ACADEMICIA
An International Multidisciplinary Research Journal
(Double Blind Refereed & Peer Reviewed Journal)

DOI: 10.5958/2249-7137.2021.00609.1

CHARACTERISTICS OF INFLOW AND SUBSIDENCE TURBIDITY IN WATER INTAKE CHANNELS

Zhamolov Farkhod Norkulovich*; Tursunov Ikram Numonugli; Ekubov Talabboy Abrorugli***; Ibodov Islom Nizomiyugli******

*Faculty of Hydro-Reclamation,
Tashkent Institute of Irrigation and Agricultural Mechanization,
Engineers Bukhara Branch, Bukhara, UZBEKISTAN
Email id: farxod.norkulovich@mail.ru

**Faculty of Hydro-reclamation,
Tashkent Institute of Irrigation and Agricultural Mechanization,
Engineers Bukhara Branch, Bukhara, UZBEKISTAN
Email id: ikromtursunov2020@gmail.com

***Faculty of Hydro-reclamation,
Tashkent Institute of Irrigation and Agricultural Mechanization,
Engineers Bukhara Branch, Bukhara, UZBEKISTAN
Email id: ytalabboy@gmail.com

****Faculty of Agricultural Mechanization,
Tashkent Institute of Irrigation and Agricultural Mechanization,
Engineers Bukhara Branch, Bukhara, UZBEKISTAN
Email id: islomibodov65@mail.ru

ABSTRACT

The article deals with the processes of turbidity, infiltration and sedimentation of mud, the annual volume of turbidity in the water intake without a dam from the Amu Darya to the Amu-Bukhara Canal. It is established that the decrease in water consumption, turbidity and transparency of the flow along the length of the intake channels is mainly due to the level of water consumption, turbidity of the river and the amount of water flowing through the main ABMC facility. As a result of the reconstruction of the main structure and the ABMC canal with the widespread use of hydro-mechanization devices, it became possible to carry out such water consumption. As the volume of water intake increased, so did the amount of turbidity that came

with the water. A large amount of floating and attracting silt coming from the river will sink into the channel bed, reducing the living cross-section and carrying capacity of the channel.

KEYWORDS: *Amu Darya, channel, river, muddy, water, flow, level, flow, structure, water velocity, muddy subsidence. The Amu-Bukhara machine canal is the main source of irrigation in the Bukhara and Navoi regions of the Republic of Uzbekistan and the Farob district of the Lebab region of Turkmenistan. Over the years of operation, the water flow through the channel has increased several times and now reaches 400 m3 / s.*

INTRODUCTION

As a result of the reconstruction of the main structure and the ABMC canal with the widespread use of hydro-mechanization devices, it became possible to carry out such water consumption. As the volume of water intake increased, so did the amount of turbidity that came with the water. A large amount of floating and attracting silt coming from the river will sink into the channel bed, reducing the living cross-section and carrying capacity of the channel. To maintain the necessary culvert capacity of the channel, the service service has to hire a large number of different tanks and various dredgers for timely cleaning and self-leveling work from the entrance along the length of the water intake channels to the ABMC. the main object. The length of the intake channels varies significantly throughout the year and from year to year, depending on the water content of the year and the location of the river fairway. Sometimes the length of water intake channels in winter increases from one hundred meters to several kilometers. Continuous cleaning of the Amu-Bukhara canal

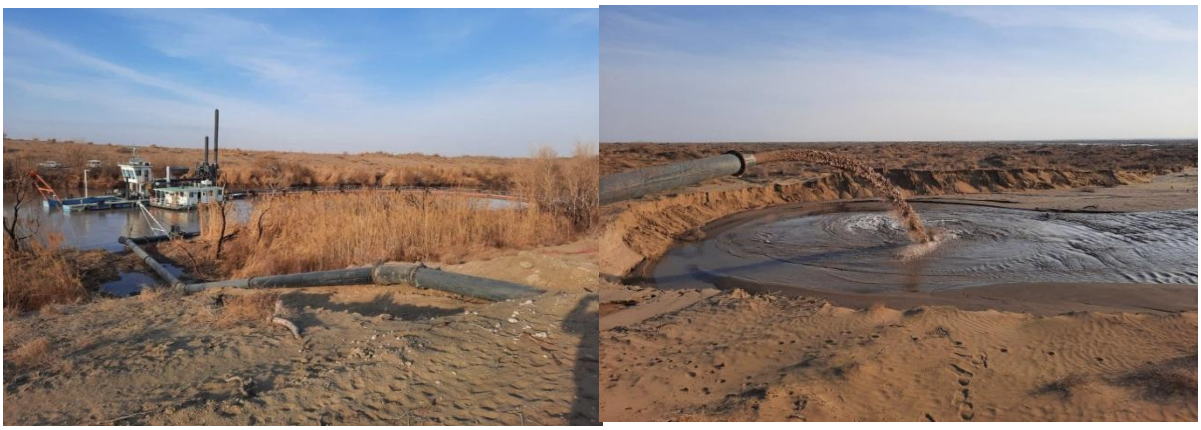

Fig. 1-Dredger in the ABK-1 channel

Based on the research materials, the analysis of seepage and subsidence of silt in the water intake channel 1 of the ABMC was carried out. The measurement data show that a sharp decrease in turbidity and a decrease in the degree of sedimentation of the flow is observed in the area from the entrance to the water intake channel No. 1 to the main sediment. There is also a decrease in the flow rate with a sharper decrease in the initial sections of the channel. The reduction of water consumption, turbidity and transparency of the flow along the lengthof the intake channels mainly depends on the level of water consumption, turbidity of the river and the amount of water flowing through the main ABMC facility. The amount of floating silt along the length of the

ABMC water intake channel No. 1 is shown in Table 1. As can be seen from this table, the reduction in water turbidity and the transparency of the flow depend mainly on the amount of water extracted. The water flow rate also depends on the length of the intake channel.

1. Months	2. January	3. February	4. March	5. April	6. May	7. June	8. July	9. August	10. September	11. October	12. November	13. December
14. Amount of **15.** turbidity m3	16. 7134	17. 11161	18. 23085	19. 32950	20. 31124	21. 55897	22. 91971	23. 51260	24. 16040	25. 7087	26. 5098	27. 6057

Clay particles of floating drilling mud <0.005 mm increase from 15% to 36% from the entrance to the main ABMC facility. D = 0.05 dust particles of floating drilling mud also increase from 38% to 66% from the entrance to the main ABMC object. In contrast, sand particles with d = 0.05-0.25 mm decreased from 3% to 71%, while turbidity particles d> 0.25 mm decreased from 1.3% to 0.15%. No. 1 the accumulation of a large amount of muddy sediments along the water intake channel led to the forced departure of the fairway of the river to the left. Thus, as a result of the increase in water intake from the Amu Darya to the ABMC, large channel deformations occurred in the catchment area. An analysis of the results of monitoring the volumes of water intake, solid runoff and treatment in 2017 at the ABMK main site showed that the maximum of these indicators, according to Table 1, falls on May, June, July and August.

REFERENCES

1. Results of a numerical study of currents in the area of a damless water intake. Anatoly Krutov, BehzodNorkulov, FarohiddinUlyaev and FarkhodJamalov. IPICSE 2020 IOP Conf. Series: Materials Science and Engineering 1030 (2021) 012121 IOP Publishing doi: 10.1088 / 1757-899X/1030/1/012121

2. The influence of the shape of the live section of the channel of a non-pressure machine and the roughness of its wetted surface on the hydraulic resistance. B Uralov, K Isabaev, F Jamolov, M Ahmadi and M Mirzaev. CONMECHYDRO – 2020 IOP Conf. Series: Materials Science and Engineering 883 (2020) 012006 IOP Publishing doi: 10.1088 / 1757-899X/883/1/012006

3. The concept of creating a new water management system in the region. N. Rakhmatov, L. Maksudova, F. Jamolov, B. Ashirov and D. Tajieva. CONMECHYDRO – 2020 IOP Conf. Series: Materials Science and Engineering 883 (2020) 012007 IOP Publishing doi: 10.1088 / 1757-899X/883/1/012007

4. " Kanal dagi hydraulic engineering.