

Environmental Monitoring Report

Bi-annual Report
June 2018

Loan 3025/3026-UZB: Amu Bukhara Irrigation System Rehabilitation Project

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ABBREVIATIONS

ABIS	Amu Bukhara Irrigation System
ADB	Asian Development Bank
BISA	Basin Irrigation System Administration
EEC	Environmental Expert of Consultant
EIA	Environmental Impact Assessment
EHS	Environment, Health and Safety
EMP/ SSEMP	Environmental Management Plan/ Site-Specific Environmental Management Plan
EMMP	Environmental Management and Monitoring Plan
EMR	Environmental Monitoring Report
GoU	Government of Uzbekistan
HGME	Hydrogeological Meliorative Expedition
IA	Implementing Agency
IEE	Initial Environmental Examination
ISA	Irrigation System Administration
MAWR	Ministry of Agriculture and Water Resources
M&ES	Monitoring and Evaluation Specialist
NPC	Nature Protection Committee
PIU	Project Implementation Unit
SE	Site Engineer
SC	Supervision Consultant
SO	Safeguards Office
WCA	Water Consumers' Association

1 INTRODUCTION

1.1 Preamble

1. This report represents the Semi - Annual Environmental Monitoring Review (SAEMR) for AMU BUKHARA IRRIGATION SYSTEM REHABILITATION PROJECT.
2. This report is the 6th EMR for the project.

1.2 Headline Information

3. In order to realize a sustainable and reliable water supply in ABIS, the Project is expected to achieve the following outputs:
 - a) Construction of one new pump station, and modernization and rehabilitation of four existing ones;
 - b) Increase in the conveyance efficiency of the main canal of ABIS;
 - c) Increase in the capacity of Basin Irrigation System Administration (BISA), Irrigation System Administrations (ISAs), water consumers' associations (WCAs), and farmers to adapt to climate change; and
 - d) Efficient management of project and ABIS
4. The Ministry of Agriculture and Water Resources (MAWR) has agreed to implement the Environmental Management Plan (EMP) and submit regular reports on its implementation. The Initial Environmental Examination Report (IEE) report, including the EMP, has been published on the Asian Development Bank (ADB) website. During project implementation, ADB and Japan International Cooperation Agency (JICA) will each be responsible for safeguard compliance in their respective project activities

2 PROJECT DESCRIPTION AND CURRENT ACTIVITIES

2.1 Project Description

5. The Amu Bukhara Irrigation System (ABIS) Rehabilitation Project is located in the central part of Uzbekistan on the right bank of Amu Darya River bordering to Turkmenistan. Bukhara is 563 km far from the capital Tashkent. The project covers lands of Bukhara and Navoi provinces. The ABIS is very important for the area and gives life as an oasis.
6. The ABIS supplies water to already irrigated lands, cities, settlements, and industries in Bukhara and Navoi provinces through a series of large cascading pump stations and thousands of kilometers of conveyance canals. It also drains the excess water through drainage system outside of the project area.
7. The ABIS, with a command area of 315,000 ha, serves the irrigated lands of the Bukhara Zarafshan and Karakul oases and the Karaul Bazar massif. The population in the ABIS command area is about 1,788,000 people, including 1,550,000 in Bukhara and 239,000 in two districts of Navoi, of which 68% live in rural areas and fully rely on irrigated agriculture. It is very important to supply reliable water to these people in the region. ABIS also supplies water for municipal and industrial purposes.
8. The aim of the Project is to improve the irrigated agriculture and water resources management in the ABIS, with the goal of promoting sustainable economic and social welfare of communities dependent upon ABIS. The Project objectives are
 - a) modernization and rehabilitation of obsolete pump stations;
 - b) increase of conveyance efficiency in ABIS main canal;
 - c) increase climate change adaptation capacity; and
 - d) increase efficiency of project management and irrigation system management.

2.2 Project Contracts and Management

9. A list or table of main organizations involved in the project and relating to Environmental Safeguards is Table 1 given below. It includes lender, borrower, PIU, Main Contractor/s and significant sub-contractors, environmental staff of various organizations with their names and contact details.

Table 2-1 Environmental Safeguards of ABISRP

Lender	
Organization:	Asian Development Bank
Environmental Staff :	Feruza Insavaliyeva
Email :	finsavaliyeva@adb.org
Tel :	-
Borrower/PIU	
Organization:	Ministry of Agriculture and Water Resources of Uzbekistan Republic Project Implementation Unit
Environmental Staff :	Shakhlo Naimova
Email :	abisr@mail.ru
Tel :	+998903181037
Supervision Contractor	
Organization:	JV Temelsu International Engineering Services Inc. Sheladia Associates Inc
Environment Specialist (International):	Saban Cimen
Email :	saban.cimen@temelsu.com.tr
Tel :	+998909663615
Environment Specialist (Local):	Jakhongir Gadayev
Email :	jakhongir.gadaev@yahoo.com
Tel :	+998901745142
Contractors	
Modernization and Rehabilitation of Amu Bukhara Main Canal Regulating Structure (ABISRP 02)	
Environmental Staff :	Izomov Amin Ashurovic
Email :	-
Tel :	-
Modernization and Rehabilitation of Kuyu Mazar and Kizil Tapa Pump Stations (ABISRP 03)	
Modernization & Rehabilitation of Kuyu Mazar Pump Station (ABISRP 03.01)	
Hebei Construction Group Co.,Ltd, Hebei Province, China	
Environmental Staff :	Zhang Wenjin
Email :	383087759@qq.com
Tel :	+998972812666
Modernization & Rehabilitation of Kizil Tapa Pump Station (ABISRP 03.02)	
Environmental Staff :	Hao Zhe
Email :	369048009@qq.com
Tel :	+998936575393
Environmental Person (Local) :	Bahodir Tillaboyev
Rehabilitation of inter-farm and on-farm pilot irrigation network (ABISRP 04)	
Environmental Staff :	Izomov Amin Ashurovic
Email :	-
Tel :	-

10. The following organizations and/or staff will be responsible for environmental monitoring:

- Basin Irrigation System Authority of Regions
- Contractor of any Subcomponent
- Civil Engineer of Consultant
- Climate Change Mitigation Specialist
- Environmental Expert of Consultant
- Electrical Engineer of Consultant
- Ministry of Health
- Project Manager of Consultant
- Project Implementation Unit
- Water Consumer Associations

11. The key staff for the environmental management and monitoring activities Mrs. Shakhlo Naimova is the PIU's Monitoring and Evaluation Specialist (M&ES). Mrs. Naimova has all responsibilities and tasks related to environment, land, social (including involuntary resettlement and indigenous people), and poverty and gender aspects in accordance with the environment and social safeguard documents and Summary Poverty Reduction and Social Strategy, all of which are project linked documents. Specifically, PIU Monitoring and Evaluation Specialist:

- takes responsibility for monitoring and evaluating performance targets and indicators with baselines indicated in the Design and Monitoring Framework of the project document for all dimensions with support from the implementation consultant;
- provides necessary guidance to the Poverty, Social and Gender Officer in the PIU of Bukhara to collect relevant information on poverty, gender, and social aspects in relation to the Design and Monitoring Framework of the project document and Summary Poverty Reduction and Social Strategy;

12. Additionally, in relation to the environmental aspects, with the support from the international consultant the environmental specialist will:

- ensure that Environmental Management Plan (EMP) is updated during detailed design completed,
- ensure that bidding documents include all requirement to implement IEE and its EMP;
- ensure that the bidder selected will have adequate resources to implement and update EMP;
- undertake safeguards monitoring activities and prepare safeguard reports to be submitted to ADB;

- ensure that all construction works will be taken place in the permanent land possession of ABISA;
 - if additional land required for construction works, ensure that land acquisition and resettlement plan is prepared in accordance to ADB SPS 2009 as well as the Government law and regulation related with land acquisition; and
 - ensure that other project-related tasks are complied with ADB SPS 2009 and Government requirement.
13. PIU as responsible IA for the project recruited a Supervision Consultant (SC) – consortium: «Temelsu International Engineering Services Inc» and «Sheladia Associates Inc.». The International environmental expert (Saban Cimen) and national environmental specialist of Supervision Consultant (EEC) – Jakhongir Gadaev assist M&ES of PIU in the supervision of the construction activities under the Project.
14. The part of the work of the Environmental Experts of the Consultant is to develop a capacity building training program for Contractor's Environmental Officers in order to increase the implementation efficiency of environmental monitoring. The timing of this program will be just before the commencement of civil works. Environmental Experts of the Consultant will develop the content of training.

2.3 Project Activities During Current Reporting Period

15. During the reporting period, the construction activities were implemented for the Contracts ABISRP-02 the intended completion date of contract is 12/04/2019.
16. Contracts for Kuyu Mazar Pump Station (ABISRP 03.1) and Kizil Tepa Pump Station (ABISRP 03.2) were signed and became effective by September 2017; the contractor of both contracts is the same company named Hebei Construction Group Co.Ltd. The contractor has mobilized to both sites design, site establishment and rehabilitation works goes on.
17. Contract for Amu-Bukhara 1 New Pump Station (ABISRP/ICB/01) is in re-bidding process.
Contract for Rehabilitation of inter-farm and on-farm pilot irrigation network (ABISRP/NCB/04) has been completed on October 27th, 2017.

The main project activities carried out in the reporting period include the following:

Table 2-2 Construction Activities Carried out During Reporting Period (January 2018-June 2018)

Site	Construction Activity	Number of Workers	
		Maximum	Minimum
<u>Modernization and Rehabilitation of Amu Bukhara Main Canal Regulating Structure (ABISRP 02)</u>			
Agitma Regulator (Tashrabad)	Construction of Temporary By-pass Canal	15	2
	Construction of Regulating Structure		
Dvoynik Regulator (Alat)	ABMK 1 Regulating Structure	15	2
Rostguy	Shafirkan Regulating Structure	25	2
	Kalkanrut Regulating Structure		
	Rostguy Regulating Structure		
	Abumuslim Regulating Structure		
Djilvan Regulator (Djilvan)	Construction of Regulating Structure	60	2
<u>Modernization and Rehabilitation of Kuyu Mazar Pump Station (ABISRP 03.1)</u>		10	5
<u>Modernization and Rehabilitation of Kizil Tepa Pump Station (ABISRP 03.2)</u>		12	5

18. Photos of construction works is given in Annex II.
19. A map of construction sites during the report period are given at the Figure 2-1.
20. The construction work Dvoynik Regulator area, Kuyu Mazar and Kizil Tepa Pump stations have been started during this reporting period.

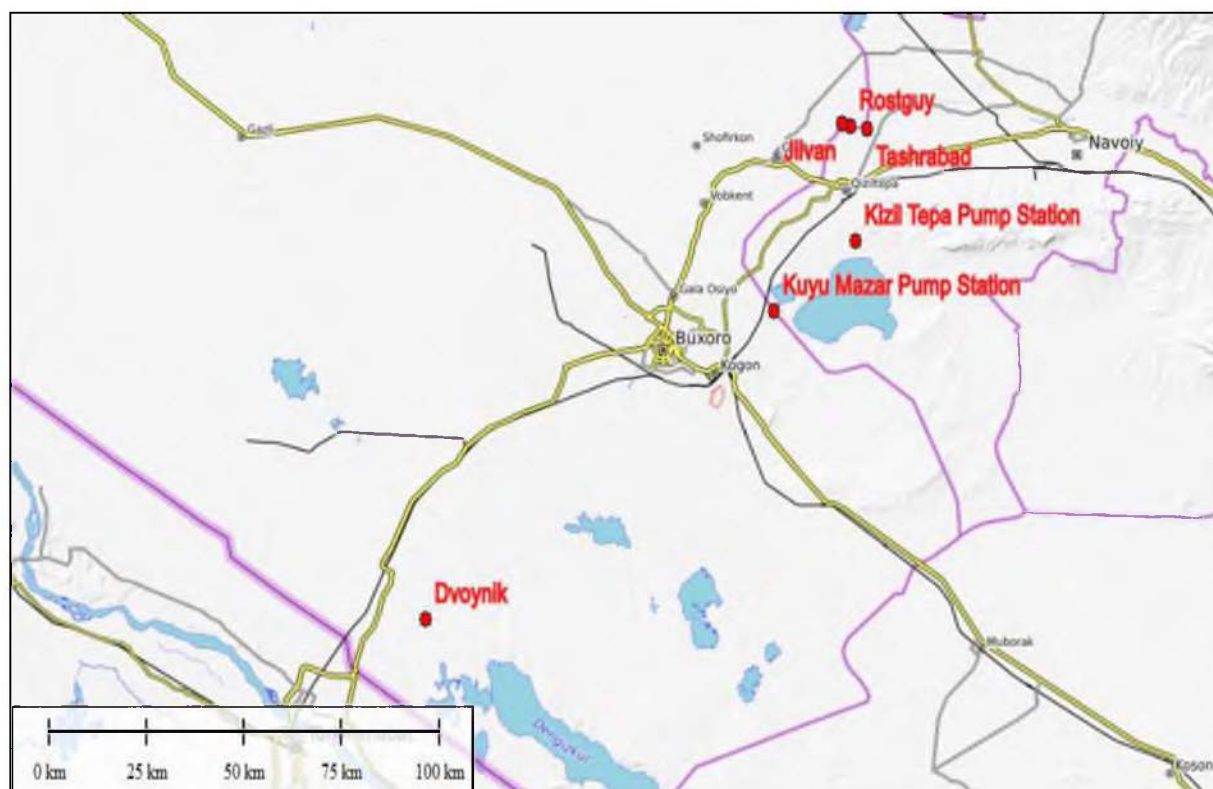


Figure 2-1 Map of Construction Sites Where Construction Activities Carried out During Reporting Period (January 2018-June 2018)

21. No changes happened during the reporting period of the project design from that which was assessed in the Impact Assessment phase of the project and is set out in the Initial Environmental Examination/Environmental Impact Assessment.

2.4 Description of Any Changes to Agreed Construction methods

22. No changes to any construction processes have been observed during the construction period

3 ENVIRONMENTAL SAFEGUARD ACTIVITIES

3.1 General Description of Environmental Safeguard Activities

23. The activities carried out by each of contractor's environmental manager during the reporting period have been summarized at the following table.

Table 3-1 Environmental Safeguard Activities Carried out During Reporting Period (January 2018-June 2018)

Environmental Safeguard Activities
<p>The International environmental expert (Saban Cimen) and national environmental specialist of Supervision Consultant (EEC) – Jakhongir Gadaev</p> <ul style="list-style-type: none"> - Review of SEMP's prepared by the contractors (January, 2018) - Review of Waste Management Plans prepared by the contractors (February, 2018) - Review of Hazardous Waste Management Plans of contracts (February, 2018) - Training of Environmental Staff of Contractors
<p>Modernization and Rehabilitation of Amu Bukhara Main Canal Regulating Structure (ABISRP 02) (Responsible Environmental Manager: Izomov Amin Ashurovic)</p> <ul style="list-style-type: none"> - Preparation of environmental monitoring reports (March-April, May-June, 2018)
<p>Modernization and Rehabilitation of Kuyu Mazar Pump Station (ABISRP 03.1) (Responsible Environmental Manager: Hao Zhe)</p> <ul style="list-style-type: none"> - Preparation of SEMP (January, 2018) - Preparation of environmental monitoring reports (March, April, 2018) - Preparation of Waste Management Plan (February, 2018) - Preparation of Hazardous Waste Management Plans (February, 2018) - Training of Working Staff on Environmental Issues
<p>Modernization and Rehabilitation of Kizil Tepa Pump Station (ABISRP 03.2) (Responsible Environmental Manager: Zhang Wenjin)</p> <ul style="list-style-type: none"> - Preparation of SEMP (January, 2018) - Preparation of environmental monitoring reports (March, April, 2018) - Preparation of Waste Management Plan (February, 2018) - Preparation of Hazardous Waste Management Plans (February, 2018) - Training of Working Staff on Environmental Issues

3.2 Site Audits

24. Regular site monitoring visits were carried out during the reporting period by PIU, and Environmental Specialist to check up realization of environmental protection measures parallel to civil works inspection as indicated below:

Table 3-2 Environmental Audits Carried out During Reporting Period (January 2018- June 2018)

Date	Conducted by	Purpose	Findings
19.01.2018	Saban Cimen Jakhongir Gadaev	Environmental Audit	Site environmental and health and safety conditions of the Contractor ABISRP 02 is poor and needs to be developed.
01.03.2018	Naimova Shakhlo, Gadaev Jahongir	General environmental audit	Environmental and health and safety conditions of the contractor for ABISRP02 are poor and require improvements. Insanitary conditions are observed in the camp of the ABISRP 02 contractr. The relevant actions has to be taken For ABISRP03 contract there have been observed dispersion of waste at the site and insanitary conditions in the food storage rooms. Certificate of state environmental expertise is not obtained.
12,18,19.03.2018	ADB Mission	General and Environmental Audit	Public consultation to be carried out, closed solid waste containers to be provided, establish hazardous solid waste area, establish environmental recording system and GRM at Contract ABISRP 03.01 and 02 sites
Routine site visits	Supervision Contractor Site Engineers	General, Environmental and OHS	Site environmental and health and safety conditions of the Contractor ABISRP 02 is poor and needs to be developed. The Contactor of ABISRP 03.01 and 03.02 need to be observed

25. It has been requested from the contractors to send monthly environmental monitoring activities which could be integrated into the monthly progress report. During the reporting period the environmental monitoring reports (EMR) which have been received from the contractors have been indicated in the Table 3-1 and presented in Annex III.

26. Modernization and Rehabilitation of Amu Bukhara Main Canal Regulating Structure (ABISRP 02) Contractor issues EMR for two months period. The environmental report format and content need to be further developed by the Contractor. The reporting period should be monthly as indicated in SEMP.
27. Modernization and Rehabilitation of Kuyu Mazar Pump Station (ABISRP 03.1) contractor has not issued the EMR for May and June. The EMR should be presented on time.
28. Modernization and Rehabilitation of Kizil Tepa Pump Station (ABISRP 03.2) contractor has not issued the EMR for May and June. The EMR should be presented on time.
29. Environmental progress of the Modernization and Rehabilitation of Amu Bukhara Main Canal Regulating Structure (ABISRP 02) Contractor considered to be minor. Environmental protection measures applied by the contractor however has not been documented well. See performance evaluation form at the Annex I.
30. Environmental progress of the Modernization and Rehabilitation of Kuyu Mazar Pump Station (ABISRP 03.1) contractor is under progress. The environmental record keeping system has been formed. Health and safety conditions, social leisure areas have been formed for the workers. Environmental and health and safety labelling partly done which needs observation. As indicated in the national State Ecological Expertise study a local State Ecological Expertise permission of the project has been obtained from the Bukhara Province Ecology and Environmental Protection Agency on 30th April 2018. (See Annex IV)
31. Environmental progress of the Modernization and Rehabilitation of Kizil Tepa Pump Station (ABISRP 03.2) contractor is under progress. The environmental record keeping system has been formed. Health and safety conditions, social leisure areas have been formed for the workers. Environmental and health and safety labelling partly done which needs observation. As indicated in the national State Ecological Expertise study a local State Ecological Expertise permission of the project has been obtained from the Navoi Province Ecology and Environmental Protection Agency on 26th April 2018. (See Annex IV)

3.3 Issues Tracking (Based on Non-Conformance Notices)

32. During the previous reporting period (July 1st - December 31st, 2017) the observed non-conformance issues have been recorded given below related to the construction activities of Amu Bukhara Main Canal Regulating Structure

(ABISRP 02), Rehabilitation of Inter-farm and On-farm Pilot Irrigation Network
(ABISRP 04) contracts. The following table gives the present situation on these tracked non-conformance notices.

Non-Conformance	Corrective measures	Implementation deadline
ABISRP – 02		
Semi-Annual EMR, R.05, P.36 - The toilet facilities for Contract ABISRP 02 in the site camping area are poor in conditions and hasn't been stored in hygienic conditions or disposed after treatment or transferred to a treatment facility. The domestic sewage effluent hasn't been observed in the construction site.	The Contractor of ABISRP 02 has been informed to comply with the national legislation and contract requirements.	31 March 2018 (Open)
Semi-Annual EMR, R.05, P. 40 - The old tires and consumed accumulators directly transferred for final disposal without any record.	The contractor has been informed provide the necessary data.	01 March 2018 (Open)
Semi-Annual EMR, R.05, P.41 - Contractors pay no attention to the storage of oil in nearby water courses which needs corrective actions to be taken by the Contractors. No sign or signboards exist for fuel storage areas.	The Contractor of ABISRP 02 has been informed to comply with the national legislation and contract requirements.	01 March 2018 (Open)
Semi-Annual EMR, R.05, P. 42 - The solid waste has not been separated in the working site. All kind of solid waste has been stored and transferred to the Municipal Solid Waste Disposal areas by means of municipal solid waste collection vehicles within the service area of Municipality or in any other case by means of Contractors tractors.	The contractor has been informed to sort solid waste separately.	12 February 2018 (Open)
Semi-Annual EMR, R.05, P.50 - Surfaces and facilities in site camps of the Contractors are not clean and kept in hygienic conditions. Facilities are not safe adequately and don't provide protection against climatological conditions, don't have acceptable light conditions.	The Contractor of ABISRP 02 has been informed to comply with contract requirements.	12 February 2018 (Open)
Semi-Annual EMR, R.05, P. 51 - Site camps of the Contractors don't have any fire-fighting equipment or fire extinguisher.	The Contractor of ABISRP 02 has been informed to comply with contract requirements.	12 February 2018 (Open)

33. On 26 November 2017 ADB mission has visited the site and prepared Mission Notes. Some non-conformances revealed during the ADB mission and indicate implementation statuses of corrective actions are given below:

Amu Bukhara Irrigation System Rehabilitation Project
Environmental Monitoring Report (January 2018 – June 2018)

Non-Conformance	Corrective measures	Implementation deadline
ABISRP – 03		
For ABISRP03 contract the non-conformance issues included dispersment of waste in the site, insanitary conditions in the food storage rooms and missing certificate of state environmental expertise.	The Contractor shall eliminate the non-conformance The Contractor must obtain the certificate of state environmental expertise	All non-conformances have been eliminated by 9 th of march 2018. The Contractor has obtained the certificate on 26 th of April 2018 for Kyzyltepa PS and on 30 th of April 2018 for Kyyumazar PS
Construction Contractor has two international environmental specialists on site and should hire national environmental expert	The Contractor shall hire national environmental expert.	1 March 2018 (Closed on 1 March 2018)
CC should prepare two SSEMPs for Kuyu Mazar and Kizil Tepa Pump Stations before commencement of construction activities by the end of December 2017 and send for SC endorsement and PIU's approval. During the mission RETA 8663 Regional Environmental Consultant delivered training related to preparation of SSEMP and provided samples	CC contractor Should provide SSEMP for Kuyu Mazar and Kizil Tepa Pump Stations.	20 December 2017 (Closed on 14 December 2017)
CC was also requested to establish environmental recording system and keep separate folder for environmental documents at camp site. The list of necessary environment documents has been shared with CC by RETA 8663 Regional Environmental Consultant including samples of weekly environmental checklists for inspections and monitoring.	The Contractor has been informed to have an environmental recording system.	31 December 2017 (Closed on 14 May 2018)
Grievance Redress Mechanism is under establishment on the site level. Training on GRM requirements was conducted for CC and SC team, the grievance log book sample was provided.	The contractor has been informed about providing GRM system and logbooks to be available at the camp site.	Before commencement of construction works (Closed on 14 May 2018)
ABISRP – 04		
Due to completion of works SC should conduct post-construction environmental audit, fill up the checklist and prepare Post-Construction Environmental Audit Report by the end of December 2017. During the mission RETA 8663 Regional Environmental Consultant provided orientation training how to conduct post-construction environmental audit and provided checklists/samples.	SC's environmental specialist to conduct Post-construction environmental audit and prepare Post-Construction Environmental Audit Report by the end of December 2017 under ABISRP 04	31 December 2017 Closed on 22 February 2018)

34. On 12,18 and 19 March 2018 ADB mission has visited the site and prepared Mission Notes. Some non-conformances revealed during the ADB mission and indicate implementation statuses of corrective actions are given below:

Non-Conformance	Corrective measures	Implementation deadline
ABISRP – 03		
Environmental Recording system to be established with separate folder for environmental documents kept at the camp site.	Establish the environmental recording system.	31 January 2018 (Closed on 14 May 2018)
GRM logbooks and grievance box to be available at the camp site before the commencement of construction works.	Prepare GRM logbooks and GRM in camp site.	31 March 2018 (Closed on 14 May 2018)

35. During the reporting period (1st January 2018 – 30th June 2018) the observed non-conformance issues have been recorded given below related to the construction activities of Amu Bukhara Main Canal Regulating Structure (ABISRP 02), Modernization and Rehabilitation of Kuyu Mazar Pump Station (ABISRP 03.1) and Modernization and Rehabilitation of Kizil Tepa Pump Station (ABISRP 03.2) contracts.

Non-Conformance	Corrective measures	Implementation deadline
ABISRP – 02		
Semi-Annual EMR, R.06, p.26 EMR prepared per two months	EMR should be prepared and submitted monthly	10 August 2018
ABISRP – 03		
Semi-Annual EMR, R.06, p.27 and p.28 EMR has not been submitted on time	Inform the Contractor for submission. Observation is required for next submissions.	n/a
Environmental Recording system to be established with separate folder for environmental documents kept at the camp site.	Establish the environmental recording system.	31 January 2018 (Closed on 14 May 2018)
GRM logbooks and grievance box to be available at the camp site before the commencement of construction works.	Prepare GRM logbooks and GRM in camp site.	31 March 2018 (Closed on 14 May 2018)

36. During the reporting period (1st January 2018 – 30th June 2018) the observed non-conformance issues have been recorded is 7 in total which only 2 of them have been closed. Total number of non-conformance issues observed is 17 which 59% has been closed. (Table 3-3).

Table 3-3 Summary of Issues Tracking Activity for Current Period

Total Number of Issues for Project	17
Number of Open Issues	7
Number of Closed Issues	10

Percentage Closed	59%
Issues Opened This Reporting Period	7
Issues Closed This Reporting Period	2

37. The distribution of non-conformance issues based on priority is shown at the Figure 3-1 and non-conformance level at the Figure 3-2.

Figure 3-1 Summary of Issues by Priority

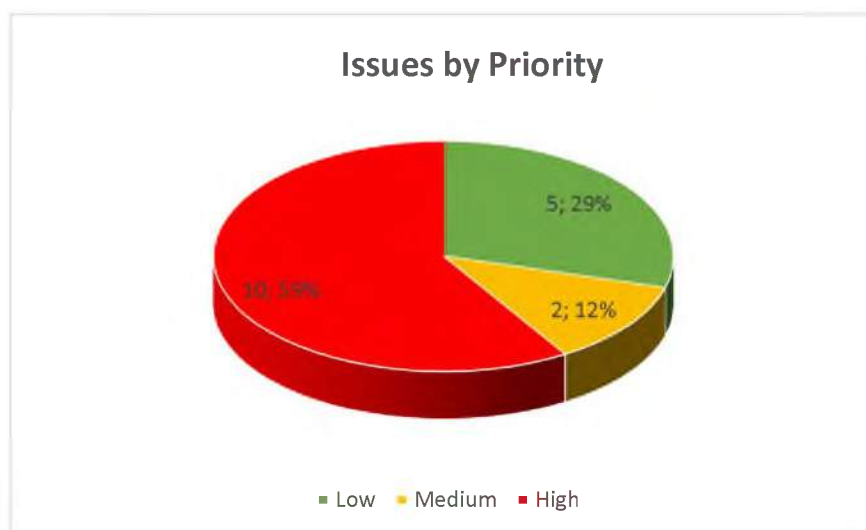
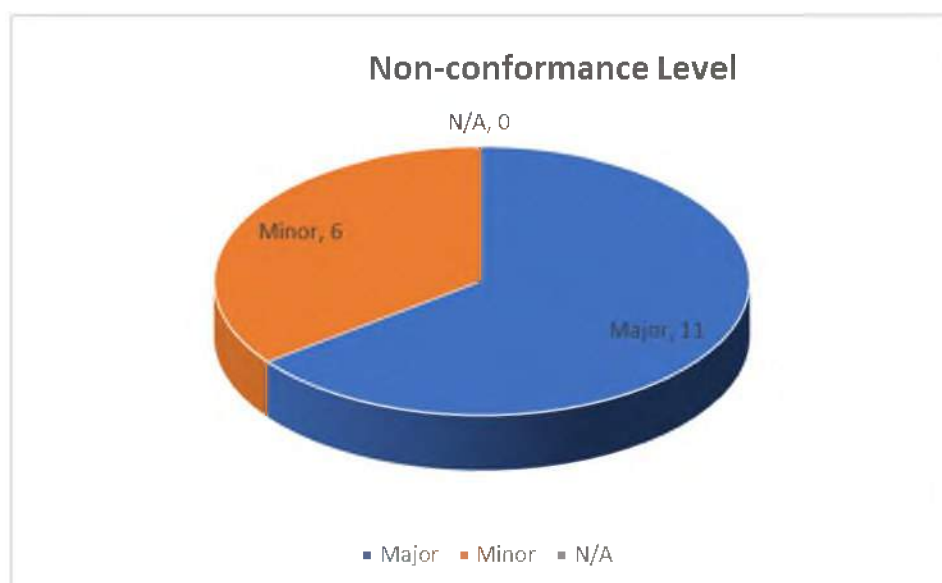
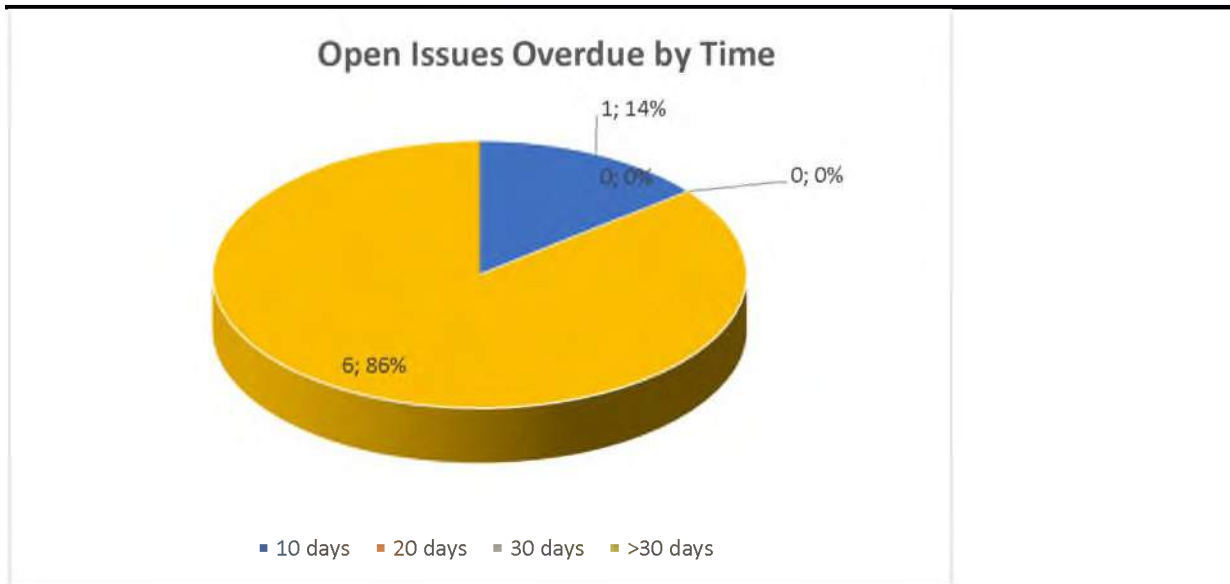


Figure 3-2 Summary of Issues by Non-Conformance



38. Duration to close any issue takes approximately 3 months. The distribution of days required to close any issue has been shown in Figure 3-3.

Figure 3-3 Open Issues Overdue by Time



3.4 Trends

39. Based on the record time, the trends of issues closed has been given at the following.

Semi-Annual Report No	Total Number of Issues	% of issues closed on time	% of issues closed late
5	12	%17	%33
6	7	-	%80

40. Totally 50% of the issues recorded on 5th semi-annual EMR reporting period however other 50% of this remain unsolved. All these open issues belong to Amu Bukhara Main Canal Regulating Structure (ABISRP 02) Contractor. That shows the Contractors involvement in environmental documentation is in low level.

41. The issues closed late since the mobilization and organization and adaptation of international contractors takes time. However, the progress in involvement of Modernization and Rehabilitation of Kuyu Mazar Pump Station (ABISRP 03.1) and Modernization and Rehabilitation of Kizil Tepa Pump Station (ABISRP 03.2) contractor is at a reasonable level.

3.5 Unanticipated Environmental Impacts or Risks

42. During the reporting period (1st January 2018 – 30th June 2018) any unanticipated environmental impacts and risks has not been observed.

4 RESULTS OF ENVIRONMENTAL MONITORING

4.1 Overview of Monitoring Conducted during Current Period

43. The Environmental Monitoring study has been based upon the collection of existing background environmental data from the relevant government authorities. The requested information covers quality of irrigation water and soil quality. Until the end of reporting period, the water quality (2015-2016) and water flow amounts (2015-2018) have been received from the relevant government agencies (Annex V). The soil quality data has been re-requested from the relevant government authorities for the next reporting period.
44. According to EMP requirements, Contractors are responsible for conduction visual monitoring of above indicated parameters. There are no more requirements on environmental monitoring included in EMP and as following in SEMP. Submitted EMR of contractor include the environmental activities. The Contractors shall be informed to submit EMR on timely manner.
45. During the reporting period no complaints were received from people living in nearby residential areas for any construction site. In case of receiving such complains, further elaboration in environmental monitoring activities and solving and or settling the problematic issues needed.

4.1.1 Air Emissions and Ambient Air Quality

46. Appropriate measures were taken to prevent the pollution of atmospheric air, to limit the dust level from working vehicles and enforce strict observance of safety rules at main road crossing, along main roads, the mahalla streets and near sub-project construction sites. Air quality measurements are not requested by IEE/EMP.
47. While excavation and transportation of excavating materials, additional environmental requirements were followed: Schedule transportation activities by avoiding peak traffic periods; Use tarpaulins to cover loose material that is transported to and from the site by truck.
48. Inspection of exhaust emissions of vehicles and machinery used has been controlled in Uzbekistan with a regulation named "Implementation of Mandatory Technical Inspection of Vehicles the Machinery" and numbered 54 which is in force since January 31st, 2003. Each Contractor should hold a valid permission for the vehicles and machineries used in the construction activities. Therefore, the vehicles and machineries used in construction activities do not exceed limits as far as they hold a valid permission from relevant Government authorities.

4.1.2 Wastewater and Ambient Water Quality

49. The toilet facilities for Contract ABISRP 02 in the site camping area are poor in conditions and hasn't been stored in hygienic conditions or disposed after treatment or transferred to a treatment facility. The domestic sewage effluent hasn't been observed in the construction site. This might be due to few number of working staff or the filtration of sewerage to groundwater. It should be reported that no ground water usage either for drinking or irrigational purposes has been observed in the nearby vicinity of working sites.
50. Canal cleaning involved excavation of large amounts of sediment. This was disposed of to the locations agreed with the Engineer. Where there was insufficient space along the side of the canal embankment to deposit the excavated materials, they were transported and deposited in disposal areas further away from the canal. On the site visit 19 January 2018 the dumping area observed at the outflow canal of Djilvan Regulator area was cleaned and levelled (See Annex II).
51. During the canal cleaning works it is unavoidable to form temporary turbidity and sediment problems. Existing water quality of the irrigation water turbid and high in sediment amount, therefore this temporary effect could not be differentiated, unless the sediment amount is measured before and during the cleaning activity.

4.1.3 Noise

52. The contractors have fit the daily regular working hours. It has been reported on EMR of Contractors using new equipment and vehicle which is appropriate for the Occupational Health and Safety Noise levels. Since no grievance has been received from the public it has been considered that noise level doesn't have any effect on public. The noise measurements are not requested by IEE/EMP.

4.2 Trends

53. Based on the visual inspection and EMR reports the air, noise and water quality conditions has not considerably changed during the project construction span. The existing performance of the Contractors has been evaluated based on the Environmental Management Plan (EMP) of the overall project and attached to Annex I.

4.3 Summary of Monitoring Outcomes

54. The established monitoring system is advice to be kept as they are it is early to make any comments on ceasing/altering monitoring since the construction activities already has been started.

4.4 Material Resources Utilization

4.4.1 Current Period

55. The utilization of electricity, water and any other materials have not been included within the SEMP of any contractor. Therefore, the EMR doesn't include this kind of information.

4.4.2 Cumulative Resource Utilization

56. As indicated in paragraph 55 material records have not been kept. Therefore, cumulative progress not included into the EMR.

4.5 Waste Management

57. Amu Bukhara Main Canal Regulating Structure (ABISRP 02) Contractor hasn't signed any contract related to the waste disposal. The waste originated from their construction and workers daily activities has been verbally reported that disposed to the municipal solid waste disposal areas by their own trucks/tractors.
58. The Contractor of Modernization and Rehabilitation of Kuyu Mazar Pump Station (ABISRP 03.1) has submitted a Waste Management Plan on 11th May 2018 and Hazardous Materials Management Plan on 10th May 2018 (Annex VI).
59. The solid waste disposal area of Contractor of Modernization and Rehabilitation of Kuyu Mazar Pump Station (ABISRP 03.1) has been declared as Kuyu Mazar Solid Waste Disposal area which is approximately 3 km away from the Kuyu Mazar Pumping Station.
60. The Contractor of Modernization and Rehabilitation of Kuyu Mazar Pump Station (ABISRP 03.1) has signed a protocol with Toza-Khudud firm for collection, transfer, and disposal of the domestic solid waste. The protocol is valid until the 31st December 2018.
61. The Contractor of Modernization and Rehabilitation of Kizil Tepa Pump Station (ABISRP 03.2) has submitted a Waste Management Plan on 11th May 2018 and Hazardous Materials Management Plan on 10th May 2018 (Annex VI).
62. The solid waste disposal area of Contractor of Modernization and Rehabilitation of Kizil Tepa Pump Station (ABISRP 03.2) has been declared a local Solid Waste Disposal area which is approximately 6 km away from the Kizil Tepa Pumping Station.
63. The Contractor of Modernization and Rehabilitation of Kizil Tepa Pump Station (ABISRP 03.2) has signed a protocol with Toza-Khudud firm for collection, transfer, and disposal of the domestic solid waste. The protocol is valid until the 31st December 2018.

4.5.1 Current Period

64. Amu Bukhara Main Canal Regulating Structure (ABISRP 02) Contractor has no record about the type, quantity of waste produced and disposed. Any domestic solid waste has not been observed at the construction and or camping sites.
65. During the reporting period (1st January 2018 – 30th June 2018) the Contractor of Modernization and Rehabilitation of Kuyu Mazar Pump Station (ABISRP 03.1) has dumped only once only domestic solid waste to the site defined at Paragraph 59. The recorded disposal was on 11th June 2018 and in an amount of 3 m³. The transfer and disposal of solid waste has been realized by Toza-Khudud firm.
66. During the reporting period (1st January 2018 – 30th June 2018) the Contractor of Modernization and Rehabilitation of Kizil Tepa Pump Station (ABISRP 03.2) has dumped three times domestic solid waste to the site defined at Paragraph 62. The recorded disposals are given in the following. The transfer and disposal of solid waste has been realized by Toza-Khudud firm.

Date of Solid Waste Transfer	Amount of Solid Waste (m ³)
09.April.2018	1.3
03.May.2018	1.3
18.May.2018	1.3
Total	3.9

67. The solid and hazardous waste collection system is well established and implemented in Kuyu Mazar Pump Station and Kizil Tepa Pump Station construction works.

4.5.2 Cumulative Waste Generation

68. During reporting period (1st January 2018 – 30th June 2018) totally 6.9 m³ of solid waste has been disposed of within the scope of Amu Bukhara Irrigation System Rehabilitation Project.
69. During reporting period (1st January 2018 – 30th June 2018) no waste reduction, increase in reuse and recycling has been reported.

4.6 Health and Safety

4.6.1 Community Health and Safety

70. During reporting period (1st January 2018 – 30th June 2018) no incidents occurred resulted in Community Health and Safety issues, including the traffic accidents.

4.6.2 Worker Health and Safety

- 71. During reporting period (1st January 2018 – 30th June 2018) no incidents occurred resulted in the working and camp site area.
- 72. It has been verbally reported that Kuyu Mazar Pump Station (ABISRP 03.1) and Kizil Tepa Pump Station (ABISRP 03.2) technical staff had a general health scan.
- 73. During the site visit it has been observed that the health and safety instruction posters have been attached to a board in the working site. The security warnings will be developed in the site as well.

4.7 Training

- 74. Training of environmental staff of contractors of Modernization and Rehabilitation of Amu Bukhara Main Canal Regulation Structures Project (ABISRP 02), Modernization and Rehabilitation of Kuyu Mazar Pump Station (ABISRP 03.1) and Modernization and Rehabilitation of Kizil Tepa Pump Station (ABISRP 03.2) has been realized by SC on 18th January 2018.
- 75. Contractor of Modernization and Rehabilitation of Kuyu Mazar Pump Station (ABISRP 03.1) has conducted Health and Safety training of 10 technical staff. The duration of training was 2 days. The training logs have been kept in the site.
- 76. Contractor of Modernization and Rehabilitation of Kizil Tepa Pump Station (ABISRP 03.2) has conducted Health and Safety training of 18 technical staff. The duration of training was 2 days. The training logs have been kept in the site.
- 77. Training related to new Manual for Monitoring of Environmental Safeguards Implementation conducted on 2 July 2018 by RETA/ADB International-Regional Environmental Safeguards Consultant for PIU, SC and CC staff .

5 FUNCTIONING OF THE SEMP

5.1 SEMP Review

77. Amu Bukhara Main Canal Regulating Structure (ABISRP 02) Contractor has submitted the SEMP just to fulfill its administrative obligations. However, the contractor acts as unaware of existence of SEMP and submits EMR accordingly. It is not expected from the contractor to increase its capacity to fulfill environmental obligations. Therefore, close follow-up of this contractor's construction activities is advised.
78. SEMP of Modernization and Rehabilitation of Kuyu Mazar Pump Station (ABISRP 03.1) and Modernization and Rehabilitation of Kizil Tepa Pump Station (ABISRP 03.2) considered to fit the environmental requirements of the construction activities, submitted and approved on 20 of February 2018.

6 GOOD PRACTICE AND OPPORTUNITY FOR IMPROVEMENT

6.1 Good Practice

79. Bilingual (English and Russian) access database formed by supervision contractor to monitor environmental, social, and financial and physical progress evaluation of project. This will accumulate all the project relevant data for evaluation purposes.



Figure 6-1 Amu Bukhara Irrigation System Rehabilitation Project Monitoring Database

80. In the working camp of Modernization and Rehabilitation of Kizil Tepa Pump Station (ABISRP 03.2) sporting area has been established for the workers as illustrated below. The sporting activities in these areas can help for developing friendships centered on healthy, safe, and enjoyable activities. This will contribute to the improvement of social environment of the workers.



Basketball Field



Ping Pong Hall

6.2 Opportunities for Improvement

81. In the working sites of Modernization and Rehabilitation of Kuyu Mazar Pump Station (ABISRP 03.1) and Modernization and Rehabilitation of Kizil Tepa Pump Station (ABISRP 03.2) operation of pumps has not been sustained and technical and administrative staff of existing pump stations are in the working site. To increase health and safety conditions in the field the technical and administrative staff of the pump stations might be trained on health and safety issues.

7 SUMMARY AND RECOMMENDATIONS

7.1 Summary

82. Before the reporting period (1st January 2018- 30th June 2018) the following environmental safeguard activities have been performed.
- The review and update of Initial Environmental Examination (IEE) Report has been realized and approval received by PIU from the national authorities.
 - SEMP of Civil Works for Inter-farm and On-farm Irrigation System Rehabilitation Project (ABISRP 04) has been approved on 6th December 2016.
 - SEMP of Modernization and Rehabilitation of Amu Bukhara Main Canal Regulation Structures Project (ABISRP 02) has been approved on 6th December 2016.
83. During the reporting period (1st January 2018- 30th June 2018) the following environmental safeguard activities have been performed
- Training of environmental staff of contractors of Modernization and Rehabilitation of Amu Bukhara Main Canal Regulation Structures Project (ABISRP 02), Modernization and Rehabilitation of Kuyu Mazar Pump Station (ABISRP 03.1) and Modernization and Rehabilitation of Kizil Tepa Pump Station (ABISRP 03.2) has been realized by SC on 18th January 2018.
 - Post-Construction Environmental Audit Report of Civil Works for Inter-farm and On-farm Irrigation System Rehabilitation Project (ABISRP 04) has been approved on 22nd January 2018.
 - SEMP of Modernization and Rehabilitation of Kuyu Mazar Pump Station (ABISRP 03.1) has been approved on 14th December 2018.
 - SEMP of Modernization and Rehabilitation of Kizil Tepa Pump Station (ABISRP 03.2) has been approved on 14th December 2018.
 - The Contractor of Modernization and Rehabilitation of Kuyu Mazar Pump Station (ABISRP 03.1) has submitted a Waste Management Plan on 11th May 2018 and Hazardous Materials Management Plan on 10th May 2018.
 - The Contractor of Modernization and Rehabilitation of Kizil Tepa Pump Station (ABISRP 03.2) has submitted a Waste Management Plan on 11th May 2018 and Hazardous Materials Management Plan on 10th May 2018.
 - Environmental Monitoring Reports submitted by all contractors to PIU.
 - Kuyu Mazar Pump Station (ABISRP 03.1) contractor obtained State Ecological Expertise permission from the Bukhara Province Ecology and Environmental Protection Agency on 30th April 2018.

- Kizil Tepa Pump Station (ABISRP 03.2) contractor obtained State Ecological Expertise permission of the project from the Navoi Province Ecology and Environmental Protection Agency on 26th April 2018.

7.2 Recommendations

84. In the ADB's Manual named "Manual for Monitoring of Environmental Safeguards Implementation- The Role of Project Implementation Unit (PIU)" subheading number 4.3 describes the GRM tracking. However, the Semi-Annual Environmental Report format doesn't include any part about the GRM tracking results and observations, etc. It has been proposed to add to the existing EMR format GRM tracking chapter or heading.

ANNEX I PERFORMANCE EVALUATION OF ENVIRONMENTAL MONITORING OF ABISRP

INDICATORS	Data Source	Frequency	Responsibility	Achievement from Commencement of Project Till end of Reporting Period (Yes(Y)/No(N)/Not Applicable(N/A))				
	How it will be measured?	How often it will be measured?	Who will measure it?	General	ABISRP 02	ABISRP 03		ABISRP 04
PRE-CONSTRUCTION PHASE						Lot 1	Lot 2	
Has the Consultant reviewed IEE?	By the activities of PIU Technical Assistance Team	Once in the initial phase of project.	EEC	Y	N/A	N/A	N/A	N/A
If the IEE has been updated has it been send to the ADB for approval?	By the activities of PIU Technical Assistance Team	Once in the initial phase of project.	EEC	Y	N/A	N/A	N/A	N/A
Has the PIU submitted IEE assessment report for approval to the National Authorities?	By the activities of PIU Technical Assistance Team	Once in the initial phase of project.	PIU	Y	N/A	N/A	N/A	N/A
Has the Consultant included the EMP as a special Condition in the Bid Document?	By the activities of PIU Technical Assistance Team	Once in the initial phase of project.	PEC	Y	N/A	N/A	N/A	N/A
Has the Contractor designed adequate staff facilities in the pump house redesigns (water-seal toilets, furbished rest rooms, dining rooms, etc.)	By technical review	Once in the review of design documents	CEC	N/A	N/A	Y	Y	N/A

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	How it will be measured?	How often it will be measured?	Who will measure it?	General	ABISRP 02	ABISRP 03		ABISRP 04
Does the Contractor's design include raised walking ways?	By technical review	Once in the review of design documents	CEC	N/A	N/A	Y	Y	N/A
Does the Contractor's design provide safety guards on the areas exposed to the machinery?	By technical review	Once in the review of design documents	MEC	N/A	N/A	Y	Y	N/A
Does the Contractor's design have any drainage facility to lower ground water?	By technical review	Once in the review of design documents	CEC	N/A	Y	Y	Y	Y
Does the design meet the internationally acceptable safety standards of electricity for wet working areas?	By technical review	Once in the review of design documents	EIEC	N/A	Y	Y	Y	Y
Does the design consider critical periods for biological life and adhere any avoidance plan?	By technical review	Once in the review of design documents	EEC	N/A	N/A	N/A	N/A	N/A
Does the Contractor have proper survey equipment?	By technical review	Once in the review of design documents	CEC	N/A	Y	Y	Y	Y

INDICATORS	Data Source	Frequency	Responsibility	Achievement from Commencement of Project Till end of Reporting Period (Yes(Y)/No(N)/Not Applicable(N/A))				
	How it will be measured?	How often it will be measured?	Who will measure it?	General	ABISRP 02	ABISRP 03		ABISRP 04
Does the design ensure free access to the facilities and availability of roads to them for O&M?	By technical review	Once in the review of design documents	CEC	N/A	Y	Y	Y	Y
Does the design take care the placement of building and facilities considering fire breaks?	By technical review	Once in the review of design documents	MEC	N/A	N/A	Y	Y	N/A
Does the design consider Corrosion protection of buildings by ground water?	By technical review	Once in the review of design documents	CEC	N/A	Y	Y	Y	Y
Does the design care the fire proof materials where necessary?	By technical review	Once in the review of design documents	CEC	N/A	N/A	Y	Y	N/A
Has the Contractor checked the desilting efficiency of inlet canal design and desilting basins?	By technical review	Once in the review of design documents	CEC	N/A	Y	Y	Y	Y

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	How it will be measured?	How often it will be measured?	Who will measure it?	General	ABISRP 02	ABISRP 03		ABISRP 04
Has the Contractor developed inlet having sand trap and/or other alternative devices?	By technical review	Once in the review of design documents	CEC/MEC	N/A	Y	Y	Y	Y
Does the design consider oil separators to have oil concentration less than 0.3 mg/l?	By technical review	Once in the review of design documents	CEC/MEC	N/A	N/A	Y	Y	N/A
Does the Contractor develop a Worker Safety Plan in compliance with Uzbekistan Labor Code?	By technical review	Once in the review of design documents	EEC	N/A	Y	Y	Y	Y
Does the design consider protection measures for pipes laid in saline areas?	By technical review	Once in the review of design documents	MEC	N/A	N/A	N/A	N/A	N/A
Does the design consider safety conditions of crossing, bridges that will be used for transportation of vehicles, equipment, and staff?	By technical review	Once in the review of design documents	CEC	N/A	Y	Y	Y	Y
Does the design consider landscaping convenient to the prevailing natural conditions?	By technical review	Once in the review of design documents	EEC	N/A	Y	N/A	N/A	Y

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	How it will be measured?	How often it will be measured?	Who will measure it?	General	ABISRP 02	ABISRP 03		ABISRP 04
Does the design consider training of O&M staff on mechanical and electrical equipment?	By technical review	Once in the review of design documents	EIEC	N/A	N/A	Y	Y	Y
Does the design consider supplying transformers free of PCB?	By technical review	Once in the review of design documents	EIEC	N/A	N/A	Y	Y	N/A
Is the EMP attached to the Contract to form a part of Contract Documents?	By technical review	Once in the review of design documents	PEC	Y	Y	Y	Y	Y
Does the design consider the irrigational and drinking water requirements?	By technical review	Once in the review of design documents	MEC	N/A	Y	Y	Y	Y
Has PIU evaluated the bidder by checking EMP requirements?	By technical review	Once in the review of design documents	PEC	N/A	Y	Y	Y	Y
Has the Contractor prepared an acceptable EMP based on the Approved IEE?	By technical review	Once in the review of design documents	CEC	Y	Y	Y	Y	Y

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	How it will be measured?	How often it will be measured?	Who will measure it?	General	ABISRP 02	ABISRP 03		ABISRP 04
Has the Contractor developed Contingency Plan for accidents including spill of fuel?	By technical review	Once in the review of design documents	EEC	N/A	Y	Y	Y	Y
Has the Contractor submitted the Site Environmental Management Plan?	By technical review	Once in the review of design documents	EEC	N/A	Y	Y	Y	Y
Does the Contractor publish a public notice regarding the nature and location of the project?	Questionnaires	Once in the initial phase of construction project.	C	N/A	N	N/A	N/A	N
Has the Consultant conducted training program for WCA?	By the activities of PIU Technical Assistance Team	Once according to the time schedule of the training program	EEC	Y	N/A	N/A	N/A	N/A
Has the Consultant conducted training program for BISA?	By the activities of PIU Technical Assistance Team	Once according to the time schedule of the training program	EEC/MEC	N	N/A	N/A	N/A	N/A

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	How it will be measured?	How often it will be measured?	Who will measure it?	General	ABISRP 02	ABISRP 03		ABISRP 04
Has the EMP been explained to the Contractor before the commencement of works?	By the activities of PIU Technical Assistance Team	Once before the commencement of construction project.	PMC/EEC/PIU	N/A	Y	Y	Y	Y
Has the Contractor defined Environmental Management Officer?	Biding Documents	Once in bid evaluation phase	C	N/A	Y	Y	Y	Y
Has the Contractor defined Safety Officer?	Biding Documents	Once in bid evaluation phase	C	N/A	N	Y	Y	N
Does the Contractor handle the protected plant species, trees taking care of environmental concerns and/or permissions?	Questionnaires	monthly	C	N/A	Y	Y	Y	Y
Does the Contractor excavate and preserve the top soil?	Questionnaires	monthly	C	N/A	N			N
Does the Contractor maximize the use of excavated material for construction works?	Questionnaires	monthly	C	N/A	Y			Y
Has the Contractor defined the licensed or got permissions borrow area for usage of construction material?	Questionnaires	monthly	C	N/A	Y			Y

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	How it will be measured?	How often it will be measured?	Who will measure it?	General	ABISRP 02	ABISRP 03		ABISRP 04
Has the Contractor caused any landslide or erosion?	Questionnaires	monthly	C	N/A	N			N
Has the Contractor stockpiles of excavated material for backfilling?	Questionnaires	monthly	C	N/A	Y			Y
Has the Contractor realized the work activities during non-cropping periods?	Questionnaires	monthly	C	N/A	Y	N/A	N/A	Y
Has the Contractor take measures for providing water continuously during construction work?	Questionnaires	monthly	C	N/A	Y	N/A	N/A	Y
Has the Contractor defined spoil disposal site with the local authorities?	Questionnaires	monthly	C	N/A	Y	Y	Y	Y
Does the Contractor disposed/recycled the waste material from the construction area?	Questionnaires	monthly	C	N/A	Y			Y
Has PCB containing electrical equipment disposed according to the requirements of Gozecoexpertisa?	Questionnaires	monthly	C	N/A	N/A			N/A
Has the Contractor defined material storage area?	Questionnaires	monthly	C	N/A	N	Y	Y	N
Has the Contractor defined fuel storage area 20 m away from water course?	Questionnaires	monthly	C	N/A	N	Y	Y	N

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	How it will be measured?	How often it will be measured?	Who will measure it?	General	ABISRP 02	ABISRP 03		ABISRP 04
Is the noise level in working area below the defined limit 80 dB(A)?	Questionnaires	monthly	C	N/A	Y	Y	Y	Y
Has the Contractor taken noise prevention measures for staff using noisy equipment, vehicles?	Questionnaires	monthly	C	N/A	N			N
Is the nearest residential area affected by the noise level?	Questionnaires	monthly	C	N/A	N	N	N	N
Has the working activities limited by daylight hours?	Questionnaires	monthly	C	N/A	Y	Y	Y	Y
Does the Contractor have a water tanker for spraying water to roads?	Questionnaires	monthly	C	N/A	Y			Y
Does the Contractor suppress the dust by watering?	Questionnaires	monthly	C	N/A	Y			Y
Has the Contractor trained the staff on personnel health and sanitation procedures at the working camp, how to interact with the host communities, subprojects environmental protection measures?	Questionnaires	monthly	C	N/A	Y			Y
Has the Contractor trained the staff on contingency plan?	Questionnaires	monthly	C	N/A	Y			Y
Has the Contractor trained the personnel for fuel handling procedure?	Questionnaires	monthly	C	N/A	Y	Y	Y	Y

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	How it will be measured?	How often it will be measured?	Who will measure it?	General	ABISRP 02	ABISRP 03		ABISRP 04
Does the Contractor train any person for the first-aid?	Questionnaires	monthly	C	N/A	N	Y	Y	N
Does the Contractor apply any simple training measure for the visitors?	Questionnaires	monthly	C	N/A	N	N	N	N
Does the Contractor keep the records for all kind of training?	Questionnaires	monthly	C	N/A	Y	Y	Y	Y
Number of accidents occurred during report period?	Questionnaires	monthly	C	N/A	0	0	0	0
Does the Contractor supply clean drinking water to the staff?	Questionnaires	monthly	C	N/A	Y	Y	Y	Y
Does the Contractor provide the staff hygienic living and working conditions?	Questionnaires	monthly	C	N/A	N	Y	Y	N
Does the Contractor have toilets, baths, sleeping quarter, dining hall for the staff?	Questionnaires	monthly	C	N/A	Y	Y	Y	Y
Does the Contractor have any social facilities like sporting area, canteen, shuttle vehicles to the local centers, etc.?	Questionnaires	monthly	C	N/A	N	Y	Y	N
Does the Contractor check the health of the staff regularly?	Questionnaires	monthly	C	N/A	N	Y	Y	N
Does the Contractor keep the health record of the staff?	Questionnaires	monthly	C	N/A	N	N	N	N

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	How it will be measured?	How often it will be measured?	Who will measure it?	General	ABISRP 02	ABISRP 03		ABISRP 04
Does the Contractor have adequate fire protection measures?	Questionnaires	monthly	C	N/A	N	Y	Y	N
Has the Contractor made available the first aid kit to the staff?	Questionnaires	monthly	C	N/A	N	Y	Y	N
Has the Contractor provided safe floor and hand rails, stairs, lifts where necessary?	Questionnaires	monthly	C	N/A	Y	Y	Y	Y
Has the Contractor provided the enough ventilation and lightening in the specific areas?	Questionnaires	monthly	C	N/A	N	Y	Y	Y
Has the Contractor provided the safety equipment, material to the staff?	Questionnaires	monthly	C	N/A	Y	Y	Y	Y
Does security staff exist in the working area?	Questionnaires	monthly	C	N/A	Y	Y	Y	Y
Does the working area have fencing in order to protect intrusion?	Questionnaires	monthly	C	N/A	N	Y	Y	N
Has the Contractor defined solid waste storage area?	Questionnaires	monthly	C	N/A	Y	Y	Y	Y
Has the Contractor defined the area for used material storage?	Questionnaires	monthly	C	N/A	N	Y	Y	N
Does the Contractor apply solid waste separation for recyclable solid waste?	Questionnaires	monthly	C	N/A	N	Y	Y	N

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	How it will be measured?	How often it will be measured?	Who will measure it?	General	ABISRP 02	ABISRP 03		ABISRP 04
Does the Contractor keep any record for the waste recycled?	Questionnaires	monthly	C	N/A	N	Y	Y	N
Does the Contractor keep any record for the solid waste disposed?	Questionnaires	monthly	C	N/A	N	Y	Y	N
Does the Contractor keep any record for the hazardous waste disposed?	Questionnaires	monthly	C	N/A	N	Y	Y	N
Does the Contractor use the local public roads even the avoidance from these road(s) possible?	Questionnaires	monthly	C	N/A	Y	Y	N/A	Y
Has the Contractor collected and disposed the solid waste regularly?	Questionnaires	monthly	C	N/A	Y	Y	Y	Y
Does the Contractor discharge the sewerage after treatment?	Questionnaires	monthly	C	N/A	N	Y	Y	N
Does the Contractor avoid the peak hours of local traffic in case of use of local public roads?	Questionnaires	monthly	C	N/A	Y	N/A	N/A	Y
Does the material carried on public roads covered?	Questionnaires	monthly	C	N/A	Y	Y	Y	Y
Does the Contractor use the vehicles having the controlled exhaust emissions?	Questionnaires	monthly	C	N/A	N	Y	Y	N

Amu Bukhara Irrigation System Rehabilitation Project
Environmental Monitoring Report (January 2018 – June 2018)

INDICATORS	Data Source	Frequency	Responsibility	Achievement from Commencement of Project Till end of Reporting Period (Yes(Y)/No(N)/Not Applicable(N/A))				
	How it will be measured?	How often it will be measured?	Who will measure it?	General	ABISRP 02	ABISRP 03		ABISRP 04
Does the Roads selected by the Contractor effect the protected areas?	Questionnaires	monthly	C	N/A	N	N	N	N
Does the public informed with adequate signs about the working area and vehicles?	Questionnaires	monthly	C	N/A	N	N	N	N
Do the Vehicles of the Contractor fit in to the speed limits?	Questionnaires	monthly	C	N/A	Y	Y	Y	Y
Does the Contractor repair all infrastructure/roads when damage given by them?	Questionnaires	monthly	C	N/A	Y	N/A	N/A	Y
Has the Contractor removed the soil if they contaminated?	Questionnaires	monthly	C	N/A	Y	N/A	N/A	Y
Has the Contractor left the working area as defined in Landscape section of the Bidding Documents?	Questionnaires	monthly	C	N/A	Y			Y
Has the Operating Personnel signed and accepted all work sites, labor camps, storage areas and temporary dumping areas?	Questionnaires	monthly	C	N/A	N			N
Number of grievances about the Contractor?	Interview with the relevant authorities	monthly	BISA	N/A	0	0	0	0

INDICATORS	Data Source	Frequency	Responsibility	Achievement from Commencement of Project Till end of Reporting Period (Yes(Y)/No(N)/Not Applicable(N/A))				
	How it will be measured?	How often it will be measured?	Who will measure it?	General	ABISRP 02	ABISRP 03		ABISRP 04
Number of grievances solved by the Contractor?	Interview with the relevant authorities	monthly	BISA	N/A	0	0	0	0
Has the Contractor provided the training on the safe use of electricity and pumps for operational staff?	Questionnaires	Once when the project activities completed	EEC	N/A	N/A			N/A
Has the Contractor evaluated the trained O&M staff?	Questionnaires	Once when the project activities completed	MEC/EIEC	N/A	N/A			N/A
Has the Consultant trained the WCA, BISA staff for irrigation canal and drainage canal management?	Questionnaires	Once when the project activities completed	EEC	Y	N/A			N/A
Has the Consultant evaluated the trained WCA, BISA staff?	Questionnaires	Once when the project activities completed	EEC	Y	N/A	N/A	N/A	N/A
Has the Oil Separator regularly checked and properly maintained?	Questionnaires	Once when the project activities completed	EEC	N/A	N/A	N/A	N/A	N/A

Amu Bukhara Irrigation System Rehabilitation Project
Environmental Monitoring Report (January 2018 – June 2018)

INDICATORS	Data Source	Frequency	Responsibility	Achievement from Commencement of Project Till end of Reporting Period (Yes(Y)/No(N)/Not Applicable(N/A))				
	How it will be measured?	How often it will be measured?	Who will measure it?	General	ABISRP 02	ABISRP 03		ABISRP 04
Has the relevant organizations observed the irrigation water quality?	Questionnaires	Once when the project activities completed	EEC	N	N/A	N/A	N/A	N/A
Has the relevant organizations observed the ground water level in the irrigation area?	Questionnaires	Once when the project activities completed	EEC	N	N/A	N/A	N/A	N/A
Have the farmers applied crop rotation?	Questionnaires	Once when the project activities completed	BISA	N	N/A	N/A	N/A	N/A
Have the farmers applied environmentally friendly agricultural production techniques?	Questionnaires	Once when the project activities completed	BISA	N	N/A	N/A	N/A	N/A
Has the fertility and productivity been enhanced?	Questionnaires	Once when the project activities completed	BISA	N	N/A	N/A	N/A	N/A
Has the O&M staff applies the national Worker Safety Plan?	Questionnaires	Once when the project activities completed	C	N/A	N	Y	Y	N

INDICATORS	Data Source	Frequency	Responsibility	Achievement from Commencement of Project Till end of Reporting Period (Yes(Y)/No(N)/Not Applicable(N/A))				
	How it will be measured?	How often it will be measured?	Who will measure it?	General	ABISRP 02	ABISRP 03		ABISRP 04
Has the Contractor made facilities available in the operational building with the clean drinking water?	Questionnaires	Once when the project activities completed	C	N/A	Y	Y	Y	Y
Has the Contractor made facilities available in the operational building with sewerage disposal/handling?	Questionnaires	Once when the project activities completed	C	N/A	N	Y	Y	N
Has the international agreements about the water abstraction been fitted?	Questionnaires	Once when the project activities completed	EEC		N/A	N/A	N/A	N/A
GENERAL ENVIRONMENTAL IMPACTS OF THE PROJECT ON THE ENVIRONMENT								
Flow amount of water in channels?	Measurement	Monthly	BISA/WCA	N	N/A	N/A	N/A	N/A
Irrigated Area (ha)	Measurement	Monthly	BISA/WCA	N	N/A	N/A	N/A	N/A
Amount of water used for irrigation purposes.	Measurement	Monthly	BISA/WCA	N	N/A	N/A	N/A	N/A
Water quality of irrigation water (pH, salinity, hardness, BOD, COD, Nitrate, Nitrite, Ammonium, Phosphate, Pesticides, Oil products, phenol) in the project area.	Measurement	Bi-annual	PIU, HGMEs, Uzhydromet	N	N/A	N/A	N/A	N/A

Amu Bukhara Irrigation System Rehabilitation Project
Environmental Monitoring Report (January 2018 – June 2018)

INDICATORS	Data Source	Frequency	Responsibility	Achievement from Commencement of Project Till end of Reporting Period (Yes(Y)/No(N)/Not Applicable(N/A))				
	How it will be measured?	How often it will be measured?	Who will measure it?	General	ABISRP 02	ABISRP 03		ABISRP 04
Soil quality/pollution (SOM) (humus), soil carbon, mobile and gross NPK, nitrates, nitrites, ammonium, phosphate, pesticides)	Measurement	Bi-annual	PIU, BISA, HGMEs, and WCAs	N	N/A	N/A	N/A	N/A
Water levels of wells in the irrigated areas? (specify wells)	Measurement	Monthly	BISA/WCA	N	N/A	N/A	N/A	N/A
Amount of water used for irrigation purposes.	Health Statistics of Local Authorities	Yearly	PIU from local MoH	N	N/A	N/A	N/A	N/A
Electricity Consumed before the project by pumping?	Electricity Meter Records	Monthly Consumed, yearly total	BISA	N	N/A	N/A	N/A	N/A
Electricity Consumed after the project by pumping?	Electricity Meter Records	Monthly Consumed, yearly total	BISA	N	N/A	N/A	N/A	N/A
Water quantity pumped before rehabilitation/reconstruction?	Flow Measurement	Monthly, average flow	BISA	N	N/A	N/A	N/A	N/A
Water quantity pumped after rehabilitation/reconstruction?	Flow Measurement	Monthly, average flow	BISA	N	N/A	N/A	N/A	N/A

Amu Bukhara Irrigation System Rehabilitation Project
Environmental Monitoring Report (January 2018 – June 2018)

INDICATORS	Data Source	Frequency	Responsibility	Achievement from Commencement of Project Till end of Reporting Period (Yes(Y)/No(N)/Not Applicable(N/A))				
	How it will be measured?	How often it will be measured?	Who will measure it?	General	ABISRP 02	ABISRP 03		ABISRP 04
Reduction in % of GHG by implementation of project?	Calculations	Once based on yearly energy consumption amounts	Calculated by PIU CCMS		N/A	N/A	N/A	N/A

BISA : Basin Irrigation System Authority of Regions

C: Contractor of any Subcomponent

CEC: Civil Engineer of Consultant

CCMS: Climate Change Mitigation Specialist

EEC: Environmental Expert of Consultant

EIEC: Electrical Engineer of Consultant

EMR: Environmental Monitoring Report

MEC: Mechanical Engineer of Consultant

MoH : Ministry of Health

MRoC: Monthly Report of the Contractor about the Implementation of EMP

PEC: Procurement Expert of Consultant

PMC: Project Manager of Consultant

PIU: Project Implementation Unit

WCA: Water Consumer Associations

ANNEX II- PHOTOS

Modernization & Rehabilitation of Amu Bukhara Main Canal Regulation Structures
(ABISRP 02)

Construction Works at Agitma



19 January 2018



16 July 2018

Construction Works at Djilvan Regulator



19 January 2018



16 July 2018

Canal Cleaning and Land Leveling at Djilvan



19 January 2018



16 July 2018

Outflow 1 at ABMC 1



16 July 2018



16 July 2018

Rostguy Regulator



16 July 2018



16 July 2018

Modernization and Rehabilitation of Kuyu Mazar Pump Station (ABISRP 03.1)

Kuyu Mazar Camp Site



12 July 2018



12 July 2018

Kuyu Mazar Pump Station



12 July 2018



12 July 2018

Modernization and Rehabilitation of Kizil Tepa Pump Station (ABISRP 03.2)

Kizil Tepa Pump Station



12 July 2018



12 July 2018

ANNEX III ENVIRONMENTAL MONITORING REPORTS OF THE CONTRACTORS



Environmental Report for March of 2018 for Kuyu Mazar Pump Station

IMPACT MITIGATION						IMPACT MONITORING
Project Activity	Potential Environmental Impact(s)	Proposed Mitigation Measures	Implementing Responsibility	Parameter to be monitored	Frequency and means of verification	Monitoring responsibility
[1] Removal of trees in construction sites	N/A	N/A	N/A	N/A	N/A	Construction manager Li Changku
[2] Site preparation	N/A	N/A	N/A	N/A	N/A	Construction manager Li Changku
[3] Excavation of sites and opening of borrow pits	N/A	N/A	N/A	N/A	N/A	Construction manager Li Changku
[4] Rehabilitation activities during cropping season	N/A	N/A	N/A	N/A	N/A	Construction manager Li Changku
[5] Removal and disposal of debris	There are 2 garbage can (dustbin) in the camp of Kuyu-Mazar pump station	Signed an agreement with local service sector «TOZA-KHUDUD» in Kagan district for removal domestic garbage (trash).				Construction manager Li Changku
[6] Storage and Handling of construction materials, fuel and lubricants	N/A	N/A	N/A	N/A	N/A	Construction manager Li Changku
[7] Noise from construction equipment; e.g. jack hammers, air Compressors	N/A	N/A	N/A	N/A	N/A	Construction manager Li Changku
[8] Dust	N/A	N/A	N/A	N/A	N/A	Construction manager Li Changku
[9] Worker Health and Safety	N/A	N/A	N/A	N/A	N/A	Construction manager Li Changku
[10] Solid and liquid waste management	There are 2 garbage can (dustbin) in the camp of Kuyu-Mazar pump station	Signed an agreement with local service sector «TOZA-KHUDUD» in Kagan district for removal domestic garbage (trash).				Construction manager Li Changku
[11] Transport of equipment and material in existing roads	N/A	N/A	N/A	N/A	N/A	Construction manager Li Changku
[12] Rehabilitation and closing of construction sites	N/A	N/A	N/A	N/A	N/A	Construction manager Li Changku
[13] Inspection and acceptance of construction works before handing over	N/A	N/A	N/A	N/A	N/A	Construction manager Li Changku

Prepared by:
International Environmental Specialist Zhang Wenjin
and Native HSE Specialist Bakhodir Tillaboev



«approved»

Hebei Construction Group Co., Ltd

Kuyu Mazar Pump Station
Construction Manager

Li Changku

« 30 » April 2018 г.

Environmental Report for April of 2018 for Kuyu Mazar Pump Station

IMPACT MITIGATION				Impact monitoring		
Project Activity	Potential Environmental Impact(s)	Proposed Mitigation Measures	Implementing Responsibility	Parameter to be monitored	Frequency and means of verification	Monitoring responsibility
construction stage						
[1] Removal of trees in construction sites	N/A	N/A	N/A	N/A	N/A	N/A
[2] Site preparation	N/A	N/A	N/A	N/A	N/A	N/A
[3] Excavation of sites and opening of borrow pits	N/A	N/A	N/A	N/A	N/A	N/A
[4] Rehabilitation activities during cropping season	N/A	N/A	N/A	N/A	N/A	N/A
[5] Removal and disposal of debris	Complying with the requirements for storage of production and household waste, and placing separate waste containers (dustbin) (2	Signed contract with a professional company designated by the local authority, ie ДУК «Тоза-Худуд», (Bukhara)	Construction Manager Li Changku	Perform daily HSE monitoring and register in the primary monitoring daily record (HSE daily monitoring record) to keep the data of the formation and transportation of waste and register it in the daily record.		HSE specialist БаходирТиллабоев

	pieces)					
[6] Storage and Handling of construction materials, fuel and lubricants	N/A	N/A	N/A	N/A	N/A	N/A
[7] Noise from construction equipment; e.g. air Compressors	N/A	N/A	N/A	N/A	N/A	N/A
[8] Dust	N/A	N/A	N/A	N/A	N/A	N/A
[9] Worker Health and Safety	N/A	N/A	N/A	N/A	N/A	N/A
[10] Solid and liquid waste management	Complying with the requirements for storage of production and household waste, and placing separate waste containers (dustbin) (2 pieces)	Signed contract with a professional company designated by the local authority, ie ДУК «Тоза-Худуд», (Bukhara)	Construction Manager Li Changku	Perform daily HSE monitoring and register in the primary monitoring daily record (HSE daily monitoring record) to keep the data of the formation and transportation of waste and register it in the daily record.		HSE specialist БаходирТиллабоев
[11] Transport of equipment and material in existing roads	N/A	N/A	N/A	N/A	N/A	N/A
[12] Rehabilitation and closing of construction sites	N/A	N/A	N/A	N/A	N/A	N/A
[13] Inspection and acceptance of construction works before handing over	N/A	N/A	N/A	N/A	N/A	N/A

draft:

HSE specialist

Б.А. Тиллабоев



Environmental Report for March of 2018 for Kizil Tepa Pump Station

IMPACT MITIGATION						IMPACT MONITORING
Project Activity	Potential Environmental Impact(s)	Proposed Mitigation Measures	Implementing Responsibility	Parameter to be monitored	Frequency and means of verification	Monitoring responsibility
[1] Removal of trees in construction sites	N/A	N/A	N/A	N/A	N/A	Construction manager Zheng Suchen
[2] Site preparation	N/A	N/A	N/A	N/A	N/A	Construction manager Zheng Suchen
[3] Excavation of sites and opening of borrow pits	N/A	N/A	N/A	N/A	N/A	Construction manager Zheng Suchen
[4] Rehabilitation activities during cropping season	N/A	N/A	N/A	N/A	N/A	Construction manager Zheng Suchen
[5] Removal and disposal of debris	There are 3 garbage-cans (dustbin) in the camp of Kizil-Tepa pump station	Signed an agreement 3/16 on 16/03/2018 with local service «TOZA-KHUDUD» in Kizil-Tepa district for removal domestic garbage (trash).				Construction manager Zheng Suchen
[6] Storage and Handling of construction materials, fuel and lubricants	N/A	N/A	N/A	N/A	N/A	Construction manager Zheng Suchen
[7] Noise from construction equipment; e.g. jack hammers, air compressors	N/A	N/A	N/A	N/A	N/A	Construction manager Zheng Suchen
[8] Dust	N/A	N/A	N/A	N/A	N/A	Construction manager Zheng Suchen
[9] Worker Health and Safety	N/A	N/A	N/A	N/A	N/A	Construction manager Zheng Suchen
[10] Solid and liquid waste management	There are 3 garbage-cans (dustbin) in the camp of Kizil-Tepa pump station	Signed an agreement #3/16 on 16/03/2018 with local service «TOZA-KHUDUD» in Kizil-Tepa district for removal domestic garbage (trash).				Construction manager Zheng Suchen
[11] Transport of equipment and material in existing roads	N/A	N/A	N/A	N/A	N/A	Construction manager Zheng Suchen
[12] Rehabilitation and closing of construction sites	N/A	N/A	N/A	N/A	N/A	Construction manager Zheng Suchen
[13] Inspection and acceptance of construction works before handing over	N/A	N/A	N/A	N/A	N/A	Construction manager Zheng Suchen

Prepared by:
International Environmental Officer Hao Zhe
and Native HSE Officer Bakhodir Tillaboev



«approved»

Hebei Construction Group Co., Ltd

Kizil Tepa Pump Station
Construction Manager

Zheng Suchen

« 30 » April 2018 г.

Environmental Report for April of 2018 for Kizil Tepa Pump Station

IMPACT MITIGATION				Impact monitoring		
Project Activity	Potential Environmental Impact(s)	Proposed Mitigation Measures	Implementing Responsibility	Parameter to be monitored	Frequency and means of verification	Monitoring responsibility
construction stage						
[1] Removal of trees in construction sites	N/A	N/A	N/A	N/A	N/A	N/A
[2] Site preparation	N/A	N/A	N/A	N/A	N/A	N/A
[3] Excavation of sites and opening of borrow pits	N/A	N/A	N/A	N/A	N/A	N/A
[4] Rehabilitation activities during cropping season	N/A	N/A	N/A	N/A	N/A	N/A
[5] Removal and disposal of debris	Complying with the requirements for storage of production and household waste, and placing separate waste containers (dustbin) (3	Signed contract with a professional company designated by the local authority, ie ДУК «Тоза-Худуд» (KT city), Contract No. 2/27, February 26, 2018	Construction Manager Zheng Suchen	Perform daily HSE monitoring and register in the primary monitoring daily record (HSE daily monitoring record) to keep the data of the formation and transportation of waste and register it in the daily record.		HSE specialist БаходирТиллабоев

	pieces)					
[6] Storage and Handling of construction materials, fuel and lubricants	N/A	N/A	N/A	N/A	N/A	N/A
[7] Noise from construction equipment; e.g. air Compressors	N/A	N/A	N/A	N/A	N/A	N/A
[8] Dust	N/A	N/A	N/A	N/A	N/A	N/A
[9] Worker Health and Safety	N/A	N/A	N/A	N/A	N/A	N/A
[10] Solid and liquid waste management	Complying with the requirements for storage of production and household waste, and placing separate waste containers (dustbin) (3 pieces)	Signed contract with a professional company designated by the local authority, ie ДУК «Тоза-Худуд» (KT city), Contract No. 2/27, February 26, 2018	Construction Manager Zheng Suchen	Perform daily HSE monitoring and register in the primary monitoring daily record (HSE daily monitoring record) to keep the data of the formation and transportation of waste and register it in the daily record.		HSE specialist БаходирТиллабоев
[11] Transport of equipment and material in existing roads	N/A	N/A	N/A	N/A	N/A	N/A
[12] Rehabilitation and closing of construction sites	N/A	N/A	N/A	N/A	N/A	N/A
[13] Inspection and acceptance of construction works before handing over	N/A	N/A	N/A	N/A	N/A	N/A

draft:

HSE specialist

Б.А. Тиллабоев



Approved by
JV Hebei Construction Group Co.LTD.
& Hebei Water Conservancy Engineering Bureau
Contractor's Representative

Wang Chaochao
May 14th, 2018

The noncompliance mentioned in the Letter №96/02-2-79 dated May 4th, 2018 on the inspection findings of the visit conducted during 12, 18-19 March, 2018

Elimination Measures №001-KT

No.	Noncompliance	Elimination Measures for the noncompliance	Elimination Deadline	Responsible Personnel	Notes
A. Main findings: Contract ABISRP/NCB/03:					
1	Public consultations for population and workers will be conducted before commencement of construction activities.	As there are no residents within 10km around the two pump stations, it won't influence the life of the residents. The employed operators received relevant training organized by the Project Department and relevant works will be implemented according to the HSE Plan.	Has been completed	HSE Officer (National) БаходирТиллабоев International Environment Office (Kizil Tepa) Hao Zhe	See picture 1
2	The mission advised to cover municipal waste containers.	Agreement has been made with the waste transportation company, who agreed to provide a cover for the waste containers.	Has been completed	HSE Officer(National) БаходирТиллабоев International Environment Office (Kizil Tepa) Hao Zhe	
3	Establish hazardous waste area with concrete ground, roofing, and with secondary container/drip tray.	We have already prepared the Hazardous Materials Management Plan and submitted it to the Consultant for review.	Has been completed	HSE Officer (National) БаходирТиллабоев International Environment Office (Kizil Tepa)	



		The specific requirements of this plan will be strictly followed for the disposal of these hazardous materials during construction.		Hao Zhe	
B.Agreed Actions:					
4	4)Environmental recording system to be established with separate folder for environmental documents kept at the camp site by the end of March 2018.	Environmental recording system has already been established, and a separated folder for environmental documents has been set and kept at the HSE office at camp site.	Has been completed	HSE Officer (National) БаходирТиллабоев International Environment Office (Kizil Tepa) Hao Zhe	
5	5) GRM logbooks and grievance box to be available at the camp site before commencement of construction works.	Make GRM logbooks and grievance box at the camp site.	Has been completed	HSE Officer(National) БаходирТиллабоев International Environment Office (Kizil Tepa) Hao Zhe	No complaints from employees or local residents have been received yet until now.(See picture 2)

Notes: All the issues above will be shown in our Monthly Environmental Report.

Prepared by:

HSE Officer

Б.А. Тиллабоев

ANNEX IV LOCAL STATE ECOLOGICAL EXPERTISE PERMISSIONS (in Russian)

«УТВЕРЖДАЮ»

Руководитель постоянного
Учреждения
«HEBEI CONSTRUCTION GROUP

CO., LTD.»
CONSTRUCTION
ZHENG SUCHEN
Kuyu Mazar
« » 2018 г.

Модернизация и восстановление насосной
станции Кую-Мазар расположенной на
территории Каганского района Бухарской
области

Проект заявления о воздействии
на окружающую среду
(ПЗВОС)

РАЗРАБОТАНО:
ООО «АТМОСФЕРА-НАВОЙ»

Директор

А.Х. РУЗИМУРОВ



« » 2018 г.

Навои – 2018 г.



ЎЗБЕКИСТОН РЕСПУБЛИКАСИ ЭКОЛОГИЯ ВА АТРОФ-МУҲИТНИ
МУҲОФАЗА ҚИЛИШ ДАВЛАТ ҚЎМИТАСИ
БУХОРО ВИЛОЯТИ ЭКОЛОГИЯ ВА АТРОФ-МУҲИТНИ МУҲОФАЗА ҚИЛИШ БОШҚАРМАСИ
705009, Бухоро ш., Ширбудин кўчаси, 41-уй. Тел.: +998 (65) 225-31-04, факс: 225-56-10
веб-саҳифа: ecobuxoro.uz, электрон почтаси: buxoro@uznature.uz.

2018 год "30" 04

№ 2-4-843

ЗАКЛЮЧЕНИЕ

Государственной экологической экспертизы

Объект: Проект заявления о воздействии на окружающую среду
Модернизация и восстановление насосной станции Кую –
Мазар расположенного на территории Каганского района
Бухарской области.
Заказчик: ПУ «HEBEI CONSTRUCTION GROUP CO.LTD»
Проектировщик: ООО "Atmosfera - Navoiy"

Руководитель постоянного
учреждения «HEBEI
CONSTRUCTION GROUP CO.LTD»
ZHENG SUCHEN

Областному отделу по экологии и
охране водных и земельных
ресурсов

На ГУП центра Бухарской Государственной экологической экспертизы
представлен проект заявления о воздействии на окружающую среду
Модернизация и восстановление насосной станции Кую – Мазар
расположенного на территории Каганского района Бухарской области.

Согласно технического задания, предусмотрено реконструкция насосных
агрегатов с восстановлением поврежденных участков для увеличения
надёжности и работоспособности.

Подкомандная площадь АБИС охватывает 315500 га и включает в себя 14
районов Бухарской области: 1 Бухара 27,967 га, 2 Вабкент 24,792 га, 3 Жондор
33,066 га, 4 Каган 18,845 га, 5 Алат 21,475 га, 6 Пешку 22,756 га, 7 Ромитан
27,241 га, 8 Шофиркон 28,402 га, 9 Каракуль 25,065 га, 10 Караулбазар 16,078 га,
11 Гиждуван 27,047 га, 12 г. Бухара 2,350 га и итого по Бухарской области
275,111 га; Навоийской области: 1 Кую-мазар 32,360 га, 2 Кармана 7,529 га и
итого по Навоийской области 39889 га.

Замена, реабилитация или модернизация 3 приоритетных насосных станций
в системе АБМК (Аму-Бухара-1, Кую-Мазар) для обеспечения гарантированной

водо подачи на орошение, промышленно-бытовые и питьевые нужды. Это также сократит расходы на ЭиО и выбросы парниковых газов.

Насосная станция граничит:

- с севера – пастбищные земли Каганского района;
- с запада – пастбищные земли района и автодорога Когон – Кизилтепо на расстоянии 285 метров;
- с юга – пастбищные земли района, подводящий канал АБМК;
- с востока – пастбищные земли района и на расстоянии 1600 метров водохранилища Куюмазар.

Ближайший населенный пункт Ходжакаб расположен на юго – западной стороне от насосной станции на расстоянии 4,1 километров.

На территории насосной станции Кую-Мазар АБМК размещено:

Подводящие каналы (Аму-Бухарский канал, Куюмазарский канал), сороудерживающее сооружение, здание насосной станции, напорные трубопроводы, напорный бассейн, отстойник системы технической воды, помещение ДЭС, мехмастерская, подсобное помещение, электроподстанция 6пр 35 кВ, кабинет начальника НС и диспетчерская Кую-Мазарского участка, пост охраны.

В здании насосной станции находятся: - административное здание, здание насосных агрегатов, здание дренажных насосов, вспомогательное помещение.

После модернизации насосной станции подача воды увеличится на 15,2 м³/сек или на 15 % от существующей мощности насоса.

Для проведения работ по реабилитации и усовершенствовании модернизации будут привлечены 40 человек.

Общий срок модернизации и восстановления насосной станции Кую-Мазар предполагается 5 лет.

Во время планировочных работ, зачистке, а также снятии четвертичных отложений выделяется неорганическая пыль. При земляных работах выделяется пыль неорганическая. Атмосферный воздух в период строительных работ загрязняться неорганической пылью. Почвы и грунты могут загрязняться в период перевозки автотранспортом строительных материалов и вывоза строймусора.

Снабжение объекта строительства водой для питьевых нужд предполагается из водопроводной сети близлежащих поселков. Доставка воды производится автоцистернами. Общий расход питьевой воды составляет 260 м³/год, расход воды для мытья полов составляет – 52 м³/год. Образующиеся сточные воды сбрасывается в специальном временном водоёме, который строят около стройплощадки.

При проведении работ образуется металлолом в количестве – 44,4768 тн/год, по мере накопления сдаются согласно договору во Вторчермет, твёрдые бытовые отходы – 20 тонн/год ТБО по мере накопления согласно договору с ГУП «Тоза худуд Бухарской области» будет вывозиться на Каганский районный полигон для складирования ТБО и нетоксичных отходов.

Электроснабжение объекта решается с использованием передвижных электростанций и линии электропередач.

После завершения строительства территория благоустраивается - вывозится мусор и излишки строительных материалов. Ямы засыпаются привозным грунтом.

В процессе оценки установлено, что выбросы вредных веществ и их максимальная концентрация в атмосферном воздухе при строительно-монтажных работах будет незначительным.

Для предупреждения возникновения аварийных ситуаций проектом разработаны мероприятия.

Необходимо взять под контроль соблюдение природоохранного законодательства при строительстве, обратив особое внимание на не допустимости несанкционированной вырубki древесной растительности.

В соответствии с перечнем видов деятельности, утвержденным Постановлением КМ РУз № 152 от 05.06.2009 г., относится к III-ей категории воздействия на окружающую среду.

Рассмотрев представленные материалы, ГУП центра Бухарской Государственной экологической экспертизы согласовывает проект заявления о воздействии на окружающую среду Модернизация и восстановление насосной станции Кую – Мазар расположенного на территории Каганского района Бухарской области.

Контроль за соблюдением требований природоохранного законодательства на объекте возлагается областному отделу по экологии и охране водных и земельных ресурсов.

Заключение государственной экологической экспертизы о соответствии объекта государственной экологической экспертизы экологическим требованиям имеет юридическую силу в течение трех лет со дня его выдачи.

Председатель комитета



А.Б.Ниязов

А Фаттаев
225-32-64



Ситуационная схема расположения насосной станции Кую-Маз



ОЖЕНИЯ

60

Вдх. Кую-Мазар

1600М

285М

степная зона

подв. канал АБВМК

Руководитель предприятия

Государственный инспектор

Эксперт госэкоэкспертизы

Подписи подтверждаю



alGlobe
alGlobe
e

Google Earth

44° 5' 6.14" N 64° 49' 15.70" E

«УТВЕРЖДАЮ»

Руководитель постоянного

Учреждения

«HEBEI CONSTRUCTION GROUP

Солтдо Зиянжиган
SOLDI ZIYANGJIGAN

«__» ____ 2018 г.



Модернизация и восстановление насосной
станции Кизилтепа расположенной на
территории 2-участка массива «Мехнат Рохат»
Кизилтепинского района Навоийской области

Проект заявления о воздействии
на окружающую среду
(ПЗВОС)

РАЗРАБОТАНО:
ООО «АТМОСФЕРА-NAVOIY»

Директор

А.Х. РУЗИМУРДОВ



«__» ____ 2018 г.

Навои – 2018 г.



O'ZBEKISTON RESPUBLIKASI EKOLOGIYA VA ATROF-MUHITNI MUHOFAZA QILISH
DAVLAT QO'MITASI
NAVOIY VILOYATI EKOLOGIYA VA ATROF-MUHITNI MUHOFAZA QILISH BOSHQARMASI
210100, Navoiy sh, Tolstoy ko'chasi 14-uy, tel: (79) 225-45-78; tel/fax: 225-36-21
el.manzil : navoiy@uznature.uz

«28» aprel 2018 yil

№ 546/18

Navoiy sh

Руководителю постоянного Учреждения
«HEBEI CONSTRUCTION GROUP CO. LTD»
Господину ZHENG SUCHEN

копия: Специалисту Кызылтепинской районной
инспекции экологии и охраны окружающей среды
Ф.Аллаёрову

копия: Главному специалисту по учету, координации
экологических нормативов и взаимодействия с инспекциями
Н.Муродову

ЗАКЛЮЧЕНИЕ

Государственной экологической экспертизы

Объект: Проект ЗВОС «Модернизация и восстановление насосной станции «Кызылтапа» расположенной на территории 2-участка массива «Мехнат Рохат», Кызылтепинского района, Навоийской области.

Заказчик: «HEBEI CONSTRUCTION GROUP CO. LTD».

Разработчик: ООО «ATMOSFERA NAVOIY».

На государственную экологическую экспертизу представлены материалы проекта ЗВОС модернизация и восстановление насосной станции «Кызылтапа» расположенной на территории 2-участка массива «Мехнат Рохат», Кызылтепинского района, Навоийской области.

Насосная станция «Кызылтапа» и трубопроводы эксплуатируется с 1975 года.

Проектом предусмотрено модернизировать морально устаревшее оборудование заменой его на новые и внедрить современные энергосберегающие технологии, отвечающие мировым стандартам.

Объектами замены, реабилитации или модернизации Кызылтепинской насосной станции включает в себя все структурные, механические и электрические компоненты насосных станций. Данные субпроект также включает в себя модернизацию мастерских для ремонта существующих и усовершенствованных насосных агрегатов.

Кызылтепинская насосная станция находится на территории участка № 2 массива «Мехнат Рохат» Кызылтепинского района, Навоийской области, с северо-восточной части озера Тудакуль, в 8 км к югу от города Кызылтепа.

Ближайший населенный пункт махалля Айрончи находится на северо-восточной стороне на расстоянии 6,8 км от Кызылтепинской насосной станции.

Насосная станция граничит:

- ▶ с севера, востока и запада – пастбищные земли района;
- ▶ с юга – пастбищные земли района, проектируемое рыбное хозяйство и в 4 км озеро Тудакуль.

На территории насосной станции Кызылтепа АБМК размещено: подводящий канал; сороудерживающее сооружение; здание насосной станции; участок трубопровода; анкерная опора № 1; напорный трубопровод ф – 3200 (Харурская ветка); напорный бассейн (Харурская ветка); Харурская ветка АБК; напорный трубопровод ф – 3600 (Шафирканская ветка); напорный бассейн (Шафирканская ветка); Шафирканская ветка АБК; электроподстанция 6 пр 35 кВ; защитная дамба; отстойник № 1; отстойник № 2; ДЭС и склад; пост.

Проектная и фактическая пропускная способность Кызылтепинской насосной станции АБМК Шафирканская ветка протяженностью – 25,7 км; ф – 3600 мм; проектный расход – 90 м³/сек; фактический расход – 80 м³/сек; Харурская ветка протяженностью – 14,0 км; ф – 3200 мм; проектный расход – 60 м³/сек; фактический расход – 55 м³/сек.

Результаты проекты от реализации этих мероприятий будут включать в себя следующие:

- ▶ реабилитированные и модернизированные насосные станции обеспечат более эффективную и гарантированную водоподачу;
- ▶ модернизированная система магистрального канала будет подавать воду в соответствии с требованиями и сведет к минимуму потери воды;
- ▶ демонстрационные участки, создаваемые для демонстрации улучшенного управления водными ресурсами на внутрихозяйственном уровне, приведут к улучшению КПД внутрихозяйственной системы;
- ▶ выбросы парниковых газов насосными станциями будут снижены за счет модернизации и оптимизации расходов с учетом ожидаемых воздействий от изменения климата;
- ▶ институциональные реформы, усиление потенциала окажут содействие в эффективном управлении проектом и ирригационными системами.

После модернизации насосной станции подача воды увеличится на 25,2 м³/сек или на 25 % от существующей мощности насоса. Потребность на электроэнергию уменьшится на 16000 кВт или на 15 %.

В результате проведения модернизации и восстановления существующих агрегатов предусматривается четыре источника выбросов, из которых в атмосферу будет поступать 0,805351 т/год загрязняющих веществ 11 наименований, постоянные 0,04494 т/год.

Пылегазоочистное оборудование не применяется.

Расчёт приземных концентраций формируемых выбросами загрязняющих веществ показал, что на границе предприятия превышения установленных квот не произойдёт.

Водоснабжение для хозяйственно-питьевых целей осуществляется привозным путём из города Кызылтепа. Расход питьевой воды составляет – 364 м³/год.

Технологические стоки не образуются, вода используется безвозвратно.

Хозбытовые стоки – 260 м³/год сбрасываются в бетонированный выгреб ёмкостью – 10,0 м³, по мере накопления, вывозятся на полив зелёных насаждений по согласованию СЭС.

В результате проведения модернизации и восстановления существующих агрегатов образуется: 115,607 тонн черного металлолома; 0,02 тонн отходы электродов; 30 тонн сорные примеси; 0,624 т/год пищевые отходы

Аварийные ситуации, негативно воздействующие на окружающую среду, не прогнозируются.

Согласно постановления Кабинета Министров РУз. № 152 от 05.06.2009 г. данный объект относится к III категории воздействия на окружающую среду.

Заключение государственной экологической экспертизы о допустимости реализации проекта имеет юридическую силу в течение трех лет, в случае неосуществления проектируемых работ за этот период или изменений проектных решений, следует заново разработать проект ЗВОС и представить его на государственную экологическую экспертизу в установленном законодательном порядке (п.19 приложения к Постановлению КМ РУз № 491 от 31.12.2001 г.).

Заключение государственной экологической экспертизы о допустимости реализации проекта не подменяет и не отменяет необходимость получения нужных разрешительных документов в установленном Законодательством порядке.

Навоийское областное управление экологии и охраны окружающей среды согласовывает проект ЗВОС «Модернизация и восстановление насосной станции «Кызылтепа» расположенной на территории 2-участка массива «Мехнат Рохат», Кызылтепинского района, Навоийской области».

Специалисту Кызылтепинской районной инспекции экологии и охраны окружающей среды необходимо взять под контроль выполнения природоохранных мероприятий:

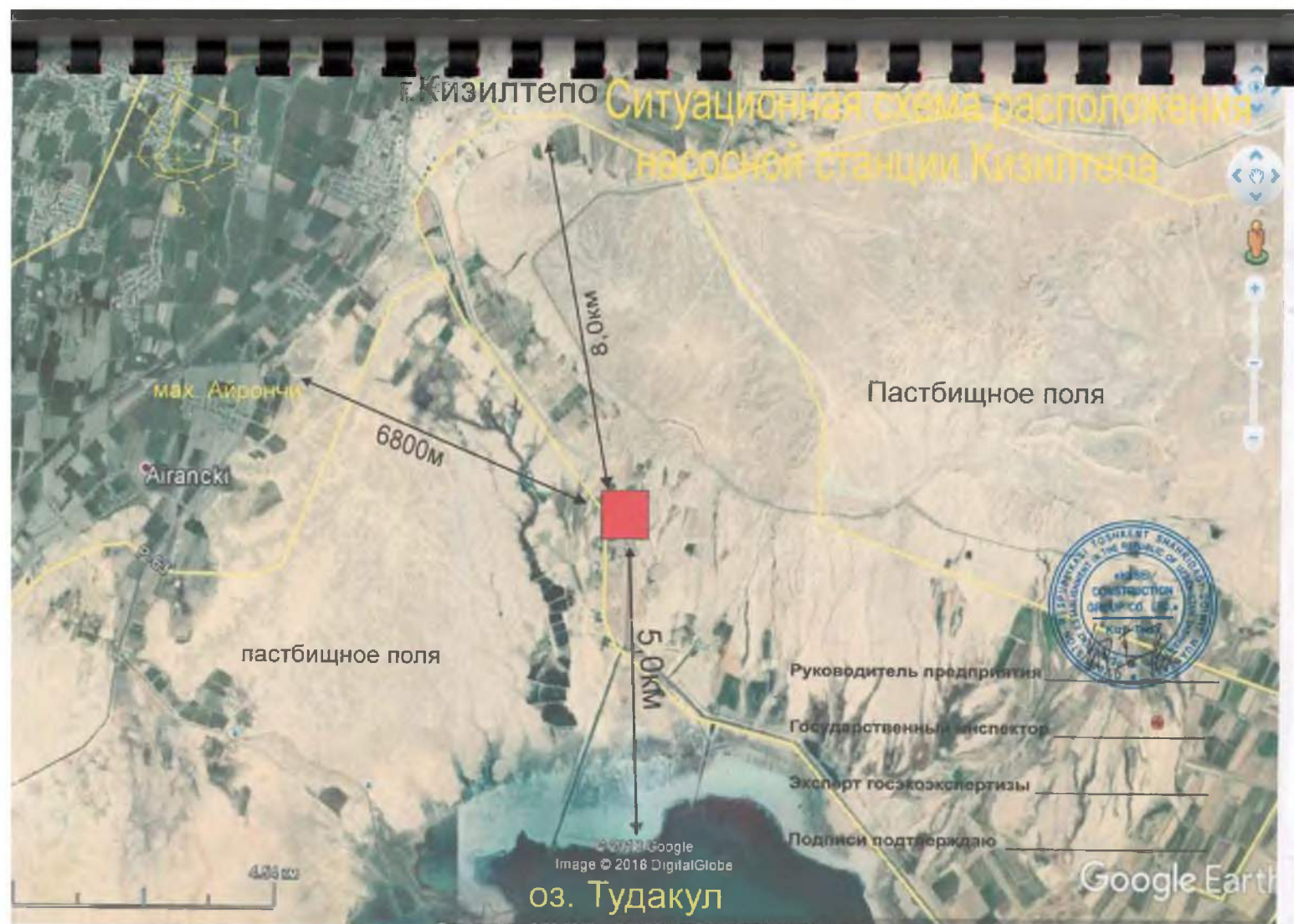
– вывоз и утилизация отходов, а также стоков.

Начальник управления:



Ш.Худайкулов

исп. А.Саидов
тел. 225-45-81



**ANNEX V BACKGROUND ENVIRONMENTAL MONITORING DATA FROM
BUKHARA AND NAVOI REGIONS (in Russian)**

ЎЗБЕКИСТОН РЕСПУБЛИКАСИ
ҚИШЛОҚ ВА СУВ ХЎЖАЛИГИ
ВАЗИРЛИГИ

ҚИШЛОҚ ВА СУВ
ХЎЖАЛИГИНИНГ ИНВЕСТИЦИЯ
ЛОЙИХАЛАРИНИ АМАЛГА
ОШИРИШ МАРКАЗИ



REPUBLIC OF UZBEKISTAN
THE MINISTRY OF AGRICULTURE
AND WATER RESOURCES

CENTER FOR IMPLEMENTATION
OF INVESTMENT PROJECTS IN
AGRICULTURE AND WATER
RESOURCES SECTOR

100128, Ташкент ш. Лабзак кўч, 1
Тел./Факс. (998-71) 241 89 06 e-mail: abisr@mail.ru

1, Labzak Str, Tashkent, 100128
Tel./Fax (998-71) 241 89 06 e-mail: abisr@mail.ru

04.05.2018 № 96/02.2-80

Mr. O. Mete Cilek
Temelsu-Sheladia

In reply to your letter ref. No. omcABISR/PIU/18.012 dated January 23, 2018 we are sending you monthly hydrological and hydrochemical characteristics of water quality in Bukhara and Navoi regions for 2015-2016.

Also we are sending you the water discharge in Amu-Darya River in Bukhara and Navoi regions for 2015-2018.

Project Manager

G. Kasimov

ЎЗБЕКИСТОН РЕСПУБЛИКАСИ
ҚИШЛОҚ ВА СУВ ХЎЖАЛИГИ
ВАЗИРЛИГИ
ҚИШЛОҚ ВА СУВ ХЎЖАЛИГИНИНГ
ИНВЕСТИЦИЯ ЛОЙИХАЛАРИНИ
АМАЛГА ОШИРИШ МАРКАЗИ



REPUBLIC OF UZBEKISTAN
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«04.05» 2018 г.
№ 96/2-2-80

“Temelsu- Sheladia”
Мете Чилек

В ответ на Ваше письмо №отс ABISR/PIU/18.012 от 23.01.2018 г. направляем Вам ежемесячную гидрологическую и гидрохимическую характеристики качества воды в Бухарской и Навоийской областях за 2015-2016 годы.

Также направляем расход воды реки Амударя по Бухарской и Навоийской областях за 2015-2018 годы.

Менеджер проекта

Г.Касимов

Исп. Ш.Наимова
Тел. 241 89 06

O'ZBEKISTON RESPUBLIKASI
FAVQULODDA VAZIYATLAR
VAZIRLIGI HUZURIDAGI
GIDROMETEOROLOGIYA XIZMATI MARKAZI
(O'ZGIDROMET)

ATMOSFERA, YUZA SUVLAR
VA TUPROO IFLOSLANISHNI
MONITORINGINI
OLUB BORISH HIZMATI (IMH)
100052, Toshkent shahar, 52
Bodomzor yo'li 1-top ko'chasi, 72
Telefonlar: 237-15-47, 235-86-14
Faks: 233 61 17
Telegraf manzili: Toshkent ГИМЕТ



REPUBLIC OF UZBEKISTAN
MINISTRY OF EMERGENCY SITUATIONS
THE CENTER OF
HYDROMETEOROLOGICAL SERVICE
(UZHYDROMET)

ATMOSPHERE, SURFACE WATER AND
SOIL POLLUTION MONITORING
SERVICE (PMS)
72, 1st Bodomzor yuli str.,
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Republic of Uzbekistan
Telephones: 237-15-47, 235-86-14
Fax: 233 61 17
Telegrams: Tashkent GIMET

2018 28.03 № 06-08/01-44

Директору Центра реализации
инвестиционных проектов в
сельском и водном хозяйстве
Юсупову Б.

Центр гидрометеорологической службы при Министерстве по чрезвычайным ситуациям Республики Узбекистан (Узгидромет) в ответ на Ваше письмо № 96/01-3-56 от 29.01.2018 г. направляет Вам ежемесячную гидрологическую и гидрохимическую характеристики качества воды в Бухарской и Навоийской областях за 2015-2016 годы.

Приложение: 12 л.

ВРИО начальника СМЗ

О.А. Белоруссова

Monthly report of quality of water for the period of 2015

Ежемесячная гидрологическая и гидрохимическая характеристика качества воды за период 2015 г.

Река: Зарафшан

Пост: выше г. Навои

Год: 2015

Показатели/ характеристики	январь	февраль	март	апрель	май	июнь	июль	август	сентябрь	октябрь	ноябрь	декабрь
Расход реки (м3/с)	-	-	-	-	-	-	-	-	-	-	-	-
Взвешенные в-ва (мг/л)	24	802	6665	101	80	420	1376	920	78	131	164	5443
pH	7,6	7,8	7,7	7,1	7,78	7,32	7,85	7,81	7,34	7,15	8	7,16
O2 (мг/л)	11,35	11,28	10,4	9,1	7,03	9,59	8,89	7,07	8,6	6,12	9,19	6,85
Насыщение 2, %	101	105	101	92	74	106	106	71	88	60	89	58
CO2(мг/л)	0	0	0	0	0	0	0	0	0	0	0	0
Жесткость (МГ – экв/л)	14	11,9	12	12,2	14,2	12,2	7	12,5	12,6	14,4	12,8	12,6
Хлориды (мг/л)	102,1	64,8	66,4	76,8	98,6	86,1	42,7	87,5	76,6	74,3	82,2	81,6
Сульфаты (мг/л)	621	477	521	521	664	541	280	569	632	560	638	520
Гидрокарбанат (мг/л)	329	191	194	266	251	250	170	255	264	279	271	295
Na (мг/л)	165	68,3	92,6	110	152,8	120	70,1	146,5	172,3	96,8	175,4	132,9
K (мг/л)	9	5	3	15	5	19	6	3	3	6	7	6
Ca (мг/л)	94,2	106,2	100,2	54,1	98,2	68,1	52,1	102,2	114,2	130,3	88,1	126,2
Mg (мг/л)	113,08	80,26	85,12	115,52	113,09	107,03	53,51	89,99	83,92	96,04	102,19	76,64
Минерализация (мг/л)	1437,9	996,2	1066,9	1162	1385,5	1204,6	680,3	1259,4	1353,6	1249,3	1385,3	1248,8
ХПК (мг/л)	25	13,7	9,43	17,5	14,8	18,5	11,6	20,5	9,98	24,2	10,2	17,2
БПК ₅ (мг/л)	5,85	1,37	2,54	1,05	1,14	1,81	2,06	1	0,52	3,86	1,51	4,9
Азот аммонийный (мгN/л)	0	0,17	0,16	0,06	0,03	0,01	0,04	0,11	0,04	0,04	0,04	0,01
Азот нитритный (мгN/л)	0,016	0,023	0,033	0,001	0,005	0,001	0,003	0,006	0,002	0,554	0,002	0,022
Азот нитратный (мгN/л)	1,02	0,83	1,03	0,8	0,64	3,02	1,33	1,4	1,71	1,55	4,84	2,36
Fe общ.(мг/л)	0,03	0,03	0,01	0,01	0,01	0	0	0	0,01	0,01	0,01	0,01
Cu(мкг/л)	0	0,4	0	0,7	0	1,1	2,9	1,4	0	0	0,3	0,1
Zn(мг/л)	2,8	1,3	0,4	2,3	1,6	1,7	1,9	0,7	0,7	0,7	3,2	1,7
Cr – VI (мгк/л)	0,4	0,2	0	0,4	0,1	0,6	1	0,7	0,7	0,5	0	0
Фенол(мг/л)	0,002	0,001	0,003	0,002	0,007	0,002	0,001	0,004	0,005	0,002	0,001	0,003
СПАВ(мг/л)	0	0	0	0	0	0	0	0	0	0	0	0
F(мг/л)	0,53	0,51	0,48	0,51	0,42	0,49	0,42	0,45	0,49	0,52	0,51	0,51

Река: Зарафшан

Пост: ниже г. Навои

Год: 2015

Показатели/ характеристики	январь	февраль	март	апрель	май	июнь	июль	август	сентябрь	октябрь	ноябрь	декабрь
Расход реки (м3/с)	-	-	-	-	-	-	-	-	-	-	-	-
Взвешенные в-ва (мг/л)	56	6417	6701	45	191	427	1441	777	62	142	157	6334
pH	7,98	6,86	6,92	7,81	7,81	7,92	8,05	7,91	7,74	7,11	8,06	7,53
O2 (мг/л)	9,48	5,16	8,86	8,93	8,66	8,5	9,15	8,15	7,87	6,65	9,12	7,94
Насыщение 2, %	87	49	90	95	103	102	116	96	91	68	87	74
CO2(мг/л)	0	0	0	0	0	0	0	0	0	0	0	0
Жесткость (МГ – экв/л)	16,2	13,2	13,1	19	14,25	12,2	7,1	12,3	12,4	14	13	14,9
Хлориды (мг/л)	121	64,2	64,8	201	95,9	71,9	40,3	95,4	82,2	76,6	82,2	116,6
Сульфаты (мг/л)	763	479	481	1006	664	519	280	557	614	573	622	656
Гидрокарбонат (мг/л)	326	268	268	276	234	261	175	256	253	283	271	298
Na (мг/л)	197	70,2	74,1	275	143,2	115	68,1	151,6	167,7	116,3	160,4	180,4
K (мг/л)	9	3	3	20	5	19	5	3	3	5	9	6
Ca (мг/л)	160,3	102,2	72,1	134,3	108,2	54,1	44,1	82,1	108,2	128,3	104,2	144,3
Mg (мг/л)	99,72	98,5	115,55	149,55	107,63	115,52	59,58	99,75	85,13	92,39	94,85	93,62
Минерализация (мг/л)	1684,3	1089,2	1083	2072,6	1360,9	1169,7	678,2	1252,5	1321,2	1282,2	1364,6	1530,6
ХПК (мг/л)	31,3	24,7	24,7	21,9	15,4	14,2	10,1	26,9	10,7	23,7	11,7	19,1
БПК ₅ (мг/л)	2,32	2,09	1,85	2,46	2,46	1,81	1,27	2,17	0,38	2,96	2,6	1,81
Азот аммонийный (мгN/л)	0,31	0,03	0,12	0,43	0,03	0,04	0,03	0,05	0,09	0,01	0,03	0,39
Азот нитритный (мгN/л)	0,024	0,089	0,009	0,148	0,005	0,003	0	0,006	0,005	0,753	0,023	0,194
Азот нитратный (мгN/л)	1,87	0,92	1	2,42	0,68	3,2	1,39	1,73	1,81	1,72	4,72	8,06
Fe общ.(мг/л)	0,01	0,08	0,01	0,02	0	0	0	0	0	0,01	0,03	0
Cu(мкг/л)	0	0,8	0,3	0,9	0	1	4,8	2,3	0,1	1	0	0,1
Zn(мг/л)	2	0,8	1	6,8	2,8	1,3	1,8	0,9	4,9	0,7	2,8	0,9
Cr – VI (мгк/л)	0,4	0	0	0,2	0	0,1	0,8	0,8	0,3	0,6	1,1	0,3
Фенол(мг/л)	0,001	0,009	0	0,004	0,009	0,006	0	0,006	0,007	0,002	0	0
СПАВ(мг/л)	0	0	0	0	0	0	0	0	0	0	0	0
F(мг/л)	0,55	0,47	0,44	0,67	0,42	0,5	0,4	0,46	0,5	0,54	0,52	0,49

Река: Зарафшан

Пост: выше г. Бухара

Год: 2015

Показатели/ характеристики	январь	февраль	март	апрель	май	июнь	июль	август	сентябрь	октябрь	ноябрь	декабрь
Расход реки (м3/с)	-	-	-	-	-	-	-	-	-	-	-	-
Взвешенные в-ва (мг/л)	15	73	11	11	6	25	12	4	1	18	4	2
pH	7,65	7,5	7,2	7,57	7,17	7,55	7,44	7,76	7,85	7,65	7,35	7,88
O2 (мг/л)	7,81	9,28	7,39	7,32	7,41	6,27	7,49	9,99	9,23	6,73	6,43	8,32
Насыщение 2, %	61	74	60	74	76	64	81	123	100	69	56	69
CO2(мг/л)	0	0	0	0	0	0	0	0	0	0	0	0
Жесткость (МГ – экв/л)	22,7	17,1	23,5	24,2	21	21,2	23	20,25	23,5	28,25	26,2	23,5
Хлориды (мг/л)	337	229	299,9	372	341,2	339	356,6	326,1	321	327	369,9	326,1
Сульфаты (мг/л)	959	800	1046	1094	1043	994	1146	993	1069	1085	1332	1076
Гидрокарбонат (мг/л)	345	276	366	355	354	332	338	325	348	343	434	355
Na (мг/л)	290	234	290	340	370	335	395	363,7	328,2	197,3	450	320
K (мг/л)	13	20	18	19	18	30	16	11	13	13	14	13
Ca (мг/л)	174,3	142,3	205,4	190,4	175,3	155,3	180,4	140,3	175,3	188,4	190,3	185,4
Mg (мг/л)	170,27	121,59	161,13	178,74	148,99	163,56	170,22	161,11	179,39	229,2	203,12	173,26
Минерализация (мг/л)	2298,8	1825,3	2392	2555	2452,9	2367,1	2611,2	2332	2442,8	2386	3006,3	2460,5
ХПК (мг/л)	28,9	33,2	30,6	38,2	17	25,5	39,9	35,2	20,9	24,6	18,3	33,8
БПК ₅ (мг/л)	0,83	2,37	1,4	0,53	1,59	0,27	2,65	1,02	2,89	1,26	3,22	0,82
Азот аммонийный (мгN/л)	0	0	0,01	0	0,04	0	0,01	0,02	0,01	0,02	0,08	0,02
Азот нитритный (мгN/л)	0,004	0,001	0,001	0	0	0,001	0,002	0	0,002	0	0,011	0,001
Азот нитратный (мгN/л)	2,32	0,55	1,26	1,32	0,54	4,11	2,02	2,66	2,01	0,69	2,92	2,64
Fe общ.(мг/л)	0,01	0,01	0,01	0	0	0,01	0,01	0	0,02	0,01	0,01	0,01
Cu(мкг/л)	0	2,2	0	0,4	0	0	1,9	0,8	0,7	0,4	0,5	0,3
Zn(мг/л)	2,2	2	0,6	2,3	1,1	0,5	0,8	2,5	2,1	0,5	2,3	0,5
Cr – VI (мгк/л)	0	0,8	0	0,2	0	0,1	0,5	1,6	0	0	0	0
Фенол(мг/л)	0,001	0,002	0,003	0,001	0,003	0,004	0,003	0,005	0,002	0,007	0,006	0,005
СПАВ(мг/л)	0	0	0	0	0	0	0	0	0	0	0	0
F(мг/л)	0,36	0,3	0,48	0,48	0,38	0,39	0,47	0,33	0,38	0,43	0,49	0,31

Река: Зарафшан

Пост: ниже г. Бухара

Год: 2015

Показатели/ характеристики	январь	февраль	март	апрель	май	июнь	июль	август	сентябрь	октябрь	ноябрь	декабрь
Расход реки (м3/с)	-	-	-	-	-	-	-	-	-	-	-	-
Взвешенные в-ва (мг/л)	35	37	15	50	9	23	44	19	4	9	510	3
pH	7,27	7,04	7,27	7,54	7,2	7,25	7,32	7,27	7,62	7,7	7,27	7,95
O2 (мг/л)	8,88	6,29	6,43	6,89	6,48	5,89	6,84	6,73	8,96	7,14	7,14	8,21
Насыщение 2, %	72	52	55	72	69	66	77	81	101	76	65	72
CO2(мг/л)	0	0	0	0	0	0	0	0	0	0	0	0
Жесткость (МГ – экв/л)	18,2	28	24	25,5	18,75	19,7	25,5	17,5	24,75	27,25	25,2	25
Хлориды (мг/л)	292	420	345,2	372	322,6	300	426,9	285,1	335	317	350	327,4
Сульфаты (мг/л)	900	1200	1062	1170	879	976	1213	921	1112	1065	1276	1305
Гидрокарбонат (мг/л)	300	427	415	374	317	313	447	330	413	314	375	358
Na (мг/л)	310	362	336	353	318	317	463	367,6	355,7	186,4	410	400
K (мг/л)	15	20	18	20	15	30	19	10	13	13	15	13
Ca (мг/л)	138,3	190,4	180,4	195,4	160,3	140,3	185,4	115,2	175,3	188,4	200,4	200,4
Mg (мг/л)	137,39	224,95	182,38	191,51	130,73	154,42	197,58	142,9	194,59	217,04	184,83	182,4
Минерализация (мг/л)	2102,1	2849,7	2546,1	2679,4	2145,2	2245,5	2962,4	2182,8	2610	2304,4	2831,2	2798,1
XПК (мг/л)	38,3	54,6	34	42,8	22	26,9	40,2	36,5	30,6	31,9	25,1	34,1
БПК ₅ (мг/л)	1,83	2,55	1,58	1,81	0,57	0,5	1,88	1,25	2,94	1,29	3,91	0,44
Азот аммонийный (мгN/л)	0	0,02	0	0,03	0	0,11	0	0,02	0	0,07	0,06	0,01
Азот нитритный (мгN/л)	0,005	0,008	0	0,009	0,001	0,59	0,005	0	0,001	0,001	0,029	0
Азот нитратный (мгN/л)	2,12	1,21	1,6	0,79	0,58	3,34	2,37	2,48	2,57	0,81	4,52	2,68
Fe общ.(мг/л)	0,01	0	0,02	0,01	0	0,01	0	0	0,02	0,01	0,01	0,01
Cu(мкг/л)	0,1	1,5	0	0	0	0	3,1	0,9	1,1	0,1	0,2	0,8
Zn(мг/л)	3,1	2,2	0,9	5	1,8	1,2	0,9	2,3	0,3	1,5	2,7	0,2
Cr – VI (мгк/л)	0	0,3	0,7	0	0	0	0	1,8	0	0,2	0,3	0
Фенол(мг/л)	0,004	0,003	0,002	0	0,001	0,005	0,005	0,003	0	0,005	0,006	0,008
СПАВ(мг/л)	0	0	0	0	0	0	0	0	0	0	0	0
F(мг/л)	0,44	0,39	0,43	0,54	0,48	0,42	0,53	0,43	0,4	0,41	0,4	0,4

Река: Южно-Бухарский канал

Пост: выше г. Бухара

Год: 2015

Показатели/ характеристики	март	июнь	сентябрь	декабрь
Расход реки (м3/с)	-	-	-	-
Взвешенные в-ва (мг/л)	103	1874	2658	108
pH	7,21	7,45	7,23	8,1
O2 (мг/л)	9,7	8,39	5,98	11,5
Насыщение 2, %	85	85	67	98
CO2(мг/л)	0	0	0	0
Жесткость (МГ – экв/л)	8,4	6,9	6,3	7,2
Хлориды (мг/л)	155,1	119	110,3	139,2
Сульфаты (мг/л)	282	299	289	293
Гидрокарбонат (мг/л)	241	166	126	217
Na (мг/л)	132	125	118	154
K (мг/л)	7	6	0	5
Ca (мг/л)	100,2	80,2	78,1	86,2
Mg (мг/л)	41,34	35,24	29,22	35,25
Минерализация (мг/л)	960,2	833,7	751,9	932,8
ХПК (мг/л)	13,8	13,7	19	12,5
БПК ₅ (мг/л)	2,2	1,34	1,1	1,01
Азот аммонийный (мгN/л)	0	0,01	0,11	0,01
Азот нитритный (мгN/л)	0,001	0,004	0,011	0,001
Азот нитратный (мгN/л)	0,35	0,73	0,28	0,72
Fe общ.(мг/л)	0,01	0	0,02	0,03
Cu(мкг/л)	0,9	0,3	0,1	1
Zn(мг/л)	1,8	0,8	0,5	0,6
Cr – VI (мгк/л)	0	0,1	0	0,6
Фенол(мг/л)	0,001	0	0,004	0,006
СПАВ(мг/л)	0	0	0	0
F(мг/л)	0,32	0,28	0,3	0,3

Река: Южно-Бухарский канал

Пост: ниже г. Бухара

Год: 2015

Показатели/ характеристики	март	июнь	сентябрь	декабрь
Расход реки (м3/с)	-	-	-	-
Взвешенные в-ва (мг/л)	4	13	10	6
pH	7,36	7	6,96	7,56
O2 (мг/л)	5,78	6,23	5,18	6,33
Насыщение 2, %	48	66	56	56
CO2(мг/л)	0	0	0	0
Жесткость (МГ – экв/л)	33	19,75	20,5	50,5
Хлориды (мг/л)	421,2	274	252,5	596,6
Сульфаты (мг/л)	1545	891	1017	2717
Гидрокарбонат (мг/л)	314	331	240	401
Na (мг/л)	380	270	282,2	708
K (мг/л)	9	17	2	13
Ca (мг/л)	235,5	165,3	165,3	350,7
Mg (мг/л)	258,38	139,86	148,98	401,28
Минерализация (мг/л)	3164,9	2090,1	2108,7	5189,2
ХПК (мг/л)	26,8	20,6	24,4	40
БПК ₅ (мг/л)	1,61	1,85	2,37	1,55
Азот аммонийный (мгN/л)	0,08	0	0	0
Азот нитритный (мгN/л)	0,005	0,005	0	0,003
Азот нитратный (мгN/л)	0,41	0,43	0,17	0,36
Fe общ.(мг/л)	0	0,03	0,01	0,01
Cu(мкг/л)	0	0	0,2	0,5
Zn(мг/л)	2,2	2,5	1,9	0,7
Cr – VI (мгк/л)	0	0	0,1	0,3
Фенол(мг/л)	0,003	0,005	0,008	0,011
СПАВ(мг/л)	0	0	0	0
F(мг/л)	0,52	0,41	0,43	0,46

Monthly report of quality of water for the period of 2016

Ежемесячная гидрологическая и гидрохимическая характеристика качества воды за период 2016 г.

Река: Зарафшан

Пост: выше г. Навои

Год: 2016

Показатели/ характеристики	январь	февраль	март	апрель	май	июнь	сентябрь	октябрь	ноябрь	декабрь
Расход реки (м3/с)	-	-	-	-	-	-	-	-	-	-
Взвешенные в-ва (мг/л)	18	86	142	98	130	625	20	69	42	64
pH	7,86	7,43	7,99	7,55	7,95	8,05	7,1	7,9	6,85	7,76
O2 (мг/л)	8,95	8,12	9,32	8,45	13,18	7,76	11,17	10,28	9,11	9,67
Насыщение 2, %	95	82	85	81	133	93	115	92	90	81
CO2(мг/л)	0	0	0	0	0	0	0	0	0	0
Жесткость (МГ – экв/л)	13,7	10,5	17,2	13	10,1	7,8	13,4	10,7	13	18,2
Хлориды (мг/л)	89,5	64,7	116	90,1	75,8	43,4	79,5	70	75,7	111,6
Сульфаты (мг/л)	685	467	760	587	473	329	615	533	580	701
Гидрокорбанат (мг/л)	205	237	341	292	184	201	280	245	252	297
Na (мг/л)	155	121,6	184,5	162	123	90,8	153	156	130,4	110,4
K (мг/л)	2	3	3	3	3	3	6	3	5	6
Ca (мг/л)	112,2	88,2	128,2	96,1	72,1	64,1	104,2	64,1	112,2	132,2
Mg (мг/л)	98,51	74,16	131,36	99,77	79,07	55,95	99,72	91,22	90	141,09
Минерализация (мг/л)	1363	1063,7	1676,2	1341,7	1025,4	800,3	1346,1	1168,2	1250,5	1510,5
ХПК (мг/л)	17,1	18,1	21	13,1	19,3	10,8	14	16,8	21,2	10,4
БПК ₅ (мг/л)	1,55	2,05	2,75	2,81	1,52	1,6	2,7	0,98	2,5	1,31
Азот аммонийный (мгN/л)	0,1	0	0,1	0,05	0	0	0,04	0,05	0,01	0,01
Азот нитритный (мгN/л)	0,036	0	0,008	0,017	0,008	0,007	0,008	0	0,007	0,016
Азот нитратный (мгN/л)	3,56	1,81	2,73	2,66	3,48	2,94	1,97	1,32	1,17	2,53
Fe общ.(мг/л)	0,01	0,02	0,01	0	0	0,02	0	0,03	0,01	0,02
Cu(мкг/л)	1,4	0	0	0	0,4	0	1,1	0	0,4	0
Zn(мг/л)	2,2	0,7	1,3	4,9	1,8	0,2	26,2	9,2	6,4	6,4
Cr – VI (мгк/л)	0,4	1,1	0	0,4	0,1	1	0	0,4	0,1	0
Фенол(мг/л)	0,004	0,001	0,001	0,005	0	0	0,002	0,001	0,001	0
СПАВ(мг/л)	0	0	0	0	0	0	0	0	0	0
F(мг/л)	0,56	0,41	0,61	0,45	0,34	0,38	0,6	0,55	0,69	0,65

Река: Зарафшан

Пост: ниже г. Навои

Год: 2016

Показатели/ характеристики	январь	февраль	март	апрель	май	июнь	сентябрь	октябрь	ноябрь	декабрь
Расход реки (м3/с)	-	-	-	-	-	-	-	-	-	-
Взвешенные в-ва (мг/л)	267	66	25	222	180	386	35	63	20	8
pH	7,1	7,35	6,97	6,9	7,81	7,36	7,65	8	7,55	7,38
O2 (мг/л)	6,39	8,97	6,28	8,25	16,64	4,18	8,84	9,76	9,92	8,64
Насыщение 2, %	58	89	62	87	166	48	101	102	100	80
CO2(мг/л)	0	0	0	0	0	0	0	0	0	0
Жесткость (МГ – экв/л)	14,7	14,1	13,2	16,6	9,9	8,3	13,1	8,5	9,6	7,4
Хлориды (мг/л)	89,5	110,7	84,5	111,3	82,2	48,5	79,5	54,9	41,8	16,7
Сульфаты (мг/л)	640	715	534	763	499	352	622	394	356	208
Гидрокарбонат (мг/л)	282	219	323	314	172	227	286	216	246	250
Na (мг/л)	135	186,3	136,7	189	141	99,3	166	117,4	74,7	38,4
K (мг/л)	6	3	3	5	3	5	6	3	2	3
Ca (мг/л)	118,2	124,2	72,1	154,3	72,1	68,1	102,2	62,1	92,2	62,1
Mg (мг/л)	107,03	96,09	116,76	108,23	76,63	59,61	97,28	65,68	60,79	52,3
Минерализация (мг/л)	1384,2	1470,1	1275,7	1664,2	1061,4	869,4	1369,2	919	878,8	636,6
ХПК (мг/л)	23,8	23,9	15,7	16,8	21,3	15,3	14	16,7	18,2	8,33
БПК ₅ (мг/л)	4,78	1,13	3,25	1,25	1,66	3,65	2,79	1,07	2,34	2,89
Азот аммонийный (мгN/л)	0,07	0	0,1	0,04	0,01	0,12	0,09	0,07	0,02	0,08
Азот нитритный (мгN/л)	0,188	0,003	0,076	0,093	0,006	0,003	0,007	0,005	0,003	0,073
Азот нитратный (мгN/л)	1,45	3,56	1,27	4,38	3,49	2,23	2,31	1,33	1,2	1,37
Fe общ.(мг/л)	0,01	0,03	0,01	0	0,03	0,11	0	0,06	0,01	0,01
Cu(мкг/л)	1,4	0	0	0	0,6	0,2	2,1	0	0,2	0
Zn(мг/л)	2	1,6	1,3	5,1	1,7	3,7	15,9	10,3	11,4	3,4
Cr – VI (мгк/л)	0,6	1,8	0,2	0	0,4	0,2	0	0,2	0,5	0,2
Фенол(мг/л)	0,007	0	0	0,004	0,001	0,002	0,005	0,002	0,003	0,006
СПАВ(мг/л)	0	0	0	0	0	0	0	0	0	0
F(мг/л)	0,58	0,52	0,5	0,57	0,44	0,3	0,65	0,48	0,4	0,3

Река: Зарафшан

Пост: выше г. Бухара

Год: 2016

Показатели/ характеристики	январь	февраль	март	апрель	май	июнь	июль	август	сентябрь	октябрь	ноябрь	декабрь
Расход реки (м3/с)	-	-	-	-	-	-	-	-	-	-	-	-
Взвешенные в-ва (мг/л)	18	14	1	1	13	9	2	2	9	2	0,4	1
pH	7,77	7,92	7,85	7,84	7,47	7,31	7,71	7,8	7,41	7,59	7,7	7,9
O2 (мг/л)	9,11	8,23	5,89	8	9,07	6,32	8,35	7,54	6,71	9,37	10,19	7,86
Насыщение 2, %	76	67	57	73	90	67	97	89	78	91	83	66
CO2(мг/л)	0	0	0	0	0	0	0	0	0	0	0	0
Жесткость (МГ – экв/л)	20,5	21,7	23	21	24,7	22,75	21,2	22,5	25,2	24,25	22,5	23
Хлориды (мг/л)	339,4	322,2	324,8	326,1	348,9	350	329,4	319	331,4	319,5	334,9	334,9
Сульфаты (мг/л)	1428	1054	1040	901	1149	1109	1035	909	1206	1005	979	1132
Гидрокарбонат (мг/л)	329	314	359	312	353	353	318	306	436	318	204	175
Na (мг/л)	574	352	333	307	364	392,5	366,4	260	400	263	261	311,6
K (мг/л)	13	10	13	6	8	9,5	10	13	13	6	13	13
Ca (мг/л)	145,2	180,4	175,3	150,3	180,3	170,3	150,3	170,3	175,3	180,4	154,3	140,3
Mg (мг/л)	161,17	154,41	173,31	164,16	190,95	173,3	166,59	170,26	200,06	185,42	179,97	194,55
Минерализация (мг/л)	3004,3	2399,1	2430,7	2186	2615,1	2578,7	2400,6	2171,5	2777,6	2281	2137,3	2306,6
ХПК (мг/л)	32,4	20,5	19,1	18,8	16,7	16,3	15,6	15,3	22,4	21,2	16,3	26,9
БПК ₅ (мг/л)	2,33	1,21	1,06	1,01	5,14	1,2	1,84	2,03	4,49	2,82	2,97	2,63
Азот аммонийный (мгN/л)	0	0	0,01	0,01	0	0	0	0,04	0	0	0	0,01
Азот нитритный (мгN/л)	0,02	0,005	0	0,003	0,001	0,015	0,026	0,001	0,244	0	0,001	0,003
Азот нитратный (мгN/л)	3,28	2,72	2,77	4,4	4,73	4,76	5,62	5,4	3,58	0,83	2,51	1,19
Fe общ.(мг/л)	0,05	0,02	0	0	0,01	0,01	0	0	0,01	0,02	0,01	0
Cu(мкг/л)	0	1	0	2,5	0	0	0	0	3,9	1,4	1,9	0
Zn(мг/л)	2,1	3,8	4,3	4,7	0	1,8	12,3	12,4	3,1	5,3	16,7	10
Cr – VI (мгк/л)	0	0	0,3	0	0	0,7	0,3	0	0	1,2	1,1	0
Фенол(мг/л)	0,002	0	0,008	0,008	0,001	0,001	0,003	0	0,007	0,012	0,002	0
СПАВ(мг/л)	0	0	0	0	0	0	0	0	0	0	0	0
F(мг/л)	0,47	0,31	0,24	0,21	0,52	0,51	0,48	0,5	0,6	0,34	0,43	0,53

Река: Зарафшан

Пост: ниже г. Бухара

Год: 2016

Показатели/ характеристики	январь	февраль	март	апрель	май	июнь	июль	август	сентябрь	октябрь	ноябрь	декабрь
Расход реки (м3/с)	-	-	-	-	-	-	-	-	-	-	-	-
Взвешенные в-ва (мг/л)	18	16	3	5	7	5	17	11	10	6	7	6
pH	7,15	7,15	7,7	7,66	7,76	7,25	7,11	7,7	7,3	7,54	6,9	7,15
O2 (мг/л)	8,89	6,52	5,86	7,64	10,04	5,73	6,54	7,03	6,03	6,86	7,21	6,77
Насыщение 2, %	78	56	60	75	103	64	81	89	72	69	61	59
CO2(мг/л)	0	0	0	0	0	0	0	0	0	0	0	0
Жесткость (МГ – экв/л)	22,5	22,7	28,5	26,75	25,7	25,75	24	27,25	26,5	25,5	25	27,7
Хлориды (мг/л)	342	335,4	340,7	384,4	336,7	386	353,9	376	347,3	313,1	324,7	379,8
Сульфаты (мг/л)	1389	1075	1284	1143	1194	1158	1045	940	1273	1052	903	1123
Гидрокарбонат (мг/л)	376	318	372	437	350	463	405	427	484	324	393	469
Na (мг/л)	527	352	342,3	377	364	413,9	358,7	250	430	255	231	340,2
K (мг/л)	13	10	16	13	6	9,5	10	13	13	8	11	13
Ca (мг/л)	150,3	190,4	240,4	190,4	185,3	175,3	155,3	190,3	185,3	200,4	180,4	200,4
Mg (мг/л)	182,4	160,5	200,69	209,75	200,07	206,75	197,61	215,89	209,8	188,48	194,54	215,23
Минерализация (мг/л)	2995	2445,8	2815	2773,7	2659,1	2836,9	2559,9	2441,4	2958,5	2345,4	2250,6	2745,5
ХПК (мг/л)	42,1	26,3	23,4	20,1	20,8	17,8	18,4	17,7	28,5	18,6	23,5	34,7
БПК ₅ (мг/л)	2,58	4,14	1,32	3,92	4,51	3,66	1,35	2,65	4,6	1,39	2,09	3,03
Азот аммонийный (мгN/л)	0,06	0	0,09	0,01	0,01	0,02	0	0	0	0,01	0	0,01
Азот нитритный (мгN/л)	0,002	0,168	0,004	0,005	0,01	0,251	0,012	0,004	0,236	0,001	0,013	0,014
Азот нитратный (мгN/л)	3,46	1,02	4,26	4,32	5,21	5,53	7,76	6,6	3,64	0,99	2,92	1,1
Fe общ.(мг/л)	0,07	0,01	0,01	0	0,01	0,01	0	0	0,01	0	0,01	0
Cu(мкг/л)	0	1,6	0	2,1	0	0	0	0	3,9	1,4	1,6	0
Zn(мг/л)	0,8	2,6	4,1	5,5	0	1,8	12,8	13,9	1,8	6,6	9,5	5,5
Cr – VI (мгк/л)	0	0	0,2	0,1	0,9	0,3	0	0	0,3	0,6	1	0
Фенол(мг/л)	0,002	0,006	0,009	0,009	0,003	0,009	0,009	0,001	0,01	0,011	0,001	0,005
СПАВ(мг/л)	0	0	0	0	0	0	0	0	0	0	0	0
F(мг/л)	0,49	0,46	0,43	0,58	0,5	0,29	0,61	0,72	0,59	0,47	0,64	0,57

Река: Южно-Бухарский канал

Пост: выше г. Бухара

Год: 2016

Показатели/ характеристики	март	июнь	сентябрь	декабрь
Расход реки (м3/с)	-	-	-	-
Взвешенные в-ва (мг/л)	430	1710	1505	300
pH	7,92	7,81	7,71	8,1
O2 (мг/л)	9,69	7,95	9,84	11,2
Насыщение 2, %	84	92	110	91
CO2(мг/л)	0	0	0	0
Жесткость (МГ – экв/л)	8,7	5,5	5,8	7,6
Хлориды (мг/л)	171	90,6	90,8	143,7
Сульфаты (мг/л)	398	277	234	307
Гидрокарбонат (мг/л)	231	109	152	204
Na (мг/л)	199	113,3	100	149,8
K (мг/л)	3	3	3	3
Ca (мг/л)	98,2	64,1	64,1	92,2
Mg (мг/л)	46,21	27,99	31,63	36,47
Минерализация (мг/л)	1151,9	691,5	678,5	939
ХПК (мг/л)	11,5	15,1	13,4	12,5
БПК ₅ (мг/л)	0,89	1,7	2,16	2,25
Азот аммонийный (мгN/л)	0	0	0	0,08
Азот нитритный (мгN/л)	0,007	0,012	0,001	0,006
Азот нитратный (мгN/л)	1,25	1,48	0,67	0,65
Fe общ.(мг/л)	0,01	0,03	0,03	0
Cu(мкг/л)	0,4	0	6,2	0
Zn(мг/л)	0,6	0,3	1,8	10,6
Cr – VI (мгк/л)	2,1	1	1,8	5,5
Фенол(мг/л)	0,002	0	0	0
СПАВ(мг/л)	0	0	0	0
F(мг/л)	0,3	0,28	0,37	0,23

Река: Южно-Бухарский канал

Пост: ниже г. Бухара

Год: 2016

Показатели/ характеристики	март	июнь	сентябрь	декабрь
Расход реки (м3/с)	-	-	-	-
Взвешенные в-ва (мг/л)	14	12	3	24
pH	7,35	7,55	7,32	7,55
O2 (мг/л)	8,06	5,04	7,01	6,27
Насыщение 2, %	67	57	84	53
CO2(мг/л)	0	0	0	0
Жесткость (МГ – экв/л)	28,7	26	9,9	52
Хлориды (мг/л)	376,5	325	135,7	703,2
Сульфаты (мг/л)	1380	1406	459	2842
Гидрокарбонат (мг/л)	323	333	223	393
Na (мг/л)	385,9	431	172	804,9
K (мг/л)	6	6	6	10
Ca (мг/л)	215,4	240,4	100,2	300,6
Mg (мг/л)	218,29	170,29	59,58	449,92
Минерализация (мг/л)	2912,3	2916	1157,5	5506,7
ХПК (мг/л)	21,3	17,3	20,2	17
БПК ₅ (мг/л)	1,1	1,04	2	3,18
Азот аммонийный (мгN/л)	0	0,06	0	0,06
Азот нитритный (мгN/л)	0,191	0,039	0	0,14
Азот нитратный (мгN/л)	1,63	0,97	0,45	0,69
Fe общ.(мг/л)	0,01	0,01	0,01	0,02
Cu(мкг/л)	0	0	1,9	0
Zn(мг/л)	7,5	0,3	2,2	6,6
Cr – VI (мгк/л)	0	0,2	0,3	0,9
Фенол(мг/л)	0,01	0,001	0,001	0,003
СПАВ(мг/л)	0	0	0	0
F(мг/л)	0,51	1,04	0,44	0,8



Написать письмо

Ответить Ответить всем Переслать Удалить Спам Переместить Ещё

Входящие

- ABISR/ICB/01-2 вход
- ABISR/ICB/01-2 исход
- ABISR/ICB/01-3 вход
- ABISR/ICB/01-3 исход

AUDIT вход

- 2014-2015
- 2016

AUDIT исход

- JICA вход
- JICA исход
- Navoi uchqora вход
- Navoi uchqora исход

Shopping

- Канцтовары 160211
- Канцтовары 160408

Shopping for Demonstration Areas

- Drip irrigation
- Seedlings
- Гидро вертушка и штанга
- Микро - метео станция

ksq mixed

- АБР прочие вход
- АБР прочие исх

Бошклар

Бухт

- АБМК
- Бух тел
- Вх
- Исх
- Навои Учкара
- Центр

ГРП вход

- ГРП исход
- Дем участка вход
- Дем участка исход
- КМК

Контракт ABISR/CON/01 вход

- Контракт ABISR/CON/01 исход
- Контракт ABISR/CON/02 вход
- Контракт ABISR/CON/02 исход
- Контракт ABISR/ICB/01 вход
- Контракт ABISR/ICB/01 исход
- Контракт ABISR/ICB/02 (ГТС) вх
- Контракт ABISR/ICB/02 (ГТС) исх
- Контракт ABISR/ICB/03 вход
- Контракт ABISR/ICB/03 исход
- Контракт ABISR/NCB/04 вход
- Контракт ABISR/NCB/04 исход

Кызыл-тепа-I и Аму-Бухара-II вх

- ABISR/ICB/05_Кызыл-Тепе-I ...
- ABISR/ICB/06_Аму-Бухара-II вх
- Кызыл-тепа-I и Аму-Бухара-II исх
- ABISR/ICB/05_Кызыл-Тепе-I ...

Директ (FREE) видео уроки 3D MAX Бесплатные 10 уроков по архитектурной визуализации, интерьеру и экстерьеру



Fwd: Amudaryo bo'yicha

suvchi@agro.uz

Кому: abizr@mail.ru

сегодня, 12:37 1 файл

Исходное сообщение

Тема: Amudaryo bo'yicha

Дата: 2018-05-04 10:05

От: ab.havza@agro.uz

Кому: Сувчи вазирлик <suvchi@agro.uz>

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1 файл

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62 КБ [Посмотреть](#) [Скачать](#) [Редактировать](#) [В Облако](#)

№	Техническое задание	Исполнитель	Сроки	Статус	Комментарии
1	Ирригатор учун	Сувчи вазирлик	2018-05-04	В работе	
2	Контракт ABISR/CON/01	Сувчи вазирлик	2018-05-04	В работе	
3	Контракт ABISR/CON/02	Сувчи вазирлик	2018-05-04	В работе	
4	Контракт ABISR/ICB/01	Сувчи вазирлик	2018-05-04	В работе	
5	Контракт ABISR/ICB/02 (ГТС)	Сувчи вазирлик	2018-05-04	В работе	
6	Контракт ABISR/ICB/03	Сувчи вазирлик	2018-05-04	В работе	
7	Контракт ABISR/NCB/04	Сувчи вазирлик	2018-05-04	В работе	

Нажмите, чтобы [Ответить](#), [Ответить всем](#) или [Переслать](#)

Защищён Антивирусом Касперского

Amu-Buhara Machine Canal water consumption from Amudarya river for Uzbekistan 2010-2017

Ўзбекистон Республикаси учун Амударёдан сув олувчи каналларнинг қўл йиллик маълумоти

№	Каналнинг номи	Йиллар	Январ			Феврал			Март			Апрел			Май			Июн			Июл			Август			сентябр			Октябр			Ноябр			Декабр		
			Река (поверх) млн м3	Амударё олмаған сув млн м3	%	Река (поверх) млн м3	Амударё олмаған сув млн м3	%	Река (поверх) млн м3	Амударё олмаған сув млн м3	%	Река (поверх) млн м3	Амударё олмаған сув млн м3	%	Река (поверх) млн м3	Амударё олмаған сув млн м3	%	Река (поверх) млн м3	Амударё олмаған сув млн м3	%	Река (поверх) млн м3	Амударё олмаған сув млн м3	%	Река (поверх) млн м3	Амударё олмаған сув млн м3	%	Река (поверх) млн м3	Амударё олмаған сув млн м3	%	Река (поверх) млн м3	Амударё олмаған сув млн м3	%	Река (поверх) млн м3	Амударё олмаған сув млн м3	%			
1	Аму-Бухара машиния каналлари	2010	388,7	466,9		303,13	185,5		262,49	180,3		396,58	293,8		483,84	392,4		570,24	538,3		664,67	775		560,99	745,6		358,64	359,5		279,62	281,2		163,81	185,3		147,48	278,3	
		2011	388,7	357,3		303,05	300		262,96	263,4		339,55	304,3		420,33	323,7		540	466,6		642,39	696,2		543,97	654,2		243,37	318,5		279,62	230,9		163,72	127,1		147,48	118,8	
		2012	388,7	280,7		303,15	272,1		262,96	248,3		338,68	283		454,03	424,3		598,75	579		733,62	770,7		593,39	686,7		316,56	377,9		279,62	161		163,81	78,5		147,48	195,8	
		2013	388,7	303,1		303,05	306,2		262,96	270,8		338,68	295,5		454,03	457,4		598,75	547,2		733,62	758,1		593,39	642		326,79	490,5		279,62	213,5		163,81	151,3		147,48	85,5	
		2014	388,7	328,6		303,05	170		262,96	236		332,72	325,5		460,08	437		598,49	560,5		733,62	753		593,39	640,2		316,56	460,1		279,62	292,2		163,81	106,6		147,48	260,9	
		2015	388,7	437,2		303,05	228,9		262,96	169,7		334,36	392,6		460,08	486,8		597,02	686,1		733,62	793,5		593,39	661,7		316,56	383,5		279,62	245,8		163,72	107,2		147,48	222,9	
		2016	388,7	365		303,46	250,7		262,49	180,3		339,55	242,3		460,08	428,3		595,29	494,7		730,16	762,3		593,39	642,8		316,56	412,8		279,62	225,9		163,72	58		147,48	259,6	
		2017	388,7	459,1		303,88	314,8		262,49	318,5		339,55	231,5		460,08	383,2		595,29	547		730,16	793,1		593,39	662,5		316,56	399,9		279,62	355,7		163,72	87,6		147,48	271,6	

Ўзбекистон Республикаси Бухоро ва Навоий вилоятлари учун Амударёдан сув олувчи каналларнинг кўп йиллик маълумоти

№	Каналлар номи	Йиллар	Январ			Феврал			Март			Апрел			Май			Июн			Июл			Август			сентябр			Октябр			Ноябр			Декабр		
			Режа (лимит) млн. м3	Амалда олинган сув млн. м3	%	Режа (лимит) млн. м3	Амалда олинган сув млн. м3	%	Режа (лимит) млн. м3	Амалда олинган сув млн. м3	%	Режа (лимит) млн. м3	Амалда олинган сув млн. м3	%	Режа (лимит) млн. м3	Амалда олинган сув млн. м3	%	Режа (лимит) млн. м3	Амалда олинган сув млн. м3	%	Режа (лимит) млн. м3	Амалда олинган сув млн. м3	%	Режа (лимит) млн. м3	Амалда олинган сув млн. м3	%	Режа (лимит) млн. м3	Амалда олинган сув млн. м3	%	Режа (лимит) млн. м3	Амалда олинган сув млн. м3	%						
1	Аму- Бухоро машина канали	2010	388,7	466,9	120	303,1	185,5	61	262,5	180,3	69	396,6	293,8	74	483,8	392	81	570,2	538,3	94	664,7	775	117	561	745,6	133	358,6	359,5	100	279,6	281,2	101	163,8	185,3	113	147,5	278	189
		2011	388,7	357,3	92	303,1	300	99	263	263,4	100	339,6	304,3	90	420,3	324	77	540	466,6	86	642,3	696,2	108	544	654,2	120	245,4	318,5	130	279,6	230,9	83	163,7	127,1	78	147,5	119	81
		2012	388,7	280,7	72	303,2	272,1	90	263	248,3	94	338,7	283	84	454	424	93	598,8	579	97	733,6	770,7	105	593,4	686,7	116	316,6	377,9	119	279,6	161	58	163,8	78,5	48	147,5	196	133
		2013	388,7	303,1	78	303,1	306,2	101	263	270,8	103	338,7	295,5	87	454	457	101	598,8	547,2	91	733,6	758,1	103	593,4	642	108	326,8	490,5	150	279,6	213,5	76	163,8	151,3	92	147,5	85,5	58
		2014	388,7	328,6	85	303,1	170	56	263	236	90	332,7	325,5	98	460,1	437	95	598,5	560,5	94	733,6	753	103	593,4	640,2	108	316,6	460,1	145	279,6	292,2	104	163,8	106,6	65	147,5	261	177
		2015	388,7	437,2	112	303,1	228,9	76	263	169,7	65	334,4	392,6	117	460,1	487	106	597	686,1	115	733,6	793,5	108	593,4	661,7	112	316,6	381,5	121	279,6	245,8	88	163,7	107,2	65	147,5	223	151
		2016	388,7	365	94	303,5	250,7	83	262,5	180,3	69	339,6	242,3	71	460,1	428	93	595,3	494,7	83	730,2	762,3	104	593,4	642,8	108	316,6	419,8	133	279,6	225,9	81	163,7	58	35	147,5	260	176
		2017	388,7	459,1	118	303,9	314,8	104	262,5	318,5	121	339,6	231,3	68	460,1	383	83	595,3	547	92	730,2	793,1	109	593,4	662,5	112	316,6	393,9	124	279,6	355,7	127	163,7	87,6	54	147,5	272	184

Аму-Бухоро ирригация тизимлари ҳавза
бошқармаси бошлиғи 1- ўринбосари:

Т.Давронов



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Письма Контакты Файлы Темы Ещё 4 Календарь Облако Бонус

✍ Написать письмо

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Ответить

Ответить всем

Переслать

Удалить

Спам

Переместить

Ещё

✉ Входящие

ABISR/ICB/01-2 вход

ABISR/ICB/01-2 исход

ABISR/ICB/01-3 вход

ABISR/ICB/01-3 исход

▼ AUDIT вход

2014-2015

2016

AUDIT исход

JICA вход

JICA исход

Navoi uchqora вход

Navoi uchqora исход

▼ Shopping

Канцтовары 160211

Канцтовары 160408

▼ Shopping for Demonstration Areas

Drip irrigation

Seedlings

Гидро вертушка и штанга

Микро - метео станция

ksq mixed

АБР прочие вход

АБР прочие исх

Бошкалар

▼ Бухг

АБМК

Бух тел

Вх

Исх

Навои Учкара

Центр

ГРП вход

ГРП исход

Дем участка вход

Дем участка исход

КМК

Контракт ABISR/CON/01 вход

Контракт ABISR/CON/01 исход

Контракт ABISR/CON/02 вход

Контракт ABISR/CON/02 исход

Контракт ABISR/ICB/01 вход

Контракт ABISR/ICB/01 исход

Контракт ABISR/ICB/02 (ГТС) вх

Контракт ABISR/ICB/02 (ГТС) исх

Контракт ABISR/ICB/03 вход

Контракт ABISR/ICB/03 исход

Контракт ABISR/ICB/04 вход

Контракт ABISR/ICB/04 исход

▼ Кызыл-тепа-I и Аму-Бухара-II вх

ABISR/ICB/05_Кызыл-Тепе-I ...

ABISR/ICB/06_Аму-Бухара-II вх

▼ Кызыл-тепа-I и Аму-Бухара-II исх

ABISR/ICB/05_Кызыл-Тепе-I ...

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№	Исх	Вход	Исх	Вход	Исх
1	1000	1000	1000	1000	1000
2	1000	1000	1000	1000	1000
3	1000	1000	1000	1000	1000
4	1000	1000	1000	1000	1000
5	1000	1000	1000	1000	1000
6	1000	1000	1000	1000	1000
7	1000	1000	1000	1000	1000
8	1000	1000	1000	1000	1000
9	1000	1000	1000	1000	1000
10	1000	1000	1000	1000	1000

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Защищён Антивирусом Касперского

Формула 1. Ежемесячная гидрологическая характеристика воды за период 2015-2018

Реки: Амударья

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