Initial Environmental Examination

March 2017

Uzbekistan: Djizzak Sanitation System Development Project

Rehabilitation and Construction of Sewerage Collectors, Networks, and Pumping Stations in Djizzak City

Prepared by the Project Coordination Unit of the Uzbekistan Communal Services Agency (UCSA) and project development consultant SU-YAPI Engineering and Consulting Inc. for the Asian Development Bank. This is an updated version of the draft originally posted in August 2014 available on https://www.adb.org/projects/46135-002/main#project-documents.

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Acronyms, Abbreviations and Glossary

Item	Definition
ADB	Asian Development Bank
dBA	A measure of audible (the human ear) noise
DSSDP	Djizzak Sewerage System Development Project
EA	Executing Agency (EA
EARF	Environmental Assessment and Review Framework
ECA	Environmental Consequences Assessment
EIA	Environmental Impact Assessment
EIS	Environmental Impact Statement
EMiT	EMP: Mitigation Table
EMoT	EMP: Monitoring Table
EMP	Environmental Management Plan
Glavgosekoexpertiza	The Environmental Assessment Department within Goskompriroda, operating at both the central and oblast levels.
Goskompriroda (GOZ)	Uzbek National Environmental Management Agency
GOU	Government of Uzbekistan
GRC	Grievance Redress Committee
IEA	Initial environmental assessment
IEE	Initial environmental examination
IRTM	Inter- regional trunk main
KMK (SNIP)	Any one of hundreds of Uzbekistan's legal standards and rule
L/c/d	liters per capita per day
MFF	Multitranche Financing Facility
MOF	Ministry of Finance
NO_2	Nitrate or Nitrogen Dioxide
PEIA	Preliminary Environmental Assessment, Screening or Terms of Reference Document prepared as a 1^{st} step of the Uzbek environmental assessment process
PDC	Project Development Consultant
PCU	Program Coordination Unit, existing and managing this project
PPTA	Project Preparation Technical Assistance
PSE	Personal Safety Equipment
RoU	Republic of Uzbekistan
REA	Rapid Environmental Assessment (and screening)
SP_{10}	Suspended particulate matter , with particles ≥ 10 microns in size, and a danger to lungs
WWTP or WWTP	Sewage Treatment Plant
SIAK	Goskompriroda water quality lab in Djizzak
SWSS	Second Water Supply and Sanitation Project
UCSA	Uzbekistan Communal Services Agency
Suvoqova	Russian abbreviation for Water Supply Company
WDC	Water distribution center ; a large pump house treating , re-pressurizing and distributing water to various communities
WSSSIIP	Water Supply and Sanitation Services Improvement Investment Program
WTP	Water Treatment Plant
WWTP	Wastewater Treatment Plant

EXECUTIVE SUMMARY

1. The Uzbekistan Communal Services Agency (UCSA), the project proponent and executing agency, is implementing the Djizzak Sanitation System Development Project (DSSDP) in order to address urgent national wastewater treatment problems. The proposed Project is a priority in Uzbekistan's poverty reduction strategy, and is highlighted in ADB's Uzbekistan Country Partnership Strategy 2012-2016, and its Road Map and Investment Program 2020, for the Water Supply and Sanitation Sector.

2. The feasibility study for DSSDP includes preliminary engineering designs, a sector performance assessment, a financial and economic analysis, as well as mandatory environment and social safeguards documentation. The DSSDP is located in Djizzak city and Uchtepa district center of Djizzak Region.

3. In stage of original IEE there were three main project components: (i) the construction of a new sewage treatment plant (WWTP) (ii) the rehabilitation of four pumping stations (Zilol, H.Nosirov, and Uchtepa), with one (Kalkhabad) being moved to rural setting, and (iii) the replacement of 16.75 km and the construction of 45.77 km of sewage collector mains and networks (total 62.52 km).

4. However according to the ADB instructions the initial IEE has been divided into two updated IEEs (i) updated IEE for construction and rehabilitation of sewer trunks, networks and pumping stations and (ii) updated IEE for construction of new WWTP.

5. This updated IEE for construction and rehabilitation of sewer trunks, networks and pumping stations also includes the (i) construction and rehabilitation of sewerage collectors and networks for around 62 km; and (ii) rehabilitation of the existing 3 pumping stations. The overall project will be implemented over five years (2016-2021). According to the new proposed WWTP site the route of gravity sewers which will be passed along the farmlands and unused lands is changed, but length of sewers not exceeds the preliminary specified length.

6. The DSSDP has undergone an environmental screening, classifying it as a category B project in accordance to the ADB Safeguard Policy Statement (SPS) 2009. Therefore, original IEE was prepared with define scope of study based on the rapid environmental assessment. Data and information used to prepare the original IEE were mostly secondary data, however field observation was also being carried out. The assessment of impacts is based on in-depth feasibility study, in which a detailed cost estimate has also been prepared, and general specifications for the new WWTP, the sewer trunk and collectors, their reconstruction and rehabilitation, and the pumping station reconstruction have been completed.

7. As part of original IEE preparation, the public consultation was carried out on 22 April 2014. The public consultation was attended by local authorities, and also affected people. The public consultation forum was able to provide participants with information about the proposed project, the project implementation plan, the project scheduled, and information of potential environmental impacts and mitigation measures. The discussion revealed that participants have no objection on the project. The public consultation summary is attached in Annex 2. During the consultation, the Project grievance redress mechanism was also explained to the participants to ensure that they have information on the procedure to submit a complaint, in case they have one.

8. At present the Djizzak Provincial Water Supply and Sewerage Enterprise SUE "Suvokova" as CW contracts' Employer and system operating enterprise repeatedly

carrying out the public consultations for local authorities and affected people. Also "Suvokova" has a special expert to work with system users.

9. As part of the IEE, the public consultations were carried out on 22nd of April 2014 and 14th of December 2016 Djizzak province. The public consultations were attended by local authorities, and also affected people. The public consultation forum was able to provide participants with information about the final design of the project, the project scheduled, and information of potential environmental impacts and mitigation measures as part update of IEE. The discussion revealed that participants have no objection on the project. The public consultation summary is attached in Annexes 4 and 5. It should be noted that additional public consultation was also conducted on February 8, 2017 in Uchtepa town at Community Meeting Hall of Djizzak District for farmers, people living approximately in 1.5-4 km distance from new WWTP and also for other interested stakeholders (e.g. people from school, hospital, epidemic center, etc), in order to share the new location of the WWTP since its previous location was changed. The minutes of meeting of additional public consultation meeting is attached in Annex 6.

10. The original IEE authors identified 27 mitigation and monitoring actions to be taken by UCSA, PCU, the contractor(s), and the Djizzak Provincial Water Supply and Sewerage Enterprise SUE "Suvokova" (DPWSSE), at varying times, starting during the preconstruction period and extending into a number of operating period years. Each mitigation measures was matched with a monitoring and reporting task, permitting easy compliance monitoring by the PCU, the Project development Consultant (PDC), the contractor and system operators. A compliance monitoring checklist template is included as Annex 4 of this IEE in order to assist with this requirement.

11. UCSA established that in Djizzak, there is very weak environmental technical capacity and non-functioning facilities necessary for a new WWTP to operate properly. To address these gaps four sets of training sessions will be organized and delivered during the preconstruction and construction period of the project. This training will include environmental management plan implementation, compliance monitoring, environmental record keeping and briefing in Uzbekistan environmental legislation. Given the importance of having pre-treated industrial effluent discharging to the new WWTP, a special briefing session covering treatment requirements and Resolution No. 11 /2012 will be delivered to the area industrial enterprises soon after construction begins

12. The original IEE provided all necessary mitigation and monitoring measures for construction and rehabilitation of sewer trunks, networks and pumping stations. Given that no changes made for this component of project (sewer trunks, networks and pumping stations) no additional impacts revealed and no additional mitigation and monitoring measures provided in this updated IEE. However EMP updated to cover only network activities.

13. The Environmental Management Plan (EMP) provides a guidance that during the pre-construction period, and as soon as a contractor has been selected, UCSA, in cooperation with Djizzak Provincial Water Supply and Sewerage Enterprise SUE "Suvokova" (DPWSSE), the police and the contractor(s) will prepare a traffic management plan to keep congestion due to sewer construction to a minimum and to restore access from home to local streets for local people, as quickly as possible after sewer pipe placement is complete.

14. A tree cutting and replanting plan will also be prepared in order to prevent or keep to an absolute minimum the removal of mature trees from the construction sites, as these trees are essential for providing shade and to help attenuate dust

during the hot dry summers. Prior to start the construction UCSA will lead the development of this plan and instruct the contractor on the cutting limits as well as the penalties for illegal or accidental tree removal (as defined in the IEE).

15. The work to lay the sewer pipes will be in largely urban areas along local Djizzak streets, where dust, noise and protection of the urban landscape is essential. To that end UCSA, through its PCU, Project development Consultant and local authorities will set out the operating limits in residential areas for the contractor: namely no work between the hours of 19:00 and 07:00, the use of low noise construction machinery and the maintenance of all haul roads to reduce dust. Loud equipment such as jack hammers will be restricted between 17:30 and 07:00.

16. Once collector sewers have been placed, the contractors will be required to immediately rehabilitate and fully landscape all disturbed areas, and re-establish preconstruction conditions unless the site was already contaminated. UCSA will require it's PIU and the PDC to monitor. PDC will undertake regular interviews with local residents to check that the rehabilitation is done satisfactorily.

17. The work with the pumping stations includes the full rehabilitation of three existing stations. Essential for the successful upgrading of the stations will be the careful clean-up of the area subjected to years of flooding and contamination with raw sewage. The boundary of the clean-up area will be determined with the cooperation of local residents and contaminated soils will be buried or tilled into the ground and the area fully re-landscaped. The rehabilitated pumping stations will be housed in buildings protected from the elements, be provided with a reliable power supply and be maintained according to a strict schedule implemented by the PCU and DPWSSE.

18. The monitoring of the contractor's work and the implementation of the mitigation measures defined in the IEE's EMP will be essential if the predicted project impacts are to be avoided or minimized. The PDC will therefore be required to conduct quarterly compliance monitoring reviews, in addition to the regular monthly inspections completed by the PCU, working with the contractor.

19. The total estimated cost for the implementation of the EMP over a 5 year period will be around USD **94,840.00** and it makes approximately USD**101,480.00** including a 7% contingency. The revised prices is less than the previous calculation (i.e., **USD 202,000.00**) due to the fact that monitoring scenarios and technical assumptions showed that the number of samples and sampling locations as well as frequency and duration of the monitoring are less than the previous numbers.

20. The sewer collectors are very urgently needed and every effort should be made to expedite it and put the facility into operation. This was a view expressed by all participants of the consultation session. It will be an overwhelmingly positive impact, affecting thousands of families, by improving their standard of living and household health.

21. With the completion of the IEE and the implementation of its EMP, UCSA will have taken all necessary actions to ensure that this project is completed in an environmentally competent manner, in keeping with international and national safeguard standards. Nonetheless, continue monitoring will be required to ensure that EMP is implemented, and SSEMP is prepared by the Contractor according to EMP. On this basis, it could be concluded that further environmental assessment study would not be required.

Foreword

Djizzak Provincial Water Supply and Sewerage Enterprise SUE “Suvokova” (DPWSSE) is responsible for operation of the water supply and sewerage systems and is in charge of distributing water supply and managing sewerage within the whole Djizzak province. As a consequence, the water supply and sewerage Companies operating within the District are the “*District Branches*” under the DPWSSE.

I. Introduction

A. The Proponent and Purpose of the IEE

22. The Uzbekistan Communal Services Agency (UCSA), the project proponent and executing agency, is implementing the Djizzak Sanitation System Development Project (DSSDP), addressing urgent national water supply (potable water) and wastewater treatment problems. The proposed Project is a priority in Uzbekistan's poverty reduction strategy, and is highlighted in ADB's Uzbekistan Country Partnership Strategy 2012-2016, and its Road Map and Investment Program 2020, for the Water Supply and Sanitation Sector.

23. This project includes work to complete technical feasibility studies with preliminary engineering designs, a sector performance assessment, a financial and economic analysis, as well as mandatory environment and social safeguards reporting.

24. An existing ADB-supported PCU within UCSA has been designated to manage the project, and is overseeing its completion.

25. The present updated Initial Environmental Examination for construction and rehabilitation of sewer trunks, networks and pump stations under the Djizzak Sanitation System Development Project (DSSDP) has been completed and is presented in this report.

26. In stage of original IEE there were three main project components: (i) the construction of a new sewage treatment plant (WWTP) (ii) the rehabilitation of four pumping stations (Zilol, H.Nosirov, and Uchtepa), with one (Khalkhabad) being moved to rural setting, and (iii) the replacement of 16.75 km and the construction of 45.77 km of sewage collector mains and networks (total 62.52 km).

27. However according to the ADB instructions the initial IEE has been divided into two updated IEEs (i) updated IEE for construction and rehabilitation of sewer trunks, networks and pumping stations and (ii) updated IEE for construction of new WWTP.

B. Project Status and Documentation

28. The Loan Agreement (Loan 3275-UZB) the Djizzak Sanitation System Development Project (DSSDP) was signed on 12 November 2015 and became effective on 29 February 2016 with loan closing date of 31 October 2021.

29. The original IEE of overall project was prepared during the project's Feasibility Study. The DSSDP has undergone an environmental screening, and was classified as a Category B project. This updated IEE is prepared as part of the feasibility study, assessments of the existing physical works, the technical and administrative capacity of the agencies involved, as well as economic and financial analyses have been undertaken. A detailed cost estimate has also been prepared. Finally, general specifications for the sewer trunk and collectors, their reconstruction and rehabilitation, and the pumping station reconstruction have been completed.

30. As of November 2016 the detailed design and bidding documents for sewerage collectors, networks and pumping stations under DSSDP have been developed and submitted for ADB approval.

C. Extent and Boundaries of the IEE

31. The project is located in Djizzak city and Uchtepa District Center of Djizzak Province.

32. The present IEE covers the construction and rehabilitation of sewerage collectors and networks for around 62 km and rehabilitation of 3 existing pumping station.

33. Predictions of the project's future effects on the natural and human environmental will be limited to the two construction years and years 1, 3 and 5 of the operating period, since once in operation, its impact will be overwhelmingly positive.

D. Content of the IEE and Methodology Applied

34. This updated IEE was prepared according to the approach, format and content suggested in Annex 1 of the ADB's SPS 2009. Surface drainage, surface water quality, and issues dealing with the industrial effluents discharging into the municipal sewage system, were given special emphasis. For original IEE consultation and information disclosure sessions were held on April 2014 and details are described in Chapter VII. At present the Djizzak Provincial Water Supply and Sewerage Enterprise SUE "Suvokova" as CW contracts' Employer and system operating enterprise repeatedly carrying out the public consultations for local authorities and affected people. The "Suvokova" has a special expert to work with system users.

35. Additional public consultations were conducted on 14 December 2016 in Djizzak province and on 8 February 2017 in Uchtepa town at Community Meeting Hall of Djizzak District for farmers, people living approximately in 1.5-4 km distance from new WWTP and also for other interested stakeholders (e.g. people from school, hospital, epidemic center, etc), in order to share the new location of the WWTP since its previous location was changed. Participants have been provided by the presentation about aims and changes in project design. Also described the environmental impact and positive effect from construction. The consultations were headed by PDC`s National Environmental Expert, the PCU Environmental Expert, the Head of Department of Djizzak City Administration, and the Head of Department of the Djizzak Province Water Supply and Sewerage enterprise Suvokova. The minutes of meeting of additional public consultation meeting is attached in Annexes 5 and 6.

E. Policy, Legal and Administrative Framework

36. This section discusses the national and local legal and institutional framework within which the environmental assessment is carried out. It also identifies project-relevant international environmental agreements to which the country is a party.

E.1 ADB Policy

37. ADB's environmental and social safeguards are a cornerstone of its support to inclusive economic growth and environmental sustainability. In July 2009, ADB's Board of Directors approved the new Safeguard Policy Statement (SPS) governing the environmental and social safeguards of ADB's operations. The objectives of the SPS are to avoid, or when avoidance is not possible, to minimize and mitigate

adverse project impacts on the environment and affected people, and to help borrowers strengthen their safeguard systems and develop the capacity to manage environmental and social risks.

38. Safeguards documents are project documents that provide information on assessments, measures, monitoring, and due diligence conducted for Environment, Resettlement, and Indigenous Peoples safeguards. View ADB's project cycle.

39. Environmental assessment and measures identify potential environmental impacts and risks of a project and prescribe the environmental management plan to be implemented by the borrower/clients. These are composed of the various documents distributed under mainly “environment”, “involuntary resettlement” and “indigenous people” topics: the pertinent Initial Environmental Examination (IEE) document is under environment topic and its description is given as follow in the official web site of the ADB:

- **Initial Environmental Examination (IEE)** - Describes the environmental condition of a project, including potential impacts, the formulation of mitigation measures, and the preparation of institutional requirements and environmental monitoring for the project.

40. The Djizzak WWTP subproject has been classified as environmental assessment category B. According to the criteria laid down in the checklist for water supply projects of the ADB’s Environmental Assessment that was especially prepared for the environmental assessment of the Djizzak Sanitation System Development Project.

41. The IEE was reviewed and approved by ADB’s Operational Department in 2014. Completed assessment available on the ADB website.

E.2. Uzbekistan Law

42. The Law on Environmental Protection (1992) established a legal, economic and organizational framework for environment protection[1]. The State Committee for Nature Protection (Goskompriroda) is a primary environmental regulatory agency, and reports directly to the Parliament. Goskompriroda is responsible for supervising, coordinating and implementing environmental protection and controlling the usage and renewal of natural resources at the central, regional and district levels. The mandate of Goskompriroda is based on the Regulation of the State Environmental Committee of the Republic of Uzbekistan (1996).

43. Glavgosekoexpertiza (SEE) is the State Ecological Expertise Department of Goskompriroda that evaluates environmental impact reports and provides the clearance for environmental assessment documents. Any environmental assessment prepared as part of this project will need a review and clearance by SEE at the national level as well as by region-level officials.

36. When evaluating sewage treatment projects, the following general legal instruments are relevant:

[1] At present Uzbekistan uses a more reactive, as opposed to preventative, approach to management of environmental impacts of development projects.

- Law on Ecological Expertise [*Environmental Assessment*]. 25/05/02 No. 73-11 Law on Introduction of Amendments into the Law on Environmental Protection and On Specially Protected Environmental Areas (5-6/05/94) New Laws of the Republic of Uzbekistan. 10th Edition, p.242. (*Biodiversity*)
- Law on Water Pollution. 1999
- Law on Ecology Security (Safety), 2005
- Law on Health Safety and Environment, May 6, 1993 (Occupational Health and Safety) and KMK 301012-2000-Health Safety in Construction.
- SanPin 0172-02; Sanitary rules and norms for protection of groundwater, from all pollution sources and conditions in Uzbekistan
- SanPin 173-04: Sanitary rules and norms for protection of surface waters in the territory of Uzbekistan
- SanPin 120-01: Sanitary Norms of permissible noise levels in workplaces
- SanPin 127-02: Sanitary Regulations for inventory, classification. Storage and disposal of industrial waste.
- SanPin 141-03: Working condition standards governing the hazards and risks in the workplace, environment and the severity and intensity of the work to be undertaken

37. The Law on Ecological Expertise [Environmental *Assessment*] 25/05/02 No.73-11 addresses Environmental Assessment and by applying the Annex 1 of the Cabinet of Ministers Resolution No 491. 31/12/01, one can establish the category of assessment most suited to a project; Resolution 491 defines four categories of projects and their associated environmental assessment requirements. Category I and II projects require a preliminary EIA (PEIA) defining how and to what extent the required EIA will be conducted, followed by a complete EIA. Category I and II projects are undertaken and evaluated at the central level only and they involve a three stage process

38. The assessment of Category III project PEIAs is under provincial jurisdiction with no central Glavgosekoexpertiza involvement. Category III environmental assessments are also based on three stages but may end with only a PEIA, given that the evaluation and decision by the expert committee is often a reduced assessment requirement. The Category III process is most similar to the ADB`s IEE. Category IV project are exempted from any EIA requirements, other than the submission of a project description and proof of Category IV status.

39. Specific to water sector projects, the following legal environmental requirements shall be complied with:

- Law on Water and Water Use (1993),
- Cabinet of Ministers Resolution No. 385 3/08/93 on Approval of "Temporal Procedure for Limited Water Use in the Republic of Uzbekistan",
- Cabinet of Ministers Resolution No. 174 7/04/92 "Regulation on Water Protection Zones of Water Reservoirs and other Water Basins, Rivers, Trunk Canals and Collectors as well as Sources of Drinking, Household and Spa Water Supply.
    - O'z RH 84.3.6:2004 Instructions on rationing the discharge of pollutants into water bodies and terrain, taking into account the technically achievable indicators of wastewater treatment

40. According to Annex 1 of Resolution 491, and if one considers the Phase II capacity of 60,000 m^3/ day treatment capacity, the WWTP would require completion of all three stages of the RoU environmental assessment process. Given that this project is now limited to 30,000 m^3/day, the Category II process is acceptable and therefore matches the ADB requirement.

41. Sewage treatment plants and related structures must adhere to the following standards:

- KMK (CNR) 2.04.03.97 Sewerage. Outside networks and Structures Tashkent 1997;
- ShNK 4 (CNR) 4.02.04-04 Wells 4 Manual. Tashkent 2005;
- Construction Norms and Regulations (CNR or SNiP) 3.01.01-97 and CNR 3.05.03-97 [related to land protection];
- CNR 2.01.03-96. "Civil Works within the seismic areas; and,
- Construction Norms and Regulations 2.01.03-96 and 3.04.02-97. Corrosion Protection of buildings to prevent effects of quality of ground water [high alkalinity].

42. Maximum allowable concentrations of major pollutants in wastewater are regulated by Uzbekistan's Rules of Industrial Wastewater Admission to Urban Sewerage Systems. The Resolution 11/ 2012 defining requirements for industries intending to discharge their wastes into WWTPs is also highly relevant.

43. Sewerage systems designs must comply with Goskompriroda's Resolution 118.027.714.24-93: Instruction on Environmental Impact Assessment Procedure during Site Selection, Development of Feasibility Study and Designs of Economic Facilities and Complexes. The Instruction stipulates, inter alia, that the designs must take into account the outcome of any approved environmental impact assessment.

44. The resolution No.14 as of January 2014 requires the institution such as Suvoqova to have laboratory facility that enable to test also toxicity and heavy metal content. The need for having Suvoqova laboratory that will function is unavoidable, because Suvoqova has to ensure that WTTP will operate effectively, and therefore, performing continue test on wastewater send to WWTP has to be done.

II. DESCRIPTION OF THE PROJECT

A. Type of Project and Category

45. The Djizzak Sanitation System Development Project will involve the (i) construction of new Wastewater Treatment plant (WWTP) in Djizzak region, (ii) construction and rehabilitation of sewerage collectors and networks; and (iii) rehabilitation and construction of pumping stations. The ADB identified this project as a Category B undertaking, meaning the requirement for the preparation of an IEE. The original IEE consultant carried out assessment to comply with undertake a rapid environmental assessment and screening (REA) of the WWTP for this Project, and confirmed a similar conclusion that the Project should be categorized as a B project.

Need for Project

46. One of the important Millennium Development Goals (MDGs) for Uzbekistan as described in its plan is to provide clean water and sanitation for all. Many of Uzbekistan's health issues are associated with contaminated drinking water and

specifically inadequate waste treatment. This is acute in many of the 2nd tier cities such as Djizzak where over 160,000 people now live and less than 40% have indoor sanitary systems where the household is connected to a functioning sewage system. Conditions such as diarrhoea, hepatitis, helminths such as hook worm and pinworms, typhus and skin diseases such as scabies continue to plague the public, costing millions of Soum each year.

47. In Djizzak the WWTP stopped functioning in 2003 and ceased all operations in 2006, thus allowing untreated sewage to discharge into the environment for more than 13 years. Undoubtedly the new WWTP and its associated facilities, such as new pumping stations and more sewer connections are very urgently needed. The participants at the consultation were fully supported this conclusion and they were eager to have the facility in place.

Project Details

48. The DSSDP has three major civil works: (i) construction of new Wastewater Treatment plant (WTTP) in Djizzak region, (ii) construction and rehabilitation of sewerage collectors and networks for around 62 km; and (iii) rehabilitation of the existing 3 pumping stations. This project will include minimal land acquisition and resettlement, because the sewerage networks (reconstruction and construction of existing sewer trunk) and collector pipes will be placed along public roads, therefore minimizing and avoid land acquisition.

49. Details of the work are:

- Rehabilitation of the Zilol pumping station with capacity of 90 m^3/h;
- Rehabilitation of H.Nosirov pumping station with capacity of 90 m^3/h;
- Rehabilitation of Uch-Tepa pumping stations with capacity of 140 m^3/h, respectively; and,
- Rehabilitation and construction of sewer collectors and networks with a total length of around 62 km, from 150 to 1200 mm in diameter.

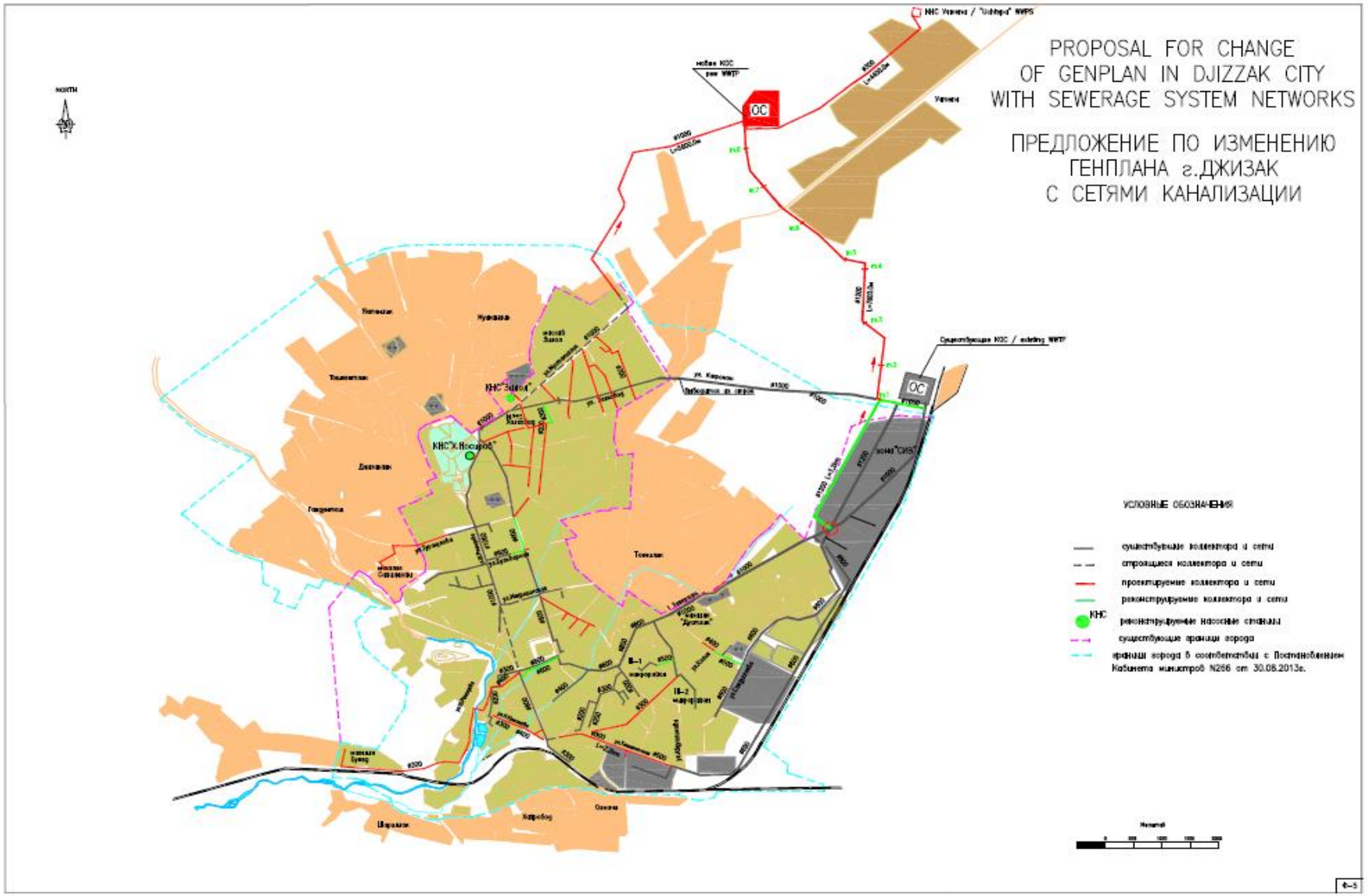
50. The components of the work likely triggering environmental problems were identified as the following:

- the rehabilitation of Zilol, H.Nosirov and Uch-Tepa pumping stations; and;
- the laying of over 62 km of sewer pipes requiring deep trenches to accommodate sewer pipes of varying diameter;

51. Given that sewer pipes are traditionally placed at 1.5-1.8m below ground in the middle of streets and along the shoulders, the environmental assessment focused on the impacts associated with construction works such as dust, access restriction, traffic congestion, plus water quality and noise monitoring. There is also need for some tree removal and for that a tree inventory and replanting plan will be completed by UCSA, once the corridor details are defined.

1) The Pumping Stations

52. All three pumping stations included in the works will be fully reconstructed and the grounds where chronic spills occurred will be cleaned and rehabilitated.


PROPOSAL FOR CHANGE
OF GENPLAN IN DJIZZAK CITY
WITH SEWERAGE SYSTEM NETWORKS
ПРЕДЛОЖЕНИЕ ПО ИЗМЕНЕНИЮ
ГЕНПЛАНА г.ДЖИЗАК
С СЕТЯМИ КАНАЛИЗАЦИИ
NORTH
ОС
КНС "Зааб"
КНС "Х.Носиров"
Существующая КОС / existing WWTP
УСЛОВНЫЕ ОБОЗНАЧЕНИЯ
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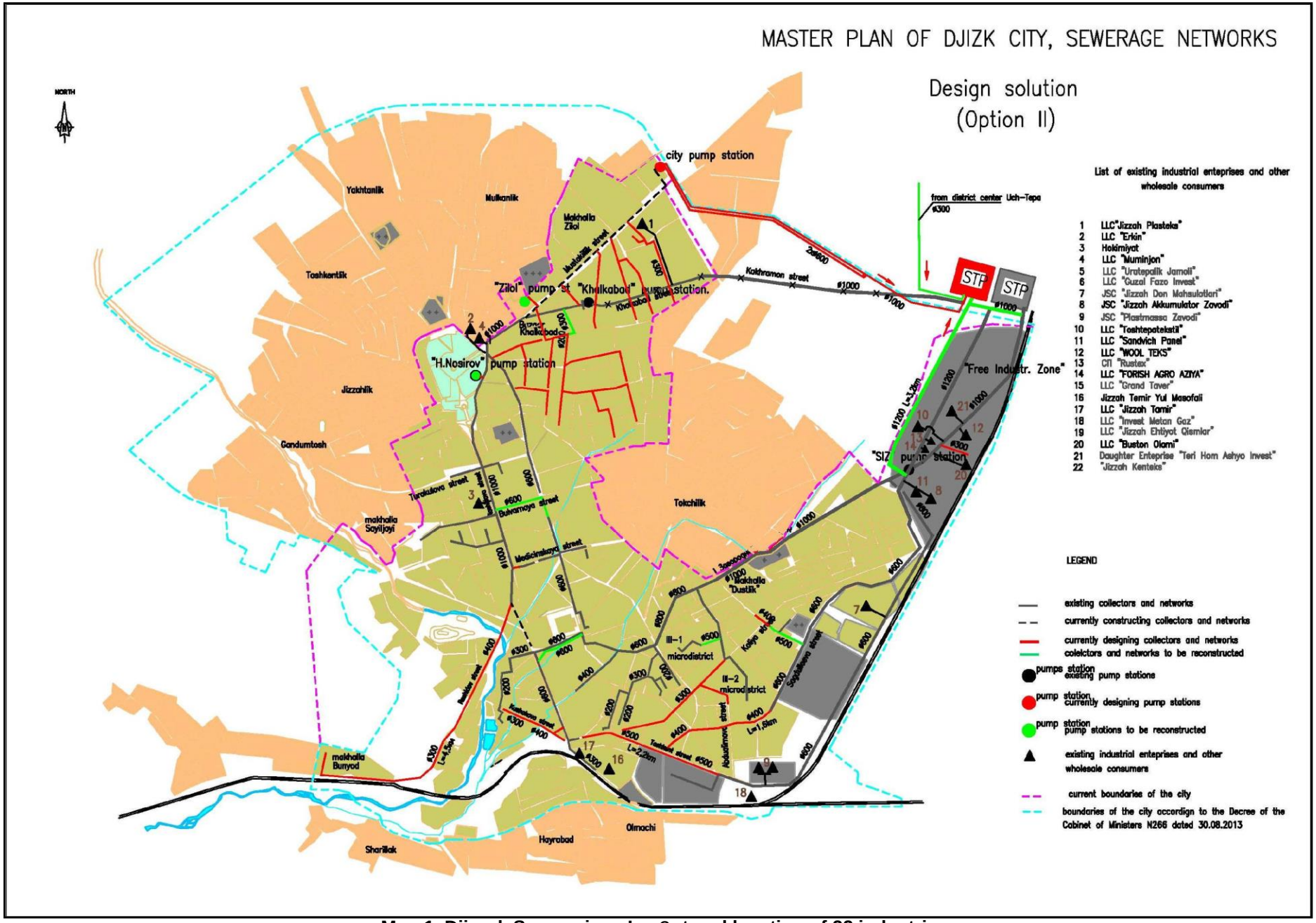


Map 1. Djizzak Sewer pipes Layout and location of 22 industries

2) The Industrial and Commercial Enterprises

53. It was identified that on 364 ha of area, there are around 20 enterprises in the industrial zone. Beyond than 49,000 household discharges, the Djizzak Sewage Treatment facility receives or will receive effluent from 22 non-residential enterprises. In 2014 it was identified that ten of them are commercial facilities such as restaurants, repair shops, and small hotels (Table 1).
54. Nowadays there are 9 industries produced effluents which were discharged mostly without pre-treatment and would cause the new WWTP system to break down, terminating sewage treatment.

Table 1. Effluent Discharged in m^3/month, by 22 enterprises into the Djizzak WWTP

	Name of enterprise	Activity	Volume of production or services	Dyeing shops	Effluent treatment facilities	Ground-water wells on property
1	"Jizzah Pasteks" LLC	Production of cotton yarn and knitted fabric	Processing of 12,000 tons/yr of cotton, production of 8, 500 tons/yr of yarn and 4, 000/tons/yr of knitted fabric.	No	No	Yes
2	LLC "Erkin"	Park	Entertainment park	No	No	Yes
3	"Viloyat Kengashlar Uyi"	Administrative building of deputies of provincial Council	Maintenance of building	No	No	Yes
4	LLC "Muminjon"	Restaurant	Organization of banquets	No	No	Yes
5	LLC “Uratepali Jamoli”	Cafe	Cafe	No	No	No
6	LLC "Guzal Fazo Invest"	Restaurant	Restaurant	No	No	
7	JSC "Jizzah Don Mahsulotlari"	Purchase of grain in Uzbekistan, processing, sale of mixed fodder, flour		No	Only sediment tanks	Yes
8	JSC "Jizzah Akkumulator Zavodi"	Production of car batteries	150,000 pcs/year	No	Treatment facilities by Trimmer Co. (USA)	Yes
9	JSC "Plastmassa Zavodi"	Polyethelene films, pipes, plastic products for domestic use	Production 1818 tons/year polyethylene films, 1684tons of polyethylene pipes of different diameters	No	No	Yes

	Name of enterprise	Activity	Volume of production or services	Dyeing shops	Effluent treatment facilities	Ground-water wells on property
10	LLC "Jizzah Toshtepa Tekstil"	Production of knitted cloth	1 200 tons/year	Yes	Aeration and settling tanks	Yes
11	LLC "SENDVICH PANEL"	Production of cotton plates for sandwich-panels based on basalt heat insulation, mineral-cotton and heat insulation materials	750 000 km2/year	No	Only sediment tanks	Yes
12	LLC "Tayorlovchi WOOL TEKS"	Primary processing of wool		No	Only sediment tanks	
13	Rustex invest	Production of cotton yarn		No	No	Yes
14	JSC "FORISH AGRO AZIYA"	Storage of fruits and vegetables		No	No	
15	JSC "Grand Taver"	Hotel		No	No	Yes
16	"Temir Yul Masofasi"	Food and entertainment Service on train station		No	No	
17	JSC "Jizzah Tamir"	Supply of components of agricultural machines		No	No	Yes
18	JSC Invest Metan Gaz	LNG Gas filling station		No	No	
19	JSC Jizzah Ehtiyot Qismlar	Spare parts trading		No	No	
20	JSC Buston Olami	Processing seeds of cotton and production of cotton seed oil	2 800 tons of cotton oil/year	No	Only sediment tanks	Yes
21	Teri Hom Ashyo Invest	Purchase and processing of skin of cattle		No	Only sediment tanks, but not functioning, no maintenance	Yes
22	Jizzah Kentex	Production of cotton yarn	7 500 tons/year	No	No	Yes

Source: Djizzak Provincial Water Supply and Sewerage Enterprise SUE “Suvokova”, March 2014.
___= pre-treatment required

36. There are following industry enterprises:

- Uzbek-German joint venture Jizzakh Plasteks. It was founded in 2011. It will allow processing 12 thousand tons of cotton fiber and producing 8.5 tons yarn and 4000 tons of knitted fabric per year.

- Jizzakh Akkumulator Zavodi (production of batteries). This company was started operation in 2001 and is equipped with the most advanced equipment.
- Jizzah plastmassa (production of plastic products). It is planned to increase production volumes, as well as to expand its product range In Jizzakh plastics factory in 2014.
- Sendvich paneli LLC. (production of sandwich panels). Its capacity is 750 thousand square meters a year.
- Jizzakh Kenteks LLC is a company for yarn production. The enterprise will annually produce 7.5 thousand tons of yarn.
- Jizzakh Toshtepa Text. The power of this enterprise is 1.2 thousand tons of knitted fabric per year.
- Jizzakhdonmahsulotlari (production of flour products), Buston olami (production of the vegetable oil extract), JSC Nurly don (the production of the vegetable oil extract) and others.

37. In accordance with the general plan of Jizzakh it is assumed:

- expanding of the scope of labor and revitalization of the population in the labor market, improving the structure of employment with a corresponding increase of the share of the employed population;
- development of complexes of social infrastructure facilities, providing the population with guaranteed volume of social services for the full conditioning of his life;
- the development and qualitative improvement of vital infrastructure.

38. According to Resolution No.11 (2010 and 2012), these industries require pre-treatment; and they are cotton cloth weaving and dying factories (No.1, 10, 13 & 22), a tannery (No.21), a lead-acid battery factory (No. 8), a gypsum wallboard manufacturer (No. 11), a raw wool cleaning and sorting plant (No. 12), a plastic bottle factory (No.9), and a flour mill and edible oil production plant (No. 7 and 20). These industries are mostly located near the new WWTP site.

39. Resolution No. 11 mandates the sewerage Company to collect and test effluent monthly, but with oversight from Goskompriroda's Djizzak Special Inspection and Analytical Control Laboratory (SIAK). The Djizzak "Suvokova" does not have such a facility and SIAK's equipment is old, outdated and not functioning properly (based on site inspection of SIAK 12- 13 April, 2014). Despite that, SIAK continue to conduct sampling and analyses as best as possible.

40. In November 2016 it was identified that there are 10 commercial facilities such as restaurants, repair shops, and small hotels and nine industrial enterprises. SIAK provided analyses of **9 business running enterprises** (Table 2).

41. These 9 commercial and industrial enterprises, scheduled to discharge their wastewater into the new municipal sewage system. According to RoU Decree No 11 and its earlier Norms and Rules (No. 0127-2002 and 0128-2002) these industries must not only pre-treat their effluent to meet RoU industrial effluent standards, but also must submit effluent quality testing reports to the sewerage company and Djizzak Goskompriroda on monthly basis. In addition to the above mentioned, Appendix N1 of Decree 11 given in Annex 6 of this IEE, an official requirements for the connection and discharge into the sewer system which will end up with the new WWTP will be implemented to monitor and ensure proper and sustainable connection and discharge which will not lead to a detrimental effect on operation of the WWTP with the untreated effluents from the enterprises.

42. There have been installed gate valves where the effluent enters the municipal sewage works, which can be closed by the sewerage company. In case of untreated Wastewater discharge from these enterprises, these valves can be closed and sealed by the Sewerage Company and penalty (incl. peculiar fines and penal sanctions) can be charged to the enterprises.

43. Each industry must also have a flow meter that accurately records the actual volume being discharged[2]. According to test results, the industrial companies exceed allowed norm parameters.

44. In December 2016, based on a request from UCSA and the sewerage company, the SIAK lab collected samples of the industrial effluent discharges from the 9 facilities of concerned and tested for 13 parameters. The outcome (Table 2) indicates that effluent of the most industrial enterprises do not meet RoU standards. This means that these 9 industrial enterprises have bad treatment condition or have not at all pre-treatment facilities. Additional monthly monitoring results during construction time can be presented by Djizzakh SIAK and discussed with.

45. In previous IEE, there were studied 11 industrial companies. Nowadays only 9 industrial companies are functional; therefore tests were run at these companies. All 9 industrial companies have reported pre-treatment, yet none of them met required standards. According to the SIAK lab results, sewage systems do not work well. It was identified that chlorides and sulfates exceed allowed norms 3-4 times (Table 2).

46. There were organized visits to industrial companies, which are connected to existing sewer system. During a meeting with directors of these companies, it was explained the possible threat to the new WWTP. It was agreed that by 2018 all companies will renew their sewage systems. The corresponding agreement letters are in Annex 9.

47. All 9 industries are now discharging untreated non-compliant effluent into sewers connected to the WWTP. The test results show that even the industries with stated pre-treatment facilities do not meet RoU standards. These results underscore an urgent need to establish a functioning laboratory and strengthen the sewerage company function to push the industries to comply with Decree No 11 which provides all the necessary legal means to control and manage industrial effluents.

Table 2. Quality of effluent for 9 industries planning to discharge wastewater into the new sewage treatment plant

	RoU standard	LLC Jizzah Plasteks	JSC Jizzah Don Mahsulot-lari	JSC Jizzah accumulator zavodi	Jizzah Toshtepa Tekstil	LLC Elit Poyafzal	Rustex invest	LLC Buston olami	LLC GOOD WILL	Kenteks
pH	6.5-8.5	7.2	7.3		7.1	-	-	-	-	7.4
BOD_{20} (mgO/L)	15-30	30	**50**	**58**	42	16	**48**	**46**	**47**	25.4
COD (mgO/L)	500	330	410	468	354	-	-	430	420	332
CL (mg/L)	350	**1620**	**1260**	**2020**	196	310	**1436**	**790**	**960**	**1610**
SO4 (mg/L)	100	**150**	**386**	**462**	**230**	**360**	**-**	**442**	**440**	**145**
PO4 (mg/L)	2.5	1.1	1.24	2,1	1.0	0.7	**3.8**	2	1.4	1.9

[2] Most industries have constructed tubewells for extracting water beyond what is obtained from the municipal piped water. Therefore, providing discharge volumes based on the piped water intake is not accurate. It is for this reason that meters at the outflow must be installed—as mandated in Decree 11.

NO3 (mg/L)	45.0	**74**	**82**	**54**	32	38	**58**	**66**	**74**	**60**
NO2 (mg/L)	3.3	3	0.06	**4,8**	3	0.06	**5.4**	0.05	0.07	**5.8**
NH4 (mg/L)	2.5	**25**	**11.6**	**9,8**	**20.5**	2.2	**16**	**8.2**	**9**	**28**
TSS (mg/L)	500	**1230**	780	954	308	310	1188	**1100**	**1450**	1644
Dry residue (mg/L)	2000	**2400**	3600	3545	1600	**1320**	**3530**		**7330**	3525
Fe	0,5		-	0.36	0.5	**-**	-	**-**	0.34	1
Petroleum derivatives	1,0		-	-	**-**	**-**	-	**1.2**	**-**	-
Sample Date		11.04.2016	6.12.2016	02.12.2016	09.11.2016	06.09.2016	22.11.2016	6.12.2016	.1.12.2016	.3..8.2016
Pr-Treatment:	Required as per Resolut. No. 11	None	None	Trimmer pre-treat. system	Trimmer pre-treat. system	None	Sedi-mentation tank exists	Settling tanks on site but not main-tained	None	None

Source; field samples by SIAK, December 2016. Note: **111** = non-compliance with standard

48. **Industrial Effluent Pre-treatment and Quality** - These 9 commercial and industrial enterprises, scheduled to discharge their wastewater into the new municipal sewage system. According to RoU Resolution No. 11 and its earlier Norms and Rules (No. 0127-2002 and 0128-2002) these industries must not only pre-treat their effluent to meet RoU industrial effluent standards, but also must submit effluent quality testing reports to the sewerage company and Djizzak Goskompriroda on monthly basis. There have been installed gate valves where the effluent enters the municipal sewage works, which can be closed by the sewerage company. Each industry must also have a flow meter that accurately records the actual volume being discharged[3]. According to test results, the industrial companies exceed allowed norm parameters.

49. In December 2016, based on a request from UCSA and the sewerage company, the SIAK lab collected samples of the industrial effluent discharges from the 9 facilities of concerned and tested for 13 parameters. The outcome (Table 2) indicates that effluent of the most industrial enterprises do not meet RoU standards. This means that these 9 industrial enterprises have bad treatment condition or have not at all pre-treatment facilities.

50. In previous IEE, there were studied 11 industrial companies. Nowadays only 9 industrial companies are functional; therefore tests were run at these companies. All 9 industrial companies have reported pre-treatment, yet none of them met required standards. According to the SIAK lab results, sewage systems do not work well. It was identified that chlorides and sulphates exceed allowed norms 3-4 times (Table 2).

51. In cooperation with Djizzak Suvokova specialists, there were organized visits to industrial companies, which are connected to existing sewer system. During a meeting with directors of these companies, it was explained the possible threat to the new WWTP. It was agreed that by 2018 all companies will renew their sewage systems. The corresponding agreement letters are in Annex 11.

[3] Most industries have constructed tubewells for extracting water beyond what is obtained from the municipal piped water. Therefore, providing discharge volumes based on the piped water intake is not accurate. It is for this reason that meters at the outflow must be installed—as mandated in Resolution 11.

52. All 9 industries are now discharging untreated non-compliant effluent into sewers connected to the WWTP. The test results show that even the industries with stated pre-treatment facilities do not meet RoU standards. These results underscore an urgent need to establish a functioning laboratory and strengthen the sewerage company function to push the industries to comply with Resolution No 11 which provides all the necessary legal means to control and manage industrial effluents.

53. According to statements of Djizak Suvokova specialists there are some industrial enterprises do not use any chemicals in technology. So it is mean there is no danger for WWTP.

54. To address this gap, UCSA will, during year 1 of construction, request the Djizzak Provincial “Suvokova” to organize a 1-day workshop with the 11 industries defined in **Error! Reference source not found.** and review with them Resolution No.11 and the requirements for reporting, testing and the installation of gate valves and flow metering systems as defined in detail in the decree and its appendixes.

55. Wastewater inflow and outflow of the Industrial Zone is being sampled and analyses as per request of the PDC to understand the potential combined effect of the individual discharges from the enterprises in the Zone over the efficiency of the new WWTP. Furthermore, commitments of the enterprises and UCSA in terms of improving the existing pretreatment plants of enterprises which have and/or constructing the missing ones will be closely followed up by PDC throughout the construction phase of the new WWTP of Djizzak City in order to ensure that the discharges of the critical enterprises in the Industrial Zone of Djizzak will not have threat to the efficiency of the operation of the new WWTP. This follow up will be reported by PDC through PCU in the Quarterly Progress Reports to be delivered to the ADB.

Subproject Layout and Components of the Work

56. The trunk and collector sewers, pumping stations, manholes and access point form an arc around the new WWTP extending some 30 km in a mostly urban and semi urban setting. These facilities will require linear corridors from 3 to 10 meters wide, mostly in the middle or close to the shoulder of existing roads, facilitating sewer connections from roadside dwellings. Three pumping stations will be either fully rehabilitated (See **Error! Reference source not found.**).

Photo 3. Existing and abandoned WWTP Sludge Pond.

III. DESCRIPTION OF THE ENVIRONMENT

A. Physical Resources

1) Geography and Climate

57. Djizzak province is located in the Central part of Uzbekistan between the Sirdarya and Zarafshan rivers, occupying 21,200 km^2, much of it semi desert, converted to dryland agriculture landuse. It borders with the Republic of Kazakhstan in the North and Sirdarya province in the South-East and the Republic of Tajikistan Navoi and Samarkand provinces in the West.

58. The climate of Djizzak city is continental with cold winter and hot summer. Average annual temperature is +13^o C, with summer averages exceeding 40^o C. Average annual relative humidity is ≤30 %

59. In the area of Djizzak city, westerly, northern and north-west winds coming from Tamerlan Gates[4] prevail. Average annual wind speed is 2.5 - 6 m/sec.

60. Cold air entering from northern part of the province causes sharp fluctuations in temperature. Frosts occur even in late spring, and damages fruit trees and crops. Level of precipitation is law (200 - 400 mm/year). Seismic zoning of the province territory belongs to the 7-seismic magnitude zone (The zones range from 1 to 9 with 9 being the worst).

2) Air Quality and Noise

61. **Air Quality** - To obtain ambient air quality data for Djizzak, all known sources were contacted and Uzhydromet responded by indicating that the agency monitors 25 industrial cities across the country. Uzhydromet suggested that the best surrogate would be Samarkand, the closest city for which there are data. These data are also marginal and none of the standard parameters such as PM10, PM2.5, CO or Volatile Organic Compounds (VOC) were monitored. The data (Table 2) provided were for the Djizzak areas and showed that most of the pollutants tested were within permissible standards.

Table 2. Average annual concentration of pollutants in atmospheric air of the Djizzak Area

Parameter	2008	2009	2010	2011	Permitted Concentrations (daily average)
Ammonia (mg/m^3)	0.06	0.06	0.04	0.04	0.12
Nitrogen dioxide (mg/m^3)	0.18	0.18	0.18	0. 18	0.06
Sulphur dioxide (mg/m^3)	0.02	0.02	0.02	0.02	0.02
Phenol (ug/m^3)*	4.9	4.9	2.1	7.1	7.0
Anhydrous hydrogen fluoride (ug/m^3)*	3.2	3.2	3.2	3.2	8.0

Source Uzhydromet, Tashkent Database, * Units normally defined as micrograms/m^3 or ug/m^3

62. Since this project will have no significant effect on air quality, the baseline data do not need to be extensive. During construction a few pieces of heavy equipment and trucks

[4] The Tamerlan Gate" is a narrow gorge in mountains located at the south-western entrance to Djizzak city where highways and railways pass through

will be used to carry out the work. The dust control along the haul road in and out of the site, these temporary problems should be well controlled.

63. **Noise.** The noise level around the pump stations according to Djizzak Provincial Health Department in April 2014 averages around 50 dBA, well within the national standards in Uzbekistan which is 65-70 dBA in the day and 50 dBA at night (KMK 12.01.08-96)

3) Topography, Geology, Soils and Hydrology

64. Aside from the mountains on its eastern border, Djizzak province is a semi desert dryland, much of it in the Arnasy Depression, a flat expanse, which through vast irrigation has become an important dryland agriculture area. The eastern mountains are snow-capped and provide much of the local water in many small streams which, as soon as they reach lower elevation, are diverted for irrigation purposes.

65. Geomorphologic structure of these soils is loess (red)-like loam, interspersed with lenses of sand and gravel from 2 to 40 m thick. Water-saturated pebblestone is found in deeper layers and the soils are subject to subsidence.

66. Shallow aquifer groundwater is located at 3 -5 m depths in a few areas, but more often at depths of 10-20 m. Ground water is recharged by infiltration from irrigation waters and precipitation. Groundwater has high TDS levels and is saline making it unfit for use on concrete production or for safe consumption[5].

67. The hydrology of Djizzak is dominated by the network of built canals and collectors which carry water diverted from all mountain runoff waters, as well as effluent discharged from WWTP, industries and general surface runoff from precipitation. This system of artificial canals has reshaped the provinces surface hydrology, resulting in the formation of the Aydarkul, located along the northern border of the province.

4) Surface Water

68. The main sources of surface waters of Djizzak province are the Sanzar and Zaaminsu Rivers. The Sanzar River is the largest in Djizzak province and flows from Chumkurtau Mountains at 3300 meters for 123 km at which point it has been diverted into the Kly Canal. It has a catchment area of 2,600 km^2, and is fed by snow melt and has an average annual water flow of 6.9 m^3/sec.

69. In Djizzak City the river turns northward and as it passes Kly Village it is diverted into the Kly Canal, much of it being used for irrigation. The Kly is also a collector for wastewater and ends up discharging its flow into the Aydar Lake (**Error! Reference source not found.**).

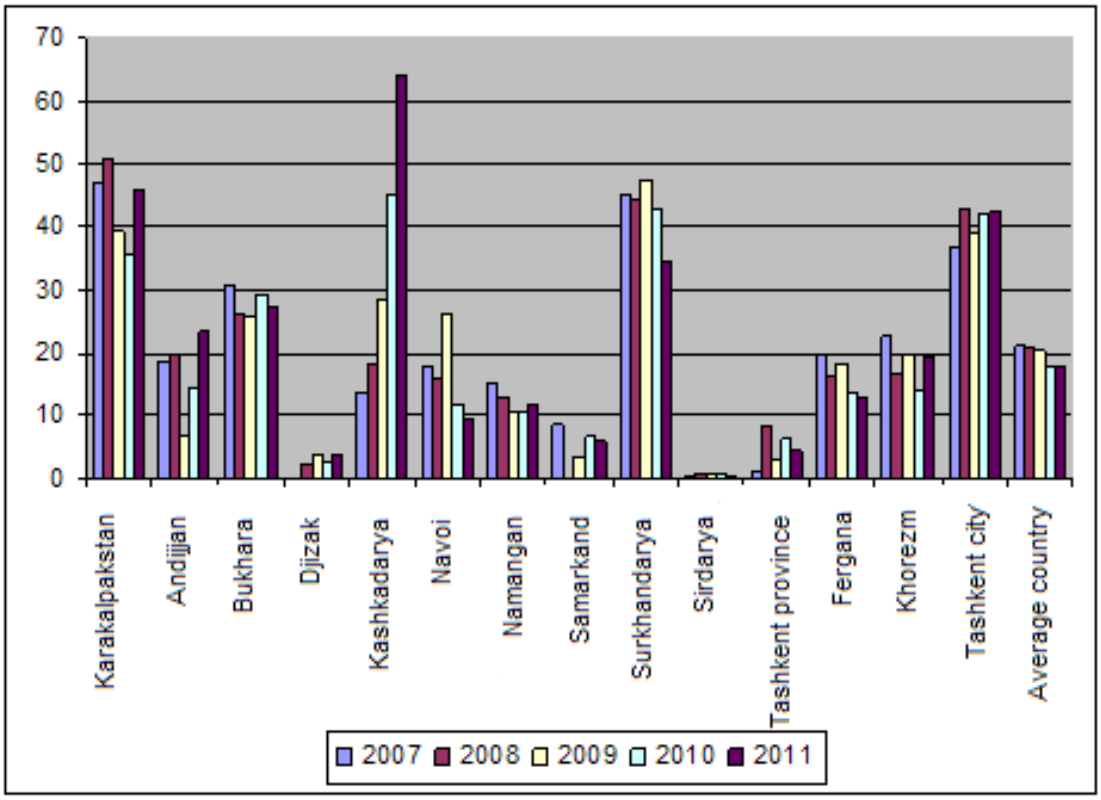
70. The Zaaminsu River is the second largest river of the province, but since it is totally outside the potential influence zone of the project, is not addressed further in this IEE.

71. Much of Djizzak Province was a semi desert and salt pan area, converted to agricultural production of mainly cotton and wheat, via a massive irrigation system developed during the Soviet era.

72. The highly saline Aydar Lake exists due to collector-drainage waters as well as discharge of excess water of Chardara water reservoir. Despite being a manufactured, the lakes averages 28 km wide and when there is water, 160 km long and averaging 12.5

[5] Djizzak has an above average incidence of both kidney stones and gallstones, both associated with highly mineralized drinking water (RoU Health Ministry statistics, 2014)

m deep. Between 2006 and 2011, the mineralization (alkalinity) of Aydar Lake doubled, increasing from 1 to 2 g/l.



5) Groundwater

73. Water for Djizzak province and specifically Djizzak city is supplied from ground water sources located along the Sanzar and Zaamin Rivers as well as some springs. In 2011 total volume extracted was 57.7 million m^3. Ground water aquifers are recharged via precipitation infiltration, mountain runoff and irrigation channel infiltration. This latter source is of concern since heavily polluted waters are often discharged into these irrigation/drainage canals, as for example the Ulgursay canal which has been discharging untreated sewage into the collectors (**Error! Reference source not found.**) since 2006. The main sources of groundwater pollution in Djizzak are public utilities, agricultural production practices, industrial plants, and poorly functioning wastewater treatment plants (National Report on Environment and Use of Natural Resources in Uzbekistan. Tashkent, Chinor ENK, 2013).

74. Due to the diversion of the Sanzar River's water (**Error! Reference source not found.**) for irrigation, the downstream wells now suffer; water levels are decreasing and hardness of the water increases markedly affecting the taste and potability. In some of ground water wells (Promzona, Kurgan, Saribazar, Uch-Tepa, Sanzarselskiy, and Devon areas) mineralization (total alkalinity) level from 1150 to 2050 mg/L, and hardness level of 8.0 to -18.6 mg-equivalent/L (Table 3) have been recorded. These levels render water unsafe to drink, and if consumed lead to kidney and gallstones.

75. Water intakes in Djizzak city are of good quality and fit for human consumption with proper treatment.

Table 3 . Groundwater Quality in Djizzak City Promzona

Parameter	Unit of Measure	NATIONAL Standard for Groundwater	Ground water (in industrial zone)

Parameter	Unit of Measure	NATIONAL Standard for Groundwater	Ground water (in industrial zone)
Temperature of water	^{o}C	18	17
Smell	Scale: 0=best & 5=worst	2	0
Black Smoke	Scale: same	2	0
Color of water	Scale: same	20-25	0
Turbidity	Point	1,5-2	0
pH	mg/L	6-9	6,8
Ammonium nitrogen	mg/L	0	0
Nitrite	mg/L	3	0
Nitrate	mg/L	45	45
Total hardness (Calcium Cations, Ca and Mg)	mg-eqv/L	7-10	10
BOD5	mg/L	2.0-2.5	1.28
Sulphates	mg/L	400-500	160.8
Chlorides	mg/L	250-350	35
Dry residual (concentration of calcium cations, Ca and Mg)	mg/L	1000-1500	720
Calcium	mg-equiv/L	-	4.5
Magnesium	mg-equiv/L	-	5.5
Alkalinity ($CaCO_3$)	mg/L	-	5.2
Residual chlorine	mg/L	1.5	0.6
Iron	mg/L	0.3-1	0.1
Copper	mg/L	1	0

Source: Data of Djizzak City Suvoqova; Promzona is 3.5 km from Djizzak City wastewater treatment facility

6) Ecological Resources

76. **Flora and Fauna -** Uzbekistan pays great attention to biodiversity and its maintenance. Among the first conventions to which the Republic joined is the Convention on Biological Diversity (1995). Convention "On Conservation of Migratory Species of Wild Animals" (1998), the Convention on Wetlands of International Importance especially as Waterfowl Habitats (2001). In Djizzak province there is Zaamin Mountain-Juniper State Nature Reserve and Zaamin National Natural Park which are located in the northern part of Turkestan mountain range. These protected areas are 1760-3500 meters above sea are the habitat for the white-clawed bear, bearded vulture, black stork, but are located 55 km from the subproject area. There is no special biodiversity protection zones within the agricultural lands allocated for new construction or along the sewer alignment.

77. **Critical Habitat: Environmentally Sensitive Areas, Rare and Endangered Flora and Fauna and Protected Areas -** The project area does not contain any of these features. For many kilometres around the WWTP and along the sewer collectors, the area is urban landscape with buildings, roads and road shoulders. Along the shore of the Ulgursay sewage effluent canal there are mostly agricultural agro-industrial and small farming enterprises.

7) The Pumping Stations

78. The three pumping stations to be fully rehabilitated have chronic and serious leakage problems, going on for years. This has resulted in untreated sewage leaking into local curb side drainage ditches and flooding onto lawns and into open urban spaces for hundreds of meters downstream of the stations. In other words all sites are badly

contaminated, and contaminating the local communities with raw sewage. In addition to reconstruction a major rehabilitation effort and clean-up of the drainage areas downstream of all pumping stations will be completed. Drainage ditches and areas where sewage flooded the land will be cleaned and sanitized of sewage waste and the area fully re-landscaped making it safe for public use.

B. Economic Development

79. Djizzak city was founded in 1926, and is the administrative centre of the province. The municipality covers about 9,640 ha of land. Its existing population is around 163,000 and has a growth rate of about 1.5% per year.

80. Within the last 3-5 years its dominant agricultural base is being slowly matched by industries, such as weaving facilities, utilizing the locally grown cotton and wool to make raw as well as dyed fabric. In other words, other industries are being established to process the raw materials produced in the province. The government has designated Djizzak as an economic growth centre for the country and as such conditions will continue to improve.

1) Agricultural and Mineral Development

81. The project area is mostly in an urban setting and as such there is no appreciable agricultural or mineral development affected by the project.

2) Transportation (road, rail air)

82. Djizzak's road transportation system boasts a set of paved main streets and unpaved secondary streets throughout the city. While this is not very satisfactory for local residents it will make the job of place of sewers and rehabilitation of roads much easier. The city has informed UCSA, that those streets where main collectors will be placed and which are not already paved will be asphalted as part of the city's urban improvement scheme. Djizzak also has a modern train station and freight terminal, linking it with services in larger centres across the country. The nearest airport is Samarkand.

3) Power Sources and Transmission

83. The city is supplied by power from the national grid provided mostly by the Sirdarya Thermal Power Plant, with supplies 1/3rd of the country's power. Plans are for a new 150 MW diesel fuelled plant in the Djizzak area. By 2017 the demand by industry will be 128 kwh/person and 136 kwh/person for households. The province has a number of high voltage transmission lines as well as large substations. As the industrial sector grows, encouraged by both the national and provincial government, so will the demand for power.

4) Industries and Employment

84. Djizzak is rapidly expanding its industrial base, witness the 22 relatively new industrial enterprises (Table 1) the new WWTP will need to service. Employment rate among the employable is around 14.5%, a rather low figure. At present income is lower than the national average, and 63.5% of the population have an income of around 144,000 USZ per month, which is considered Uzbekistan`s poverty income level. With the rapid expansion of industries these figures will improve so long as the government provide adequate capacity building; since otherwise businesses will have to bring in outside skilled labour.

C. Social, Cultural Development and Quality of Life Values

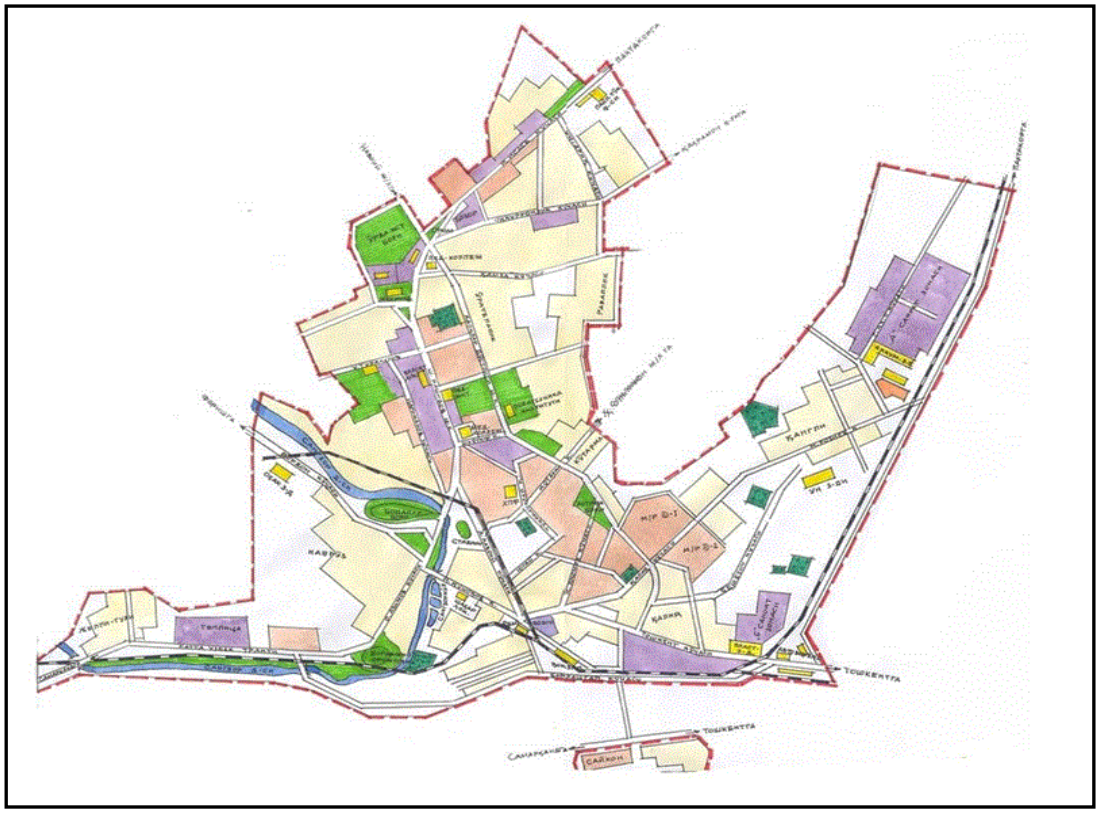
1) Socioeconomic Profile

85. Djizzak region is located in central Uzbekistan between the Sirdarya and Zarafshan rivers, about 200 km from Tashkent. It has an area of 21,200 km^2, 4.8% of the country's total area, and an arable area of 1.3 million ha. Regional population exceeded 1.2 million people in 2012 with a population density of 56.8 people per km^2. The region comprises 12 administrative districts, 6 cities, 8 urban-type settlements and 100 rural community assemblies (villages). 47.7% of the regional population lives in urban areas. The average age of the population was 26.4 years (2011).

86. There are two tertiary educational institutions, 75 vocational colleges, 4 academic lyceums, 553 secondary schools (including specialized), 166 kindergartens, and 39 non-school educational institutions in the region. Health infrastructure in the region includes 63 hospitals (including 14 private ones), 272 polyclinics, 14 resorts, 124/174 rural medical centres, and 139 first-aid/ambulance units.

87. Djizzak city (**Error! Reference source not found.**) is the administrative centre of Djizzak region with a population of 162,500. It is expected that the city population of Djizzak city in 2020 will reach 169,800 (+12.8 %) and 236,000 by 2030. The total area of the city is 9640 ha. Of them, 3,517 ha are agricultural lands, 1,333 ha are occupied by houses (13.8%), and 233 ha by municipal buildings and roads. Within the territory of the city, a Specialized Industrial Zone (SIZ), "Djizzak", was created in March 2013. The land area reserved for the SIZ is 244 ha. About 87.8% of the city population is Uzbek. The other major ethnic groups include Russians (3.9%), Tajiks (1.7%) and others (6.6%). The city is divided into 35 urban mahallas (Figure 1). There are 2,560 small business enterprises in the city, including 38 farms with average areas of 38 ha, 10 industrial enterprises, and 32 joint-venture enterprises. The social infrastructure includes 26 kindergartens, 30 schools (including two specialized), 2 musical schools, 9 vocational colleges, 3 academic lyceums, and 2 universities. There are 22 clinics in the city.

Map 2. Mahallas of the Djizzak city (as of 2012)



88. According to Djizzak "Suvokova", the coverage of the city population with centralized water supply is 94%, and with sewerage services 23.6% (35% in Uch-Tepa

settlement). 12,781 households with 38,359 people are served in Djizzak city, and 4,235 people in Uch-Tepa settlement. 68% of the current volume treated by the city is residential, 18.1% from the government organizations, and 13.9% from other users.

2) Standard of Living and Community Health

89. Djizzak is a middle to low income community, based on RoU data, Poverty in the subproject area is due to factors such as a lack of employment opportunities and inadequate provision of water supply and sanitation services. Positive impacts from the Djizzak subproject are likely to include improvement in the quality of life, time-saving and reduced workload particularly for women, improved household and personal hygiene, and improved health status of adults and children particularly through a reduction in the incidence of infectious diseases.

90. Public health is the most important factor in the socio-economic development of the state and society. It is generally accepted that human health is determined by three main factors: genetics, quality of living and environmental factors. Therefore, the health indicators, the epidemiological situation, changing patterns of disease are directly dependent on condition of the environment. The national situation is improving (Table 4) while conditions in Djizzak are not as good (Table 5).

91. Dysentery incidence in three provinces of the country varies between 64 and 228 people per 100 000 people according to the Ministry of Health of Uzbekistan (Table 4).

Table 4. Number of acute dysentery cases per 100000 people

Provinces	2006	2007	2008	2009
Djizzak province	124.8	79.0	136.3	79.0
Samarkand province	100.9	64.0	100.4	64.0
Sirdarya province	220.0	182.4	227.6	182.4
Total the country	133.9	120.8	122.2	80.7

Source: Statistics Yearbook, State Statistics Committee of Uzbekistan, Tashkent 2013.

Table 5. Water-Quality related disease incidence in Djizzak city (No. / 100,000 people).

Disease	2009	2010	2011	2012	2013
Gallstone	270	284	264	283	300
Urolithiasis (Kidney Stones)	119	116	128	134	141
Viral hepatitis	128	120	123	152	468
Acute intestinal infections	209	199	200	223	453

Source: Data of State Epidemiological Surveillance of Djizzak province and Djizzak city health department.

92. Data for the period 2009-2013 on the incidence of four other water-borne diseases were obtained from the Djizzak Health Department and suggest a steady rise in

incidences (Table 5), underscoring the urgency of better water treatment. The rise in gallstones and urolithiasis is more associated with highly mineralized water.

93. Goskompriroda reported that in 2013 in Djizzak Province 12% of potable water tests (likely an under estimate) did not meet nation standards due to bacterial contamination (National Report on Environment and Use of Natural Resources in Uzbekistan, State Nature Protection Committee of Uzbekistan, Tashkent: Chinor ENK, 2013)

94. Condition of sewage treatment facilities, networks and collectors in Djizzak city is particularly worrisome (Table 6) because of possible negative impact on ecological and epidemiological situation of the city and region. Operated equipment is outdated, wastewater treatment plants do not function, and untreated waste waters are discharged directly to channel such as the Ulgursay. Goskompriroda reports that the provision of sewage treatment is far below the need. There are no facilities for additional treatment of wastewater and sludge, leading to not just water but agricultural soil contamination.

Table 6. Effluent discharged into sewerage treatment plants and treatment efficiency

Province	Years and '000.m^3/day			Average treatment efficiency of treatment facility, %
	2008	2010	2011	
Djizzak	7.2	7.1	7.2	33
Samarkand	121.7	56.3	121.7	61
Sirdarya	13.5	18.9	13.5	8

Source: National Report on Environment and Use of Natural Resources in Uzbekistan, State Nature Protection Committee of Uzbekistan, Tashkent: Chinor ENK, 2013

Human Settlement in the RoW

95. The screening of sewerage pipes construction sites showed that there will be no resettlement impact, neither temporary nor permanent, during implementation of the project works related to sewerage pipes rehabilitation/new construction in Djizak city. All project works will be implemented on municipality lands along main roads or sidewalks which will be recovered by the project to original condition after completion of works. No works will be carried out on territories of households or businesses.

Archaeological and Historical Features and Sites

96. Based on discussions with the Djizzak Sewerage company and the Administration's office there are no archaeological sites, or historical or culturally important features or sites within 200 m radius (centred over the alignment) of any of the sewer construction corridors. The city does have important sites, about 10km from the project affected areas, in the northern part of the eastern planning area at the site of a former fortress "Urda". It is a memorial complex dedicated to victims of Djizzak uprising. The other site is located in the industrial area "B" which is a hilly area called "Kaliya Tepa".

IV. ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

97. This subproject will have a large positive impact on Djizzak, bringing sanitary sewage services to many thousands of families, and business enterprises. Some temporary impacts associated with construction works will occur. To deal with those impacts, the most important mitigation measures are proposed, and described in the environmental management plan (EMP) section. The EMP is provided in detail in Annex 3.

98. The original IEE provided all necessary mitigation and monitoring measures for construction and rehabilitation of sewer trunks, networks and pumping stations. Given that no changes made for this component of project (sewer trunks, networks and pumping stations) no additional impacts revealed and no additional mitigation and monitoring measures provided in this updated IEE. However EMP updated to cover only network activities.

A. Preconstruction Period

99. The activities during pre-construction stage will play important role in avoiding and minimizing impacts during construction and operation of sewer pipes. The most important activities during pre-construction stage are: (i) finalizing the design by taking into account potential impacts during construction and operations, (ii) Procurement of civil works by incorporating all requirement to implement mitigation measures in the contract document for supervision construction management consultants (PDC)/engineer, and contractor, and (iii) establishment of institutional arrangement by having qualified environment specialist in the sewerage company, and Executing Agency in this case is UCSA with its Project Coordination Unit to ensure that mitigation measures are implemented. UCSA and its PCU need to fully understand their responsibility during pre-construction period, since it is during this phase that future impacts can be prevented and associated costs avoided. If the PDC is brought into the project early, the preconstruction tasks could be undertaken jointly by the PCU and the PDC.

100. **Finalizing the detail design**. The EMP lists nine Preconstruction mitigation measures and monitoring actions. Land will be required for the installation of new sewer mains, collectors and pumping stations (for about 6 ha). The construction will temporarily damage urban streets, but not require removal of trees, however generally disrupt living conditions. The incorporation of sensitive construction planning as defined in the EMP into detail design will help to avoid and minimize negative effects that often plague WWT system installations. The detail design needs to incorporate the mitigation measures for following impacts:

i) **Traffic congestion** – *(EMP No. 1.6)* Major road disruption will take place during the installation of many kilometers of sewer mains and collectors, placed mostly in or near the center of project roads. This will require major diversions or even road closures. To avoid severe traffic congestion and disruption of commerce, a traffic management plan will need to be prepared with the cooperation of the police, and passed to the contractor for modification, and then implementation.

ii) **Excessive Cutting of Tree** – *(EMP No. 1.8)* Most collector sewers will be replaced or newly installed will be buried along road shoulders, which have many mature trees. Therefore, a careful tree inventory (some of this has already been completed as part of the Resettlement Plan work) and cutting plan will be required in order to keep to an absolute minimum the removal of trees., Mature trees vital for shade, given that summer daytime temperatures in Djizzak can rise to over 40^{o}C and trees can reduce this heat by as much as 10^{o}C. The cutting plan will be accompanied with a replanting program, with input from local

residents and district forest departments, concerning replacement species (if the trees cut cannot be replaced with the same species); and,

iii) **Local Community Access Blockage** *(EMP No. 1.7).* The construction work will result in a large number of temporary blockages of the access between hundreds homes and travel streets. The contractor will have to carefully manage this to restore access as quickly as possible. Therefore, an important pre-construction task will be for the PCU to establish the sequence for notification of work to come, the work schedule and restoration of access to all households and businesses affected, such that this disruption is known ahead of time, is as short as possible and the re-established access is at least as good as prior to construction. This basic plan needs to be handed to the contractor for them to adjust to their work schedules and implement it.

iv) **Matching industrial effluent with WWTP treatment Capability**. The quality of intake waste water from industries will need to be carefully checked to be sure it conforms to the treatment limits of the new WWTP, including the treatment of sludge coming from the sludge ponds and therefore minimizing the chances of facility breakdown due to unacceptable influent quality. The effluent test from all industries will be provided in the updated IEE for construction of net WWTP under DSSDP.

101. **Procurement of civil works**. UCSA will need to confirm that all relevant environmental actions as defined in the EMP are reflected in the bidding document that will be offered to the contractor and consultant/engineer, and bid evaluation has to include the evaluation or assessment whether contractor, or consultant/engineer could implement the required EMP. Lastly, the contract document should include item works to implement EMP and reflected well in the bill of quantities. UCSA also responsible to ensure that all environmental documents are available in adequate quantities, have been translated and have been distributed to all key stakeholders including the local Governments, water and sewerage companies and Mahalla , the PDC as well as the contractor. UCSA will establish the contact point for complaints and grievances (see Grievance Redress Section V), such as a community relations person within the PCU and to be named by the contractor.

102. **Institutional Arrangement.** To ensure the EMP requirement will be incorporated in the detailed design and procurement stages, UCSA will need to have an environment specialist as soon as the project is implemented. The weak technical capacity (as defined in more detail in Chapter XI) (*EMP No. 1.1*) of the water and sewerage companies, Djizzak Environment Agency and the contractor(s), will require the delivery of two short training workshops, one targeting the oversight agencies and the second the contractor and the day-to-day managers of the work (the PCU and the PDC) and covering basic environmental management and the implementation of the EMP. This training will need to be completed during project preparation but before mobilization of the contractor and this training could be delivered by the PDC[6].

Construction Period

103. The environmental impacts associated with construction work will need to be managed carefully. Therefore, it is also important to properly identify who is doing what to minimize impacts and monitor during this period as described in the EMP (Annex 3). Prior to the start of construction, the day to day management of the work will be delegated by the PCU Regional Coordinator in Djizzak. The Regional Coordinator will then work with contractor, the PCU and the PDC to complete the construction. After receiving notice to proceed to mobilize resources, the contractor will be required to submit the site-specific

[6] This detail is as yet not fixed, and will be decided by UCSA at the start of the preconstruction period.

environmental management plan (SSEMP)[7], incorporating principles laid out in the EMP. The SSEMP will include a work schedule showing where and how the mitigation and monitoring measures will be integrated into the construction work schedule. The PDC on behalf of PCU will approve the SSEMP.

104. The environmental impacts from construction and reconstruction of sewer networks and pumping stations will directly impact the communities along the sewer networks and nearby the pumping stations. Although the sewer networks (mains and collectors) will be placed along the shoulders of urban streets, these constructions works will be in the residential areas of Djizzak and Uch-Tepa District Center (**Error! Reference source not found.**). The environmental impacts associated with construction works will include the followings:

105. **Inadequate construction camp/working camp, and storage areas site selection and management.** The area selected for construction camp, and storage areas for construction materials and equipment should be selected carefully with adequate distance from public social infrastructures such as market, medical clinics/hospitals, sport centre, school, and public offices. The working camp/storage areas should be adequately fence or safety ribbon telling the public that there is danger and it is a construction worksite. It is important to The EMP (*No. 2.4, 2.6, 2.7, 2.8 & 2.9)* provide a guidance to maintain construction camp and storage areas to avoid and minimize environmental impacts.

106. **Unacceptable storage, handling use and disposal of all petroleum products-** The unacceptable storage, use and disposal of petroleum products such as fuels, lubricants, work camp kitchen oils used during the work and waste oils from maintenance will be carefully managed. The contractor will be required to manage all fuels, lubricants and waste materials according to national standards, and more importantly according to the best practices to avoid polluting or contaminating surrounding work camp/storage areas. To avoid ground water contamination, the areas for handling fuel, oil and other lubricant should be cemented, and spillage and leakage of oil and lubricants should be collected and disposed in accordance to the local regulation, and in a manner that will not cause further contamination.

107. Laying the sewerage networks will involve excavation works that will create noise, dust, localized air pollution, and generating unwanted excavated soil. The EMP *No. 2.1, 2.2, 2.4* provides a guidance on how to minimize and avoid these impacts. It is important to ensure that contractor(s) and sub-contractors use construction equipment that generates low noise and vibration, and is well maintain to avoid emitting black sooty exhaust. The mitigation measures for these issues will be for the PDC and PCU to check on and enforce equipment maintenance, and to complete visual inspections, confirming how well equipment is maintained and that a dust suppression program using watering trucks has to be implemented.

108. **Transporting construction materials and spoiled materials for disposal.** These activities will create a nuisance. Therefore, it is important to consult local authority to seek approval on route that allow to be used for transporting these materials. In addition, The contractor will need to inspect roads used for the transport of earthworks every day, making sure that debris waste materials and earth has not fallen off the back of trucks, generating safety concerns and dust; and that immediate clean up occur if problems are noted. All such trucks will need to be equipped with covers or nets preventing spillage and reducing wind-blown dust from vehicles.

109. **Noise** - *(EMP No. 2.2).* Some construction material will also be fabricated by supplier outside the project areas and will need to be trucked through residential areas,

[7] The SEMP is also often known as a Construction Environmental Work Plan, or Environmental, Health and Safety Plan

creating noise, dust and intermittent traffic congestion. Route selection and timing of this movement, coupled with the measures defined in paragraph 94, will help to minimize these annoyances. There will be no mobile aggregate of concrete batch plant operations[8] and therefore little noise other than from excavation equipment. Working in urban communities especially residential areas is categorized as working in sensitive sites. Contractors will be required to mitigate noise, dust and other air emissions constantly. This will be achieved through the use of low noise construction equipment (e.g., jackhammers[9] used to break up asphalt and concrete during the sewer work), strict control over working hours, and the installation of temporary noise barriers, such as plywood/foam board barriers at highly sensitive receptors such as playgrounds and in front of hospitals. Limiting the operation of high-noise equipment during the sewer placement to between 07:00 and 17:30 hr, will help to reduce noise annoyance.

110. Further PDC will conduct field noise surveys using a handheld sound-pressure meter at each active construction site, at least once a month. The PDC has to give strict instruction to the contractor on how to mitigate the excessive noise, if any violation of local standard is observed.

111. **Dust -** *(EMP No. 2.1)* **-** will be another significant, albeit temporary problem, both in terms of what is generated by the construction work and that created by truck hauling excavation materials from the work corridor and bringing in fresh materials when burying the sewer line. Preventing trucks from losing material on the roads, vigilant haul road cleaning, and dust suppression at the worksite will be important mitigation measures to be implemented during the construction period..

112. **Pollution Controls Defined in Contractor Agreement -** *(EMP No. 2.1).* It is important to include in the contractor's contract agreement that the contractors have to use sound equipment, and regularly maintained to avoid the emissions of black smoke and high levels of suspended particulate matter from the contractors fleet. Although, these emissions will not be a serious long term health threat, it will create temporary disturbance to people living nearby the project areas. Therefore, it is obligation of the contractor to manage these potential impacts.

113. **The tree cutting and replanting plan -** *(EMP No. 2.3).* According to the updated LARP all project works will be implemented on municipality lands along main roads or sidewalks which will be recovered by the project to original condition after completion of works. No works will be carried out on territories of households or businesses. In case of necessity the tree management plan will be prepared prior to commence of civil works (EMP No. 1.8) and will be given to the contractor at the start of construction and a consultation with roadside residents completed. During this time the PCU will review the limits specified in the plan, and where possible, minimize or eliminate all tree cutting along urban streets. This plan will be monitored constantly by the PCU, since this was a major complaint voiced at the public consultation session.

114. Consultations with tree owners will be completed, and compensation for the loss of trees will be paid for as defined in the LARP. The approval for the contractors to proceed will only be given to the contractor, after the affected people are compensated by UCSA for the loss their trees. The PCU will also be responsible to minimizing tree cutting. If contractor needs to acquire additional land, and this could involve additional tree cutting, the contractor will need to inform the PCU. The plan will be monitored constantly by the PCU, since excessive tree cutting was a major complaint voiced at the public consultation

[8] The existing access road to the WWTP is now degraded and potholed gravel road, badly in need of repair. The total 700m length will need to be reconstructed, requiring either asphalt of concrete.

[9] Chicago Pneumatic Breaker Hammers, mail@chicagopneumatic.com; Sullair Breaker Hammers, sullaircompressors@sullair.com ; Makita HM1810 Breaker Hammer, http://www.makita.com
Atlas Copco Breaker Hammers; contact 1-800-732-6762 ; Wacker Neuson Breaker Hammer EH 65 Breaker Hammer ; www.wackerneuson.us/en

session, and described as a major failure during previous environmental mitigation measures.

115. However the screening of sewerage pipes construction sites showed that there will be no resettlement impact, neither temporary nor permanent, during implementation of the project works related to sewerage pipes rehabilitation/new construction in Djizak city. All project works will be implemented on municipality lands along main roads or sidewalks which will be recovered by the project to original condition after completion of works. No works will be carried out on territories of households or businesses.

116. **Traffic control and access management plans -** *(EMP No. 2.5).* The traffic control and access management plan prepared during the preconstruction period will need to be given to the contractor before mobilization. If it is not prepared, the contractor and PCU has to prepare traffic management plan for areas affected by the construction works. A meeting confirming understanding and the implementation of these plans, involving the PCU, the local police and the contractor(s) will need to take place and be recorded. UCSA, working with the PCU will make certain this takes place.

117. **The landscaping should be undertaken during the construction period to ensure that adequate Post Construction Landscaping** will be in place *(EMP No. 2.11).* The long sewer construction/placement corridors, up to 10m wide, will have significantly disturbed ground and piles of excavation wastes littering the countryside. As each section of the sewer placement is completed, the contractors will be required to undertake immediate landscaping and remediation with plants and seedling trees to stimulate rapid recovery and returning the construction zone to preconstruction conditions as quickly as possible.

118. **Capacity Building -** *(EMP No. 2.8)* Given the importance of capacity building this item is repeated from the preconstruction discussion. The contractor(s) must be competent enough to implement the 11 EMP actions and to fully understand and adhere to the environmental specifications found in their construction contract. The PCU and PDC will prepare and deliver workshops (Table 8) totalling around 1.5-2.0 days, on environmental management and EMP implementation in relation to construction work, targeting the contractor, the PCU and hopefully ”Suvokova” staff who will be responsible for carrying on the mitigation and monitoring actions during the operating period. The contractors will be required to have at least two people attending these sessions, who will be responsible for environmental safeguards during the construction period.

119. **Reporting** - *(EMP No. 2.10.)* During the construction period the contractor will be required to file monthly progress reports, in which will be a section on environmental safeguards where actions during the past month will be briefly mentioned. In addition the contractor will be required to complete a quarterly compliance monitoring checklist, using the EMP table to create the list and checking off the work completed. A blank checklist for use by contractors is provided as Annex 4. The quarterly checklist will also include information on specific issues resolved such a complaints about access, traffic and noise.

120. PDC will assemble the quarterly reports, add noise measurements data and observations on dust and air pollution. The PCU will submit to ADB the environmental monitoring report during construction period, PCU will be required to submit a semi-annual environmental monitoring report, describing the implementation of EMP, including both mitigation measures and monitoring tasks, reporting on whether any unexpected impacts occurred and how these were handled, and a record on any complaint received from affected people.

121. **Rehabilitation of the Pumping Stations** *(EMP No. 2.13)* – The existing pumping

Zilol Pumping station

stations to be rehabilitation have been leaking untreated sewage into the community roadside drainage ditches, onto roads and even roadside grassed areas for many years (**Error! Reference source not found.**). In addition to the engineering work to repair upgrade, and for Khalkabad move the pumping station, a complete area-wide pollution clean will be undertaken. Based on feedback from local residents and a visual survey of the area affected by the sewage flooding, a rehabilitation area will be marked and all will be cleaned, disinfected if needed, then fully re-landscaped. The pumping stations should be virtually free of methane and ammonium odour and housed in aesthetically pleasing structures (**Error! Reference source not found.**), protected from the elements and provided with a safe power supply.

122. **Training/Breifing for Industrial Enterprises**-*(EMP NO. 2.14).* At least 22 enterprises will be discharging wastewater into the new WWTP. Of these at least 11 will be discharging materials that must, under the law (Resolution No.11) have pre-treatment and specific discharge conditions complied with. The information collected to date indicated that none of these industries have effective pre-treatment and none have the necessary equipment installed to permit adequate monitoring by the sewerage Company. This finding raised serious concerns and UCSA will work closely with the sewerage Company, SIAK and its PCU to address this gap. A one-day briefing seminar (see Table 8) to review Resolution No.11 (Annex 6) and discuss the timing of pre-treatment and the need to have this operational before discharge will be allowed will be prepared. This workshop will be delivered at the start of the last year of construction, giving the industries plenty of lead time to complete the necessary installations.

Operating Period

123. At the end of the construction period the contractor will provide the facility operator with a construction period mitigation and monitoring summary—which can be a more detailed compliance monitoring checklist (see Annex 4), plus some text. The responsibility for implementing the five operating period mitigation and monitoring measures will be with the Djizzak “Suvokova”, who will operate the new facility under the District water supply and sewerage enterprise.

The construction of the main sewer collectors and connections to users, will leave behind a scarred corridor, susceptible to erosion, visually unattractive, particularly in the densely

populated urban areas, and very often with poorly repaired excavation sites in the middle or sides of existing roads. The contractor will be required to rehabilitation this area, however the Djizzak “Suvokova” will be required to follow up a rectify problems. The following potential impacts were identified and associated mitigation measures need to be undertaken:

i) **Inadequate EMP completion -** *(EMP No. 3.3)* Contractors frequently forget to prepare the EMP completion report at the end of their contract. The PCU and PDC need to insure that this report is prepared and that the contractor has complied with requirements in the EMP. The PCU and/or the PDC needs to pass this material to Djizzak “Suvokova” and advise them to continue to implement activities started during the construction period, such as the management of the tree replanting effort and the continuation of any road rehabilitation.

124. **Need to have modern laboratory facilities.** The Suvoqova as describe above needs to continue monitor the intake water to the Djizzak WWTP to ensure the effectiveness of the WWTP. In addition, sludge and effluent from WWTP needs to be routinely monitor and record has to be submitted to the Djizzak Nature Protection Committee. In this context, the requirement of Suvokova to have modern facility of laboratory to enable test on toxicity and heavy metal content is now unavoidable. The Cabinet Minister Resolution no:14/2014 has required that laboratory such as Suvokova should have facility to test toxicity and heavy metal content.

125. **Pumping Station Clean Up**. *(EMP No. 3.5).* Within the first year of operations, the Djizzak “Suvokova” will need to file a clean-up report for all three pumping stations in terms of the work done, rehabilitation completed, and landscaping concluded. This report with photos of the improved facilities will be filed with UCSA and made available to ADB.

Irreversible and Irretrievable Impacts

126. No irreversible or irretrievable impacts due to the project were identified. Excessive and widespread tree cutting along the sewer construction corridor, while not irreversible, will require decades for full recover as seedlings grow to maturity. Therefore, when a contractor illegally cut trees (based on the tree management plan prepared during the pre-construction period and given to the contractor) a penalty will be imposed and replanting and payment of compensation as described in the Government Resolution specified in the LARP.

Environmental Enhancements

127. The benefit of the projects will be very significant and extensive. There will be a major reduction of pollution from the sewage effluent as it will be fully treated by the new treatment plant and the sewage will be piped away from homes to the WWTP in a sanitary manner. This will mean water with much of the nutrient load, pathogens and bacteria removed, and a far cleaner effluent discharged into Ulgursay sewage canal.

128. There will be a reduced risk of drinking water, and well contamination downstream and the reduced risk of the spread of communicable disease. Households with sanitary sewage services will see a significant reduction in waterborne, pathogen and fungal diseases, particularly among children. This improvement should significantly reducing health care costs per family. The burden of maintaining a sanitary home, which falls on the women, will be lowered, due to the sanitary toilet and washing facilities.

Social Sector Impacts

1) Social Assessment

129. The social assessment showed clearly that the benefits of the new waste water facilities far outweighed any mostly temporary negative impacts i.e., noise, dust and access restriction, occurring during the 2-year construction period. During the consultation, people in the communities to received new sewer connections expressed great approval for the project and wished it to be completed as quickly as possible.

2) Poverty Impact

130. There will not be a requirement for land acquisition. Therefore, it is not expected that the land acquisition will trigger any poverty impacts. In fact, there will be benefits since much of the construction workforce will be hired locally, providing better paying secure jobs for >2 years, and any labour force from outside Djizzak will bring revenues to local business owners. Further, the cleaner healthier conditions will reduce sick days and improve worker productivity.

3) Resettlement

131. No households will be relocated since the majority of the sewage collector placement will be along streets, specifically along the shoulders and in the middle of the streets.

V. ANALYSIS OF ALTERNATIVES

132. The analysis of alternatives focused principally on the with and without project scenarios since the access to sanitation system for all has been established as one of important targets of the Government of Uzbekistan in meeting the UN's Millennium Development Goals (MDGs).

133. The without project scenario would result in continued contamination of ground water with untreated waste water that could lead to outbreak of diseases. The poor environmental performance due to untreated industrial waste mixed with domestic waste will continue to be an environmental problem. The poor sewerage networks and sewer blockages and poor connectivity will result in a continuing unhealthy environmental condition, bad odour, and unnecessary untreated sewage flooding local areas.

134. The with- project scenario, will bring untreated waste to the WWTP, and the operation of new WWTP will help with requiring the industries to comply with effluent standard prior to sending their wastewater to the WWTP (i.e. pre-treatment according to Resolution No.11). Therefore, healthy environment would be the result, and these improved conditions would be enjoyed by the people living in Djizzak and Uchtepa cities.

135. Optional designs were also examined, including biological treatment versus biomechanical treatment. Given the extensive maintenance and skill needed for biological treatment and the poor climatic conditions to make it work, the bio-mechanical treatment was selected as the preferred design.

VI. GRIEVANCE REDRESS MECHANISM

136. Aside from the requirement for UCSA and other local institutions to established mechanism to receive any appeal from citizen as directed by the Government Law on Citizen Appeal No: 446-II/13 December 2002, ADB requires that the Project Executing Agency UCSA has to establish and maintain a grievance redress mechanism to receive and facilitate resolution of affected peoples' concerns and grievances about its delivery of environmental safeguards. The grievance redress mechanism should be scaled to the risks and impacts of the project. It should address affected people's concerns and

complaints using an understandable and transparent process that is gender responsive, culturally appropriate, and easy to access.

137. To that end UCSA, in cooperation with the Djizzak Province Khokimiyat, the district and city Khokimiyats affected by the work should establish a grievance redress committee (GRC) in Djizzak City, with emphasis on local membership.

138. UCSA and the PCU will guide the Djizzak city Khokimiyat in setting up a GRC preparing a letter from the mayor , naming the positions that will be required to respond to a complaint filed in that jurisdiction. UCSA, “Suvokova” and the PCU will work to make sure the committee is in place. UCSA will delegate the work of establishing the GRC to the PCU, who will work with the chief engineer of the Provincial water supply and sewerage enterprise “Suvokova” and the provincial and municipal Hokimiyats to set this up. The GRC will have strong female representation and will include representation from the local mayor’s office.

139. The first point of contact (Table 7) for any grievance filed during the pre-construction stage of the work should be the PCU head and during the construction period, the contractor, “Suvokova” and the PCU. Grievances can be filed in writing or orally with the contractor’s or PIU’s GR contact person or directly with the contractor. Once filed, 15 days are provided for a credible response. If unsatisfied with the decision the complainant can submit the grievance to the municipal GCR for a resolution. The provincial GRC will have a further 15 days to provide a decision, and if no ruling is forthcoming the grievance will be automatically decided in favour of the complainant and all compensation will be provided.

Table 7: Grievance Resolution Process

Level	Activities
Preconstruction Period	
Preconstruction period - file with PCU	PCU immediately clarifies issue and attempts to find reasons and a helpful solution
Construction Period	
Discussion with contractor	Contractor discusses with complainant and tries to fix this issue immediately
Appeal to municipal GRC	PCU Regional Coordinator dealing with complaints clarified the issue to addressed affected person. If explanation not satisfied, the procedures for filing complaints with the provincial GRC will be explained, and the complainant can file a written or oral complaint.
Provincial GRC/Municipal GRC	Provincial GRC decides on a resolution after reviewing submissions, and if complainant not satisfied the complaint can be taken to the court for an appeal. If this does not work the complainant can file a grievance with ADB 8 days after submission to the provincial GRC and if there is no response.
ADB Compliance Review Panel. Uzbekistan Resident Mission 1A.Khodjaev Street, Tashkent Tel: +998711401920: Website: www.adb.org/urm.	ADB receives the complaint, investigates and provides a resolution within 7 days.
Operating Period	
Direct contact with the Djizzak provincial “Suvokova”	The Djizzak provincial “Suvokova” investigates and acts

Level	Activities
office	quickly to alleviate the complainants concern

140. To be effective the composition and operation of the GRC, as well as contact names and numbers need to be included in the brochures to be distributed before or during the consultation and information session (s), are at the very least, at the consultation session.

141. In addition to the internal grievance redress mechanism, affected persons and the public can also access the ADB's Accountability Mechanism (2012). It consists of a consultation phase and a compliance review phase, by which the problems or issues raised by the affected people and/or stakeholders are investigated and resolved immediately by the ADB. Complainants who have exhausted effort to resolve problems with the project and ADB's operations can submit their complaint in any national language of the affected people to the Compliance Review Panel at the ADB Resident Mission[10].

VII. Information Disclosure, Consultation and Participation

A. Public Consultation

142. A public consultation for original IEE was held on April 22, 2014 in the conference hall of Djizzak city Administration in accordance with the standard procedure of ADB and practice of the Republic of Uzbekistan. The purpose of the consultations was to engage the public in a discussion on possible environmental impacts during implementation of the construction works for Djizzak Sanitation system development project.

143. The consultations were headed by PPTA`s International Environmental Expert, the National Environmental Expert, the Head of Department of Djizzak City Administration, and the Head of Department of the Djizzak Province Water Supply and Sewerage enterprise "Suvokova".

144. For the consultations, a special brochure was prepared in local - Uzbek language which was printed and distributed to all participants of the consultations (Annex 1). The brochure included information on project, scope of project works and potential environmental impacts, proposed mitigation and monitoring measures and project implementation schedule. Also, a special presentation on the project was prepared for the consultations (Annex 1).

145. Djizzak city Administration kindly provided its conference hall for conducting the public consultations. The hall was equipped with equipment necessary for making speeches and presentations. The population of Djizzak City was informed about the consultation through announcements published in local newspapers «Djizakskaya pravda» and «Jizzah Haqiqati». The announcements were published on 19 April, 2014 (See Annex 1).

146. The issues raised and comments during consultations included: (i) whether the project will monitor industrial's effluent, (ii) how the sewerage pumping in Kalkhabad will be relocated and the site rehabilitated, (iii) how the project will handle locked sewerage system, (iv) how the project will utilized the gravity to save energy, (v) how the project will help to address temporary flooding after raining, (vi) how to rehabilitate the road after completing construction of sewerage system, and the impacts on trees along the road, (vii) costs for people to have sewerage connection, and lastly (viii) loan repayment.

[10] 1A.Khodjaev Street, Tashkent 100027 (Tel: +998711401920: Fax: +998711401900; Website: www.adb.org/urm).

147. The comments made at the sessions and issue raised have all been incorporated into the IEE, especially issues surrounding proper clean up after sewer placement and adequate revegetation as well as proper traffic management and a protocol for maintenance of local access for roadside residents who will have access cut off when a sewer is being placed across their access to a road. Issues and comments related with payment for connection and loan payment have been reported to UCSA to be used as consideration in taking into account as operation costs.

148. The new public consultations conducted on 14 December 2016 and on 8 February 2017 in Uchtepa district for farmers, people living in the area of new WWTP and new sewers and also for other interested stakeholders e.g. from school, hospital, epidemic center, etc. located approximately in 2-4 km distance from WWTP construction area for updating the IEE. They provided by the presentation about aims and changes in project design. Also described the environmental impact and positive effect from construction. Consultations were held in the conference hall of Djizzak Suvokova and were headed by PDC`s National Environmental Expert, the PCU Environmental Expert, the Head of Department of Djizzak City Administration, and the Head of Department of the Djizzak Province Water Supply and Sewerage enterprise Suvokova.

149. For the consultations, a special presentation was prepared. The presentation included information on project, scope of project works, changes in project design and potential environmental impacts, proposed mitigation and monitoring measures and project implementation schedule.

150. The public consultation summary is attached in Annexes 1, 2 and 3.

B. Information disclosed

151. During the consultations the Consultant presented overall information on the Djizzak sewerage project. The information included goals of the project, justification, information on the existing situation of the sewerage system in the city, related environmental impacts, recommended variants for project implementation, information on planned treatment processes for the new sewerage treatment facility, cost estimates of the project, project implementation schedule, information on environmental safeguards to be implemented during the project implementation period. The IEE report will also be disclosed through ADB website, and should be made available in PCU office and other local authorities such as Mahallas related to project.

152. UCSA, in cooperation with the Djizzak Suvokova's office will follow up by placing the translated IEE, or at least the executive summary and the EMP in the Djizzak City Suvokova's office and let those people attending the consultation know that the document is available. This action was announced at the consultation session.

VIII. The Environmental Management Plan (EMP)

153. The EMP presents the impacts predicted to occur during the planning, construction and operation of the collector sewer network. These predictions are based on lessons learned, and measurements of the amount of change, from recorded baseline conditions, for specific biophysical indicators such as air quality noise and water quality. This is followed by an analysis of the effect of these changes relative to known tolerance levels of affected ecosystem components and people.

154. The EMP (Annex 4) includes a listing of impacts, mitigation measures, monitoring needs and definitions of where and when impacts are likely and who will have to implement the mitigation and monitoring measures, as well as who oversees the work. In

this IEE the EMP is presented as two matrix tables; the mitigation table and the monitoring table, with each listing one set of numbered items, permitting easy cross referencing and use in bid document and construction contract preparation.

155. In Section IV, the discussion of each impact and mitigation measure includes a cross reference to the listing for that action in the EMP.

A. The Mitigation and Monitoring Tables (EmiT) & (EmoT)

156. During the completion of the mitigation and monitoring actions during the pre-construction period will be executed by UCSA and its PCU. If the PDC is retained early enough it may work closely with the PCU in moving forward with detailed design and planning the implementation of the EMP. The PDC that assisted PCU to verify all the work of contractor, will be actively involved in an oversight and due diligence role. The contractor will also have major responsibility in implementing the construction period mitigation and monitoring measures as defined in the EMP and in additional contract specifications. All mitigation and monitoring tasks are defined in detail in the EMP's Mitigation Table (EmiT) and Monitoring Table (EmoT), attached in Annex 4. Both tables are self-explanatory and have been prepared such that they can be used as environmental clauses in the contract documentation and as monitoring checklists. The action items in the IEE text, the EmiT and EmoT are all numbered and fully cross referenced.

1) Environmental Mitigation Table (EmiT):

157. **Preconstruction Perio.** Of the eight mitigation and monitoring actions identified for this period (EmiT Annex 4), environmental training will essential if the EMP is to be credibly implemented by the PCU and its PDC. Therefore, a 1-1.5 day workshop will be arranged through UCSA. Secondly, UCSA and its PCU will need to confirm that environmental safeguard specifications are defined in the bid documents and or the EMP is referenced as a clause in the construction contract(s). Thirdly, to ensure that IEE is distributed to the PCU, the contractor, the Djizzak "Suvokova" and the PDC, UCSA will need to prepare a document distribution list and make sure materials have been translated into Uzbek and distributed.

158. The project will lead to consider traffic and access issues during the construction period. To avoid that, a traffic management and access protocol will be prepared by UCSA and explained to the contractor during the pre-mobilization workshop.

159. Finally the placement of sewer pipes will involve works along urban streets and the need to clear trees. Careless cutting can have disastrous impacts for local communities and to avoid this a tree removal and rehabilitation plan will be prepared during the preconstruction period. This will involve a tree inventory along the corridor setting of the alignment boundary to minimize the need to take trees, agreement with local residents on tree removal and replanting, and a replanting schedule. This plan will be implemented by PCU and PDC with support from the contractor(s), and it will be strictly enforced and monitoring by the PDC.

160. **The Construction Period**. Thirteen impacts were predicted to occur during construction period (Annex 4), and include the standard issues about contractor good housekeeping and management of waste, fuel, vehicle emissions and dust suppression. Other important mitigation measures will be to minimize tree cutting and make sure that the contractor complies and that PDC and PCU enforce all measures and that the contractor rehabilitate the sewer construction corridor as soon as possible after the work is done.

161. The contractor(s) will need to demonstrate their capacity to implement environmental safeguards by including monthly updates in the monthly project progress reports and also quarterly environmental compliance checklist reports.

162. In addition, it is important to inform the contractors that they have to provide and submit safeguards implementation reports during the construction period, and a completion report at the end of the construction works. Failure to provide regular report to the PIU and PDC on the implementation of the EMP will be subject of civil work contract violation and well defined penalties.

163. Since the existing pumping station sites are all seriously contaminated with leaking sewage, serious health hazards exist for local area residents. A full clean up and rehabilitation of these sites will be included as an important work items for contractor. The work will be inspected by the PDC and PCU to ensure that a hygienic and aesthetically pleasing landscape, acceptable to the local communities, is the outcome.

164. One year before the end of construction UCSA will organize a workshop with the 22 or more enterprises intending to discharge wastewater into the WWTP. At this session UCSA and others will brief them on the requirements as specified in Resolution No.11 concerning pre-treatment and other installations necessary before discharge into the WWTP is possible.

165. **The Operating Period -** UCSA identified five possible impacts (Annex 4) and suggested appropriate mitigation measures. Most important is the potential problems with the operation of the WWTP due to poor maintenance or poorly treated industrial effluents. To track this the Djizzak "Suvokova" will be required to comply with existing RoU norms and conduct monthly testing of influent and effluent at the new WWTP.

166. Second will be the inspection of the tree rehabilitation and corridor landscaping to be sure that it has been done properly and to the satisfaction of local residents. To that end the Djizzak provincial "Suvokova" will have to file a completion report specifying who was contacted and when and that the rehabilitation was done satisfactorily.

167. Since the existing pumping stations were chronically leaking and overflowing with raw sewage into the local communities for years, a major clean up during the construction period was specified. This work involved an initial scoping of the work to be done, including specific consultation with local residents to define the boundary of the sewage spills, followed by a full disinfection, clean up and re-landscaping of the areas, to the satisfaction of the local communities impacted for so many years. The landscaping will include planting of shrubs, perennial flowering plants and trees.

168. During the operating period it will be the Djizzak provincial "Suvokova" Company's job to obtain the completion report from the contractor(s), inspect this work as soon as the operation of the facilities begins, but before the contractors have been given the final payment, and file a report with the Chief Engineer of Djizzak provincial "Suvokova".

2) Environmental Monitoring Table (EmoT):

169. The monitoring table (Annex 4) defines the actions needing to be taken by the agencies in charge during each stage of the project to report on compliance and effectiveness of the mitigation measures described. The EMoT also describes the deliverables that need to be filed in order to confirm to UCSA and ADB that the EMP has been implemented.

170. The EMoT is self-explanatory and simply applies a due diligence reporting requirement to each mitigation measures, specifying what the deliverable is, proving that monitoring and the mitigation measures has taken place, and the requirement for submission to and inspection by UCSA as well as the ADB. No additional details are provided here.

IX. Implementation Arrangements and Technical Capacity

A. Approval of the IEE

171. This original IEE documents has been submitted to the Ecological Expertise of the Regional Nature Protection Committee, as the project is categorized as project class II under the EIA regulation of the GoU. The Goskompriroda issued a Conclusion of the State Ecological Expertise as of August 14, 2014 covering its opinion on the proposed project. (Annex 8). This letter gave to UCSA clearance to execute the project with conditions such as provided that environmental and social safeguard measures as defined in the IEE are fully implemented.

172. ADB will include all the environmental safeguard tasks defined in this IEE and its EMP into the loan agreement, to be used as a project administration management guide to safeguard implementation by the PCU. If any unexpected impacts occur during the period of project implementation, the PCU will have the responsibility to address those unexpected impacts and immediately report to ADB. Depend on the type of impacts, ADB will need to check and approve the proposed mitigation measures to handle un-expected effects.

173. UCSA is governed directly by the Cabinet of Ministers, but delegates project management to its PCU. At the late preconstruction stage of this project USCA will retain a PDC. The PCU through its Regional Coordinator will be responsible for the day-to-day oversight of the subproject, and the management of the contractor who will be required to implement all 11 mitigation measures as defined in the EMP.

174. At the end of the construction period, responsibility for the operation of the facility, as well as the continuation of environmental safeguard measures will be handed to the Djizzak Provincial “Suvokova” enterprise which in turn will assign the day-to-day management of the WWTP operator(s). However, prior to any such hand over to Djizzak Provincial “Suvokova” enterprise, UCSA will obtain operation clearance from the Uzbekistan Nature Protection Committee.

175. The operation of sewerage facilities will be binding with the requirement on effluent and emission levels as specified by Resolution No.11, as well as clearance from the Nature Protection Committee. To maintain credible performance the Djizzak Provincial “Suvokova” will recruit an environmental specialist to assist in managing environmental related concerns for operating sewerage facilities. Having the specialist will ensure its compliance with the requirement from Nature Protection Committee and also to comply with requirement from the Ministry of Health.

176. Therefore the institutional arrangement for the implementation of safeguards as defined in the EMP will be as follows:

a) The PCU will implement the EMP through the preconstruction stage, until a PDC is retained, at which point the PDC takes over, but must work closely with the PCU.

b) The PCU will monitor the construction work and complete necessary monthly inspections, which are usually followed by less frequent audits by the PDC.

c) The PCU will make sure that the contractor understands and implements the construction period mitigation and monitoring measures as defined in the EMP and in contract specifications, e.g. the quarterly compliance monitoring checklists and the semi-annual compliance monitoring summaries, submitted to PDC and the PCU.

d) Within 3 months of the end of the construction period, the contractor must submit an EMP completion checklist, indicating what EMP items were addressed and when, plus some details on the exact actions taken. This

report is then handed to the Djizzak Provincial “Suvokova”, with instructions to continue the implementation of operating period mitigation and monitoring measures.

177. The PCU will ensure that bidding document and later contract for PDC[11] include a requirement that the PDC has to have expert to assist in ensuring that the contractor implement all the require mitigation measures during the construction period. . It is also essential that basic capacity building be carried out and that administrators be strongly encouraged to support efforts to implement environmental safeguards through a) filling of the safeguard staff position within the PCU, b) provision of resources to allow the Djizzak Provincial “Suvokova” to learn about environmental monitoring, and c) providing training in systematic cross-sectoral environmental data (water-related) collection, analysis and reporting.

X. Performance Indicators

178. The environmental performance indicators are defined for three project stages, i.e. project preparation, construction and operations. During project preparation stage the indicators will include at least: (i) a record that the detail design took into account the recommendations from the IEE,(ii) confirmation that the bidding document for PDC and Contractors include the requirement described in the IEE and its EMP, (iii) a record that the contract agreement with PDC includes a clear statement that PDC has to employ an environmental specialist, (iii) confirmation that the contract documentation specifies that the contractor must handle all environmental impacts associated with constructions as describe in this IEE and its EMP, and lastly (iv) a record that all environmental permits for construction works have been obtained.

179. Environmental Performance indicator during construction will at least include: (i) routine monitoring reports addressing environmental impact during construction from contractor: (ii) routine monitoring report for PDC to ensure that contractor carry out responsibility to implement mitigation measures, (iii) record that routine monitoring of environmental quality affected by construction works are recorded and reported [air including dust, noise, and water] (iv) a good system for recording complaints received from affected people, and resolution provided by UCSA. A compliance monitoring checklist based on the EMP’s EmoT has been provided as Annex 5 and will be used to record compliance and effectiveness of the mitigation measures defined in the EMP.

180. During the operation stage, the environmental performance indicator will include:

i) the improvement in the quality of the effluent with a functioning WWTP over pre-treatment levels, as well as reductions in pollutants present in the inflow and the outflow at the WWTP;

ii) the satisfaction of the local communities through which the sewer construction took place (based on interviews and field inspections by the Djizzak Provincial “Suvokova”), with how well trees were protected and a revegetation and re-landscaping activity was completed;

iii) the results of interviews with local residents reporting their satisfaction with the rehabilitation of the pumping station sites where raw sewage leaked out for years;

iv) how many industries of the 22 listed installed credible pre-treatment facilities and the extent of the industrial effluent testing and reporting program in place;

[11] UCSA assumes that the CMC will be required to have specific environmental expertise names and on the job.

v) the record, in the quarterly compliance monitoring checklist, of how often the Djizzak Provincial "Suvokova" undertakes enforcement actions against Industries for non-compliant discharges and how often samples were taken; and examined by the Djizzak Provincial "Suvokova" or SIAK laboratories

vi) The record of the mandatory permits and decisions provided by the Nature Protection Committee.

XI. Institutional Capacity

181. There are three components to effective environmental institutional capacity building; a) having the necessary laws, decrees and standards supporting environmental management, b) having the support of administrators and senior officials for environmental safeguards capacity building and their willingness to share information, and the c) having the technical capacity of the responsible agencies to implement mitigation measures, undertake monitoring and keep records.

182. Although the RoU's environmental management system is still based on a remedial or reactive approach, i.e. taking action only when a problem arises, instead of preventing it[12], it has a comprehensive and generally complete set of laws, decrees and standard with which to manage environmental issues. The priority senior administrators place on managing environmental problems is low, principally due to constrained budgets and other being issues rated as more important. A case in point is the "Suvokova" laboratory which, while mandatory, has never been established, leaving it without the ability to monitor its own effluent.

183. The four key agencies who will be directly involved in the implementation of the IEE and its EMP are: UCSA and its PCU and PDC, the Djizzak Provincial "Suvokova", the municipal SIAK lab of Goskompriroda and to a lesser extent the Administration of Djizzak City. Based on an audit of the five agencies in Djizzak with environmental testing and management responsibility, all had considerable technical gaps needing strengthening. These gaps ranged from capacity building in basic sampling, data collection, analysis, data storage, as well as information reporting.

184. There are also the industrial enterprises, intending to discharge wastewater into the new sewage system. All require pre-treatment and according to various norms and standards, must test their effluent quality and submit monthly reports to the Djizzak "Suvokova" and SIAK. Of the 9 potentially dangerous industrial effluent emitters, none have known functioning pre-treatment and none have lab facilities to regularly test effluent, and all have multiple non-compliance issues (**Error! Reference source not found.**). Three of the industries were inspected and none had technical expertise for water sample, collection or even proper recording of sampling information.

185. The capacity building program should begin with a workshop held during the preconstruction period to brief and train the main agencies responsible for the IEE on EMP implementation and reporting (Table 8).

Table 8. Proposed Technical Capacity Building

Agencies	Deliverable	Content	Duration/ Timing
UCSA, PCU, Djizzak Provincial "Suvokova", SIAK,	Workshop	• IEE understanding and use EMP implementation and reporting • Understanding recent and	1 Day/ during preconstruction period

[12] In the case of EIA it is fitting the assessment to a final location and design instead of determining site and design suitability first.

SES and contractor(s)		relevant RoU legislation, e.g. Resolution No.11 and • Data bases, information sharing and collaboration	
PCU, PIU, Djizzak Provincial "Suvokova", SIAK, SES and contractor(s) Industrial Ent.	Workshop	• Water quality analysis: sample collection, sample and data recording, data analysis, and reporting • Relevant RoU Decrees, norms and standards	1 days/ during construction period
PCU,PIU, Contractor, SES, Djizzak Provincial "Suvokova",	Workshop	• EMP implementation and managing environmental compliance of contractor(s) • Contractor reporting and compliance monitoring checklist	½ day/ prior to start of construction
Industrial Enterprises UCSA,SES Djizzak Provincial "Suvokova",	Workshop	• Effluent pre-treatment • Relevant legislation • Data collection and analysis • Resolution No.11	1 day/During the construction period

186. The proposed four workshops will be essential to enable its compliance with EMP. and to ensure the involvement of relevant agencies for operation of the future sewerage facilities in compliance with RoU's relevant decrees, norms and standards.

187. Follow up training will be required for the Djizzak Provincial "Suvokova", and SIAK Labs to insure sampling standardization, database design and information transfer protocol. The training for the labs will take place during the construction period, and delivery of this training will be either by the PDC[13], or via other national or international expertise.

188. Given the importance of pre-treatment of industrial effluent and the apparent lack of technical capacity or knowledge required to install proper pre-treatment, maintain it and file credible reports, a 2 day training session for the 11 industries of concern, will be organized by the PCU and will take place sometime during the construction period. The workshop participants will review the pre-treatment set-up of each industry and specify necessary upgrades and an implementation timetable to be completed before the commissioning of the new WWTP in 2018. The second focal area will be on effluent sampling, analysis and reporting, as well as the regulatory requirements and enforcement by SIAK and Goskompriroda.

XII. Mitigation and Monitoring Costs

A. Environmental Mitigation and Monitoring Costs

189. With a preconstruction period of about 10-12 months, and the need of actions associated with preventative planning and technical capacity building, the estimated preconstruction cost will be about US$ 6,550.00. There will be one important training workshop to be held that will cost around 50% of the estimated cost. The remaining actions will involve the preparation of short plans and protocols that, if implemented and

[13] When calling from bids for a CMC, UCSA will specify the requirement for environmental safeguards and water quality information collection, analysis and management skills.

enforced, will avoid future impacts. UCSA has to commit and ensure that the EMP will be fully implemented.

190. During the construction period three workshops will be delivered, focusing on EMP implementation, water quality analysis and other aspects of good environmental mitigation and monitoring. The three workshops, the water and sludge testing and implementation of the tree protection program for the 2- year construction period is estimated to cost about USD 50,730. It is recommended that PCU to purchase a noise meter and conduct a set of noise measurements at sensitive sites during the construction period, especially while the sewer is being laid.

191. During the operating period a semi-annual independent sewage effluent testing program will need to be carried out, and the implementation of mitigation measures also need to be monitored. To enable submission of project completion report, monitoring scheduled for years 1 will cost about USD $ 5,400.00. While the follow up monitoring to obtain operation permit from Nature Protection Committee (NPC) may need to be scheduled routinely and report need to be submitted to NPC.

192. The largest item will be the water quality monitoring program; undertaken in order to assemble a basic dataset on the project area's surface water quality. Sampling, lab analysis and reporting for at preconstruction, construction and two years of operation will cost a minimum of USD 32,160.00. However, this monitoring program will need to be reviewed to ensure the new environmental conditions will be taken into account. However, once the new laboratory of the Djizak Suvokova established, this cost will become an operating cost to be cover by DSSDP routine budget.

193. The total estimated mitigation and monitoring cost, is estimated to be USD **94,840.00** and it makes approximately USD**101,480.00** including a 7% contingency. The revised prices is less than the previous calculation (i.e., *USD 202,000.00*) due to the fact that monitoring scenarios and technical assumptions showed that the number of samples and sampling locations as well as frequency and duration of the monitoring are less than the previous numbers. The new calculations are also in line with the national requirements and ADB's requests and standards such as parameters to monitor.

194. The budget provided in details in Annex 6 should be revisited during the preconstruction period, in order to re-examine the assumptions and costs with new information based on detailed design and planning considerations.

B. Social Development Programs and Resettlement Costs

195. The social impacts related with land acquisition both for permanent and temporary acquisition should be addressed in accordance to the Government Resolution on land acquisition and ADB's requirement as described in SPS 2009. The costs to be covered will include but not limited for compensating loss on income, loss trees, loss agricultural land where local government needs to develop a new agricultural land, compensation for vulnerable, and transaction costs to implement land acquisition and resettlement plan.

XIII. Conclusions and Recommendations

196. The IEE for DSSDP identified 27 mitigation measures, and monitoring actions to be taken by UCSA, PCU, PDC, the contractor(s), and the Djizzak "Suvokova", at varying times, starting during the preconstruction period and extending into a number of operating period years. Each mitigated action was matched with a monitoring and reporting task, permitting easy compliance monitoring by the PCU and the PDC. A compliance monitoring checklist template is included as Annex 4 of this IEE in order to assist with this requirement.

197. Djizzak city. UCSA established that there is very weak environmental technical capacity in Djizzak, and non-functioning facilities necessary for a new WWTP to operate properly. To address these gap four sets of training sessions will be organized and delivered during the preconstruction and construction period of the project. This training will include environmental management plan implementation, compliance monitoring and environmental record keeping.

198. During the pre-construction period, and as soon as a contractor has been selected, UCSA, in cooperation with local officials, the police and the contractor(s) will prepare a traffic management plan to ensure traffic safety of affected areas and avoid traffic congestion due to sewer construction, and to ensure a minimum disturbance, and to restore access from home to local streets for local people, as quickly as possible after sewer pipe placement is completed.

199. As the necessity arises the tree cutting and replanting plan will also be prepared in order to prevent or keep to an absolute minimum the removal of mature trees from the construction sites, as these trees are essential for providing shade and to help attenuate dust during the hot dry summers. UCSA will lead the development of this plan and instruct the contractor on the cutting limits as well as the penalties for illegal or accidental tree removal (as defined in the IEE). However the screening of sewerage pipes construction sites showed that all project works will be implemented on municipality lands along main roads or sidewalks which will be recovered by the project to original condition after completion of works. No works will be carried out on territories of households or businesses.

200. While the WWTP construction will take place in a rural setting with no nearby dwellings or people to be impacted, the work to lay the sewer pipes will be in largely urban areas along local Djizzak streets, where dust, noise and protection of the urban landscape is essential. To that end UCSA, through its PCU and PDC will set out the operating limits of the contractor, namely no work between the hours of 19:00 and 07:00, the use of low noise construction machinery and the maintenance of all haul roads to reduce dust. Loud equipment such as jack hammers will be restricted between 17:30 and 07:00.

201. Once collector sewers have been placed, the contractors will be required to immediately rehabilitate and fully landscape all disturbed areas, and re-establish preconstruction conditions unless the site was already contaminated. UCSA will require it's PCU and the PDC to monitor. PDC will undertake regular interviews with local residents to check that the rehabilitation is done satisfactorily.

202. The work with the pumping stations includes the full rehabilitation of three stations. Essential for the successful upgrading of the three stations will be the careful clean-up of the area subject to years of flooding and contamination with overflowing raw sewage. The boundary of the clean-up area will be determined with the cooperation of local residents and contaminated soils will be buried or tilled into the ground and the area full re-landscaped. The rehabilitated pumping stations will be housed in buildings protected from the elements, be provided with a reliable power supply and be maintained according to a strict schedule implemented by the Djizzak "Suvokova".

203. The monitoring of the contractor's work and the implementation of the mitigation measures defined in the IEE's EMP will be essential if the predicted project impacts are to be avoided or minimized. The PDC will therefore be required to conduct quarterly compliance monitoring reviews, in addition to the regular monthly inspections completed by the PCU.

204. The chemical-mechanical sewage treatment process produces nutrient rich sewage sludge which will be pumped into a number of sludge ponds, requiring management and

periodic cleaning. Within the first year of operations, UCSA will instruct the Djizzak sewerage Company to prepare a sludge management procedure, and implement it.

205. The total estimated cost for the implementation of the EMP over a 5 year period will be around USD **101,480.00 including a 7% contingency.**

206. These sewer collectors are very urgently needed and every effort should be made to expedite it and put the facility into operation. This was a universal view expressed by all participants of the consultation session. It will be an overwhelmingly positive impact, affecting thousands of families, by improving their standard of living and household health.

207. With the completion of the IEE and the implementation of its EMP, UCSA will have taken all necessary actions to ensure that this project is completed in an environmentally competent manner, in keeping with international and national safeguard standards. Nonetheless, continue monitoring will be required to ensure that EMP is implemented and updated if it is required. On this basis, it could be concluded that further environmental assessment study would not be required.

XIV. ANNEXES

1. **Public Consultation Presentation and minutes of meeting conducted for original IEE on 22 April, 2014**
2. **Public Consultation Presentation and minutes of meeting conducted for updated IEE on 14 December 2016**
3. **Additional Public Consultation Presentation and minutes of meeting conducted for updated IEE on 8 February, 2017**
4. **EMP (EmiT and EMoT)**
5. **Compliance Monitoring Checklist**
6. **Costing Details (including for capacity building)**
7. **Decree No.1**
8. **Conclusion of the State Ecological Expertise**
9. **Agreement letters from Industrial Enterprises**

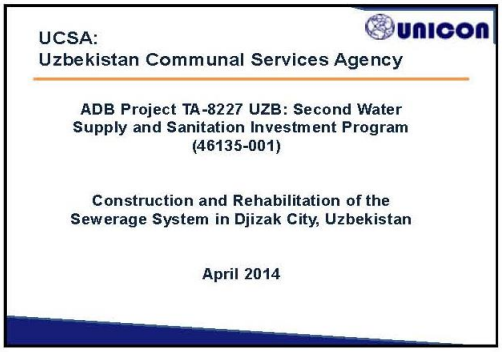
ANNEX 1

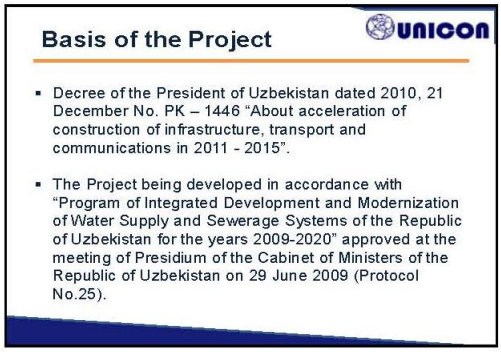
Record on Public Consultation Presentation and Minutes of Meeting conducted for original IEE on 22 April, 2014

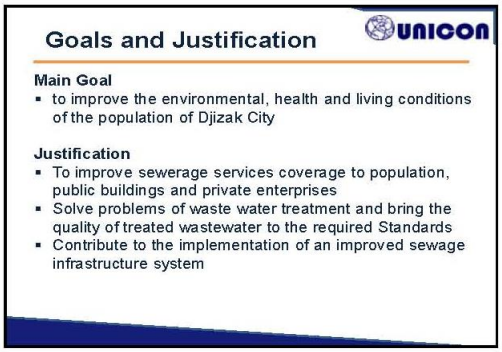
Consultation Presentation and Pictures

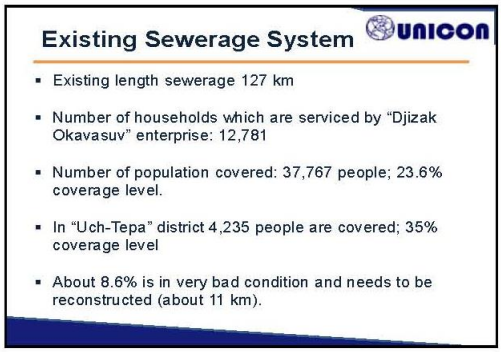
This presentations were presented in Uzbek, but the slides and the oral delivery. The Uzbek version is available for review with UCSA, Tashkent.

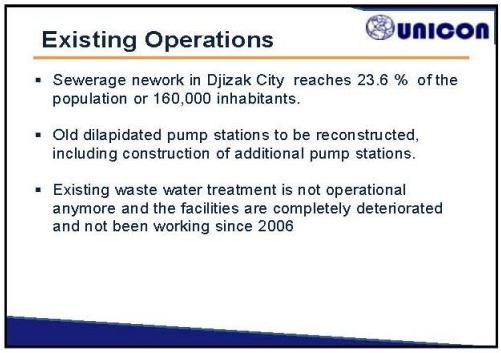
22 April 2014.







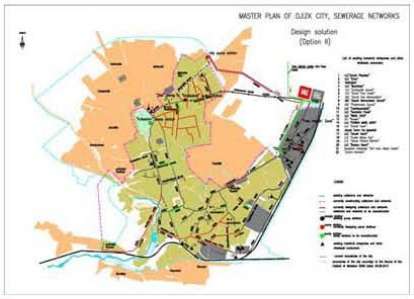




Recommended Facility

Given funding constraints, the best design to get a new Sewage Treatment Plant built and operating quickly will be:

- Rehabilitate obsolete 16.75 sewerage network;
- Construct new sewerage collectors 45.8 km.
- Rehabilitation and construction of 4 sewage pumping stations
  - Nosirova (No. 9)-Reconstruction
  - Zilol (NO.10)-Reconstruction
  - Uchtepa-Reconstruction
  - City Pumping Station No. 1-New
- Construction of a new Sewage Treatment Plant with an ultimate capacity to treat 60,000 m³ of sewage per day.



Type of Treatment Facility

- **Option 1:** Conventional Mechanical-Biological Waste Water Treatment Plant (WWTP)
- **Option 2:** Bio-Ponds Waste Water Treatment
- **Option 3:** Rehabilitation of the Existing Waste Water Treatment Plant

The Selected Treatment Facility

Conventional mechanical-biological Waste Water Treatment Plant (Option 1)

- Design a new Wastewater Treatment Plant with a capacity of 60,000 m³/day (design horizon year 2035, to be constructed in two Phases)
- First Phase, taking two years to build will have a capacity to treat 30,000 m³/day—by late 2017

Djizak: Population Prognoses

Year	Population Projection Djizak City	Population Projection including extended City Borders
2013	162,538	
2020	183,138	259,346
2030	208,580	295,375
2035	220,481	312,229

2-Stage Construction

Item	Sewerage flow m³/day	
	2017	2035
Service coverage to a 70% cooverage)	12,986	39,340
Non covered by the centralized sewerage	4,364	2,342
Business organizations	2,018	2,554
Commercial sector	1,583	2,004
Industrtrial sector	3,500	8,000
Subtotal daily average	24,451	54,240
Uch-Tepa-area outside city	561	1,700
Average total per day	25,012	55,940
Maximum per day	30,014	61,534

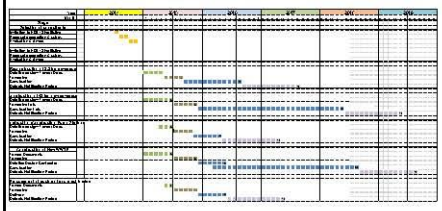
Main Process Steps: Waste Water Treatment Plant

- Preliminary treatment
- Primary treatment
- Secondary treatment
- Disinfection
- Sludge handling

Overview: Tentative Cost Estimate

Item	Quantity	Tentative Cost Estimate in USD
Reconstruction of Sewers	16,750 m	12,958,131
Construction of new Sewers	45,800 m	25,343,232
Reconstruction and construction of Pump Stations	4 units	2,450,814
Operation & Maintenance equipment	NA	2,813,892
New WWTP (30,000 m³/d)	1	26,521,208
Decommissioning of the old WWTP	1	1,861,800
Total (Construction)		71,848,085

Implementation schedule



THANK YOU!

Consultation Session Minutes and Attendance Sheets

"Djizzak Sanitation System Development Project"

Venue: Conference hall of Djizzak city Administration

Date: April 22, 2014

By: Djizzak city sewerage Company "Suvokava"

On 14 April will be held public consultations devoted to discussion of environmental impacts during reconstruction of treatment facilities and sewage collectors in Djizzak city.
Objective of the consultation is to provide to public information on project and discuss environmental impact issues that will appear during construction and commissioning of sewerage treatment facility and receive comments.
During the first phase of the project part of sewerage networks and sewerage treatment plant will be reconstructed.
The project will be funded by Asian Development Bank and the Government of Uzbekistan.
Venue: Djizzak city, Building of Djizak Suvokova

Record on Public Consultation for original IEE

A. People Delivering the Workshop and Information Disclosed

1. Representatives of the following organizations and Djizzak city residents took part in the consultations:

- Djizzak City Administration
- Djizzak Province water supply and sewerage enterprise "Suvokova"
- Djizzak city sewerage enterprise
- Djizzak city water supply enterprise
- Djizzak city State Epidemiologic Services
- Uzbekistan hydrometeorological organization "Uzhydromet", Djizzak branch
- Djizzak city Health Department
- Djizzak city Nature Protection Department
- Djizzak city Roads Management and Operation Department
- Djizzak city Traffic Police
- Djizzak city Beatification department
- Enterprises discharging industrial effluents to city sewerage network
- Local environmental NGOs
- Djizzak city Technical University Teachers
- People living along road and people who may have impact during construction of sewerage collectors
- Residents of houses located around overflowing sewerage pump stations and other city residents
- Both the national and international environmental specialists, representing UCSA and the consultant UNICON

2. Totally, 46 people took part in the consultations, of which five were female. Detailed list of participants is included below.

Summary of Comments by Participants

3. After the Consultant's presentation the participants were invited to ask any question and share their comments on the project. The participants asked number of questions and provided some comments.

4. Industrial effluents. The participants were interested if quality of industrial effluents will be monitored. They mentioned that industrial enterprises are discharging their effluents without pre-treatment and due to the fact that sewerage treatment plant does not function these effluents goes to Ulgursay channel causing serious environmental impacts. For example last year people around Ulgursay channel witnessed a lot of foam which rose above the channel for one meter in a long distance due to chemicals discharged in to Ulgursay channel. The project team was asked to include in the project all possible measures to ensure that industrial enterprises will pre-treat their effluents properly before discharging to sewerage system.

5. "Khalkobod" sewerage pumping station. Participants provided some information on "Khalkobod" sewerage pumping station located in Djizzak city which causes real problems for people living around it. This pump station was located wrongly in the middle of densely populated area causing very bad odour and over-flooding from time to time. Participants strongly recommended to reconstruct the pump station or move it to another location, far from populated area.

6. Locked sewerage pipelines. The participants were interested what actions will be taken for those old sewage pipelines which are filled with sludge and blocked. In the city there number of places where sewage pipes are blocked and cause problems such as impossibility of connection to city sewerage system, overflowing of waste waters which have serious environmental and health impacts.

7. Relief of the city. The participants mentioned that relief of the city is hilly and this allows to use gravity for sewages. If gravity will be used a lot of electricity will be saved and there will be no need for pumping.

8. Rain waters. During rainy seasons, a lot of rain water is accumulated in the city streets. The participants asked if the project will take into account drainage of rain and storm waters because in some areas it really difficult to cross streets because of accumulated rain waters.

9. Recovering streets after construction works are completed. The participants were concerned if streets will be recovered after the project is completed. During previous ADB funded drinking water supply project the city streets were recovered badly. On places where construction works were completed the streets were recovered with poor quality and later these streets became broken which now causes inconveniences for the city residents. The participants were concerned if the same will repeat in this ADB sewerage project.

10. Trees protection. The participants interested in ADB requirements for protection of trees during the project implementation. The city is located in hot and dusty area. For this reason the city pays great attention for planting and protection of trees. The participants asked to do the best not to cut trees in the city during the execution of construction works on streets.

11. Loan repayment. The participants were interested to know timelines and requirements for the loan repayment. They mentioned that this is quite big loan for the city and after the project completion the city must effectively use the new facilities, people should be careful and not discharge effluents that can violate work of the sewerage system and pay timely their bills, industrial enterprises must be prohibited to discharge not pre-treated effluents and sewerage enterprise must thoroughly monitor all these requirements. Otherwise the new system can repeat the fate of existing and not working

sewerage treatment facility which became ineffective in a short period of time, within about twenty years after commissioning in 1980.

12. Provide new equipment for the Djizzak sewerage enterprise. Participants mentioned that to provide effective operation and maintenance the operator – Djizzak sewerage enterprise “Oqavasuv” will need enough number of equipment and machineries. In this regard will the project provide enough equipment and machineries for the Djizzak “Oqavasuv” including necessary laboratory equipment?

13. Payment for connection of new customers to the sewerage system. The participants were interested how new households will be connected to the sewerage system. If the project will pay for that or the households must pay.

Summary of Reply by Workshop Team

14. All questions and comments of the participants were answered by the Consultant and chief engineer of Djizzak sewerage enterprise “Oqavasuv” as follows.

15. Locked sewerage pipelines. All sewerage pipes in the areas included in to the project scope will be cleaned and if necessary will be replaced to new pipes. Totally the project plans to replace about 11 km of old and locked pipelines which will solve abovementioned problems. Sewerage networks in remaining part of the city which is not included in to the project scope will be reconstructed in Phase 2.

16. Industrial effluents. One of the requirements of the loan will be establishment of pre-treatment facilities in industrial enterprises by the year of commissioning of new treatment facility. The Government will have to guarantee that such enterprises will establish pre-treatment facilities on the territory of the enterprise and discharge effluents with quality that complies with the National Standards of Uzbekistan. Djizzak sewerage enterprise “Oqavasuv” already started sending letters-notifications to enterprises asking to establish their pre-treatment facilities by the year 2017. Actually, according to the Decree of the Cabinet of Ministers of Uzbekistan No.11 dated 03.02.2010 enterprises was to establish such treatment facilities however they did not. This decree should be enforced.

17. “Khalkobod” sewerage pumping station. This pumping station will be closed and moved to a new location outside the city. So, environmental situation in the area where existing pump station is located will be solved. Also the area will be completed rehabilitation and re-landscaped.

18. Relief of the city. Designers will do their best to take into account the relief of the city and use gravity mode of work of sewerage system, however pumping stations will be required.

19. Rain waters. Rain waters are usually drained out by rain drainage system through ditches. According to the standards of Uzbekistan, sewerage systems are not planned for accepting rain waters. There must be parallel system to drain rain waters. There is now a wide reconstruction works in the city initiated by the Government. We hope that within these works rain water drainage systems of the city will be reconstructed.

20. Recovering streets after construction works are completed. The project will recover all the streets where construction works will be implemented. There are funds allocated by ADB for recovering the streets. Main policy of ADB is restoration of all impacted assets to original condition including streets. If the project will not recover streets or will recover with poor quality the city residents can inform UCSA the Uzbekistan Communal Services Agency “Uzkommunkhizmat” at **+99871 235-45-24**, regarding poor quality of post –sewer installation street repair. UCSA will inform the contractor to take immediate steps.

21. Trees protection. The project will try to avoid cutting trees as much as possible. If it will be impossible to avoid that trees will be cut following legislation of Uzbekistan and ADB safeguards requirements. In this case all actions will be coordinated with the Djizzak

city State Nature Protection Department all required compensations will be paid and/or new trees will be planted after the works are completed. Mr. Teleki mentioned that a tree cutting, protection and replanting plan will be prepared and used by the contractor.

22. Loan repayment. The loan repayment terms are still not fixed. From ADB other projects we can say that the period of repayment may be about 20-25 years. And like in previous ADB water supply and sewerage projects in Uzbekistan the Government (Ministry of Finance) may repay 100% of the loan. Anyway this loan terms are still under consideration.

23. Provide new equipment for the Djizzak sewerage enterprise. The project will provide all necessary equipment and machineries for Djizzak sewerage enterprise “Oqavasuv” so that it will be able to maintain the system properly and analyse the quality of the effluent discharged to the sewerage system.

24. Payment for connection of new customers to the sewerage system. This matter is under consideration now. However, usually households themselves pay for connection to sewerage system. Anyway, at this stage we cannot say exactly who will pay for that. The UCSA consultant is now conducting willingness/readiness of city population to pay for improved sewerage services which will be completed soon. Based on results of this survey and in coordination with the Government decision will be taken on this.

List of participants (22 April, 2014)

Agency Name or General Public	Name of Person	Title	City
Djizzak city Hokimiyat	Mr.Ortikov S.	Head of Department	Djizzak
	Mr. Yusupov M.	Deputy Head of Department	Djizzak
Djizzak province water supply and sewerage enterprise	Mr. Shukurov P.	Head of Department	Djizzak
	Mr. Ochilov W	Leading expert	Djizzak
Djizzak city sewerage enterprise “Okavasuv”	Mr. Ortikov Yu.	Head of Department	Djizzak
	Mr. Rustamov B	Engineer	Djizzak
	Mr. Mustafakulov B	Chief Engineer	Djizzak
Djizzak City Nature Protection Commitee Department	Mr. Norbekov.U	Head of Department	Djizzak
Djizzak city Health Department	Mr. Mahmonov. O	Head of Department	Djizzak
Djizzak city Roads Management Department	Mr. Raimjonov U	Deputy Head	Djizzak
Djizzak city Public Education Department	Mr. Jabbarov J	Head of Department	Djizzak
«Suvokavakhizmat»	Mrs. Prozorova T.V	Engineer	Djizzak
Djizzak city Communal Services Department	Mr. Ahmedov V.	Head of Department	Djizzak
Djizzak city Technical University	Mr. Takabaev K.	Teacher	Djizzak
	Mr. Bobomuradov U.	Teacher	Djizzak
Tannery plant	Mr. Alikulov S.	Deputy Director	Djizzak
	Mr. Karimov O.	Engineer	Djizzak
Oil production plant “Buston Olami”	Mr. Ochilov V.	Deputy Director	Djizzak
“Toshtepa Tekstil” textile company	Mr. Rozov M.	Head of Department	Djizzak
Residents around Khalkabad sewerage pump station	Mr. Turdikulov O.	City resident	Djizzak
	Mr. Asadov H	City resident	Djizzak
	Mr. Sultonov R	City resident	Djizzak
	Mr. Samatov U	City resident	Djizzak
Resident around sewerage treatment facility	Mr. Rozikov B	City resident	Djizzak
	Mr. Turdikulov T	City resident	Djizzak
	Mr. Tuychiev S	City resident	Djizzak
	Mr. Umerov E	City resident	Djizzak
Environment Movement	Mr. Karshiboev	Head of Department	Djizzak
Car battery plant	Mr. Ziyoev F	Engineer	Djizzak
Makhalla Navruz	Mr. Nasreddinov	City resident	Djizzak
Makhalla Tashlak	Mrs. Nurullaeva D	City resident	Djizzak
	Mr. Ikromov A	City resident	Djizzak
Erkin JSC	Mr. Satarov	Deputy Director	Djizzak
Treatment facility	Mr. Umarov H	Engineer	Djizzak
Djizzak city TV	Mr. Rahimkulov G	Editor	Djizzak
	Mr. Jelmuradov Z	Operator	Djizzak
	Mrs. Jamolova R	Narrator	Djizzak
	Mrs. Abnorova S	Narrator	Djizzak
Laboratory of Djizzak province water	Mrs. Jamolova R	Head of laboratory	Djizzak

supply and sewerage enterprise			
	Mrs. Akbarova S	Laboratory assistant	Djizzak
City Beautification Department	Mr. Ahmedov B	Head of Department	Djizzak
Hotel «Grand Tover»	Mr. Halilov I	Director	Djizzak
Makhalla Bunyodkor	Mrs. Umarova F	City resident	Djizzak
	Mrs. Tursunova	City resident	Djizzak

ANNEX 2

Record on Public Consultation Presentation and Minutes of Meeting conducted for updated IEE on 14 December 2016

Consultation Presentation for updated IEE

This presentation was presented in Uzbek, but the slides and the oral delivery. The Uzbek version is available for review with UCSA, Tashkent.

Ўзбекистон
«Ўзкоммунхизмат» Агентлиги

ОБТ ТА-8227 ЎЗБ ЛОЙИХАСИ

ЖИЗЗАХ ШАХРИ КАНАЛИЗАЦИЯ ТИЗИМИНИ ТАЪМИРЛАШ ВА КУРИШ

ДЕКАБР 2016 ЙИЛ

Основанием проекта является

- 1. ПП 2447 от 11.12.2016 «О мерах реализации проекта «Развитие системы канализации в городе Джиззаке» с участием АБР»
- 2. ПП 2313 от 06.03.2015 «О программе развития и модернизации инженерно-коммуникационной и дорожно-транспортной инфраструктуры на 2015-2019 годы»
- И др.

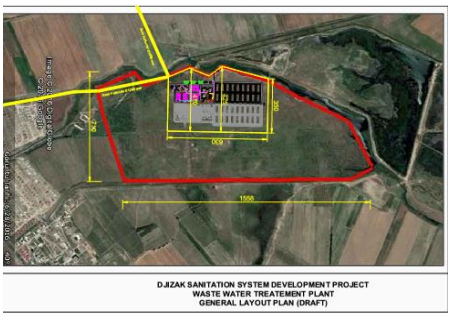
Цель проекта:

- 1. Реконструкция 16,75 км канал.коллекторов и сетей в аварийном состоянии
- 2. Строительство 35,77 км коллекторов и 10 км распределительных сетей
- 3. Реконструкция 3-х Канализационных Насосных Станций, которые находятся в аварийном состоянии
- 4. Строительство одной канализационной насосной станции перекачки сточных вод, со строительством очистных сооружений канализации мощностью 30,0 тыс.м3/сут

Первоначальное предложение проекта

Нынешнее состояние КОС

Новое расположение КОС в р/ц Учтепа



План экологического управления:

- При строительство нового очистного сооружения, которое будет расположено около 750 метров в западе от старого очистного сооружения, и около 1 км от населения или коммерческих предприятий,
- При реконструкции насосных станций Зилол, Х.Носиров и Учтепа;
- При прокладке более 62.5 км канализационных труб, для чего требуются глубокие траншеи для укладки канализационных труб различных диаметров
- **ДЛЯ ПРЕДПРИЯТИЙ ИНДУСТРИАЛЬНОЙ ЗОНЫ**

План экологического контроля
Субпроект: Канализационное очистное сооружение г.Джизак
Таблица по смягчению экологического негативного воздействия

Воздействие на окружающую среду/вопрос	Смягчающее мероприятие	Располо-жение*	Период выполнения	Ответственность	
				Реализация	Над
1. ПРЕДСТРОИТЕЛЬНЫЙ ПЕРИОД – в основном задачи по планированию, необходимые для предотвра негативных последствий в период проекта					
1.1 Отсутствие потенциала по понимано и реализации экологических смягчающих мероприятий, обучение не проводится	Подготовка и проведении учебного семинара по вопросам реализации ПЭК	Джизак	До мобилизации подрядчика	Агентство «Узкоммунхозмаш» (Агентство) консультант ГИП	Агентст
1.2 Нет средств для перевода ПЭИ и соответствующих документов для использования со стороны ГРП и подрядчиков	Агентство должно обеспечить перевод на узбекский язык		До отбора подрядчика	Агентство	Агентст

Вопросник по ежеквартальному мониторингу для Подрядчика: Период строительства

2. Воздействие в период строительства	Смягчающее мероприятие	Мероприятие по мониторингу	Когда, частота и продолжительность?	Результа
2.1 Длительное загрязнение воздуха в период строительства	Выброс будет сведен к минимальному уровню путем: 1. обеспечения того, что парк подрядчика обслуживается надлежащим образом 2. использования приемлемого топлива и транспортных нагрузок в рамках определенных лимитов 3. ограничения холостой работы машины не более 3 минут 4. регулирования технических условий обслуживания машин будут путем проверки строительства и регулярных от-четностей 5. особого контроля уровня пыли на строительном участке путем увлажнения, установками стропов ограничений по скорости машин не более 30км/ч в или вблизи населенных пунктов и очистки дорог с покрытием, по которым осуществляется транспортировка. 6. включения такого оборудования как дизельный генератор в программу контроля и регулярной настройки с целью предотвращения излишнего загрязнения комплексной системы обеспечения работы оборудования/сажей	Контроль в вопросов как указано в Таблице по смягчающим мероприятиям и представление Подрядчику обратной связи	Как минимум каждые три месяца	

ПОСТАНОВЛЕНИЕ КАБИНЕТА МИНИСТРОВ РЕСПУБЛИКИ УЗБЕКИСТАН 03.02.2010 г. N 11

О ДОПОЛНИТЕЛЬНЫХМЕРАХ ПО УЛУЧШЕНИЮ ПРИРОДООХРАННОЙ ДЕЯТЕЛЬНОСТИ В СИСТЕМЕ КОММУНАЛЬНОГО ХОЗЯЙСТВА

- II. УСЛОВИЯ ПРИЕМА ПРОИЗВОДСТВЕННЫХ СТОЧНЫХ ВОД В КОММУНАЛЬНУЮ КАНАЛИЗАЦИОННУЮ СЕТЬ ГОРОДОВ И ДРУГИХ НАСЕЛЕННЫХ ПУНКТОВ
- 6. В системы коммунальной канализации городов и других населенных пунктов принимаются производственные сточные воды, которые при очистке на локальных очистных сооружениях абонентов доведены до требований коммунально-экологических нормативов и не вызывают нарушения в работе канализационных сетей и очистных сооружений.
- 7. Не допускается сброс в систему коммунальной канализации городов и других населенных пунктов без предварительной очистки на локальных очистных сооружениях абонентов, включая: ...**вещества, оказывающие разрушающее действие на материалы труб и технологические коммуникации канализационно-очистных сооружений**, ...

НОРМАТИВЫ предельно-допустимых концентраций загрязняющих веществ в сбросах производственных сточных вод в коммунальные канализационные сети

N	Вещества	Концентрация (мг/л)
1.	Анилин	2,57
2.	Ацетальдигид	8,58
3.	Ацетон	17,16
4.	Барий	0,44
5.	Бензойная кислота	5,43
6.	Глицерин	38,6
7.	Жиры растительные и животные	5,0
8.	Капролактам	10,73
9.	Ксилол	1,0
10.	Краски серосодержащие	10,7
11.	Молибден	1,0
12.	Метазин	12,9
13.	Метанол	1,0

ПЕРЕЧЕНЬ особо токсичных загрязняющих веществ

N	Вещества	Концентрация (мг/л)
1.	Алюминий	0,75
2.	Ванадий пятивалентный	0,1
3.	Висмут	15,0
4.	Железо (ион Fe^{++})	5,0
5.	Железо сернокислое закисное	0,5
6.	Кадмий	0,1
7.	Кобальт	0,1
8.	Марганец	30,0
9.	Медь	1,0
10.	Мышьяк	0,1
11.	Нефть и нефтепродукты	1,0

РАХМАТ

Public consultation photos:

Record on Public Consultation

"Djizzak Sanitation System Development Project"

Venue: Djizak province SUE "Suvokova"

Date: December 14, 2016

Participants:

1. M.Muminiva – SU-YAPI Environmental specialist
2. M.Yaparov – SU-YAPI Consultants' Deputy Team Leader
3. S.Tillyakhodjayeva – ADB PCU UCSA Environment and social specialist
4. S.Subkhonkulov – Director, Djizzak province SUE "Suvokova"
5. A.Yusupov – Head of investment department of Djizzak province SUE "Suvokova"
6. A.Abdusattarov – Regional Coordinator, PCU UCSA
7. Z.Mamarasulov – Head of Djizzak city branch of SUE "Suvokova"
8. A.Toshpulatov – Djizzak city State Sanitary-Epidemiologic Inspection
9. A.Akhmedov – Head of Djizzak district branch of SUE "Suvokova"

Invited: residents and farmers from Djizzak city and Uchtepa district center (list of participants attached)

AGENDA:

1. Overview of the "Djizzak Sanitation System Development Project" and environmental impact; Presentation of changes in the project design; Discussion the potential ecological risk and mitigation measures in the new project territory – **Presentation of SU-YAPI Environmental specialist Magfirat Muminiva**
2. Brief Project Information – Djizzak "Suvokova" Director S.Subkhonkulov

The Uzbekistan Communal Services Agency (UCSA), the project proponent and executing agency, is implementing the Djizzak Sanitation System Development Project (DSSDP), addressing urgent national water supply and wastewater treatment problems.

There are three main project components: (i) the construction of a new sewage treatment plant (WWTP) (ii) construction and rehabilitation of sewerage collectors and networks for around 62 km; and (iii) rehabilitation of the existing 3 pumping stations. The overall project will be implemented over five years (2016-2021).

According to PPTA technical report and PFS the construction of new wastewater treatment facilities is foreseen near the existing WWTP and it was planned that the delivery of wastewater from the city will be carried out by construction of new main sewerage pump station through two new constructed pressure collectors, with the transition to the gravitational collector.

However, in case of any accident or instant power system failure in main sewerage pump station, the wastewater withdrawn from the city, will directly flow into the residential area. This may result in a spreading of diseases and pollution of the residential areas. Such

power failures or accidents often happen at the existing sewage pump station Khalkabad, which pumps wastewater to the existing WWTP.

In order to prevent such accidents it is proposed by the Djizzak provincial Suvokova to relocate the original site of the WWTP outside the city to north-eastward which is unused and non-agricultural land in Djizzak city. In this case, the wastewater of Djizzak city will gravitationally flow to the WWTP, which will provide reliable and failure free operation of the sewerage system.

Besides, the advantages of this relocation are: (i) excluding the construction of main pump station, which will allow saving energy in the amount of 1.3 GWh in a year and salaries of the personnel; (ii) excluding the provision of main pump station with external communications such as electricity, gas supply, water supply, heating and access roads; (iii) the original site has resettlement and environmental impacts while the proposed relocation site does not have any resettlement and environmental impacts.

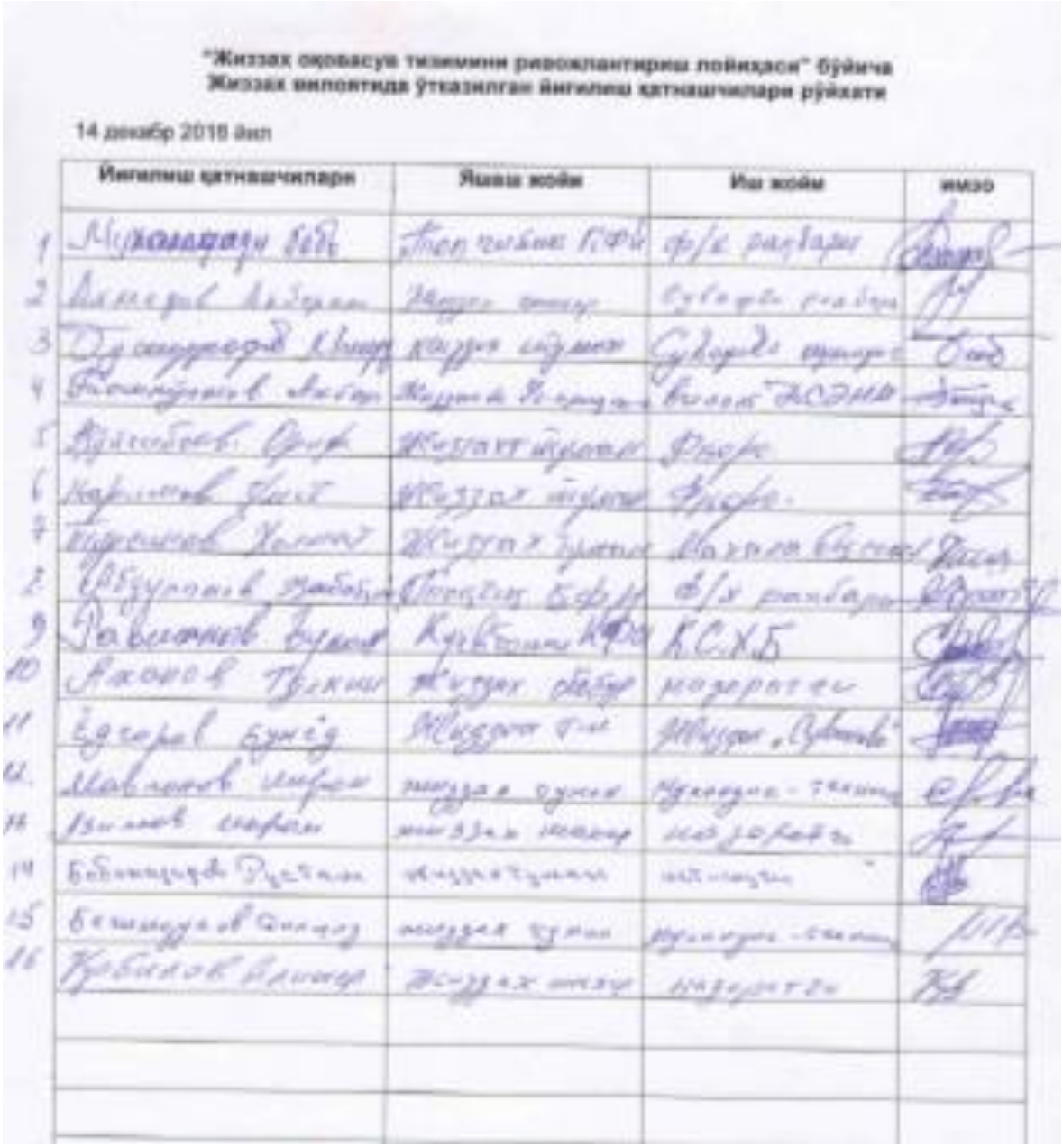
During the meeting were discussed the aims of project and changes in project design. In particular, was described positive effect from construction on public health, social and environment aspects in the project territory.

Also was introduced national ecological policy, ADB environmental guidelines, changes in IEE and other measures which are necessary to comply during the project implementation process.

Participants were advised with changes in the new project territory and its positive effect.

During the discussion there were no complaints and feedback received from local people and farmers that related to new site of WWTP. Local people expressed their interest and need in construction of this project. They are pleased with good expectations because of project implementation.

List of Participants
(14 December, 2016)



"Жиззах оқовасув тизимини ривожлантириш лойиҳаси" бўйича
Жиззах вилоятида ўтказилган йиғилиш қатнашчилари рўйхати

14 декабр 2016 йил

	Йиғилиш қатнашчилари	Яшаш жойи	Иш жойи	имзо
1	[illegible]	[illegible] ГФЙ	ф/х раҳбари	
2	[illegible]	[illegible]	[illegible]	
3	[illegible]	[illegible]	[illegible]	
4	[illegible]	[illegible]	[illegible]	
5	[illegible]	[illegible]	[illegible]	
6	[illegible]	[illegible]	[illegible]	
7	[illegible]	[illegible]	[illegible]	
8	[illegible]	[illegible]	ф/х раҳбари	
9	[illegible]	[illegible]	ЖСХБ	
10	[illegible]	[illegible]	[illegible]	
11	[illegible]	[illegible]	[illegible]	
12	[illegible]	[illegible]	[illegible]	
13	[illegible]	[illegible]	[illegible]	
14	[illegible]	[illegible]	[illegible]	
15	[illegible]	[illegible]	[illegible]	
16	[illegible]	[illegible]	[illegible]	

ANNEX 3

Additional Public Consultation Presentation and minutes of meeting conducted for updated IEE on 8 February, 2017

Record on Additional Public Consultation for Updated IEE

Additional Public Consultations in Uchtepa Town

08 February, 2017

Brief description: The Uzcommunkhizmat of Uzbekistan is preparing detailed engineering design for reconstruction of the wastewater facilities of Djizzak under the loan from ADB. The project will be implemented according to the SPS (2009) of ADB.

The Supervision Engineer consultant (Su Yapi) hired by the Uzcommunkhizmat within the frames of the project "Djizzak Sanitation System Development Project" has conducted additional public consultation meeting related to the updated and a new IEE version in Uchtepa, office of Mahalla, on 8th of February, 2017, which were attended by the local population and representatives of the local authority.

The aim of the public consultations was the presentation of updated IEE. The requirements of public consultations and comments made by the stakeholders are an important component of the project.

The Project belongs to B category and therefore IEE and public consultations should be implemented according to the guidelines of ADB.

Accordingly, updated Executive Summary, as well as updated draft IEE document have been presented and available during the IEE disclosure process.

The meeting was attended by:
The Representatives of PCU and Regional Uzcommunhizmat, and Infrastructure of Uzbekistan and Consultant's side:

Olim Gulboev, First Deputy of Uchtepa Khokim
Sobir Abdusattorov, Representative of Regional Uzcommunhizmat of Uzbekistan
Alisher Usupov, Djizzak Suvoqova, Head of Technical Department
Keti Dgebuadze, ADB Environmental Safeguards Consultant
Magfirat Muminova, National Environmental Expert of Su Yapi
Marat Yaparov, National Engineer Expert of Su Yapi
Aziz Qurbonov, National Resettlement Expert of Su Yapi
Günal Özenirler, International Environmental and Social Expert of Su Yapi
Niyazii Seyman, International Engineer Expert of Su Yapi

The meeting was also attended by: superiors of the regions, officials and population of Uchtepa town (See the attached list of participants).

Presentation was hosted by Deputy Uchtepa Khokim – Olim Gulboev. Mr. Gulboev informed the participants about the project goals, objectives and benefits.

Ms.M.Muminova, environmental consultant of supervision company (Su Yapi) presented environmental policy and guidelines of ADB. The expert described project aim, the IEE structure, and legislative base, which is necessary to comply with during the project implementation process. She also discussed with the participants about possible impacts of the project on natural and social environment, appropriate mitigation measures and Environmental Management Plan.

The presentation was followed by a Q&A session. The questions and comments of different participating parties were replied by the representatives of Regional Uzcommunhizmat and by the consultant. The questions and answers is given in Table 5.1

Place of event: Office of Mahalla, Town of Uchtepa
Date and time of event: February 8, 2017, 11:30 p.m.

Photos of Public Consultation:






Participants:

Remarks: The concerned parties and local population were informed in advance related with upcoming additional Public Consultation (8 Feb, 2017). Relevant announcement has been published via local (“Djizzak khakikati”) newspaper as well as network of local Mahalla on 5 February. Also announcements were placed on Mahalla Committee building and public places (see attached photos in Annex 5). Hard copies of final draft of IEE and Executive Summary in Russian have been available at the Uzcommunhizmat. Electronic versions of the same documents in Russian and English languages have been available on the web-site of Uzcommunhizmat.

Table 6.1. Question-and-Answer session:

No.	Question/Comment	Author	Expert comment
1.	Is there any training program for employees to start working in new WWTP?	Djakhongir Abdullaev	According to feasibility study, there are several trainings for Djizzak Suvoqova experts. Supervision company's experts will provide trainings for contractor too.
2.	What's distance between WWTP and residential structures?	Alisher Muhammadiev	Based on the KMK 2.04.03-96, the distance between a WWTP and the residential structures has to be 500 m. According to the design of our project the distance between the residential structures and the WWTP is around 800 m.
3.	When WWTP will be running, it will produce specific smells. What you'll do to avoid air pollution?	Pulot Bekmurodov	To avoid odor nuisance appropriate chemical treatment will be implemented, and in addition, the green spaces will be arranged around the WWTP.
4.	How many specialists will work at WWTP?	Resident of Uchtepa	• According to the Design documents new workplaces will be created. 56 people will be hired.

List of attendees of Public Hearings (8 February, 2017)

Осиё Тараққиёт банки лойиҳасини мувофиқлаштириш гуруҳининг 03.02.2017 йилдаги 015-01/30-сон хати асосида 2017 йил 8 феврал куни соат 11-00 да Ш.Рашидов тумани хокимлиги залида бўладиган йиғилишда иштирок этганлар

РЎЙХАТИ

№	Вазифаси	Фамилияси ва исми
1	[illegible] бошлиғи	[illegible]
2	[illegible]	[illegible]
3	"[illegible]" фуқаролари	[illegible]
4	Туман [illegible]	[illegible]
5	Маҳалла фуқаролари	[illegible]
6	-//-	[illegible]
7	-//-	[illegible]
8	-//-	[illegible]
9	-//-	[illegible]
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11	-//-	[illegible]
12	-//-	[illegible]
13	-//-	[illegible]
14	-//-	[illegible]
15	-//-	Қаримова Ч.
16	-//-	Икромов Ч
17	-//-	[illegible]
18	-//-	[illegible]
19	-//-	Маматкулов Н
20	-//-	Озимов С
21	-//-	[illegible]
22	-//-	Қорбекова Г
23	-//-	Тахиров А
24	Уз-Тепа [illegible] КХК	Холмуродов И.
25	Работ [illegible] КХК	Азизов Н.
26	[illegible] СЭС бошлиғи	Мухаммадиев А.
27	[illegible] директор [illegible]	[illegible]
28	Маҳалла фуқаролари	Бегбутаев А.
29	-//-	Норматов Х.
30	-//-	[illegible]
31	-//-	Раҳмонбердиев Б
32	-//-	[illegible] С.
33	-//-	[illegible] С
34	-//-	Юсупов А.
35	-//-	[illegible]
36	-//-	[illegible]
37	[illegible] бошлиғи	[illegible]
38	[illegible] КХК	[illegible]
39		Дусмуродов Р.
40		[illegible]
41		Дусмуродов А.
42		[illegible]
43		[illegible]
44	Уз-Тепа МФЙ раиси.	Бекмуродов П.
45	Уз-Тепа МФЙ котибаси	[illegible]
46	посбони	[illegible]
47	Уз-Тепа [illegible] оқсоқоли	[illegible]
48	[illegible] мах. раиси.	[illegible] К.
49	Туман Пенсия жамғармаси	Тошибоев Х.
50	Туман хокими ўринбосари	Гулбоев А.
51	[illegible] саноат коллежи	[illegible] Р.
52	[illegible] tuman 13-maktab	Xolbekova Sh. Sh.

Announcements for PC to be conducted on 8 February, 2017:

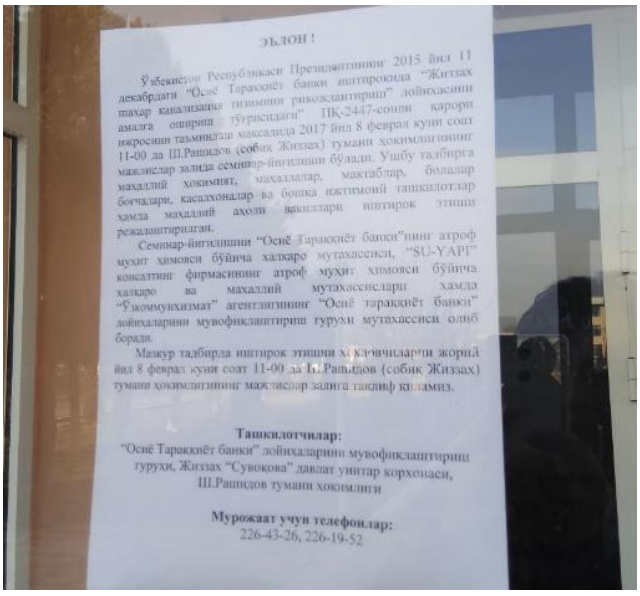
1. “Djizzak hakikati” newspaper’s announcement

, аввало, меҳнат
-тез мулоқотда
уларнинг дарду
орзу-ниятлари,
ва эҳтиёжлари-
ши ўта муҳимдир.
ҳаётдан янада
ашлари учун улар-
ложи борича яқин
тилади.
лнинг номлани-
билан мулоқот"
манфаати" жум-
икда қўлланилга-
ас, булар бири
ўлдирувчи яхлит
Ушбу тушунча
ндан кейин ҳам
лқ бирлигининг,
аҳкамланиб бо-
ишончнинг рам-

ЭЪЛОН

2017 йил 8 февралда Учтепа туман марказидаги мактаб биносида соат 11:00 да Осиё Тараққиёт Банки томонидан молиялаштирилаётган “Жиззах шаҳрида канализация тизимини ривожлантириш” лойиҳасига бағишланган жамоа йиғилиши ўтказилади. Йиғилишда ушбу лойиҳа доирасида амалга ошириладиган қурилиш ишларининг атроф-мухитга таъсирини ўрганиш ва салбий таъсирларининг олдини олиш мавзуси ёритилади. Жамоа йиғилишига барча қизиққанлар таклиф этилади.

2. Announcement on Mahalla’s building



ЭЪЛОН !

Ўзбекистон Республикаси Президентининг 2015 йил 11 декабрдаги “Осиё Тараққиёт банки иштирокида “Жиззах шаҳар канализация тизимини ривожлантириш” лойиҳасини амалга ошириш тўғрисидаги” ПҚ-2447-сонли қарори ижросини таъминлаш мақсадида 2017 йил 8 февраль куни соат 11-00 да Ш.Рашидов (собиқ Жиззах) тумани ҳокимлигининг мажлислар залида семинар-йиғилиши бўлади. Ушбу тадбирга маҳаллий ҳокимият, маҳаллалар, мактаблар, болалар боғчалари, касалхоналар ва бошқа ижтимоий ташкилотлар ҳамда маҳаллий аҳоли вакиллари иштирок этиши режалаштирилган.

Семинар-йиғилишини “Осиё Тараққиёт банки”нинг атроф муҳит ҳимояси бўйича халқаро мутахассиси, “SU-YAPI” консалтинг фирмасининг атроф муҳит ҳимояси бўйича халқаро ва маҳаллий мутахассислари ҳамда “Ўзкоммунхизмат” агентлигининг “Осиё тараққиёт банки” лойиҳаларини мувофиқлаштириш гуруҳи мутахассиси олиб боради.

Мазкур тадбирда иштирок этишни ҳоҳловчиларни жорий йил 8 февраль куни соат 11-00 да Ш.Рашидов (собиқ Жиззах) тумани ҳокимлигининг мажлислар залига таклиф қиламиз.

Ташкилотчилар:
“Осиё Тараққиёт банки” лойиҳаларини мувофиқлаштириш гуруҳи, Жиззах “Сувоқова” давлат унитар корхонаси, Ш.Рашидов тумани ҳокимлиги

Мурожаат учун телефонлар:
226-43-26, 226-19-52

ANNEX 4

The Environmental Management Plan

Djizzak Sewage Treatment Facility Subproject: Environmental Mitigation Table (EmiT)

Environmental Impact/Issue	Mitigation Measures	Location[2]	Time Frame	Responsibility	
				Implementation	Supervision
1. PRE-CONSTRUCTION PERIOD –mostly planning tasks designed to prevent negative effects from occurring later during the project					
1.1 Lack of any capacity to understand and implement environmental mitigation measures, and no training	Design and deliver a training workshop on EMP implementation	Djizzak	Prior to contractor mobilization to the field	UCSA, PCU	UCSA, PCU
1.2 No provision for translation of IEE and related documents for use by contractors	UCSA to insure that translation into Uzbek or Russian is completed	NA	Prior to contractor selection	PCU	UCSA, PCU
1.3 Bid documents prepared without access to or use of the IEE and particularly this EMP	Inclusion of environmental specifications in contract bid documents, based on EMP items, as well as preparation of a bill-of-quantities section specifically showing environmental safeguard costs	NA	When bid documents are being prepared	PCU	UCSA, PCU
1.4.Contractor selected has no capacity to implement safeguards	UCSA to decide if contractor to be prequalified in the environmental safeguards area or a requirement for expertise, whether hired or internal must be demonstrated prior to start of construction	NA	When bid documents are being prepared	PCU	UCSA, PCU
1.5 Pre-construction period monitoring checklist not submitted	UCSA advises PCU and PDC that such a checklist is needed	NA	Within 2 months of end of preconstruction period	PCU, PDC	UCSA, PCU
1.6 Failure to Initiate a traffic management plan, to handle traffic during sewer installations	UCSA to advise PCU and Djizzak “Suvokova” that a basic traffic management plan—at last framework must be prepared and be ready for use by the contractor	For all sewer installations involving actively used roads	The framework should be ready by the start of the construction period	PCU, PDC	UCSA, PCU
1.7 Failure to prepare specifications on how to manage temporary access blockages due to sewer pipe placement	PCU and Djizzak “Suvokova” to establish the sequence for notification of work to come, doing the work and restoration of access to all households and businesses affected, such that this disruption is known ahead of time, is as short as possible and the re-established access is at least as good as prior to construction.	All worksites	Prepare prior to start contractor mobilization to field	PCU, and Djizzak “Suvokova” and PDC	UCSA, PCU

Environmental Impact/Issue	Mitigation Measures	Location[2]	Time Frame	Responsibility	
				Implementation	Supervision
1.8 No tree inventory and cutting specifications prepared for sewage line construction corridor	Most collector sewers to be replaced or newly installed will be buried along road shoulders, which have many mature trees. A tree inventory and cutting plan will be required in order to minimize to an absolute minimum the removal of trees, accompanied with a replanting plan, with input from local residents and district forest departments, concerning species, if the trees cut cannot be replaced with the same species	For all sewer installation corridors-where there are trees	Inventory and 1st draft by end of preconstruction period	PCU, and Djizzak "Suvokova" and PDC	UCSA, PCU
2. CONSTRUCTION PERIOD					
2.1 Excessive construction-period air pollution	Emissions will be kept to a minimum by: 1. ensuring that the contractor's fleet of vehicles are properly maintained and 2. Use acceptable fuel and haul loads within specified limits. 3. Vehicle idling time limits to no more than 3 minutes and 4. equipment maintenance specifications will be imposed through construction inspection and regular reporting, 5. Dust control at the construction site will be particularly stringently controlled by watering, setting strict speed limits of no more than 30kph in or near settled areas, and clean-up of paved haul roads. 6. Equipment such as the diesel generator will be included in the emission control program and will be and regularly tuned to prevent excessive TPM/soot pollution.	Anywhere at construction sites where vehicles of the contractor or under the contractors control (including paying for services), such as subcontracted trucks hauling materials	Throughout the construction period	Contractor	Djizzak "Suvokova", PDC and PCU
2.2 Excessive noise	Identify sensitive sites like hospitals, retirement homes, sanatoriums and urban park areas, then reduce noisy activities such as jack hammers during low noise periods and if needed set up temporary noise baffles.	All work areas within 250m of schools, sanatoriums, hospitals, playgrounds and residences	Undertake noise management throughout the construction period	contractor	Djizzak "Suvokova"
2.3 Inadequate use of tree clearing and replanting plan prepared during pre-construction period	Contractor to be handed the tree cutting and replanting plan at the start of construction and carefully monitored-Contractor must review, update with the PDC and Djizzak "Suvokova" then adhere to the plan A system of severe fines, involving replanting of mature trees, for cutting and damaging trees outside the cutting areas, will be implemented. Any installations where there are mature roadside shade trees, designers will be contacted to realign the sewer into the road to	All areas were need to clear trees is being considered	Throughout the construction period	Contractor	Djizzak "Suvokova" and PDC

Environmental Impact/Issue	Mitigation Measures	Location[2]	Time Frame	Responsibility	
				Implementation	Supervision
	avoid cutting				
2.4. Poor Haul Road Maintenance	1. The contractor will need to inspect roads used for transport of earthworks every day, making sure that debris waste materials and earth has not fallen off the back of trucks generating safety concerns and dust; and that immediate clean up occur if problems are noted. 2. All such trucks will need to be equipped with covers or nets preventing spillage and reducing wind-blown dust from vehicles	All roads used by the contractor and, subcontractor	Inspection program at least every other day	Contractor	PCU regional Coordinator and PDC
2.5 Inadequate traffic management when sewer construction taking place	Traffic management will be essential since most of the sewer placement work will be in the middle or on one side of existing roads, requiring an effective traffic management operation. To that end contractors will require either automated lights or two flagmen at each major work area to help keep traffic from backing up too badly.	All roads were sewer construction is planned and where there is a regular traffic flow	At all times that construction is taking place	Contractor	PCU regional Coordinator and PDC
2.6 Failure to adhere to construction related good housekeeping practices, including solid and sanitary waste management and	Contractors will adhere to standard good housekeeping practices as defined in the contract Terms & Conditions and Contract Specifications. Special considerations will be given to 1. management of construction waste and water 2. equipment lubricants and fuel, including management and collection of waste oils and fuel particularly related to refuelling depots, maintenance areas and diesel generator sets Sewage will require latrines or chemical toilets with complete clean up after the construction is complete. 3. Garbage will be collected and properly disposed of after recycling and sorting, This work will be completed in accordance with RoU norms and codes which the contractor will be expected to know, based on the information found in the IEE. Also, the contractor shall orient all construction workers in basic sanitation and health care issues occurring in the Djizzak area.	All work camps, construction maintenance yards and any other areas operated by the contractor and involved in the project	Throughout the construction period	Contractor	PCU regional Coordinator and PDC
2.7 Inadequate occupational health and safety measures in the workplace	1. The contractor will provide PSE such as hardhats, boots noise protection, safety vests and eye protection where necessary, such as when welding, grinding or cutting. 2. Fencing or safety ribbon will be required at every worksite, marking the boundary for safe viewing 3. Sanitary toilet, washing and eating facilities (if needed) will be provided	At all worksites of the contractor and any subcontractors	At all times during the construction work	Contractor	Djizzak "Suvokova " and PDC

Environmental Impact/Issue	Mitigation Measures	Location[2]	Time Frame	Responsibility	
				Implementation	Supervision
	4. Safe potable water supply will be available at all times and within easy reach of workers 5. Industrial –grade first aid kits will be at every work site				
2.8 The lack of technical capacity with the contractor to implement and report on environmental safeguards, leading to the collapse of the environmental safeguards actions	At the start of the construction period, but before field mobilization the PCU and PDC will deliver a short training workshop to the contractor as well as "Suvokova" staff, focusing on the EMP, the mitigation and monitoring tasks, responsibility to the public and proper documentation. Approximately 12-13 people will be involved, plus three people delivering the workshop.	Djizzak City Administration	Prior to the start of construction but after the contractor has been named and has appointed an ecological expertise	UCSA/PDC and PCU	UCSA, PCU
2.9 Failure to properly manage petroleum products such as fuel, lubricants, leading to spill and contamination.	Contractor will be required to have the following spill prevention measures in place at all work sites: 1. All fuelling to be done on a concrete surface provided with spill catch tank that can be cleaned and all spilled fuel recovered and recycled based on discussions with fuel supplier. 2. All repair and maintenance work must either be done on a concrete surface with oil spill catch basin or oil catch pans must be provided at all service areas and training provided to all 'mechanics'. 3. All fuel use areas where spills and leakage is possible, e.g. the generator, must have drip basins installed to prevent any leakage. These recovered materials must be recycled. 4. A fuelling areas must be equipped with proper fuel nozzles 5. All fuel tanks must have means for containment of accidental spills. 6. Any spills must be cleaned up according to RoU norms and codes within 24 hours of the occurrence, with contaminated soils and water treated according to RoU norms and codes.	At maintenance yards and any other areas that the contractor uses or subcontractor use during the construction period	Throughout the construction period	Contractor	PCU and PDC
2.10 Contractor does not provide monthly monitoring updates or quarterly monitoring checklists or semi-annual summary reports or final construction period	At start of construction period the contractor will be given and schedule for report submission and during the training period samples of the reports required will be presented.	NA	Monthly, quarterly and semi-annually as well as at the end of the construction period	Contractor	PCU and PDC

Environmental Impact/Issue	Mitigation Measures	Location[2]	Time Frame	Responsibility	
				Implementation	Supervision
EMP implementation report					
2.11 Post sewer installation rehabilitation and landscaping	Immediately after the placement if a section of sewer the contractor must immediately rehabilitate and re-landscape the area to preconstruction conditions, including re-establish access.	All sewer placement sites	At all times	Contractor	PCU and PDC
2.12 Pumping Station spill damage	All existing pumping stations have spilled untreated sewage in a large area around the pump site. As part of the repair and rehabilitation each site will be full cleaned up and re-landscaped in consultation with local residents.	Existing pumping stations	During the construction period	Contractor	PCU and PDC
3. OPERATING PERIOD					
3.1 No or poor maintenance of tree replanting and landscaping along sewer placement construction corridors	UCSA and the PCU will advise the Chief Engineer of Djizzak Province "Suvokova" of the importance maintaining and enhancing the tree replanting and landscaping activity undertaken as the sewer were buried. Repair and further improvements to this work, particularly along urban streets will be implemented by the Djizzak Province "Suvokova" enterprise.	All sewer excavation and burial areas	As soon as the work is done in any one area	Djizzak Province "Suvokova"	Djizzak Province "Suvokova"
3.2 No annual monitoring Report	UCSA/PCU will inform the Djizzak Province "Suvokova" Chief Engineer of the mandatory ADB requirement of preparation of the annual environmental safeguards report	Prepared for the entire Djizzak project	End of year 1, 3, and 5	Djizzak Province "Suvokova"	Djizzak Province "Suvokova"
3.3 No pumping station clean up inspection report	Djizzak Province "Suvokova" will inspect the clean- up and restoration work of the old pumping station sites and provide a short report and pictures of the work done and provide an assessment of adequacy - in consultation with local residents	At all pumping stations - old and new	Within the first 6 months of operations	Djizzak Province "Suvokova" - Municipal Operating Unit	UCSA, ADB
3.4. Industrial enterprises not complying with pretreatment requirements	At the start of the final construction year, PDC and PCU will provide a detailed briefing to contractor on effluent pre-treatment requirements and the provisions of Resolution No.11 as it applies to the industries	At Djizzak "Suvokova" office in Djizzak	At start of final construction year	PCU, Djizzak "Suvokova" and PDC	PCU and UCSA

Example of Environmental Management Plan: As prepared for Djizzak Sewage Treatment Facility Subproject:

Environmental Monitoring Table (EMoT)

ITEM	Mitigation Measures	Monitoring Details/Also Performance Indicators	Timing	Executing Unit	Reporting Responsibility
1. PRE-CONSTRUCTION (DESIGN) PERIOD: all written confirmation and reports submitted to UCSA and PDC with copies to Djizzak Province Nature Protection Department					
1.1 Lack of any capacity to understand and implement environmental mitigation measures, and no training	Design and deliver a training workshop on EMP implementation	Obtain record of training workshop	Immediately after workshop completed	UCSA. PCU	PCU→UCSA
1.2 No provision for translation of IEE and related documents for use by contractors	UCSA to insure that translation into Uzbek or Russian is completed	Inspect translated versions of safeguard documents	Prior to contractor selection	PCU	PCU→UCSA
1.3 Bid documents prepared without access to or use of the IEE and particularly this EMP	Inclusion of environmental specifications in contract bid documents, based on EMP items, as well as preparation of a bill-of-quantities section specifically showing environmental safeguard costs	Check bid documents and confirm that environmental provisions/clauses are included and that separate bill-of-quantities section is included	Prior to contractor selection	PCU; sometimes PDC is involved if retained early enough	PCU→UCSA
1.4.Contractor selected has no capacity to implement safeguards	UCSA to decide if contractor to be prequalified in the environmental safeguards area or a requirement for expertise, whether hired or internal must be demonstrated prior to start of construction	Confirm contractors environmental capacity by conducting a meeting	After contractor selected and before training workshop	PCU/PDC	PCU→UCSA
1.5 Pre-construction period monitoring checklist not submitted	UCSA advises PCU and PDC that such a checklist is needed	Get copy of checklist and file	Within 1 month of the start of construction	PDC and PCU	PCU→UCSA
1.6 Failure to Initiate a traffic management plan, to handle traffic during sewer installations	UCSA to advise PCU and Djizzak Province “Suvokova” that a basic traffic management plan - at last framework must be prepared and be ready for use by the contractor	Confirm that there is a traffic management plan and that it is in the hands of the contractor	Within 1 month of the start of construction	PDC and PCU	PCU→UCSA

ITEM	Mitigation Measures	Monitoring Details/Also Performance Indicators	Timing	Executing Unit	Reporting Responsibility
1.7 Failure to prepare specifications on how to manage temporary access blockages due to sewer pipe placement	PCU and Djizzak Province "Suvokova" to establish a protocol for notification, doing the work & restoration of access to all households & businesses affected, such that this disruption is known ahead of time, is as short as possible and the re-established access is at least as good as prior to construction.	Review the draft protocol and insure that it will be implemented by the contractor and that the PIU is fully aware	Prior to start of construction	PCU, Djizzak Province "Suvokova" and PDC	PCU→UCSA
1.8 No tree inventory and cutting specifications prepared for sewer construction corridor	Most collector sewers to be replaced or newly installed will be buried along road shoulders, which have many mature trees. A tree inventory and cutting plan will be required in order to minimize to an absolute minimum the removal of trees, accompanied with a replanting plan, with input from local residents and district forest departments, concerning species, if the trees cut cannot be replaced with the same species	Examine tree inventory and replanting plan and discuss with Contractor	After contract signing but before construction field mobilization	PCU, Djizzak Province "Suvokova" and contractor	PCU→UCSA
2. CONSTRUCTION PERIOD -prepare and use this section as construction monitoring checklist					

ITEM	Mitigation Measures	Monitoring Details/Also Performance Indicators	Timing	Executing Unit	Reporting Responsibility
2.1 Excessive construction-period air pollution	Emissions will be kept to a minimum by: 1. ensuring that the contractor's fleet of vehicles are properly maintained 2. Use acceptable fuel and haul loads within specified limits. 3. Vehicle idling time limits to no more than 3 minutes and 4. equipment maintenance specifications will be imposed through construction inspection and regular reporting, 5. Dust control at the construction site will be particularly stringently controlled by watering, setting strict speed limits of no more than 30kph in or near settled areas, and clean-up of paved haul roads. 6. Equipment such as the diesel generator will be included in the emission control program and will be and regularly tuned to prevent excessive TPM/soot pollution.	Inspect 6 issues as defined in EmiT and provide contractor with feedback Monitoring details- Smoke-belching vehicles, equipment, air and construction sites. (visual monitoring) The 1-4 actions should be taken before starting working days (in the garages of contractors if it is existence) and the 5-6 actions should be conducted in soil roads of construction site where it may cause air pollution.	Once a month	PDC	Contractor→ PDC→PCU
2.2 Excessive noise	Identify sensitive sites like hospitals, retirement homes, sanatoriums and urban park areas, then reduce noisy activities such as jack hammers during low noise periods and if needed set up temporary noise baffles.	Measure noise levels at sensitive receptor sites and discuss non-compliance with contractor. Noise to be measured when equipment operating, 0800-1000 and 1500-1600. Confirm that no work is done near sensitive sites after 18:30 Monitoring details- all kind of noise generated machines (basic monitoring nearby sensitive areas).	Once a month, Once a week if the construction site is in nearby households and sensitive sites.	PDC/Contractor	Contractor→ PDC→PCU

ITEM	Mitigation Measures	Monitoring Details/Also Performance Indicators	Timing	Executing Unit	Reporting Responsibility
2.3 Inadequate use of tree clearing and replanting plan prepared during pre-construction period	Contractor to be handed the tree cutting and replanting plan at the start of construction and carefully monitored-Contractor must review, update with the PDC and Djizzak Province "Suvokova" then adhere to the plan A system of severe fines, involving replanting of mature trees, for cutting and damaging trees outside the cutting areas, will be implemented. Any installations where there are mature roadside shade trees, designers will be contacted to realign the sewer into the road to avoid cutting	Inspect construction areas to insure that tree cutting is avoided wherever possible and organize immediate meeting with PDC chief engineer and PCU to discuss any noncompliance. Monitoring details- vegetation sites where the construction is conducted. Monitoring revegetation regularly, especially during initial growth to ensure stable growth and lasting groundcover	When work at a new site begins and where trees are possibly cut.	Contractor and Djizzak Province "Suvokova", PCU regional Coordinator	Contractor→ PDC→PCU
2.4. Poor Haul Road Maintenance	1. The contractor will need to inspect roads used for transport of earthworks every day, making sure that debris waste materials and earth has not fallen off the back of trucks generating safety concerns and dust; and that immediate clean up occur if problems are noted. 2. All such trucks will need to be equipped with covers or nets preventing spillage and reducing wind-blown dust from vehicles	Inspect haul roads at least weekly and report condition. PDC to conduct random inspections as well. iv) Confirm that trucks hauling material that is dusty, have covers or tarpaulins. Monitoring details- vehicles and roads that vehicles are used (visual monitoring).	Weekly	Contractor and PCU regional Coordinator	Contractor→ PDC→PCU

ITEM	Mitigation Measures	Monitoring Details/Also Performance Indicators	Timing	Executing Unit	Reporting Responsibility
2.5 Inadequate traffic management when sewer construction taking place	Traffic management will be essential since most of the sewer placement work will be in the middle or on one side of existing roads, requiring an effective traffic management operation. To that end contractors will require either automated lights or two flagmen at each major work area to help keep traffic from backing up too badly. Confine heavy construction related traffic in sensitive access roads to the construction sites to avoid accidents. Minimize transportation during high traffic periods (e.g., when students are entering or leaving school) to minimize potential traffic accidents	Drive construction roads and report on traffic management—and report excessive delays and suggest corrective actions Monitoring details- vehicles and roads during high traffic periods (visual monitoring).	At all times that work is going on	Contractor, PDC and PCU regional Coordinator	Contractor→ PDC→PCU

ITEM	Mitigation Measures	Monitoring Details/Also Performance Indicators	Timing	Executing Unit	Reporting Responsibility
2.6 Failure to adhere to construction related good housekeeping practices, including solid and sanitary waste management	Contractors will adhere to standard good housekeeping practices as defined in the contract Terms & Conditions and Contract Specifications. Special considerations will be given to 1. management of construction waste and water 2. equipment lubricants and fuel, including management and collection of waste oils and fuel particularly related to refuelling depots, maintenance areas and diesel generator sets Sewage will require latrines or chemical toilets with complete clean up after the construction is complete. 3. Garbage will be collected and properly disposed of after recycling and sorting, The contractor shall brief all construction workers in basic sanitation and health care issues occurring in the Djizzak area.	Inspect construction work areas and report the 3 items listed Monitoring details- solid and waste debris, construction site, special containers (visual and basic monitoring if required).	Weekly	Contractor, PDC and PCU regional Coordinator	Contractor→ PDC→PCU

ITEM	Mitigation Measures	Monitoring Details/Also Performance Indicators	Timing	Executing Unit	Reporting Responsibility
2.7 Inadequate occupational health and safety measures in the workplace	1. The contractor will provide PSE such as hardhats, boots noise protection, safety vests and eye protection where necessary, such as when welding, grinding or cutting. 2. Fencing or safety ribbon will be required at every worksite, marking the boundary for safe viewing 3. Sanitary toilet, washing and eating facilities (if needed) will be provided 4. Safe potable water supply will be available at all times and within easy reach of workers 5. Industrial grade first aid kits will be at every work site	Inspect construction work areas and report on the 5 items listed	Once a quarter	Contractor, PDC	Contractor→ PDC→PCU
2.8 The lack of technical capacity with the contractor to implement and report on environmental safeguards, leading to the collapse of the environmental safeguards actions	At the start of the construction period, but before field mobilization the PCU and PDC will deliver a short training workshop to the contractor as well as "Suvokova" staff, focusing on the EMP, the mitigation and monitoring tasks, responsibility to the public and proper documentation. Approximately 12-13 people will be involved, plus three people delivering the workshop.	Complete a meeting with contractor to determine the effects of the training workshop and if the contractor is capable to implement the EMP	At start of construction period, but 4-6 months after the technical workshop	PDC	Contractor→ PDC→PCU

ITEM	Mitigation Measures	Monitoring Details/Also Performance Indicators	Timing	Executing Unit	Reporting Responsibility
2.9 Failure to properly manage petroleum products such as fuel, lubricants, leading to spill and contamination.	Contractor will be required to have the following spill prevention measures in place at all work sites: 1. All fuelling to be done on a concrete surface provided with spill catch tank that can be cleaned and all spilled fuel recovered and recycled based on discussions with fuel supplier. 2. All repair and maintenance work must either be done on a concrete surface with oil spill catch basin or oil catch pans must be provided at all service areas and training provided to all 'mechanics'. 3. A fuelling areas must be equipped with proper fuel nozzles 4. All fuel tanks must have means for containment of accidental spills. 5. Any spills must be cleaned up according to RoU norms and codes within 24 hours of the occurrence, with contaminated soils and water treated according to RoU norms and codes.	Inspection undertaken quarterly and report filed, addressing the 5 points listed	Quarterly	Contractor, PDC	Contractor→ PDC→PCU
2.10 Contractor does not provide monthly monitoring updates or quarterly monitoring checklists or semi-annual summary reports or final construction period EMP implementation report	At start of construction period the contractor will be given and schedule for report submission and during the training period samples of the reports required will be presented.	Remind contractor of this requirement and collect reports	As per the reporting schedule	Contractor, PDC	PDC →PCU

ITEM	Mitigation Measures	Monitoring Details/Also Performance Indicators	Timing	Executing Unit	Reporting Responsibility
2.11 Post sewer installation rehabilitation and landscaping	Immediately after the placement if a section of sewer the contractor must immediately rehabilitate and re-landscape the area to preconstruction conditions, including re-establish access	Inspection of all installation sites, interview with local people to gauges how well the rehabilitation was done-prepare checklist-type report	As soon as an installation area has been cleared by contractor and rehabilitation is done	Contractor	Contractor→ PDC→PCU
2.12. Pumping station Spill Damage-rehabilitation	All existing pumping stations have spilled untreated sewage in a large area around the pump site. As part of the repair and rehabilitation each site will be full cleaned up and re-landscaped in consultation with local residents.	Prepare 1-pg inspection report and photos of rehabilitation and record of interviews with local people	As soon as work at a pumping station is complete	Contractor, PDC	Contractor→ PDC→PCU
2.13. Industrial enterprises not complying with pretreatment requirements.	At the start of the final construction year, PDC and PCU will provide a detailed briefing to contractor on effluent pre-treatment requirements and the provisions of Resolution No.11 as it applies to the industries.	Maintain record of briefing and content of material and attendance	Start of last year of construction	Djizzak Province “Suvokova”, PDC and PCU regional Coordinator	PCU →UCSA
3. OPERATING PERIOD					
3.1 No or poor maintenance of tree replanting and landscaping along sewer placement construction corridors	UCSA and the PCU will advise the Chief Engineer of Djizzak Province “Suvokova” of the importance maintaining and enhancing the tree replanting and landscaping activity undertaken as the sewer were buried. Repair and further improvements to this work, particularly along urban streets will be implemented by the Djizzak Province “Suvokova”.	Conduct monitoring program as indicated	2X/year for years 1, 3 and 5.	Djizzak Province “Suvokova”	Djizzak Province “Suvokova” →UCSA
3.2 No annual monitoring Report	UCSA/PCU will inform the Djizzak Province “Suvokova” Chief Engineer of the mandatory ADB requirement of preparation of the annual environmental safeguards report	Collect monitoring report from “Suvokova”	Near the end of years 1,3 and 5	Djizzak Province “Suvokova”	Djizzak Province “Suvokova” →UCSA

ITEM	Mitigation Measures	Monitoring Details/Also Performance Indicators	Timing	Executing Unit	Reporting Responsibility
3.3 No pumping station clean up inspection report	Djizzak Province "Suvokova" will inspect the clean- up and restoration work of the old pumping station sites and provide a short report and pictures of the work done and provide an assessment of adequacy-in consultation with local residents	UCSA to obtain report from "Suvokova"	Within 1st 6 months of operations	Djizzak Province "Suvokova"	Djizzak Province "Suvokova" →UCSA

ANNEX 5

Quarterly Compliance Monitoring Checklist for Contractor: For Construction Period

2.Construction Period Impact	Mitigation Measure	Monitoring Action	When, frequency and duration?	Output provided?	Quarterly Update?
2.1 Excessive construction-period air pollution	Emissions will be kept to a minimum by: 1. ensuring that the contractor's fleet of vehicles are properly maintained 2. Use acceptable fuel and haul loads within specified limits. 3. Vehicle idling time limits to no more than 3 minutes and 4. equipment maintenance specifications will be imposed through construction inspection and regular reporting, 5. Dust control at the construction site will be particularly stringently controlled by watering, setting strict speed limits of no more than 30kph in or near settled areas, and clean-up of paved haul roads. 6. Equipment such as the diesel generator will be included in the emission control program and will be and regularly tuned to prevent excessive TPM/soot pollution.	Inspect 6 issues as defined in EmiT and provide contractor with feedback	Monthly		
2.2 Excessive noise	Identify sensitive sites like hospitals, retirement homes, sanatoriums and urban park areas, then reduce noisy activities such as jack hammers during low noise periods and if needed set up temporary noise baffles.	Measure noise levels at sensitive receptor sites and discuss non-compliance with contractor. Noise to be measured when equipment operating, 08:00-10:00 and 15:00-16:00. Confirm that no work is done near sensitive sites after 18:30	Monthly Once a week if the construction site is in nearby households and sensitive sites.		
2.3 Inadequate use of tree clearing and replanting plan prepared during pre-construction period	Contractor to be handed the tree cutting and replanting plan at the start of construction and carefully monitored- Contractor must review, update with the PDC and Djizzak Province "Suvokova" then adhere to the plan A system of severe fines, involving replanting of mature trees, for cutting and damaging trees outside the cutting areas, will be implemented. Any installations where there are mature roadside shade	Inspect construction areas to insure that tree cutting is avoided wherever possible and organize immediate meeting with PDC chief engineer and PCU to discuss any noncompliance.	When work at a new site begins and where trees are possibly cut		

	trees, designers will be contacted to realign the sewer into the road to avoid cutting				
2.4. Poor Haul Road Maintenance	1. The contractor will need to inspect roads used for transport of earthworks every day, making sure that debris waste materials and earth has not fallen off the back of trucks generating safety concerns and dust; and that immediate clean up occur if problems are noted. 2. All such trucks will need to be equipped with covers or nets preventing spillage and reducing wind-blown dust from vehicles	Inspect haul roads at least weekly and report condition. PDC to conduct random inspections as well. Confirm that trucks hauling material that is dusty, have covers or tarpaulins.	Weekly		
2.5 Inadequate traffic management when sewer construction taking place	Traffic management will be essential since most of the sewer placement work will be in the middle or on one side of existing roads, requiring an effective traffic management operation. To that end contractors will require either automated lights or two flagmen at each major work area to help keep traffic from backing up too badly.	Drive construction roads and report on traffic management—and report excessive delays and suggest corrective actions	At all times that work is going on		
2.6 Failure to adhere to construction related good housekeeping practices, including solid and sanitary waste management and	Contractors will adhere to standard good housekeeping practices as defined in the contract Terms & Conditions and Contract Specifications. Special considerations will be given to 1. management of construction waste and water 2. equipment lubricants and fuel, including management and collection of waste oils and fuel particularly related to refuelling depots, maintenance areas and diesel generator sets Sewage will require latrines or chemical toilets with complete clean up after the construction is complete. 3. Garbage will be collected and properly disposed of after recycling and sorting, The contractor shall brief all construction workers in basic sanitation and health care issues occurring in the Djizzak area.	Inspect construction work areas and report the 3 items listed	Weekly		

2.7 Inadequate occupational health and safety measures in the workplace	1. The contractor will provide PSE such as hardhats, boots noise protection, safety vests and eye protection where necessary, such as when welding, grinding or cutting. 2. Fencing or safety ribbon will be required at every worksite, marking the boundary for safe viewing 3. Sanitary toilet, washing and eating facilities (if needed) will be provided 4. Safe potable water supply will be available at all times and within easy reach of workers 5. Industrial grade first aid kits will be at every work site	Inspect construction work areas and report on the 5 items listed	Once a quarter		
2.8 The lack of technical capacity with the contractor to implement and report on environmental safeguards, leading to the collapse of the environmental safeguards actions	At the start of the construction period, but before field mobilization the PCU and PDC will deliver a short training workshop to the contractor as well as Djizzak Province "Suvokova" staff, focusing on the EMP, the mitigation and monitoring tasks, responsibility to the public and proper documentation. Approximately 12-13 people will be involved, plus three people delivering the workshop.	Complete a meeting with contractor to determine the effects of the training workshop and if the contractor is capable to implement the EMP	At start of construction period, but 4-6 months after the technical workshop		
2.9 Failure to properly manage petroleum products such as fuel, lubricants, leading to spill and contamination.	Contractor will be required to have the following spill prevention measures in place at all work sites: 1. All fuelling to be done on a concrete surface provided with spill catch tank that can be cleaned and all spilled fuel recovered and recycled based on discussions with fuel supplier. 2. All repair and maintenance work must either be done on a concrete surface with oil spill catch basin or oil catch pans must be provided at all service areas and training provided to all 'mechanics'. 3. A fuelling areas must be equipped with proper fuel nozzles 4. All fuel tanks must have means for containment of accidental spills. 5. Any spills must be cleaned up according to RoU norms and codes within 24 hours of the occurrence, with contaminated soils and water	Inspection undertaken quarterly and report filed, addressing the 5 points listed	Quarterly		

	treated according to RoU norms and codes.				
2.10 Contractor does not provide monthly monitoring updates or quarterly monitoring checklists or semi-annual summary reports or final construction period EMP implementation report.	At start of construction period the contractor will be given and schedule for report submission and during the training period samples of the reports required will be presented.	Remind contractor of this requirement and collect reports	As per the reporting schedule		
2.11 Post sewer installation rehabilitation and landscaping	Immediately after the placement if a section of sewer the contractor must immediately rehabilitate and re-landscape the area to preconstruction conditions, including re-establish access .	Inspection of all installation sites, interview with local people to gauges how well the rehabilitation was done-prepare checklist-type report	All sites immediately after contractor leaves the site		
2.12. Pumping station Spill Damage-rehabilitation	All existing pumping stations have spilled untreated sewage in a large area around the pump site. As part of the repair and rehabilitation each site will be full cleaned up and re-landscaped in consultation with local residents.	Prepare 1-pg inspection report and photos of rehabilitation and record of interviews with local people	As soon as work is completed		
2.13. Industrial enterprises not complying with pretreatment requirements	At the start of the final construction year, PDC and PCU will provide a detailed briefing to contractor on effluent pre-treatment requirements and the provisions of Decree No.11 as it applies to the industries	Maintain record of briefing and content of material and attendance	One time		

ANNEX 6

Updated Mitigation, Monitoring and Special Survey Cost Estimates

DJIZAK SANITATION SYSTEM DEVELOPMENT PROJECT
Djizak Sewerage Project Environment Mitigation & Monitoring
Detailed Costs

	Unit	15,13 Quantities	Unit Cost (US$ '000)	Base Cost (US$ '000)	Parameters (in %) Phy. Cont. Rate	Gross Tax Rate
I. Investment Costs						
A. Pre-Construction Period (12 months)						
1. Design and Deliver a Training Workshop in EMP						
a. Preparation of materials						
National expert	days	7	0,1	0,70	10,0	24,0
b. Logistics and materials	ls	1	0,1	1,00	10,0	16,0
c. Delivery of training workshop						
International resources	2 day	1	0.25/day	0,50	10,0	0,0
National trainers	2 day	1	0.1/day	0,20	10,0	24,0
2. Carry out Pre-construction activities						
a. Translation of materials by UCSA						
Translator	6 days	1	0.1/day	0,60	10,0	24,0
b. Inclusion of environmental specs in Bid Documents						
National expert	5 day	1	0.1/day	0,50	10,0	24,0
c. Contractor prequalification check (including interview)						
National expert	day	1	0.1	0,10	10,0	24,0
d. UCSA advice to PMU & CSC on checklist						
National expert	0.5 day	1	0.1/day	0,05	10,0	24,0
e. Basic traffic management plan preparation						
National expert	14 day	1	0.1/day	1,40	10,0	24,0
f. Notification of limited access and restoration						
National expert	5 day	1	0.1/day	0,50	10,0	24,0
g. Tree inventory, cutting and replanting plan						
National expert	10 day	1	0.1/day	1,00	10,0	24,0
Subtotal				6,55		
B. Construction Period (24 months)						
1. Activities undertaken by Mitigation & Monitoring Consultant						
a. Emmissions and dust monitoring and contrail						
National expert /a	4 days	4	0.1/days	1,60	10,0	24,0
b. Identification of sensitive sites and noise control measures						
National expert /b	5 days	8	0.1/days	4,00	10,0	24,0
c. Implement tree cutting and replanting plan						
National expert /c	20 days	20	0.05/days	20,00	10,0	24,0
d. Field testing activities						
Noise measurement /d	20 days	32	0.01/days	6,40	10,0	16,0
Noise metre and calibration unit	ls	1	1.6	1,60	10,0	24,0
Expenses	ls	1	2	2,00	10,0	16,0
Subtotal				35,60		
C. Miscellaneous expenses						
1. Design and Deliver a Training Workshop in EMP						
a. Preparation of materials						
National expert	8 days	1	0.3/days	2,40	10,0	24,0
b. Logistics and materials	ls	1	8	8,00	10,0	16,0
c. Delivery of training workshop						
International resources	3 day	4,5	0.25/day	3,38	10,0	16,0
National trainers	3 day	4,5	0.1/day	1,35	10,0	24,0
Subtotal				15,13		
D. Post-commissioning Period (years 1, 3, and 5)						
1. UCSA/PMU support to Vodakanal Chief Engineer						
a. Advise on tree planting and landscaping						
National consultants /g	6 day	2	0.1/day	1,20	10,0	24,0
b. Preparation of annual environmental safeguards report						
National consultants /h	0.5 days	2	0.1/day	0,10	10,0	24,0
c. Support to preparation of annual sludge management plan						
National consultants /i	0.5 day	2	0.1/day	0,10	10,0	24,0
d. Environmental reporting						
National consultants /j	20 day	2	0.1/day	4,00	10,0	24,0
Subtotal				5,40		
E. Special Monthly Effluent Monitoring Programme						
1. Preconstruction sampling and testing (one sample/location)	1 time	1 sample x 2 location	205	0,41		
2. Construction (Quarterly) sampling and testing (one sample/location)	10 quarter	1 sample x 3 location	205	6,15		
3. Operation (Monthly) sampling and testing /k	24 mth	1 sample x 5 location	205	32,18	10,0	16,0
Total				94,84		

\a Four cycles per year of two days for two years.
\b Four cycles per year of five days for two years by one consultant.
\c One cycle per year of 60 days for two years by 10 consultants.
\d Twenty sample stations with eight samples four times a year for two years.
\e Sixteen sampling stations, three samples, two replications with testing for six parametres.
\f Sixteen sampling stations, three samples, two replications with testing for six parametres.
\g Two cycles per year with 3 days per cycle
\h One cycle per year with 0.5 days per cycle
\i One cycle per year with 0.5 days per cycle
\j One cycle per year for three years with 20 person days per cycle
\k Monthly monitoring for the first two years of operational phase at five sampling stations with one sample tested for c.20 parameters

ANNEX 7

RESOLUTION OF THE CABINET OF MINISTERS
OF UZBEKISTAN
03.02.2010
N 11
ABOUT ADDITIONAL MEASURES
ON IMPROVEMENT NATURE PROTECTION ACTIVITIES
IN COMMUNAL SECTOR
(Extracts)

For the purpose of further enhancement of economic mechanism of environmental management, improvement of environment, improvement of work and financial condition of water supply and sewerage enterprises the Cabinet of Ministers **DECIDES:**

1. To accept the proposal of the State Nature Protection Committee, the Ministry of Economy, the Ministry of Finance of the Republic of Uzbekistan, the Uzbek Agency "Uzkommunkhizmat" about determination of legal entities and individuals who are engaged in business activity without establishing a legal entity and who discharge industrial waste waters in to municipal sewerage networks of cities and other settlements and who are payers of compensation payments for environmental pollution and allocation of wastages in the territory of the Republic of Uzbekistan regarding above-standard discharges of contaminants (further - compensation payments).

2. Compensation payments by water supply and sewerage enterprise for discharge of pollutants shall be calculated excluding the amounts billed to their customers for above-standard discharge of pollutants in to municipal sewerage networks

3. To determine that:

- monitoring of above-standard discharge of contaminants in to municipal sewerage networks of cities and other settlements is assigned to water supply and sewerage enterprises;
- compensation payments are levied by entities of State Nature Protection Committee of the Republic of Uzbekistan based on information of special laboratories of water supply and sewerage enterprises and calculations by payers of compensation payments in accordance with the established procedure;
- compensation payment amounts levied for above-standard discharge of contaminants in to municipal sewerage networks of cities and other settlements shall be distributed as follows:
- 40 % – to nature protection funds for their using according to the Regulations on nature protection funds approved by the resolution of the Cabinet of Ministers of N 246 from May 24, 1993 (amended at 2010);
- 60 % - to the National Budget.

4. To approve the RULES of acceptance of industrial effluents and procedure for calculation of compensation payments for above-standard discharge of pollutants in to communal sewerage networks of cities and other settlements of the Republic of Uzbekistan according to the Appendix No. 1.

5. Water supply and sewerage enterprises who operate communal sewerage networks and treatment facilities of cities and other settlements in one month period shall prepare and agree with ++++provincial divisions of the Nature Protection Committee of Uzbekistan list of legal entities and

individuals who are engaged in business activity without establishing a legal entity and who discharge industrial waste waters in to municipal sewer networks of cities and other settlements as well as ensure regular update of this list.

6. To modify and change some decisions of the Government of the Republic of Uzbekistan according to the Appendix No. 3.

7. The Uzbek Agency “Uzkommunkhizmat” and other involved ministries and agencies in one month period shall submit to the Cabinet of Ministers their proposals on changes and modifications to the legislation based on this Decree.

8. To assign the Deputy Prime Minister of the Republic of Uzbekistan Mr. B.Khodjaev with monitoring implementation of this Decree.

Prime-Minister of
the Republic of Uzbekistan **Sh. Mirziyoev**

Appendix N 1
to the Resolution of the Cabinet of
Ministers of Uzbekistan
N 11 dated 03.02.2010

The RULES of Acceptance of industrial effluents and procedure for calculation of compensation payments for above-standard discharge of pollutants in to communal sewerage networks of cities and other settlements of the Republic of Uzbekistan

I. GENERAL CONDITIONS

1. These Rules establish uniform rules of acceptance of industrial effluents and procedure for calculation of compensations for above-standard discharges of pollutants into communal sewerage network of cities and other settlements of the Republic of Uzbekistan.

2. These Rules shall apply:

i) during issuance technical requirements for discharge of industrial effluents by customers in to municipal sewerage systems of cities and other settlements

ii) during development of drafts of communal-environmental standards for existing, designed and reconstructed enterprises;

iii) by regional entities of the State Nature Protection Committee (hereinafter - Goskompriroda) during levy compensations payments from customers for above-standard discharge of pollutants in to communal sewerage networks;

iv) during acceptance and treatment of industrial effluents discharged in to sewerage systems of cities and other settlements.

3. Glossary:

4. These Rules are aimed at ensuring:

i) protection of surface waters from pollution by industrial and domestic effluents;

ii) effective work of treatment facilities and safe operation due to proper organization of acceptance of industrial effluents in to sewerage network of cities and other settlements.

5. Water supply and sewerage enterprises who are owners of industrial effluent treatment facilities of cities and other settlements in coordination with regional entities of "Goskompriroda" shall approve communal-environmental standards for discharge of industrial effluents in to sewerage networks based on Maximum Permissible Concentrations of pollutants permitted for customers who are engaged in business activity and who discharge industrial effluents in to communal sewerage networks of cities and other settlements according to sanitary rules and standards.

Communal-environmental standard shall be developed for 5 years and shall be effective during the period of conservation of water balance and during effectiveness of quantitative and qualitative structure of discharging effluents.

II. CONDITIONS OF ACCEPTANCE OF INDUSTRIAL WASTEWATERS INTO MUNICIPAL SEWERAGE NETWORKS OF CITIES AND OTHER SETTLEMENTS

6. Industrial effluents which are treated on local treatment facilities of customers up to the requirements of communal-environmental standards and do not cause disturbances for operation of sewerage networks and sewerage treatment plants shall be accepted in to communal sewerage systems of cities and other settlements.

7. It is prohibited to discharge the following in to communal sewerage networks of cities and other settlements without pre-treatment on local treatment facilities of customers including:

i) industrial effluents of customers which contain substances that can clog pipes, wells, grids or deposit on pipe walls, wells, racks (scale, lime, sand, gypsum, metal chips, remains of animals and other wastes of organic origin);

ii) construction and household wastes and other industrial and household waste; conditionally clean drains which are not regulated by communal-environmental normative; waste waters containing dyes;

iii) surface effluents from territory of industrial sites (rain, melt, irrigation-washing water and others) and drainage waters due to reduction of ground water level on industrial sites and territories (for universal sewerage system or partially separate sewerage system);

iv) substances that have destructive effect on to pipe materials and technological networks of sewerage treatment facilities; harmful substances in concentrations preventing the biological treatment of industrial effluents; dangerous bacterial contaminants; insoluble derivatives of petroleum products; biological hard-oxidizable organic and surface-active substances and minerals;

v) discharge of industrial effluents whose flow and composition may lead to exceed of permissible norms for volume and quantity of pollutants into water body;

vi) industrial effluents with temperature more than 40°C, pH lower than 6.5 or more than 9, COD more than BOD_5 more 2.5 times or BOD_{full} more than 1.5 times – not exceeding 500 mg/L, weighted and floating substances in concentrations exceeding 500 mg/L; substances for which Maximum Permissible Concentrations are not established for discharging to sewerage networks;

vii) acids, hot impurities and dissolved toxic gaseous substances, in particular, solvents (benzene, diethyl ether, dichloromethane, benzene and other), dyes, can form toxic gases in sewerage networks and treatment facilities (hydrogen sulfide, carbon disulfide, carbon oxide, hydrocyanic acid, a pair of volatile aromatic hydrocarbons and other); other explosive and flammable substances, toxic mixtures, concentrated mother and distillation solutions as well as waste waters containing radioactive substances.

8. If there is no special sewerage system for reception of industrial effluents containing radioactive substances they shall be accepted into sewerage system of city or other settlement in accordance with the rules of radioactive safety and sanitary rules for work with radioactive substances and with other sources of ionizing radiation.

9. Discharges of industrial effluents in municipal sewerage system of cities and other settlements whose interaction can lead to:

- formation of emulsions,
- poisonous or explosive gases
- large number of insoluble substances (for example, industrial effluents containing salts of calcium or magnesium and alkaline solutions; soda and acidic water; sodium sulfide and water with excessive content of alkali chlorine and phenol)

are prohibited.

10. During calculation of limits of maximum permissible discharge of pollutants in to industrial effluents which will be accepted to sewerage network of cities or other settlements, water supply and sewerage enterprises shall take into account the following:

i) permissible content of organic origin substances which are in suspended, colloidal and dissolved state expressed in a generic indicator of BOD_5, BOD_{full} which should be determined by calculating way. At the same time, BOD_5 of industrial effluents must not exceed maximum rated BOD_5 adopted during design of these facilities;

ii) allowable concentrations of pollutants removed at treatment facilities of settlements shall be determined taking into account:
   a. condition of discharge of treated industrial effluents in to water bodies specified in permission for special water use or within limits of maximum permissible discharge for such water body;
   b. appropriate type of water use depending on effectiveness of removal of pollutants of industrial effluents at treatment facilities of settlements;
   c. proportion of volume of urban and industrial effluents flowing in to sewerage systems of settlements;

iii) standards of maximum permissible concentrations of pollutants in discharge of industrial effluents in to sewerage networks according to Appendices 1 and 2 of these Rules;

iv) allowable concentrations of substances which are not recyclable and cannot be neutralized at treatment facilities which are designed, based on limits for maximum permissible discharge into sewerage system taking into account dilution of calculated ratio of volumes of domestic and industrial effluents.

11. Industrial effluents must be discharged into communal sewerage systems of cities and other settlements through separate outlets equipped with control manhole located outside the territory of customer. Such outlets of industrial, transport, construction and other enterprises shall be equipped with devices (bridges, automatic samplers, flow meters and if necessary with sealing automatic stopping devices) to ensure permanent control over discharge and quality of industrial effluents at each outlet.

12. If quantity and composition of industrial and domestic waste waters vary within 24 hours, customers must install special balancing tanks that ensure even discharge of industrial effluents in to sewerage network during 24 hours.

13. Technological effectiveness of city treatment facilities shall be determined by comparing design indicators and actual indicators of treatment of industrial effluents. If design data is not available and in case of deviation of flow and composition of industrial effluents from design parameters of enterprise, water supply and sewerage enterprises shall determine estimated values of standard indicators of work of treatment facilities.

14. Effectiveness of treatment facilities is determined based on analysis of submitted (average-daily) samples of industrial effluents. Schedules of sampling shall be agreed with regional entities of Goskompriroda and sanitary-epidemiological stations of the Ministry of Health of Uzbekistan.

15. Estimated values of specific indicators of treated industrial effluents shall be determined taking into account their concentrations and effectiveness of removal at treatment facilities.

III. ORDER OF ISSUANCE OF TECHNICAL TERMS OF REFERENCE FOR DISCHARGE OF INDUSTRIAL EFFLUENTS

16. The following are the basis for issuing technical requirements for discharge of industrial effluents in to communal sewerage networks of cities and other settlements:

i) for repeatedly constructed and reconstructed customers – design documentation agreed with water supply and sewerage enterprises;
ii) for current customers – communal-environmental normatives for discharge in to sewerage network approved according to established procedure (Appendix N 3 of these Rules);
iii) layout of local treatment facilities, layout of in-site sewerage network with indication of discharge point to communal sewerage system of cities and other settlements and with indication of their numbers, normatives of qualitative composition of discharging industrial effluents and their volumes including those of sub-customers;
iv) results of analysis of industrial effluents before and after local treatment facilities on discharge points in to sewerage networks of city and other settlement based on average and maximum indicator of volume pollutants.

17. Technical requirements shall be issued free of charge within 3 days after receipt of application.

18. New customers and repeatedly commissioned facilities shall be connected to sewerage networks of cities and other settlements only after their local treatment facilities are put in to

operation which can ensure treatment of industrial effluents up to the level acceptable for their acceptance in to sewerage treatment facilities.

19. “Water supply and sewerage” and “Environmental Impact Assessment” sections of design documentations for construction and reconstruction of enterprises shall be agreed by water supply and sewerage enterprises.

20. A contract for water supply and discharge of industrial effluents shall be made between water supply and sewerage enterprises and customers based on technical requirements for discharge of industrial effluents in to communal sewerage systems of cities and other settlements.

IV. PROCESS OF CONTROL OF DISCHARGE OF INDUSTRIAL EFFLUENTS

21. A customer shall ensure permanent internal monitoring of volumes and qualitative content of industrial effluents discharged in to sewerage system of city or other settlement as well as condition of in-site sewerage networks of enterprises.

22. Monitoring shall be implemented through sampling and analysis of industrial effluents on entry and outlet of local treatment facilities, in control manholes right before discharge in to sewerage system of city or other settlement. Also, during monitoring process, volumes of discharging effluents shall be metered in control manholes and in mostly responsible points of industrial sewerage network.

23. Customers are obliged to submit to water supply and sewerage enterprises information on volume, quality and content of industrial effluents and mode of discharge. Date of submission of report data and template of report shall be agreed by a contract between customer and water supply and sewerage enterprise. Customer shall be responsible for reliability of submitting report data.

24. Water supply and sewerage enterprises together with regional entities of Goskompriroda shall ensure necessary monitoring of compliance of industrial effluents discharged by customers to approved communal - environmental standards approved for a customer.

25. Any cases of worsening of quality of treatment of industrial effluents, volley discharges, implementation of accident-rehabilitation works customers shall immediately informed to water supply and sewerage enterprises as well as to regional entities of “Goskompriroda”.

26. Customers who discharge industrial effluents in to communal sewerage systems of cities and other settlements are obliged to ensure for water supply and sewerage enterprises possibility for collecting samples of industrial effluents at any time of 24 hours and provide necessary data on quality and volume of discharged industrial effluents, provide devices and equipment and provide assistance of operation personnel for taking samples.

27. Specialized laboratories of water supply and sewerage enterprises shall monitor discharge of industrial effluents.

28. If water supply and sewerage enterprise determines high concentration of pollutants in city waters resulted by discharge of industrial effluents that can disturbs technological order of treatment facilities, the water supply and sewerage enterprise must immediately inform regional entities of Goskompriroda and Ministry of Health of the Republic of Uzbekistan. At the same time water supply and sewerage enterprise shall search for source of high pollution.

V. PROCESS OF CALCULATION OF COMPENSATIONS FOR

ABOVE-STANDARD DISCHARGE OF EFFLUENTS IN TO SEWERAGE NETWORKS OF CITIES AND OTHER SETTLEMENTS

29. Compensation payments for above-standard discharge of pollutants shall be determined according to the Decree of the Cabinet of Ministers dated 1 May 2003, No. 199 “On improvement system of payments for environmental pollution and allocation of wastes on the territory of the Republic of Uzbekistan” taking into account specifications provided in this section.

30. Quarterly, up to 5th day of month, special laboratories of water supply-sewerage enterprises shall submit to regional entities of “Goskompriroda” information on customers’ non-compliance with requirements of discharge of industrial effluents in to communal sewerage network according to the Appendix N 4 of these Rules.

31. Regional entities of “Goskompriroda” based on information submitted by water supply and sewerage enterprises shall calculate and recover payments from customers for over-standard discharge of pollutants in to communal sewerage networks in accordance with the legislation and these Rules.

32. Based on results of reporting period, water supply and sewerage enterprises shall agree with regional entities of “Goskompriroda” the calculations of compensation payments for discharge of pollutants in to open water bodies or to relief and shall make the payments, excluding amounts of payments charged to their customers for above-standard discharge of pollutants in to communal sewerage networks.

33. Special Inspections of Analytical Control (hereinafter - SIAK) under regional entities of “Goskompriroda” (in order of coordination and provision methodological assistance to water supply and sewerage enterprises) have right to monitor quality of treated industrial effluents customers before their discharge in to communal-sewerage networks. Such monitoring shall be implemented no more than once in month if there is no special approval of regional commissions of National Council for Coordination Activities of Controlling Organizations.

34. In cases of disagreement between water supply-sewerage enterprises and their customers regarding reliability of laboratory analysis of industrial effluents, a decision shall be taken by SIAK of regional entities of “Goskompriroda”.

35. In case of unauthorized discharge of rain waters in to communal sewerage systems of cities and other settlements, a customer shall be charged as follows: 3 x current tariff for discharge of industrial effluents. Such calculation is made based on area of organization and meteorological data.

36. For customers who discharge in to communal sewerage networks pollutants above permitted concentration specified in Appendix No.1 of these Rules, the accrual compensation payments with increase ratio of 2.0 (and increase ratio of 5.0 for those which are specified in Appendix No.2 of these Rules) shall be applied during calculation of compensation payments for discharge of industrial effluents in to communal sewerage networks.

VI. RESPONSIBILITIES FOR VIOLATION OF THESE RULES

37. Customers shall be responsible for violation of the Rules regarding discharge of insufficiently treated industrial effluents in to water bodies as well as for breakdowns or accidents that occurred on industrial treatment facilities; for discharge of chemicals and other substances and materials used in technological process of customer and not regulated by these Rules.

Responsibility of customer for compliance with requirements of these Rules shall be determined in accordance with the legislation.

38. Customers shall ensure adoption of measures for preventing violation of requirements specified by communal - environmental regulations regarding discharge of industrial effluents into sewerage system of cities or settlements. In case of such violation, a customer shall immediately stop discharge of polluted industrial effluents in to sewerage system of city and other settlement.

39. It is prohibited to connect a new customer to existing sewerage system of city and settlement without endorsement by water supply and sewerage enterprise.

40. In case of determination of customer's violation of the Rules, water supply and sewerage enterprises shall prepare an act and shall notify regional entities of "Goskompriroda" on the revealed case of violation.

41. Regional entities of "Goskompriroda" shall issue order to customer for elimination of violations including specifying amount of compensation.

In case of evasion from execution or improper execution of issued order, the case shall be brought to court.

42. Water supply and sewerage enterprises have right to present claims and bring an action against customers for damages incurred to communal sewerage systems as well as for violations of technological regulations of treatment of industrial effluents.

Appendix N 1
to the Rules

Maximum concentrations of pollutants in industrial effluents permitted to discharge to communal sewerage networks

N	Substance	Concentration (mg/L)
1.	Aniline	2,57
2.	Atsetaldigid	8,58
3.	Acetone	17,16
4.	Barium	0,44
5.	Benzoic acid	5,43
6.	Glycerol	38,6
7.	Vegetable and animal fats	5,0
8.	Caprolactam	10,73
9.	Xylol	1,0
10.	Paints sulfa	10,7
11.	Molybdenum	1,0
12.	Metazin	12,9
13.	Methanol	1,0
14.	Methylstyrene	0,1
15.	Polyacrylamide	2,0
16.	Resorcinol	0,18
17.	Carbon bisulfide	5,0
18.	Synthetic Surface Active-Substances anionic	20,0
19.	Styrene	0,56
20.	Sulfides	1,0
21.	Antimony	0,2
22.	Thiourea	0,13
23.	Titan	0,1
24.	Toluene	2,8
25.	Tricresyl	0,03
26.	pH	6,5-8,5

N	Substance	Concentration (mg/L)
27.	Suspended particles	500
28.	Dry residue	2000
29.	Total nitrogen	30,0
30.	Ammonia nitrogen	2,5
31.	Nitrite nitrogen	3,3
32.	Nitrate nitrogen	45,0
33.	Ammonium ion	2,5
34.	Chlorides	350
35.	Phosphates	2,5
36.	Fluoride ion	1,5
37.	COD	500
38.	BOD_{20}	15-30
39.	BOD5	11,3-22,6

Appendix N 2
to the Rules

APPENDIX N2: LIST
of very toxic pollutants

N	Pollutant	Concentration (mg/L)
1.	Aluminum	0,75
2.	Pentavalent vanadium	0,1
3.	Bismuth	15,0
4.	Iron (ion fe + +)	5,0
5.	Ferrous iron sulphate	0,5
6.	Cadmium	0,1
7.	Cobalt	0,1
8.	Manganese	30,0
9.	Copper	1,0
10.	Arsenic	0,1
11.	Oil and oil products	1,0
12.	Nickel	0,5
13.	Tin	20,0
14.	Mercury	0,001
15.	Lead	0,1
16.	Selenium	0,01
17.	Strontium	18,0
18.	Phenol	0,05
19.	Formaldehyde	0,6
20.	Trivalent chromium	0,5
21.	Hexavalent chromium	0,1
22.	Cyanide	0,64
23.	Zinc	1,0

Appendix N 3
of the Rules

APPENDIX N 3.
COMMUNAL-ENVIRONMENTAL STANDARD FOR DISCHARGE TO SEWERAGE NETWORK: [Forms]

_____
(Name of enterprise)

"AGREED"
by Head of nature
protection entity

_____
Signature
STAMP

"APPROVED"
by Chief Engineer of
Water Supply-Sewerage
Enterprise

_____
Signature
STAMP

Communal-environmental normative

_____

Reference number N _____ dated _____ 20__ .
valid until _____ 20__.

signature of responsible person
_____ STAMP
validity period extended up to _____ 20__.
day, month, year

Signature of responsible person
_____ STAMP
validity period extended up to _____ 20__ г.
day, month, year

Signature of responsible person
_____ STAMP
Permission for special water use N ____ dated _____ 20__.

valid untill _____ 20__.

Communal-environmental standard of concentration of matters entering in to sewerage with discharging effluents

1. Organization _____
_____
2. Departmental subordination _____
3. Mailing address of water user _____
_____
4. Discharge _____ category of effluents _____
Discharge _____ category of effluents _____
Discharge _____ category of effluents _____

5. Category of water using _____
6. Actual discharge effluents _____ m3/hour
7. Approved discharge of effluents for establishment of normatives
_____ m3/hour
8. Approved limit standard for discharge and content of discharging effluents (discharge of effluents not indicated below are prohibited for discharge)

Indicators of effluents' composition	Actual concentration mg/L	1. Actual 2. discharge g/hour	Permitted concentration g/hour	Approved standard
1	2	3	4	5

1. Suspended matters
2. Mineral composition
3. Chloride
4. Sulfates
5. Total BOD, etc.

9. Approved properties of effluents:
a) floating contaminants (substances) _____
b) odor, taste _____
c) color_____
d) temperature _____
d) reaction (pH) _____
e) Coli index _____
g) Dissolved oxygen _____
10. _____ Other Conditions

Temporarily agreed limits for discharge of matters

with effluents

Data	Limit						Standard	
	20		20		20		gr/ m 3.	gr./ day.
	gr/ m 3.	gr/ m 3.	gr/ m 3.	gr/ m 3.	gr/ m 3.	gr/ day.		
1	2	3	4	5	6	7	8	9

1. Implemented action plan for phased achievement standard levels
2. Wastewater flow m.3/day.
3. Effluents indicators
4. Suspended matters
5. BOD.

_____
(The official responsible for water, signature, full name)

Numbers of action plan stages for phased achievement of standard levels shall be indicated

Water use

Intake, transfer and use of water in the year ___ (reporting data) thnd.m3/year									
Water use				Waters from other enterprises	Water transferred to other enterprises	Water use			
Total	Including					Total	Including:		Volume of turnover water supply
	Surface waters	Ground waters	City water pipe				domestic/ drinking needs	Industrial needs	
1	2	3	4	5	6	7	8	9	10

Sewerage (reported data)

Intake, transfer and use of water in the year ___ (reporting data) thnd.m3/year									
Water use				Waters from other enterprises	Water transferred to other enterprises	Water use			
Total	Including					Total	Including:		Volume of turnover water supply
	Surface waters		Surface waters				domestic/ drinking needs	Industrial needs	
1	2	3	4	5	6	7	8	9	10

Discharge of effluents in to city sewerage system or cesspool

Year	Total	Including:							
		нормативно чистых без очистки	polluted			Treated on facilities up to standards			
			total	including		total	Including		
				without treatment	insufficiently treated		Biological treatment	physical-chemical	Mechanical
1	2	3	4	5	6	7	8	9	10

Specifications of treatment facilities

Year	Name of treatment facilities and method of treatment	Carrying capacity m3/day.		Treatment efficiency				
				Ingredients	Design concentration		Concentration (actual)	
		Design	Actual		received mg/l	discharged mg/L	received mg/l	discharged mg/L
1	2	3	4	5	6	7	8	9

Calculation of standards

Indicators of effluents	Concentration of pollutants entering the treatment plant	Treatment efficiency				Standard mg/L	Standard g/L
		Actual		Standard			
		concentration of pollutants on entry mg/L	concentration of pollutants on outlet mg/L	concentration of pollutants on entry mg/L	concentration of pollutants on outlet mg/L		
1	2	3	4	5	6	7	8

Actual discharge of effluents – m3/day; Design Discharge of effluent m3/day

ACTION PLAN
for achievement standard parameters of effluents treatment

Actions	Specification (volume, capacity etc.)	Estimated cost	Implementation period	Executors	Expected result
1	2	3	4	5	6

Head of enterprise _____ _____

(Name) (Stamp)

Environmental specialist of
enterprise _____
(Name, Office telephone)

APPENDIX 4
TEMPLATE OF TABLE ON INFORMATION ABOUT VIOLATION OF THESE RULES OF ACCEPTANCE INDUSTRIAL EFFLUENTS IN TO SEWERAGE NETWORKS

____ quarter 20___

_____
(name of WSS enterprise)

N	Name of enterprise	Name of pollutants	Volume of discharge of effluents (m3/day)		Concentration of pollutants (mg/l)		Date laboratory sampling
			Permitted	Actual	Limit	Actual	
1	2	3	4	5	6	7	8

Head of communal
sewerage enterprise _____

Head of specialized
laboratory _____

"___" _____ 20___ _____ (STAMP)

ANNEX 8

Conclusion of the State Ecological Expertise

ЖИЗЗАХ ВИЛОЯТИ
ТАБИАТНИ МУХОФАЗА
КИЛИШ КУМИТАСИ
ДАВЛАТ ЭКОЛОГИК
ЭКСПЕРТИЗАСИ

JIZZAX VILOYATI
TABIATNI MUHOFAZA
QILISH QO'MITASI
DAVLAT EKOLOGIK
EKSPERTIZASI

Директору
ЧП «SUVOQAVA-XIZMAT»:
В.М.КАРМАЗИНУ.

Копия: Начальнику отделу по охране природы г.Джизака.

ЗАКЛЮЧЕНИЕ
ГОСУДАРСТВЕННОЙ ЭКОЛОГИЧЕСКОЙ ЭКСПЕРТИЗЫ

г. Джизак № 755-9 от "14" августа 2014 г

По объекту: Проект заявления о воздействии на окружающую среду (ЗВОС) реконструкция канализационных сетей и очистных сооружений города Джизак.

Заказчик: ЧП «SUVOQAVA-XIZMAT».
Разработчик: ЧП «SUVOQAVA-XIZMAT».

На государственную экологическую экспертизу представлены материалы первого этапа оценки воздействия на окружающую серу (ЗВОС) реконструкция канализационных сетей и очистных сооружений города Джизак.

Джизакская область находится в центральной части Узбекистан между реками Сырдарья и Зеравшан. Площадь территории области 21,21 тыс.кв.км. Джизакская область граничит на севере с Республикой Казахстан, на востоке с Сырдарьинской областью, на западе – с Самаркандской и Бухарской областями.

Население: 1205,0 тыс.чел. (по состоянию на 1 января 2013 г). Районы: Арнасай, Бахмаль, Галляараль, Джизак, Дустлик, Заамин, Зарбдор, Зафарабад, Мирзачуль, Пахтакор, Фариш и Янгиобод.

Административный центр: город Джизак расположен в долине реки Санзар, у северного подножия гор Нурота, южной части Мирзачульской степи, в 180 км к юго-западу от Ташкента, в 90 км к северо-востоку от Самарканда. Город граничит с Джизакским и Галляаральскими районами Джизакской области. Площадь территории города 9460 га.

В систему канализации г.Джизака принимаются хозяйственно-фекальные стоки от населения, общественных и коммунальных учреждений, хозяйственно-бытовые и производственные стоки промышленных предприятий города и р/ц Уч-Тепа.

В настоящее время сеть распределения воды состоит из 40 км магистральных водоводов диаметром от 800 мм до 300 мм и 160 км сетей распределения. Система водоснабжения города Джизак эксплуатируется предприятием «Сувокова» города Джизак.

Общее количество домовладений и квартир в г.Джизаке, обслуживаемых предприятием «Жиззах Оковасув» составляет 12781.

Численность населения, обеспеченного канализацией, в г.Джизаке составляет 37,768 тыс. человек, в р/ц Уч-тепа, чьи стоки также должны направляться на Джизакские очистные сооружения – 1,876 тыс.человек.

Охват населения централизованными системами водоотведения в настоящее время составляет по г.Джизаку 23,6 % по р/ц Уч-Тепа -15 %.

Таким образом, большая часть населения города и райцентра использует в качестве канализации выгребные ямы или септики и туда сбрасывают сточные воды.

Реализация проектного решения по компоненту строительство, реконструкция канализационных сетей, насосных станций и КОС приведет к улучшению качества отводимых сточных вод, что благоприятно повлияет на окружающую среду и здоровье населения.

Мощность существующей системы канализации – 50 тыс. $м^3$/сут. по данным 2013 г. в систему поступило – 10,63 тыс. $м^3$/сут сточных вод, в том числе:

- от населения – 7,04 тыс.$м^3$/сут;
- от бюджетных организаций – 1,94 тыс. $м^3$/сут;
- от прочих оптовых потребителей – 1,65 тыс.$м^3$/сут.

Объем сточных вод, принимаемых со стороны канализационного очистного сооружения в марте 2014 г. оценивались в среднем объемах в пределе 10,0 тыс. $м^3$/сутки.

Были изучены и оценены три варианта развития системы канализации (варианты по очистным сооружениям рассматриваются отдельно):

Вариант 1: реконструкция 16,75 км существующих аварийных канализационных коллекторов; строительство 11,8 км новых напорных линий от насосных станций, самотечных коллекторов до ОС, реконструкция трех существующих КНС, ликвидация одной временной КНС и строительство взамен новой КНС.

Вариант 2: реконструкция 16,75 км существующих аварийных канализационных коллекторов плюс строительство 45,8 км новых канализационных коллекторов в районах города, не охваченных услугами канализации, реконструкция трех существующих КНС, ликвидация одной временной КНС и строительство взамен новой КНС.

Вариант 3: реконструкция 16,75 км существующих канализационных коллекторов плюс строительство 102 км новых канализационных коллекторов в районах города, не охваченных услугами канализации, реконструкция трех существующих КНС, ликвидация одной временной КНС и строительство взамен новой КНС.

Ввод объектов в эксплуатацию намечен в 2019 году.

Данным проектом предусмотрено:

- реконструкция 16,75 км канализационных коллекторов и сетей, находящихся в аварийном состоянии;
- строительство 35,77 км канализационных коллекторов и 10 км распределительных сетей;
- реконструкция 3-х канализационных насосных станций перекачки сточных вод, находящихся в аварийном состоянии;
- строительство 1 канализационной насосной станции перекачки сточных вод;
- строительство очистных сооружений канализации мощностью 30,0 тыс. $м^3$/сутки (1 очередь с учетом 2020 г) для обеспечения нормативной очистки сточных вод г.Джизака;
- оснащение ПУ «Сувокова» г.Джизака необходимыми машинами и механизмами для промывки канализационных сетей и ликвидации аварий и лабораторным оборудованием для анализа качества очистки сточных вод;
- институциональное усиление управленческого и инженерно-технического персонала ПУ «Сувокова», эксплуатирующих системы канализации.

Строительство канализационных очистных сооружений г.Джизак мощностью 30 тыс.$м^3$/сутки (I очередь). Существующие сооружения на площадке очистных сооружений находятся в аварийном состоянии, реконструировать их или осуществлять новое строительство в пределах существующей площадки невозможно, т.к. невозможно обеспечить зону санитарной охраны очистных сооружений 500 м (на территории зоны санитарной охраны старых КОС построен жилой поселок).

В результате анализа существующего положения, с учетом требований Азиатского банка развития, принято решение о выделении нового участка под строительство очистных сооружений размером 31,2 га.

Строительство канализационных очистных сооружений включает в себе строительство:

- главная насосная станция;
- песколовка горизонтальная с 2 отделениями – 1 шт;
- первичные отстойники Д=30 м с насосной станцией – 2 шт;
- аэротенки четырехкоридорные 60,0х4,5х4,4 (h) – 2 шт;
- вторичные отстойники Д=30 м – 3 шт;
- комплекс доочистки стоков;
- смеситель – лоток Паршаля;
- контактные резервуары;
- аэробные стабилизаторы четырехкоридорные 48,0х4,5х3,2 – 2 шт;
- осадкоуплотнители Д=18 м с насосной станцией – 2 шт;
- насосно-воздуходувная станция;
- песковые площадки;
- иловые площадки;
- иловый резервуар;
- хлораторная;
- дренажная насосная станция иловых площадок;
- дренажная насосная станция песковых площадок;
- насосная станция над скважиной;
- водопроводная башня;
- контора-лабаратория;
- санпропусник;
- РММ;
- гараж;
- материальный склад;
- проходная.

В проекте предусматривается следующие методы очистки сточных вод и обработка их осадка:

1) Полная механическая очистка на:
- решетках с механическими граблями;
- песколовках горизонтальных;
- первичных радиальных отстойниках Д=30 м.

2) Полная биологическая очистка на аэротенках – вытеснителях с регенерацией активного ила и вторичных радиальных отстойниках D=30м;

3) Обеззараживания – жидкими хлором;

4) Обработка осадков – аэробная в аэробных стабилизаторах и уплотнение в осадкоуплотнителях;

5) Подсушивание осадка на иловых площадках.

Строительство сооружений будет выполнено с применением новейшего оборудования обеспечивающим:

- полную автоматизацию процесса очистки сточных вод;
- автоматизацию, гарантирующую высокую экономичность очистки, а также минимальное потребление электроэнергии и хим. Реагентов;
- обучение персонала в период реконструкции и ввода сооружений в эксплуатацию.

Реконструкция канализационных сетей и строительство очистных сооружений, практически являются природоохранными мероприятиями, но в процессе ведения работ оказывают незначительное воздействие на экологическую ситуацию на объектах

строительства, местах прокладки канализационных сетей, территорий дислокации строительных организаций.

Источниками воздействия на окружающую среду при реконструкции канализационных сетей и очистных сооружений являются: сооружения и производственные здания основной и вспомогательной технологии как материальные объекты, размещаемые в окружающей среде, к которым относятся очистные сооружения, канализационные насосные станции; технологические подземные коммуникации. Где используются бетонные, чугунные, пластмассовые, стальные трубы, реагентное хозяйство, места хранения хлора.

Ожидается, что воздействие рассматриваемого проекта на окружающую среду будет преимущественно позитивными, а отрицательные последствия будут временными.

В период проведения работ в атмосферный воздух будет привноситься неорганическая пыль и продукты сгорания от строительной и передвижной техники. Нарушится состояние грунтов, почвенно-растительного покрова. Воздействие будет временным на эти компоненты среды с обратимыми последствиями.

Ремонт и строительство канализационных коллекторов, их очистка вызовут изменения режима работы канализационных коллекторов, что возможно ухудшит санитарно-гигиеническое состояние прилегающих территорий. Воздействие будет не продолжительное по времени с обратимыми последствиями.

Анализ показывает, что реализация проектных мероприятий позволит снизить: затраты по эксплуатации и техническому обслуживанию при устранении аварий, потери сточных вод/инфильтрацию грунтовых вод, количество санитарных «удобств» на участках, энергоемкость оборудования и потребление энергии.

В процессе реализации проекта реконструкции канализационных сетей и строительство очистных сооружений будут осуществляться следующие операции:

- выемка;
- насыпь и обратная засыпка;
- монтаж, демонтаж, обработка бетонных, металлических конструкций;
- укладка канализационных труб.

В процессе проведения строительных, ремонтных работ на канализационных очистных сооружениях (КОС), распределительных узлах и канализационных коллекторах будут образовываться строительные отходы, которые требуют применения надежной системы сбора, удаления, и их минимизации.

Образующейся в процессе очистки сточных вод, отходы с песколовок и ил при его удалении могут быть источником загрязнения почвы и поверхностных и грунтовых вод.

Песок из песколовок удаляется гидроэлеватором на песковые площадки. Ил может использоваться в качестве удобрения на хлопковых полях.

Следующие отходы сформируются во время ремонтно-востановительных работ канализационной сети: отходы механической очистки коллекторов от насосов, состоящие из мусора, минеральных солей и органических веществ будут складироваться в полосе отчуждения и разравниваться бульдозером; земляные отходы от подготовки объектов для строительства коллекторов, которые будут использованы для обратной засыпки траншей; отходы материалов после ремонта поврежденных железобетонных и чугунных трубопроводов предусматривается сдавать Вторчермет или на переработку металлургический завод.

На рабочих объектах будут возникать различные типы твердых отходов, включая древесину, пластмассу, и картонные коробки из-под упаковки оборудования.

Смягчающие меры включают обеспечение контейнерами для сортировки твердых отходов. Картонные коробки под упаковки оборудования будут сдаваться в приемные пункты «Вторутильсырье», отработанную пластмассу- на ближайшие предприятия по переработке пластмасс.

Заправка горюче-смазочными материалами, обслуживание техники будет производиться исключительно на заправочных станциях, станциях техобслуживания. Использованные масла и другие жидкие загрязняющие вещества будут складироваться в специально оборудованных для них местах и вывозиться на регенерацию на ближайшую нефтебазу.

Площадка строительства после окончания строительных - монтажных работ должны быть очищены от мусора и благоустроены. В случае разрушения асфальтового покрытия улиц необходимо будет выполнить его восстановление.

При необходимости вывоза и складировании излишнего грунта требуется получение разрешения управления городской или областной архитектуры с указанием места складирования.

При завозе щебня, гравия, песка для строительных работ, также требуется получение разрешения на использования площадок и карьеров. При проведении строительных работ транспортные перевозки должны осуществляться строго по выделенным проездам, чтобы исключить возможность разрушения плодородных слоев почвы.

Необходимо создание санитарных условий для строителей и их медицинское обслуживание. Контролеры участков обязаны ежедневно производить обходы площадок строительства и близлежащих территорий с целью визуального обследования за выполнением строителями природоохранных мероприятий в том числе не причинение вреда животным и растениям, сбор отходов и масел в специальные емкости и другие.

При эксплуатации канализационных сетей, станций перекачек после реконструкции ожидается улучшение отвода сточных вод, ликвидация утечек, что благоприятно повлияет на окружающую среду и здоровье населения, поскольку устранит инфильтрацию неочищенной сточной воды из канализационных труб в грунт, грунтовые воды.

Для снижения возможных негативных последствий воздействия проекта на окружающую среду в проекте ЗВОС разработан план смягчающих мер на период проведения работ, планы экологического мониторинга и управления за состоянием окружающей среды.

Экологическая экспертиза проекта показала соответствие материалов требованиям законодательных документов, предъявляемых к первому этапу оценки воздействия на окружающую среду. Из выше сказанного видно что, соблюдая все заложенные экологические мероприятия, производство не окажет существенного влияния на состояние природной среды района.

Из вышеуказанного Джизакская областная экологическая экспертиза **согласовывает** проект заявления о воздействии на окружающую среду (ЗВОС) для реконструкция канализационных сетей и очистных сооружений города Джизака Джизакской области, как удовлетворяющий требованиям законодательства.

До сдачи объекта в эксплуатацию следует разработать заявление об экологических последствиях (ЗЭП) с привязкой к конкретной территории и содержащее экологические нормативы и другую необходимую информацию, предусмотренную законодательством.

Заявление об экологических последствиях (ЗЭП) следует представить на государственную экологическую экспертизу в установленном законодательством порядке.

Контроль выполнения вышеуказанных требований возлагается отделу по охране природы г.Джизака.

М.П. **Председатель комитета:** **Э. Холматов**

Исп: З.Асанов
Тел: 222-40-69

ANNEX 9

Agreement letters from Industrial Enterprises

These enterprises state that they will construct modern treatment facilities in 2018.

«JIZZAX
ULYATOR ZAVODI»

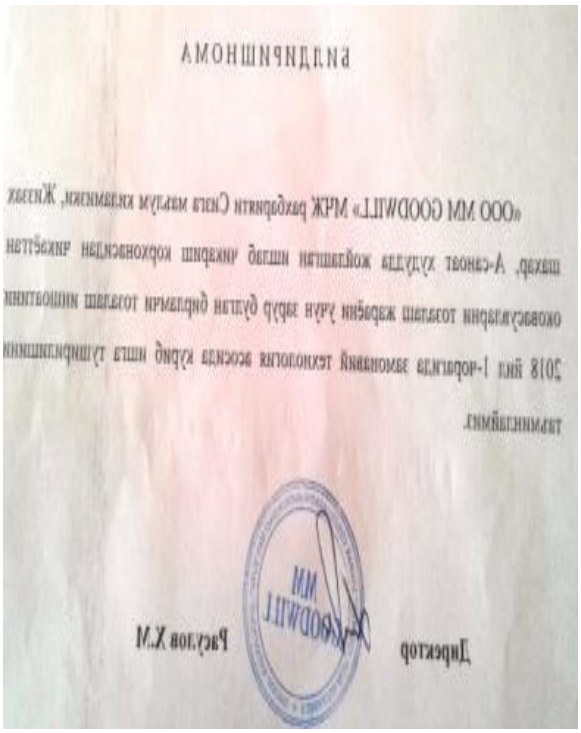
«ДЖИЗАКСКИЙ
АККУМУЛЯТОРНЫЙ ЗАВ

«16» 12 2016 yil

Билдиришнома

ззах аккумулятор заводи» АЖ шуни маълум киладики корхо
окова сувларни биринчи тозалаш жараёни учун зарур бул
иншоати (2-дона хар бири 10 м3 тиниташ хавзаси, натрий с
лаб колиш учун 2-дона гидропресс, 3-дона микрофильтр)
кувирига жунатилади.2018 йилга бундан кам такомуллаш
ускуналар урнатиш режага киритилган.

ш мухандис: Умаров Ш.Х.



Директор Рахимов Х.М

"BO'STON OLAMI"

Bo'ston Oil

mas'uliyati cheklangan jamiyati shaklidagi qo'shma korxona

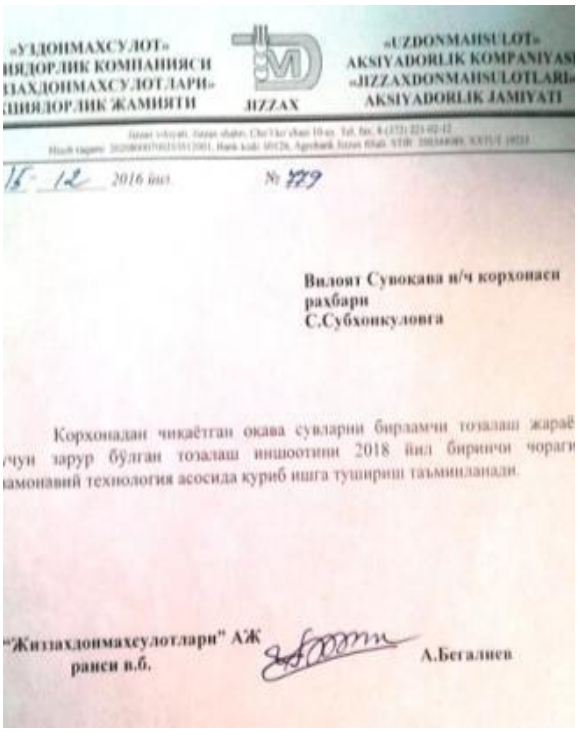
«16» 12 2016 yil № 1166 Jizzax shahri

ЖИТЗАХ "СУВ ОҚОВА"
ДИРЕКТОРИ
С.СУБХОНКУЛОВ га

БИЛДИРИШНОМА

"BO'STON OLAMI" МЧЖ КК рахбарияти Сизга шуни ёзиб маълум кила
корхонамиздан чикаётган оковасувларни биринчи тозалаш жараёни учун зарур б
бирламчи тозалаш иншоатини 2018-йил I-чорагида замонавий технология ас
куриб ишга туширишни таъминлаймиз.

«BO'STON OLAMI» МЧЖ КК
бош директори: Ж.М.Нортошев



«УЗДОНМАХСУЛОТ»
ИЯДОРЛИК КОМПАНИЯСИ
ЗАХДОНМАХСУЛОТЛАРИ»
ЗИЯДОРЛИК ЖАМИЯТИ

JIZZAX

«UZDONMAHSULOT»
AKSIYADORLIK KOMPANIYASI
«JIZZAXDONMAHSULOTLARI»
AKSIYADORLIK JAMIYATI

16 12 2016 йил № 779

Вилоят Сувокава н/ч корхонаси
рахбари
С.Субхонкуловга

Корхонадан чикаётган окава сувларни бирламчи тозалаш жараё
учун зарур бўлган тозалаш иншоотини 2018 йил биринчи чорак
замонавий технология асосида куриб ишга тушириш таъминланади.

"Жизахдонмахсулотлари" АЖ
раиси в.б. А.Бегалиев