the Project: Commissioning of STP of Capacity of 1.3 MLD STP at Goindwal Sahib Distt Tarntarn

Brief Scope of Work		**Scope : 1.3 MLD STP**	
1	Preparation of DPR	14.01.2019	31.03.2019
2	Tendering of the work including allotment	01.02.2019	01.03.2019
3	Commencement of work	01.03.2019	-
4	Quarterly milestones during the construction stage	25%	-
5	Completion and commissioning	30.06.2019	30.06.2019

12. Name of the Project: Commissioning of STP of Capacity of 1.0 MLD STP for Rawal and Colonies Distt Kapurthala by Jalandhar Development Authority (JDA)			
Brief Scope of Work		**Scope : 1.0 MLD STP**	
1	Land Acquisition	Not acquired	
2	Preparation of DPR	14.01.2019	31.03.2019
3	Financial Closure	Funds to be tied up-T	
4	Tendering of the work including allotment	T+3 months	T+6 months
5	Commencement of work	T+6 months	T+18 months
6	Quarterly milestones during the construction stage	25%	-
7	Completion and commissioning	T+18 months	T+21 months

Annexure M – Timelines for setting up of treatment facilities by MES, Kapurthala

1. **Name of the Project:** Garrison Engineering Services, Kapurthala – STP of 1.0 MLD capacity		
Brief Scope of Work		**STP based on MBBR Technology of capacity 1.0 MLD**
Sr.No.	**Stage**	**Status**
1	Preparation of DPR	Prepared
2	Financial Closure	31.03.2020
3	Tendering of the work including allotment	Work Alloted
4	Commencement of work	Started
5	Quarterly milestones during the construction stage	-
6	Completion and commissioning	31.03.2020

ANNEXURE N - Installation of STPs by PSIEC for Industrial Estates

01	**Name of the Project**	**Installation of STP of 2 MLD based on MBBR Technlology to be installed, for Industrial Growth Center Pathankot, DPR of which has been approved and process of calling the tenders is at final stage.**	
Sr.No.	**Stage**	**Start Date**	**Completion Date**
1	Land	4 Acre available	
2	Preparation of DPR	Approved	-
3	Financial Closure	01.04.2019	31.03.2020
4	Tendering of the work including allotment	Issued	Work not Alloted
5	Commencement of the work	-	-
6	Quarterly Milestones during the construction stage	-	-
7	Completion and commissioning	1.4.2019	31.12.2020
02	**Name of the Project**	**Installation of STP of 2.0 MLD, Industrial Focal Point, Goindwal Sahib**	
1	Land	5 Acre available	
2	Preparation of DPR	Not prepared	NA
3	Financial Closure	NA	NA
4	Tendering of the work including allotment	NA	NA
5	Commencement of the work	-	-
6	Quarterly Milestones during the construction stage	-	-
7	Completion and commissioning	1.04.2019	31.12.2020

ANNEXURE O – Timelines for setting up of treatment facilities for sewage / sullage in Rural areas

The phase wise time lines are given as under:

Phase – I			
Brief Scope of Work		**Treatment facilities for villages having discharge more than or equal to 300 KLD**	
Sr.No.	**Stage**	**Start Date**	**Completion Date**
1	Preparation of DPR	01.03.2019	31.05.2019
2	Financial Closure	01.06.2019	31.07.2019
3	Tendering of the work including allotment	01.08.2019	30.09.2019
4	Commencement of work	1.10.2019	31.12.2019
5	Quarterly milestones during the construction stage	-	-
6	Completion and commissioning	01.01.2020	31.01.2020
Phase – 2			
	Brief Scope of Work	**Treatment facilities for villages having discharge between 100 KLD to 300 KLD**	
1	Preparation of DPR	01.01.2020	31.03.2020
2	Financial Closure	01.04.2020	30.06.2020
3	Tendering of the work including allotment	01.07.2020	31.08.2020
4	Commencement of work	01.09.2020	31.12.2020
5	Quarterly milestones during the construction stage	-	-
6	Completion and commissioning	01.01.2021	31.01.2021
Phase – 3			
Brief Scope of Work		**Treatment facilities for villages having discharge less than 100 KLD**	
Sr.No.	**Stage**	**Start Date**	**Completion Date**
1	Preparation of DPR	01.02.2021	30.04.2021
2	Financial Closure	01.05.2021	30.06.2021
3	Tendering of the work including allotment	01.07.2021	31.08.2021
4	Commencement of work	01.09.2021	31.12.2021
5	Quarterly milestones during the construction stage	-	-
6	Completion and commissioning	01.01.2022	31.01.2022

ANNEXURE P(1) – Timeslines for installation of Online Continuous Effluent Monitoring System

1. PWSSB for the STPs already in operation in the towns namely Pathankot, Shri Hargobindpur, Mukerian,Sham Chaurasi, Dasuya, Tanda, Begowal, Bholath, Kapurthala and Sultanpur Lodhi.			
Name of the Project		**All Existing STPs where maintenance is with PWSSB**	
Sr.No.	**Stage**	**Start Date**	**Completion Date**
1	Financial Closure	7.1.2019	31.3.2019
2	Tendering of the work including allotment	1.4.2019	30.6.2019
3	Commencement of the work	1.7.2019	30.9.2019
4	Completion and commissioning	1.10.2019	30.11.2019
2. PWSSB for the STPs proposed to be installed in Pathankot (2 MLD & 1.2 MLD), Dhilwan (2.5 MLD), Kartarpur (4.0 MLD), Sultanpur Lodhi (1.0 MLD and 4.0 MLD), Hariana (2.0 MLD), Sujanpur (5.5 MLD), Talwara (4.0)			
Name of the Project		**All Proposed STPs where maintenance shall be with PWSSB**	
1	Financial Closure	31.03.2020	30.06.2020
2	Tendering of the work including allotment	01.07.2020	30.07.2020
3	Commencement of the work	01.08.2020	31.08.2020
4	Completion and commissioning	01.09.2020	30.09.2020
3. BBMB for the STP already in operation in the town Talwara			
Sr No	**Name of the Project**	**STP of 8 MLD at Talwara**	
1	Financial Closure	10.1.2019	31.3.2019
2	Tendering of the work including allotment	5.4.2019	10.5.2019
3	Commencement of the work	15.5.2019	30.6.2019
4	Completion and commissioning	30.6.2019	30.6.2019
4. Department of Water Supply and Sanitation.			
Sr No.	**Name of the Project**	**STP of 1.3 MLD capacity at Goindwal Sahib.**	
Sr.No.	**Stage**	**Start Date**	**Completion Date**
1	Financial Closure	15.2.2019	31.3.2019
2	Tendering of the work including allotment	1.4.2019	20.4.2019
3	Commencement of the work	21.4.2019	20.5.2019
4	Completion and commissioning	21.5.2019	30.5.2019
5. MES for the STPs already in operation in the towns namely GE (Air Force), GE (South), GE(West), GE (Mammon) & GE(North) of Pathankot & GE Kapurthala.			
Name of the Project		**All Existing STPs where maintenance is with MES**	
Sr.No.	**Stage**	**Start Date**	**Completion Date**
1	Financial Closure	7.1.2019	31.3.2019
2	Tendering of the work including allotment	1.4.2019	30.6.2019
3	Commencement of the work	1.7.2019	30.9.2019
4	Completion and commissioning	1.10.2019	30.11.2019

6. PSIEC for the 2 no: STP proposed to be installed in Focal Point Pathankot and Goindwal Sahib.			
Name of the Project		**All Proposed STPs where maintenance shall be with PSIEC**	
Sr.No.	**Stage**	**Start Date**	**Completion Date**
1	Financial Closure	31.03.2020	30.06.2020
2	Tendering of the work including allotment	01.07.2020	30.07.2020
3	Commencement of the work	01.08.2020	31.08.2020
4	Completion and commissioning	01.09.2020	30.09.2020
7. Jalandhar Development Authority for STP of 1.0 MLD for Rawal and Colonies Distt Kapurthala.			
Name of the Project		**STP of 1.0 MLD capacity for Rawal and Colonies by JDA**	
Sr.No.	**Stage**	**Start Date**	**Completion Date**
1	Financial Closure	31.03.2020	30.06.2020
2	Tendering of the work including allotment	01.07.2020	30.07.2020
3	Commencement of the work	01.08.2020	31.08.2020
4	Completion and commissioning	01.09.2020	30.09.2020

ANNEXURE P(2) – Timelinesfor installation of CCTV cameras for the STPs already in operation

1. PWSSB for the STPs already in operation in the towns namely Pathankot, Shri Hargobindpur, Mukerian, Sham Chaurasi, Dasuya, Tanda, Begowal, Bholath, Kapurthala and Sultanpur Lodhi.			
Name of the Project		**All Existing STPs where maintenance is with PWSSB**	
Sr.No	**Stage**	**Start Date**	**Completion Date**
1	Financial Closure	5.1.2019	30.1.2019
2	Tendering of the work including allotment	1.2.2019	28.2.2019
3	Commencement of the work	1.3.2019	15.3.2019
4	Completion and commissioning	15.3.2019	31.3.2019
2. PWSSB for the STPs proposed to be installed in Pathankot (2 MLD & 1.2 MLD), Dhilwan (2.5 MLD), Kartarpur (4.0 MLD), Sultanpur Lodhi (1.0 MLD and 4.0 MLD), Hariana (2.0 MLD), Sujanpur (5.5 MLD), Talwara (4.0))			
Name of the Project		**All Existing STPs where maintenance is with PWSSB**	
1	Financial Closure	31.03.2020	30.06.2020
2	Tendering of the work including allotment	01.07.2020	30.07.2020
3	Commencement of the work	01.08.2020	31.08.2020
4	Completion and commissioning	01.09.2020	30.09.2020
3. BBMB for the STP already in operation in the town Talwara			
	Name of the Project	**STP of 8 MLD at Talwara**	
1	Financial Closure	10.1.2019	31.3.2019
2	Tendering of the work including allotment	5.4.2019	10.5.2019
3	Commencement of the work	15.5.2019	30.6.2019
4	Completion and commissioning	30.6.2019	30.6.2019
4. Department of Water Supply and Sanitation.			
	Name of the Project	**STP of 1.3 MLD capacity at Goindwal Sahib.**	
1	Financial Closure	15.2.2019	15.3.2019
2	Tendering of the work including allotment	16.3.2019	31.3.2019
3	Commencement of the work	1.4.2019	20.4.2019
4	Completion and commissioning	21.4.2019	30.4.2019
5. MES for the STPs already in operation in the towns namely GE (Air Force), GE (South), GE(West), GE (Mammon) & GE(North) of Pathankot & GE Kapurthala			
Name of the Project		**All Existing STPs where maintenance is with MES**	
1	Financial Closure	15.2.2019	15.3.2019
2	Tendering of the work including allotment	16.3.2019	31.3.2019
3	Commencement of the work	1.4.2019	20.4.2019
4	Completion and commissioning	21.4.2019	30.4.2019

6. Jalandhar Development Authority for STP of 1.0 MLD for Rawal and Colonies Distt Kapurthala.			
Name of the Project		**STP of 1.0 MLD capacity for Rawal and Colonies by JDA**	
Sr.No.	**Stage**	**Start Date**	**Completion Date**
1	Financial Closure	31.03.2020	30.06.2020
2	Tendering of the work including allotment	01.07.2020	30.07.2020
3	Commencement of the work	01.08.2020	31.08.2020
4	Completion and commissioning	01.09.2020	30.09.2020

ANNEXURE Q(1) –Timelines For Online Continuous Monitoring System For Industries

Sr No.	Activity	Date of Start	Date of completion
1	Contacting to various suppliers for inviting quotations.	01.02.2019	28.02.2019
2	Finalization of orders with the supplier	01.03.2019	31.03.2019
3	Installation of online continuous monitoring system	01.04.2019	31.05.2019
4.	Caliberation of online continuous monitoring system	01.06.2019	30.06.2019
5.	Connecting the online continuous monitoring system with the server of the CPCB and PPCB	01.07.2019	31.07.2019

ANNEXURE Q(2) – Timelines ForReal Time Water Quality Monitoring Station by PPCB

Sr No.	Activity	Date of Start	Date of completion
1	Contacting to various suppliers for inviting quotations.	01.02.2019	28.02.2019
2	Finalization of orders with the supplier	01.03.2019	31.03.2019
3	Installation of online continuous monitoring system	01.04.2019	31.05.2019
4.	Caliberation of online continuous monitoring system	01.06.2019	30.06.2019
5.	Connecting the online continuous monitoring system with the server of the CPCB and PPCB	01.06.2019	30.06.2019

ANNEXURE R –Format for Monitoring of Progress of Projects

Name of the Project		**Progress achieved at the end of the month**		
Brief Scope of the Project				
S. no.	**Stage**	**Start Date**	**Completion Date**	
1	Preparation of DPR			
2	Financial Closure			
3	Tendering of the Work including allotment			
4	Commencement of Work			
5	Quarterly Milestones during the construction / development Stage			
6	Completion and Commissioning			

ANNEXURE S - Performa For Operational Record of the STP

Sr No	Location of STP	Capacity of STP (MLD)	Reading of Water meter at 8 am	Quantity of waste water treated (in KLD)	Sludge wasted (kg/day)	Qty. of Chlorine used/ DAY (Kg/day)	Details of chemical used for dozing purpose and the component at which the same was imparted.	Name of the component remained out of order during the day and reasons thereof.	Qty of treated w/w reused for irrigation of agricultural land / irrigation of green area / construction purpose (KLD)	Qty of treated w/w discharged into drain leading to river Beas (KLD)
1.	BBMB Talwara	8								
2.	Dasuya	4								
3.	Mukerian	5								
4.	Tanda	4								
5.	Kapurthala	25								
6.	Sultanpur Lodhi	2.6								
7.	Bholath	4								
8.	Begowal	2.5								
9.	Sham Chaurasi	1.0								
10.	MC Pathankot	27								
11.	MC Sri Hargobindpur	1.3								
12.	GE(Air Force) Pathankot									
13.	GE (South)									
14.	GE (West)									
15.	GE (Mammon)									
16.	GE (North)									

ANNEXURE T – PerformaFor Keeping Record Of Analaysis Result of STP

Sr No	STP	Date of Sampling	Point of sampling	Values of the parameters in mg/l except pH				
				pH	TSS (mg/l)	BOD (mg/l)	T.Coli (MPN/100 ml)	F.Coli (MPN/100 ml)
1.	BBMB Talwara	11/09.2017	Outlet	7.4	48	14	-	-
2.	Mukerian	27/12/2018	Outlet	7.8	17	12	2200	1100
3.	Pathankot	16/07/2018	Bypass	7.5	240	120	1,10,000	46,000
4.	Sri Hargobindpur	17/12/2018	Outlet	9.0	52	35	28000	8400
5.	Dasuya	27/12/2018	Outlet	7.8	17	12	2200	1100
6.	Tanda	27/12/2018	Outlet	7.3	10	08	790	330
7.	Sham Chaurasi	30/11/2018	Outlet	7.0	64	138	35000	17000
8.	Bholath	11/12/2018	Outlet	8.1	36	24	6300	2600
9.	Begowal	11/12/2018	Outlet	7.6	29	9	1700	700
10.	Sultanpur Lodhi	21/12/2018	Outlet	7.5	58	36	22000	13000
11.	STP Kapurthala	21/12/2018	Outlet	7.8	72	40	7000	2100
12.	GE (Air Force) Pathankot	Sample yet to be collected						
13.	GE (South), Pathankot	Sample yet to be collected						
14.	GE (West), Pathankot	Sample yet to be collected						
15.	GE (Mammon), Pathankot	Sample yet to be collected						
16.	GE Engineer(North), Pathankot	Sample yet to be collected						

ANNEXURE U(1) - Proforma for Monitoring of Industrial Effluents

S.No.	Name & location of the Industry	Date of visit	Observations noticed during visit	Analysis results of trade effluent samples	Whether meeting with the effluent standards or not	Remarks, if any

ANNEXURE U(2) – Proforma for Monitoring of Water Quality of Industrial Complex Sansarpur-Terrace, Himachal Pardesh

S.No.	Name & location of the Industry	Date of visit	Observations noticed during visit	Analysis results of trade effluent samples	Whether meeting with the effluent standards or not	Remarks, if any

ANNEXURE V - Proforma For Monitoring Of Water Quality Of River Beas

S.No.	Point of Sample Collection	Date of Sampling	pH	DO mg/l	COD mg/l	BOD mg/l	T.Coli MPN/100 ml	F.Coli MPN/100 ml	DBU Classification
1.	Beas at Talwara H/W	Dec,2018	7.8	7.8	08	1.0	94	49	B
2.	Beas at Mirthal Bridge Gurdaspur		8.2	7.4	08	1.1	170	110	B
3.	U/S Pathankot		8.3	7.3	12	1.3	350	170	B
4.	D/S Pathankot		8.0	7.5	16	2.0	490	330	B
5.	Beas 1km D/S effluent discharge point at Mukerian		7.7	7.4	18	2.1	840	460	C
6.	Beas Bridge at village Bheate Patan Tehsil Batala Distt. Gurdaspur		7.9	7.3	17	1.9	790	490	C
7.	Beas at G.T. Road, under Bridge Near Kapurthala		7.8	7.4	16	1.6	630	460	C
8.	U/s Goindwal		7.9	7.5	14	1.5	580	250	C
9.	D/s Goindwal		7.9	8.3	15	1.6	630	330	C
10.	Beas at Harike		7.6	7.5	12	1.4	580	430	C

ANNEXURE W - Proforma For Submission of Report Regarding Health Check Camps

Sr. No.	Location of the camp	Date on which camp was organized	Name of the Doctor(s) & name of their organization	No. of people examined	No. of people found effected with water borne disease

ANNEXURE X - Proforma For Submission Of Report Regarding Awareness Programme

Sr. No.	City / Town / Location where the awareness pgoramme is organized	Name of the Officer(s) who hold this programme	Date	No. of participants	Brief detail about awareness detail