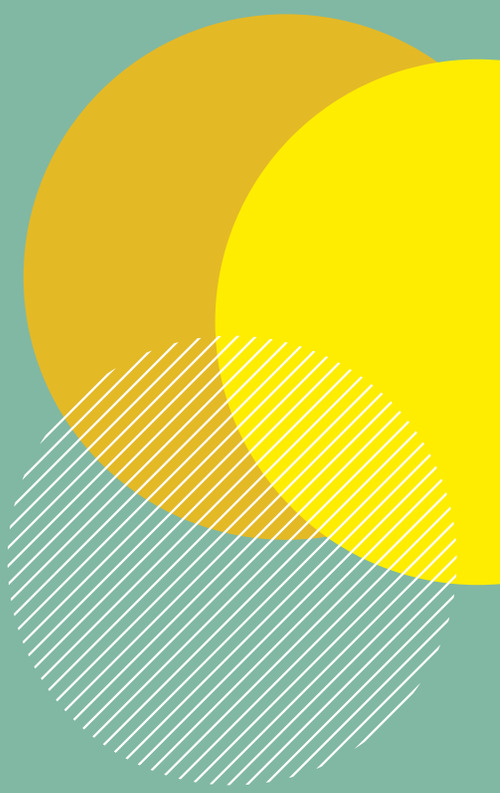
2022 ANNUAL ENVIRONMENT REPORT



CONTENT

1 INTRODUCTION

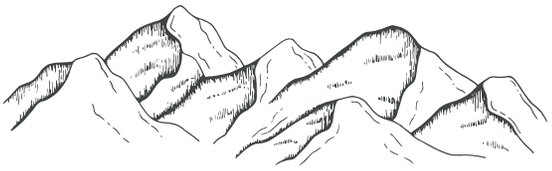
ABOUT “KUMTOR” MINE

The Kumtor mine is one of the few remote and high-altitude mines in the world currently in operation.
The Kumtor gold deposit is located on the northwestern slope of the Ak-Shiyrak ridge of the Tien Shan (or Heavenly) Mountains, in the northeastern part of the Kyrgyz Republic (Fig. 1).
The mine and its auxiliary facilities are located at an altitude of 3,600 m to 4,400 m above sea level. The mine is located about 60 km south of the Issyk-Kul Lake and 60 km northwest of the border with China.
By administrative-territorial affiliation, it belongs to the Djety-Oguz district of Issyk-Kul region.
The main access road to the deposit is the Barskoon-Karasai State Road (45 km), as well as a new road along the Arabel River (40 km).
The area of the deposit is characterized by harsh climatic conditions (the average annual temperature is -8 °C, snow all year round, active glaciers and permafrost extending to a depth of several hundred meters).

The Kumtor River originates from the Petrov Lake, which is located at the base of the glacier of the same name and belongs to the Taragai– Naryn – Syr-Darya River system of the Aral Sea Basin.

Figure 1: Gold deposit of the Kumtor mine

1.2 GEOLOGICAL STRUCTURE



Soil conditions, as well as the wildlife and plant world, are typical for the high-altitude areas of the Tien Shan with an active layer (2-3 m) of permafrost. One of the species of vegetation of the buttercup family (Hedysarum kirgizorum), as well as a number of wild animals, such as mountain sheep (Ovis ammon karelini), snow leopard (Panthera uncla), Siberian ibex (Capra sibirica aliana) and some golden eagle birds (Aquila chrysaetos), bearded man (Gypaetus barbatus) are listed in the Red Book of the Kyrgyz Republic.

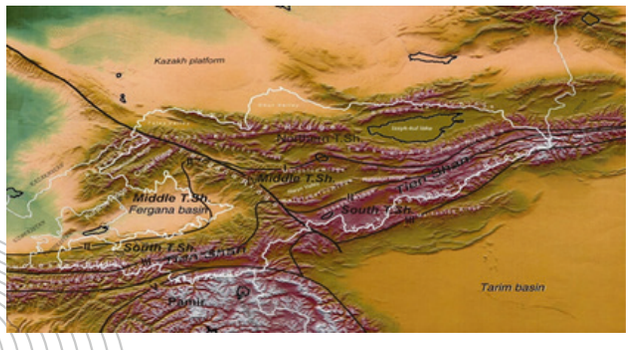


Figure 2: Geological structures of the Kyrgyz Republic

The geological structure of the Kumtor deposit area is determined by two large faults. The first of them is the large structural line of Nikolaev, separating the Caledonian structures of the Northern Tien Shan to the west of the Nikolaev line and the Caledonian-Hercynian structures of the Middle Tien Shan to the east of the Nikolaev line. The Kumtor deposit is confined to the fault of the same name, which can be traced along and eastward from the fault line, with a length of more than 50 km, with a variable width of up to 400 m. This fault is the second significant geological structure of the area.

Gold ore concentrations of the Kumtor deposit are contained in coal-bearing phyllites of the Upper Proterozoic formation, which has undergone hydrothermal alteration and deformation. Gold is associated with sulfides (mainly pyrite) and occurs mostly in the form of particles from 40 microns to less than 5 microns inside or along pyrite faults. Gold is also found as tellurides in finely interspersed chalcopyrites. Gold, in addition to pyrite, is associated with albite, potassium feldspar and carbonate decomposition products.

2 NOTIFICATION OF ENVIRONMENTAL INCIDENTS

In 2022, there were no reportable cases to be reported to the controlling state bodies according to the criteria of the Kyrgyz Republic and according to the procedures for notification of incidents in accordance with the KGC Emergency Response Plan (ERP) and the KGC Environmental Management Action Plan (EPAP).

CLASSIFICATION OF INCIDENTS RELATED TO ENVIRONMENTAL IMPACT

The classification system for leaks into the environment outside the secondary containment system is shown in table 1.

Type I, II – Incidents of these categories are not subject to notification to external regulatory authorities.

Type III, IV, V - According to the legislation of the Kyrgyz Republic, the controlling state agencies should be immediately notified about leaks of this category, according to the ERP.

IN CASE OF RELEASES OR LEAKS OF CHEMICALS AS A RESULT OF ACCIDENTS, THE KGC CONTINUES TO USE THE NOTIFICATION PROCEDURE PROVIDED IN THE ERP AND IN THE EMAP (7TH EDITION). THIS NOTIFICATION PROCEDURE ENSURES THAT THE COMPANY COMPLIES WITH THE RELEVANT LEGISLATION OF THE KYRGYZ REPUBLIC AND INTERNATIONAL STANDARDS.

Table 1: Definition of the spill hazard class

	Spill			
Chemical substance	Lesser that reportable amount	From 1 to 10 of reportable amount	From 10 to 100 of reportable amount	100 times more than reportable amount
Hydrocarbons (Gasoline, OIL Petroleum products)	<10 liters	10-100 liters	100–1000 liters	>1000 liters
Protected or sealed surface	**Not reportable**	**Not reportable**	**Not reportable**	**I**
Compact surface Hard surface parking, road surface or production/work area) [1]	**Not reportable**	**I**	**I**	**II**
Unsealed surface (Undisturbed / without **human intervention) drainage channel or non-flowing water**[2]	**I**	**I**	**II**	**III**
Water flow or undisturbed/without interference, surface[3]	**I**	**II**	**III**	**IV**
An unstable ecosystem[4] (Local water flow/creek, undisturbed, local vegetation, groundwaters)	**II**	**III**	**IV**	**V**

** 1. It is assumed that the spill can be cleaned up without residual contamination.*
** 2. It is assumed that a spill that occurred in a disturbed area or in a special settlement pond (potential residual contamination).*
** 3. It is assumed that the host environment is not receptive (either from outside environmental or public perspectives).*
** 4. An ecosystem is considered to be a fraction of a landscape with relatively uniform dominant flora and fauna. Vulnerable ecosystems are those that are easily destroyed and/or rare, having ecological significance due to the biodiversity of the species they support.*

2.2 ENVIRONMENTAL INCIDENTS SUBJECT AND NON-SUBJECT TO NOTIFICATION

In 2022, there were no reportable incidents at the Kumtor mine that were subject to notification. In general, in 2022, 7 cases of environmental incidents of the first level of environmental impact were registered, which are not subject to notification.

3 ENVIRONMENTAL MONITORING PROGRAM

3.1 WILDLIFE MONITORING

In 2022, daily work on the wild animal monitoring program was continued on the territory of the KGC Tailings facility.
The program is designed to identify and count all species of wild birds and mammals appearing in the area of the tailings dam and its surroundings, as well as to confirm the absence of negative impact on wildlife from the side of the object. Daily monitoring is carried out by trained specialists of the KGC Environment Department.

Monitoring of wild animals extends to all types of birds and mammals. The detection of traces and signs of animal habitation is also important.
Daily monitoring of the Tailings facility (365 days a year) is carried out by trained personnel of the Environment Department with registration of observations in MP-Field database via a tablet (I-pad).
This contributes to proper analysis and compliance with internal and external reporting requirements. Observations are focused on the Tailings Management Facility (TMF). An overview of the entire territory of the TMF is carried out from seven observation points (TD 1-TD 7) using appropriate equipment, such as a telescope mounted on a tripod, binoculars and special instruments. Observations carried out daily throughout the year ensure that the effects of seasonal factors are taken into account.

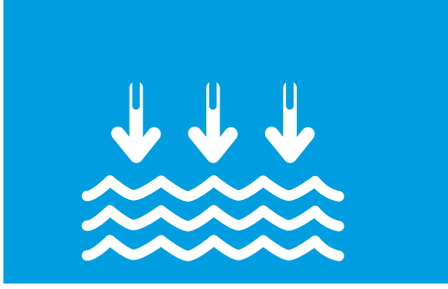
Table 2: Summary data on the observation of wild animals on the territory of the Tailings Management Facility

Indicator	2020	2021	2022
Number of days no wildlife was observed	232/366	309/345	331/355
Number of days mammals observed	26/366	36/345	22/355
Number of mammal days	127	140	41
Maximum mammal group size seen	34	10	11
Number of days birds observed	121/366	313/362	16/355
Number of bird days	1820	217	252
Maximum bird flock group size seen	70	38	143

6: Monitoring points of wild animals on the territory of the TMF

Extreme weather conditions and lack of food resources at the high-altitude Tailings facility make it a little-visited and unsuitable habitat for birds and other wildlife.
Most of the year, the pond of the Tailings facility is covered with ice, which prevents contact of wild animals with the supernatant fluid. Monitoring indicates that the tailings storage system at the Kumtor mine still poses a relatively low risk of cyanide poisoning for birds or other wild animals, despite periodically increasing concentrations of cyanide in the tails. The daily wildlife monitoring program will be continued in 2023.

3.2 SURFACE WATER QUALITY



In the Kyrgyz Republic, the Kumtor River, due to the high content of pumps coming from its tributaries, is classified as a category of “communal and household use” river. According to the Environmental Protection legislation of the Kyrgyz Republic, the results of the test are evaluated by the water quality in the W1.8 station, which is a controlled target for compliance with the norms of maximum allowable concentrations (MAC) and is located 1 km upstream from the city of Naryn, which is the closest user of river water downstream to the mine. The results obtained at W1.8 station (Naryn city) continue to indicate that many mountain river systems downstream from the mine and away from the Kumtor River system affect the water quality in the Naryn River.

The glacial origin of the surface waters on the territory of the Kumtor mine leads to an increased runoff of sediment (suspended particles). As a result, the water has a characteristic milky appearance. Such effluents affect the total concentration of metals (aluminum, copper, iron, zinc). This naturally elevated background level was documented in the initial data collected before the start of mining operations of the KGC. The increased background concentrations are also reflected in the water quality of the Petrov Lake, which is the source of the Kumtor River and is located above the Kumtor mine. The presence of sediment and metals contained therein does not indicate weak ecological indicators of the Kumtor mine.

The water quality standards used in the Kyrgyz Republic relate to the total concentration of metals, while international environmental standards mainly take into account dissolved metals, which show the greatest impact on the surrounding environment and bear the corresponding risks. We take these aspects into account when assessing the quality of KGC water.

We continue to improve the process of managing surface runoff (from snow and melting ice) to reduce the risk and prevent possible contamination. At the foot of the Davydov, Lysiy and Sary-Tor Glaciers pumps were installed and pipelines were stretched to bypass the waste rock dumps. For the deposition of solid particles, large sumps are used. On the Kumtor River and the Lysiy River there is a hydropost with automatic reading of information about the flow of water by importing indicators directly into the MP5 database. To monitor water quality, we take samples from more than 50 sampling stations located on the entire Concession area and beyond its boundaries. Our preliminary control point for compliance with the established requirements is located outside the Concession – downstream of the Kumtor River, below the site of the discharge of treated wastewater and its connection to surface waters. This point, which has the conditional designation W1.5.1 and is called a “Voluntarily accepted point of compliance with regulations”, was selected by Kumtor as a protective measure within the framework of the Environmental Management Action Plan EMAP and prevention of possible pollution of the Kumtor River.

Map of the main environmental monitoring points

Table 3: Description of the main water quality sampling points

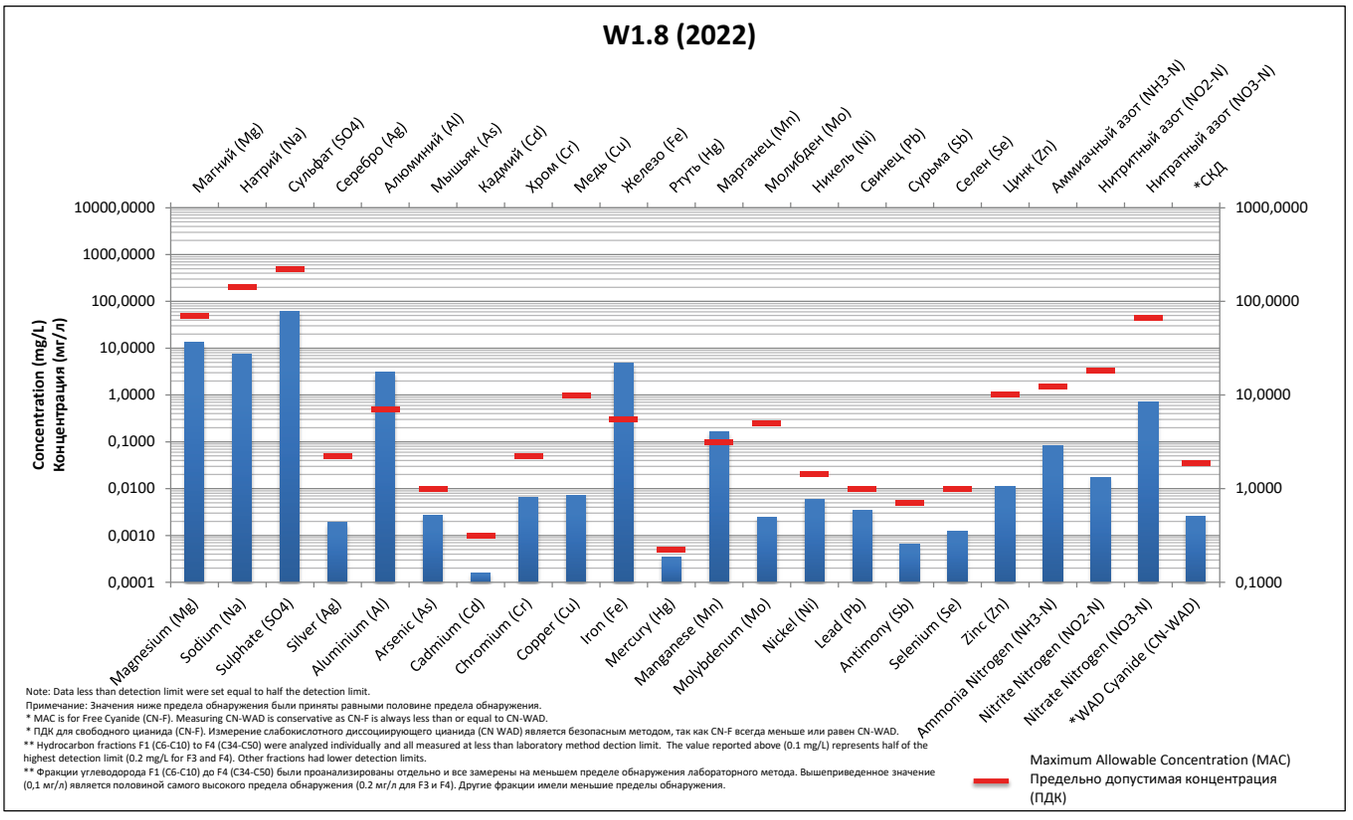
W1.1	Petrov Lake outflow – Kumtor River Head Waters (alpine glacier fed lake – elevated Al, Fe)
W3.4	Lysiy Creek before joining Kumtor Rive
W3.1	Kumtor River after confluence of Lysiy Creek and just before ETP discharge
TPX	End of tailings spigot – discharge into Tailings Management Facility (TMF) pond. Discharge point moves along dam wall
T8.1	Tailings Pond (feed to ETP)
T8.4	ETP discharge point into Kumtor River (MAD limits apply)
W1.4	Between Kumtor bridge and flume 1km downstream from ETP discharge
SDP	Treated sewage discharge point into Kumtor River (MAD limits apply)
W4.1	Head water of Arabel-Suu diversion ditch (background level)
W4.2	Lower Diversion Channel (LDC)
W4.2.1	New Lower Diversion Channel
W4.3.1	Discharge of Upper Diversion Channel (UDC) sediment pond to Kumtor Rive
W2.6.1	Chon-Sarytor Creek from under the Central Valley waste rock dumps before joining Kumtor River
POR1 Sump	Pit water collection sump before discharge to Kichi-Sarytor Creek
SWS3.1	Kichi-Sarytor Creek before joining Kumtor River
SWW1	Meltwater from Sarytor glacier
W1.5.1	Kumtor River, just downstream from Kumtor Concession Area (voluntary compliance point)
W6.1	Arabel-Suu River, 6 km from Kumtor Concession Area (background level)
W1.6	Kumtor River, 17 km from Kumtor Concession Area (before confluence with Taragay River)
W1.7	Taragay River, 40 km from Kumtor Concession Area (Kumtor + Kashka-Suu + Maitor River)
W1.8	Naryn River in Naryn City, approximately 230 km downstream from Kumtor Concession Area
P5.2N, P5.3	Potable (treated drinking) water - Camp and Mil
PS’z	Piezometers at the Tailings Dam

Any discrepancy between water quality parameters at the W1.5.1 station, serves as a reason to check the data obtained in the control monitoring station W 1.8.

The results of monitoring in 2022 are presented in Figure 1, 2 and include the values of the maximum allowable concentrations (MAC) recommended in the Kyrgyz Republic for household water bodies. The monitoring results in the form of average monthly data for 2022 are presented in Appendix 1.

Figure 10: Conducting a water quality test

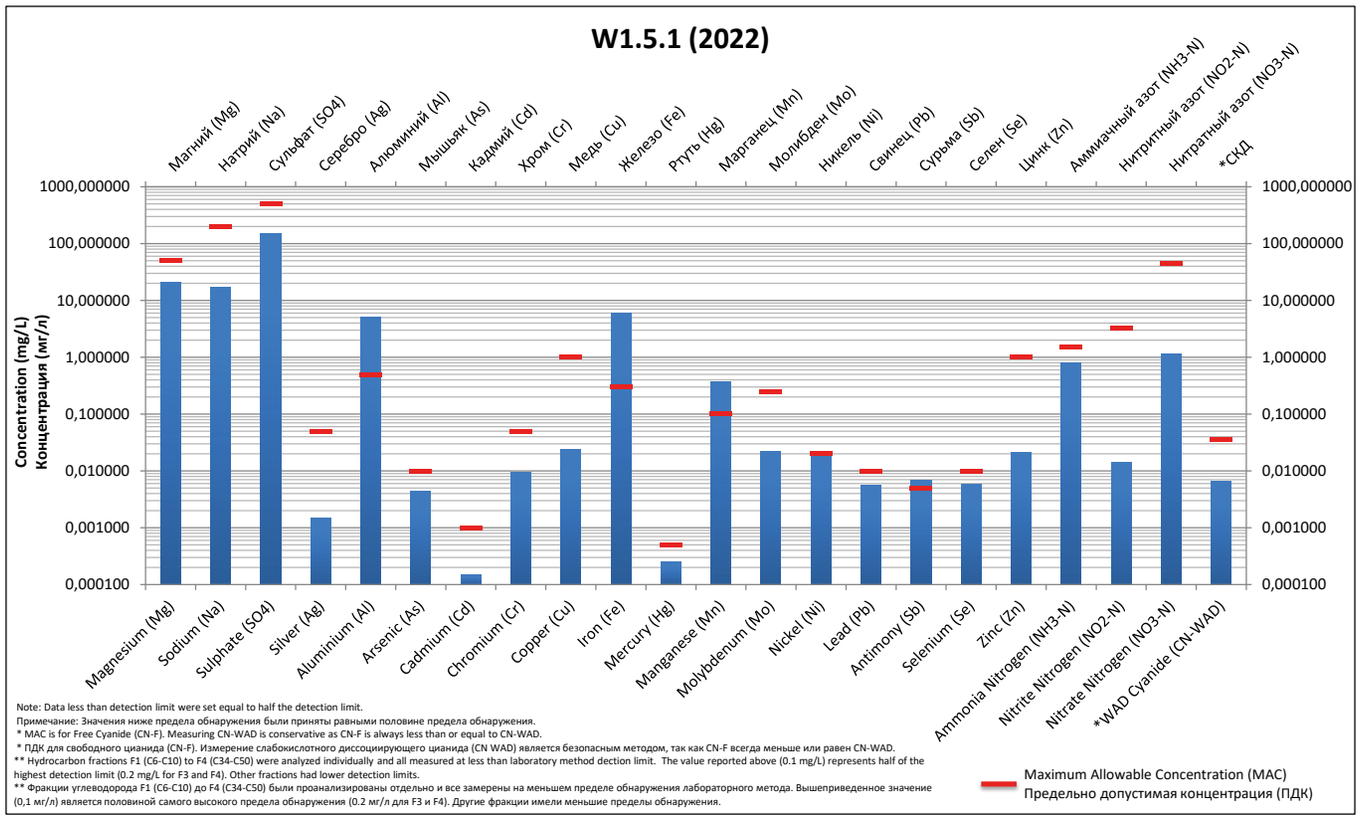
Diagram 1: Water quality indicators in the Kumtor River for 2022 at the point of compliance with standards, according to the legislation of the Kyrgyz Republic (W1.8)



***Note:** Values below the detection limit were assumed to be equal to half of the detection limit.*
** MAC for free cyanide (CN-F). The measurement of weak acid dissociating cyanide (With WAD) is a safe method, since CN-F is always less than or equal to CN-WAD.*
Other fractions had smaller detection limits.

A review of the 2022 results in Diagram 1 shows that in the control station 1.8, the average content of aluminum, iron and manganese exceeds the MAC norms.
However, the indicators correspond to a naturally high background concentration in the region, which may be the same or higher. This does not pose a significant risk to human health or the environment, since iron affects not so much the human body as its aesthetic perception (taste, visual). The Earth's crust is the richest in these metals, so the level of their concentration is normal for this area.

Diagram 2: Water quality indicators in the Kumtor River for 2022 at the end of the mixing zone and the concession area (W.1.5.1.)



Note: Data less than detection limit were set equal to half the detection limit.
Примечание: Значения ниже предела обнаружения были приняты равными половине предела обнаружения.
* MAC is for Free Cyanide (CN-F). Measuring CN-WAD is conservative as CN-F is always less than or equal to CN-WAD.
* ПДК для свободного цианида (CN-F). Измерение слабокислотного диссоциирующего цианида (CN WAD) является безопасным методом, так как CN-F всегда меньше или равен CN-WAD.
** Hydrocarbon fractions F1 (C6-C10) to F4 (C34-C50) were analyzed individually and all measured at less than laboratory method dection limit. The value reported above (0.1 mg/L) represents half of the highest detection limit (0.2 mg/L for F3 and F4). Other fractions had lower detection limits.
** Фракции углеводорода F1 (C6-C10) до F4 (C34-C50) были проанализированы отдельно и все замерены на меньшем пределе обнаружения лабораторного метода. Вышеприведенное значение (0,1 мг/л) является половиной самого высокого предела обнаружения (0.2 мг/л для F3 и F4). Другие фракции имели меньшие пределы обнаружения.

Note: *values below the detection limit were assumed to be equal to half of the detection limit.*
** MAC for free cyanide (CN-F). The measurement of weak acid dissociating cyanide(CN WAD) is a safe method, since CN is always less than or equal to CN-WAD.*
There is an increased natural concentration of iron and aluminum in the rivers of the region.

A review of the 2022 results in Diagram 2 shows that at the voluntarily adopted point W 1.5.1, the average content of aluminum, iron, manganese and antimony exceeds the MAC standards. However, the indicators of aluminum and iron correspond to a naturally high background concentration in the region, which may be the same or higher. This does not pose a significant risk to human health or the environment, since iron affects not so much the human body as its aesthetic perception (taste, visual). The Earth's crust is the richest in these metals, so the level of their concentration is normal for this area. Manganese naturally occurs in nature, is formed as a result of erosion and weathering of rocks and minerals and does not pose a significant risk to human health and the environment.

Consultants of the Northern Environmental Protection Service of Canada from Saskatoon, Canada (CanNorth), to assess the risk of the potential effect of antimony on humans and the environment downstream of the Kumtor mine concluded that such a level of antimony concentration is “significantly lower than the levels associated with the potential effect on indicators of aquatic biota. Thus, the concentration level of this chemical substance does not have significant negative effects for the ecology of water bodies”. The concentration of antimony in 2022 is the limiting harmful index (LHI) for mammals. The World Health Organization (WHO) in the guidelines for safe for human health indicates that the antimony content in drinking water is not more than 0.020 mg/l. Cannorth has considered other ways of antimony’s influence on the body (for example, through fish consumption) by comparing consumption with LHI.

For antimony, an LHI was selected from the databases of the Integrated Risk Information System (IRIS) of the United States Environmental Protection Agency (US EPA), after which the level of exposure for adults, children and newborn kids who could positively be affected by antimony as members of shepherd families seasonally living downstream from Kumtor in the Taragai River valley was calculated. Calculations showed that the possible use of antimony was “significantly lower than the level of LHI”, which indicates that the concentration of antimony “is not a cause for concern from the point of view of human health” (CanNorth, 2017). Despite the above conclusions, Kumtor strives to identify and neutralize the source of antimony in the Kumtor River.

3.3 DRINKING WATER QUALITY

The water used at the mine for ordinary household consumption (drinking, cooking, personal hygiene, general cleaning of the mine camp and offices) is regularly checked for compliance with the quality standards of drinking water in Kyrgyzstan and the World Health Organization (WHO). Our drinking water meets these standards and is therefore safe for appropriate use.

3.4 QUALITY OF DISCHARGED EFFLUENTS

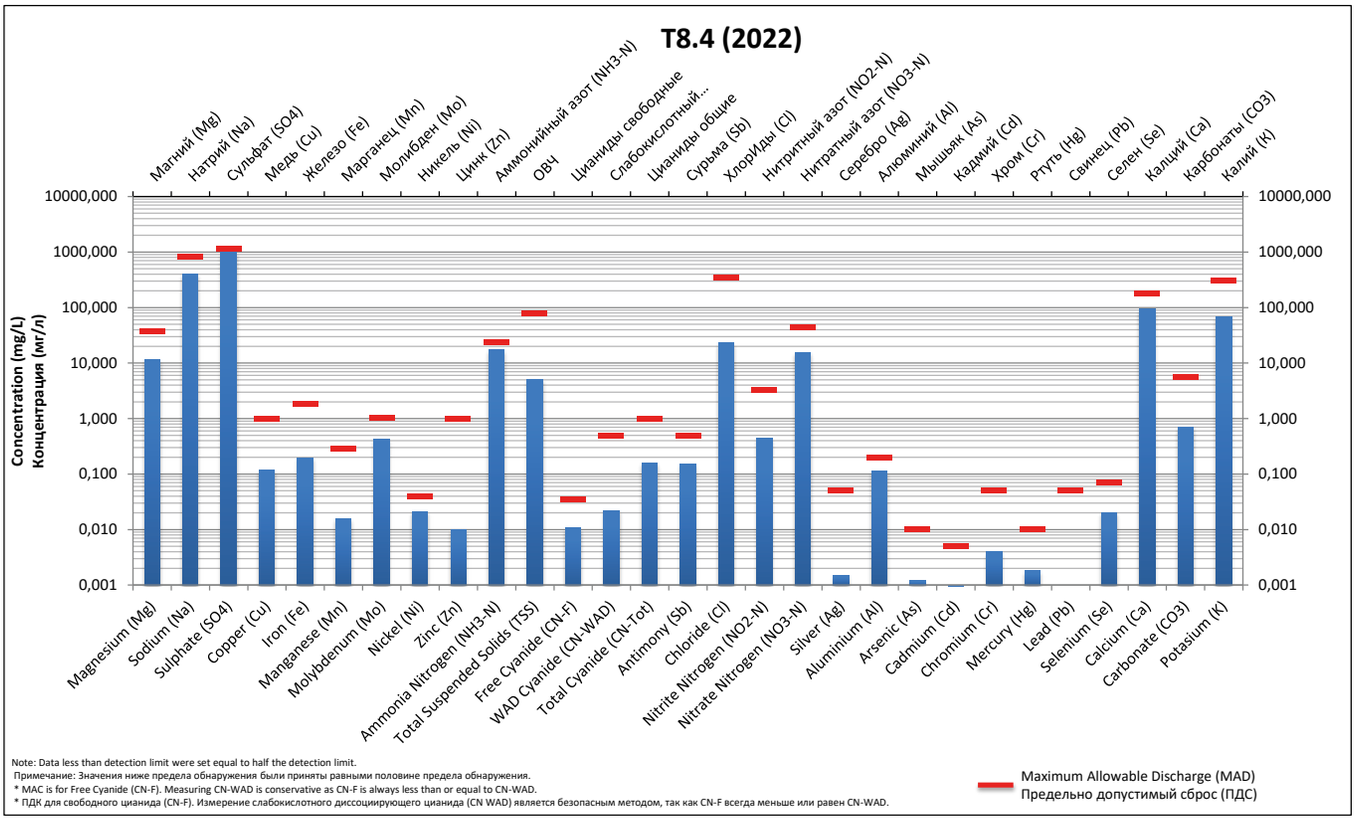
Discharges from industrial wastewater treatment plants (ETP – Effluent Treatment Plant)

Taking into account the extreme climatic conditions at the mine, the industrial Effluent treatment plant (ETP) of the Kumtor Tailings facility, as a rule, are operated from May to October (in the warm season). During the treatment season, the Kumtor River, which receives treated effluent from the ETP, does not freeze and provides significant volumes of runoff.

The quality indicators of treated industrial effluents from ETP for 2022 are presented in figure 3. They are compared with the standards of maximum allowable discharge (MAD) and are discussed below.

According to the data obtained, the concentrations of cyanide in the discharged treated wastewater, as well as other parameters, meet the relevant standards of the MAD.

Diagram 3: Water quality indicators of treated industrial effluents from ETP for 2022 (T 8.4)

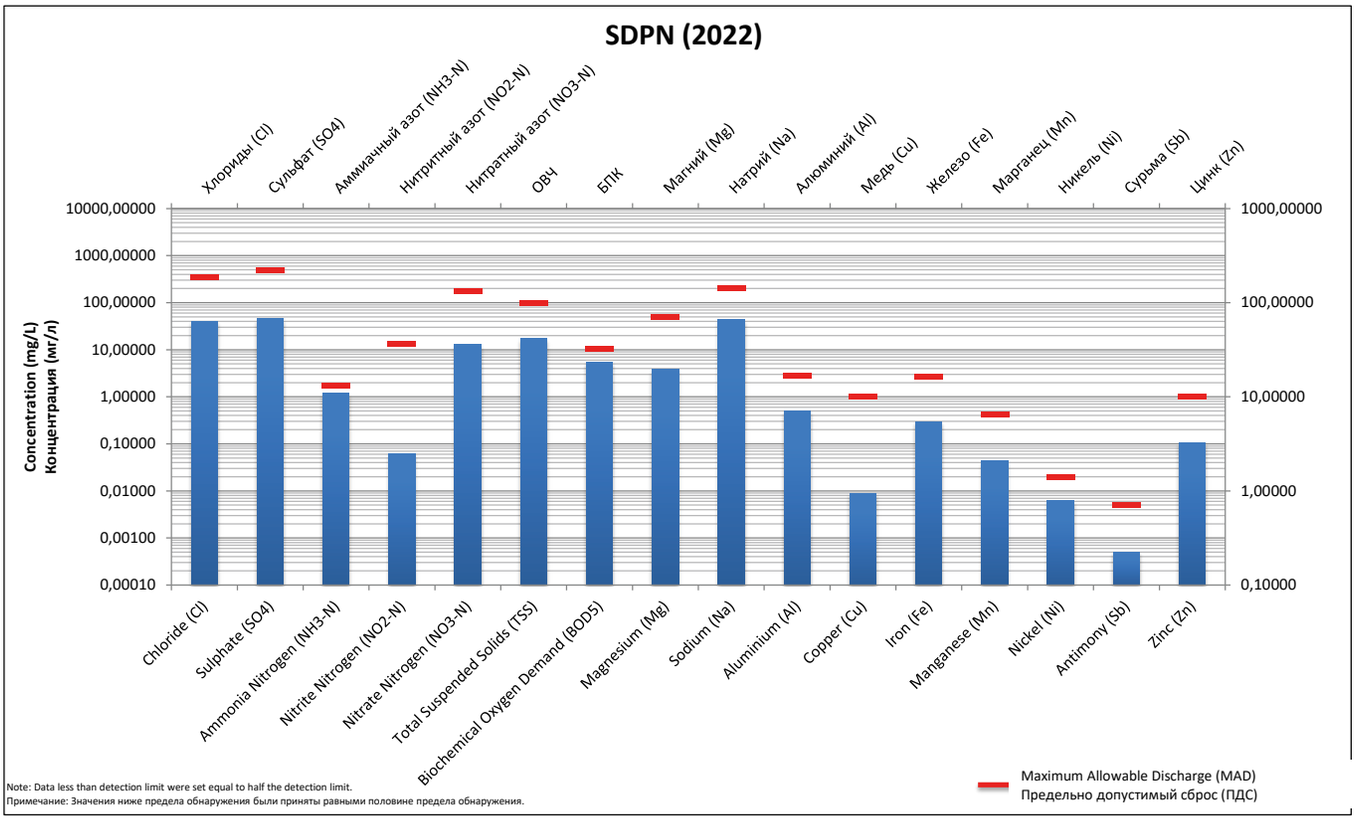


Note: *values below the detection limit were assumed to be equal to half of the detection limit.*
** MAC is for Free Cyanide (CN-F). Measuring CN-WAD is conservative as CN-F is always less than or equal to CN-WAD.*

Discharges from sewage treatment plant of household effluents (STP)

In 2022, the average volume of domestic wastewater was 352 m3/day. The quality of the treated effluents discharged from the STP met the standards of the MAD.

Diagram 4: Water quality indicators of treated wastewater from the STP for 2022 (SDPN)



Note: *values below the detection limit were assumed to be equal to half of the detection limit.*

External water quality check

Our activities are regularly checked by the authorized state bodies for environmental protection, which notify us of any issues of concern. We, in turn, respond to these issues and solve them.

Monthly indicators and data from previous years

The average monthly results of surface water monitoring are presented in Appendix 1 to this report. The results of the monitoring of previous years are presented in the previous annual environment reports, which are also available on the website www.kumtor.kg.

3.5 AIR QUALITY MONITORING

Road dust raised by moving cars and trucks is the main source of observed and measurable emissions into the atmosphere on the technological road passing through the Barskoon Valley.

To determine the total amount of suspended particles in the air in various places around the perimeter of the mine, five large-volume air samplers were installed (A1.2B, A1.3, A1.4, A1.6 and A1.7). Sampling at points A1.2B, A1.3 and A1.4 will be carried out once every six days continuously for 24 hours. To ensure the monitoring of the condition of the mine's activity, the adjacent territory is sampled once a month from point A 1.6, also during the annual period, as an additional control, we install point A1.7 on the Lysiy gravel pit, the sampling frequency is equal to this point twice a year.

Point A 1.2 B is located about 50 m northeast of the substation in the Chon-Sarytor Valley. Point A 1.3 is located approximately 1000 m northeast of the northern end of the Tailings dam. Point A 1.4 is located approximately 2000 m to the west of pumping station #1 on Petrov Lake, on the southern side of the Lysiy gravel pit. Point A 1.6 is located on the border of the license zone of the mine and the Sarychat-Ertash State Reserve. Point A 1.7 is located at the Lysiy gravel pit, approximately 600 meters north of the Sewage Treatment Plant.

In 2022, the total concentration of suspended particles in air (TSP) at monitoring stations, it was below the daily limit of 500 micrograms/m3 for industrial zones in the Kyrgyz Republic, except for isolated cases of A1.2B station. This station is located close to the technological road, with a strong wind in the direction of the sampler, all the raised dust flows towards the sampler and an increased amount of suspended particles in the air is fixed. In such cases, dust suppression measures were immediately taken at this site.

Dust samples in the atmospheric air are examined for the content of cyanide, mercury, arsenic, nickel, selenium, zinc, uranium. In accordance with the previous results, the monitoring data for 2022, presented in Table 5 to this report, demonstrate that the indicator is lower than the corresponding threshold values.

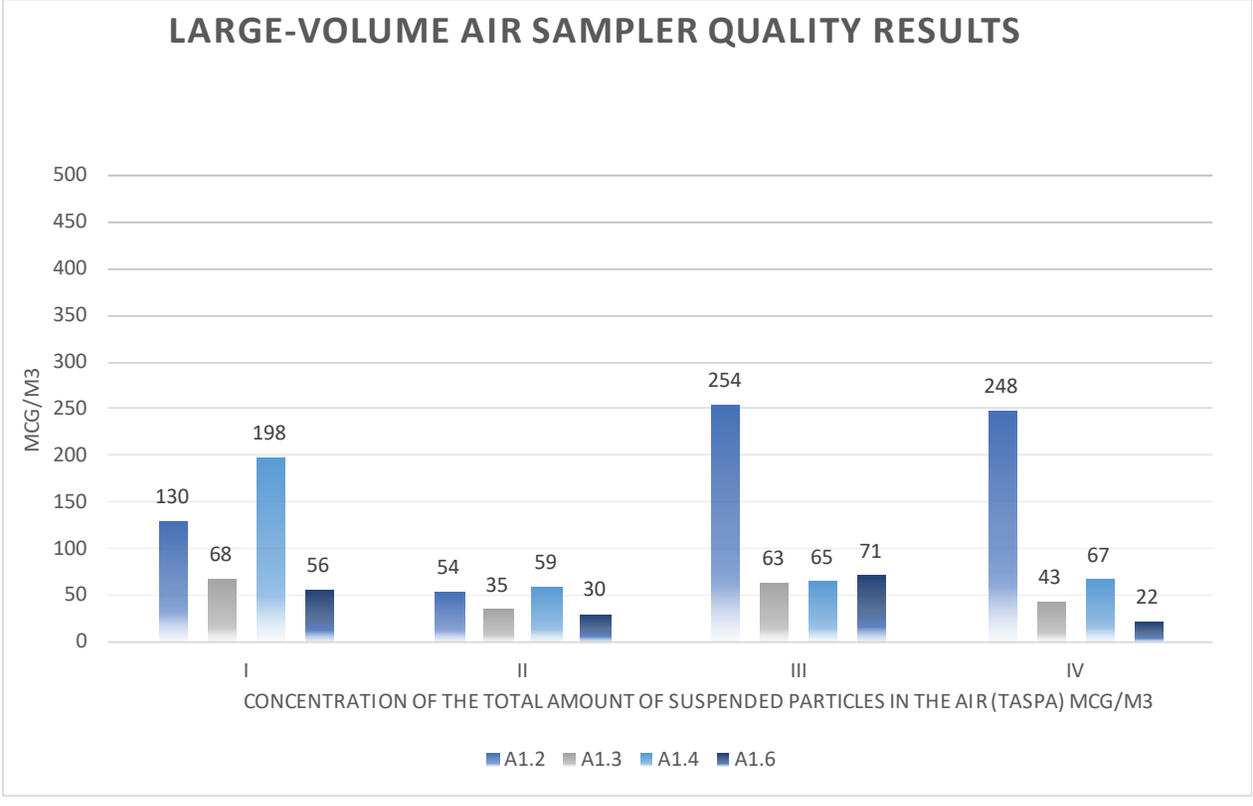
Figure 13: Dust sampler

High volume sampler air quality results

*On the territory of the Kyrgyz Republic, the permissible emission in **24 hours** in industrial zones is **500 micrograms/m3***

The locations of monitoring stations sometimes change depending on changes in the area of the mine. The average annual results for stations are shown below.

Diagram 5: Air quality indicators of high-volume samplers



Air monitoring results

In accordance with the species composition and volume of pollutants emitted into the atmosphere, the enterprise belongs to the first category of danger. Emissions from non-stationary sources are calculated in accordance with the estimates based on the actual data (production factors) of the previous period. As shown in Table 4, the total annual emissions of pollutants into the atmospheric air from the mine sources in 2022 amounted to 446.2467 tons, most of the pollutants are associated with work carried out in the pit.

The main pollutant by contribution is dust (81.62%). In 2022, emissions of pollutants into the atmospheric air from stationary and area sources of the Kumtor mine.The greatest contribution to atmospheric air pollution is formed by the release of inorganic dust from loading and unloading operations at the Central pit.The maximum surface concentration of dust emissions is Cm = 10 MAC within the mine perimeter. For the remaining pollutants and summation groups, the maximum concentrations do not exceed 0.3 MAC.

Table 4: Comparative data of emissions at the Kumtor mine and MAE (Maximum Allowable Emissions), t/year

The pollutant	MAE standard	Actual emissions for 2022
Dust that contains SiO2, 20-70%	717,2484	364,2325
Hydrocyanide (hydrogen cyanide)	0,0026	-
Sodium hydroxide (sodium hydrate)	0,05617	0,05617
Calcium oxide dust (lime)	0,5068	0,5068
Carbon (soot)	0,7516	0,6729
Lead and its inorganic compounds	0,02665	0,02665
Sulfur dioxide	3,2450	3,1195
Welding aerosol	0,4394	0,2336
Manganese oxide	0,0597	0,0318
Hydrofluoride (hydrogen fluoride)	0,0518	0,0274
Nitric oxide	0,27903	-
Hydrocarbon	8,07135	6,37738
Nitrogen dioxide	56,3605	34,6981
Carbon monoxide	65,6090	33,8993
Silicon Tetrophtharide	0,0190	0,0098
Ammonia	1,4273	1,4273
Silicon compounds	0,0190	0,0098

Hydrochloride (hydrogen chloride)	0,0105	0,0105
Formaldehyde	0,1436	0,1436
Benz(a)pyrene	0,000013	0,000013
Ammonium nitrate	0,0041	0,0021
Suspended particles	0,7589	0,7589
Hydrocarbons (for kerosene)	2,48406	-
Total	852,8997	446,2467

According to calculations, the impact of the activity of the Kumtor mine on the atmosphere is estimated as moderate. Based on the indicators of the concentration of pollutants on the earth's surface, it can be said that outside the concession area, none of the pollutants exceeds the standards of the MAE. In order to reduce such an impact, work areas are watered during mining and other operations at the mine, including earthworks transport and loading operations.

Taking into account the fact that the Sarychat-Eertash State Reserve is adjacent to the mine site, regular monitoring of air is conducted in the northeastern part of the concession area and in the northwestern part of the reserve.

Figure 8: Dust samplers

Table 5: Contents of metals and radionuclides in dust – Kumtor mine

	As	Ni	Pb*	Se	U	Zn	CN
(ng/m^3)	**10 000**	**200 000**	**8 000**	**200 000**	**200 000**	**1 600 000**	**5 000 000**
A1.2b	13.430	6.596	1.373	6.715	1,678.788	3,174.143	2.229
A1.3	13.467	1.447	6.733	6.733	1,683.359	2,244.614	6.168
A1.4	13.794	1.292	6.897	6.897	1,724.199	4,258.931	0.357
A1.6	13.794	0.707	6.897	6.897	1,724.209	4,280.250	5.022

Note:

1. MAC indicators are presented by the Agency for Toxic Substances and the Register of Diseases, and the Occupational Safety and Health Administration. The indicators S and ZN are presented according to the corresponding ratio of SO2 and ZnO.

2. The Concentration of Radionuclides in the Air for Breathing (CRAB) indicators are presented in accordance with the safety standards of 1999 of the Atomic Energy Agency.

Dust level in the Barskoon Valley

Transportation of employees to the workplace, as well as delivery of consumables and other materials is carried out on a technological road that passes through the Barskoon Valley and is served by KGC. The route leads to several settlements, including the village of Ak-Shyirak, summer pastures and hunting farms in high-mountain valleys, Sarychat-Eertash nature reserve, various tourist routes. Local residents, researchers, hunters and tourists also use the road.

In order to avoid an increase in the level of dust in the Barskoon Valley, we continued to work on watering the roads and more than ten water trucks servicing the road daily. To confirm that the Company's vehicles do not affect the level of dust, in the fall of 2014, a sensor was installed in the gorge that records any vehicles passing at a speed exceeding the limit of more than 10 km/h. In addition, along the entire technological route, dust counters, instruments for measuring the dust content in the air, were installed before the mine site, and since 2015, the data have been monitored. In 2022, 54,507 vehicles were registered with the installed sensor, of which 40,789 (74.8%) cars or motorcycles and 13,718 (25.2%) were trucks.

The average number of cars or motocycles per day ranged around 120 units, while the average number of trucks per day ranged up to 40 units.
The measurement results show that the samples selected by the dust samplers comply with all international criteria for dust deposition and sanitary and hygienic indicators. It is worth noting that in 2022, several stations and samplers designed to collect and analyze dust along the technological road were vandalized. Such phenomena lead to a lack of data for comparing vehicle accounting data with data on solid particles and the total quantity of deposited dust in order to determine whether there is a correlation between traffic volume and speed and fugitive dust levels.

However, the data continue to show that mine-related vehicles comprise only 25% of the total traffic volume and that the daily numbers are fairly consistent throughout the year. Most of the vehicles travelled above the posted speed limit of 50 km/hr. At the same time, we note that GPS navigators are installed on all KGC vehicles, which automatically transmit information about cases of exceeding the speed limit of the dispatching company and strict disciplinary penalties are applied to violators.

Table 6: Monitoring of dust levels in the Barskoon Valley, mcg/m3

Sampling points (Stations)	Unit of measure	2020	July 2021	August 2021	July 2022	August 2022
		Due to the pandemic, no sampling was carried out in the Barskoon Valley				
#1	mcg/m3		51	98	49	14
#2	mcg/m3		28	165	41	17
#3	mcg/m3		27	153	33	50
MAC* – Recommended norm MAC – KR populated areas	mcg/m3		100	100	100	100

Doctor of Biological Sciences G.A. Lazykov in 2022 continued the study of the "vegetation cover of the Kumtor deposit and the Barskoon gorge". The conclusions of the study are given in Section 4.4.

Table 7: Metal content in dust – Barskoon

Station	As, mg (ng/m^3)	Ni, mg (ng/m^3)	Pb, mg (ng/m^3)	Se,mg (ng/m^3)	U,mg (ng/m^3)	Zn, mg (ng/m^3)
TLV's/DAC's	**10 000**	**200 000**	**8 000**	**200 000**	**200 000**	**1 600 000**
Barskoon #1	13,316	6,731	6,658	6,658	9,698	630,072
Barskoon #2	13,055	6,409	15,163	6,527	9,356	470,908
Barskoon #3	13,928	6,305	6,964	6,964	9,772	727,793

Note:

1. TLV's have been sourced from either the Agency for Toxic Substances and Disease Registry (ATSDR), or the Occupational Health & Safety Administration (OHSA). S and Zn TLV's have been adjusted using the molar ratios of SO2 and ZnO.

2. DAC's have been sourced from the 1999 International Atomic Energy Agency (IAEA) safety standards.

3.6 METEOROLOGICAL MONITORING

We have a mutually beneficial arrangement with the agency of Hydrometeorology under the KR Ministry of Emergency Situations. The Kumtor meteorological station is a part of the national weather network, which provides weather forecasts, important for safe and efficient operation in the extreme climatic conditions on site.

Meteorological station - the weather station was organized on August 19, 1996. It was located about 350 m to the west of the camp. At the end of 2016, a new automatic meteorological station was built and put into operation, and it was dismantled in 2017. The weather station is fully automated and designed to measure barometric pressure, wind speed and direction, air and soil temperature, relative humidity, precipitation, dew point, short-wave and long-wave solar radiation. The data is read every 5 minutes, and automatically enters the MP5 program. In case of precipitation in the form of snow or snow with rain, the snow measuring device is checked manually daily. Precipitation is recorded in terms of its water equivalent (WE).

The data recorder of the weather station is directly connected to the computer installed in the premises of the meteorological station and the computers of the employees of the KGC Environment Department, which allows continuous monitoring of weather conditions at the Kumtor mine. The weather report is transmitted by the staff of the Hydrometeorological Service to Bishkek. Over the past few years, the Kumtor weather station has received the official status of the Tien Shan weather station. Daily reports are posted on several meteorological sites on the Internet that provide weather data in the Kyrgyz Republic.

The lowest value of relative humidity at the mine was recorded in October (7.9%). The highest and lowest recorded temperatures at the mine are +21.9 °C and -34.7 °C, respectively. The recorded maximum wind speed was 17.0 m/s. In about 40% of cases, the wind speed was 1.5 m/s or less, and in 2.04% of cases, the winds were weak. As in previous years, the barometric pressure was still low in winter and autumn, and increased in summer. The total amount of precipitation in 2022, including the water equivalent (WE), determined when snow melts, was 472.2 mm. Approximately 78% of the total annual precipitation in 2022 was in the spring-summer period (from April to August). Table 8 shows the general meteorological data for 2022.

Diagram 6: Average monthly temperature in 2022

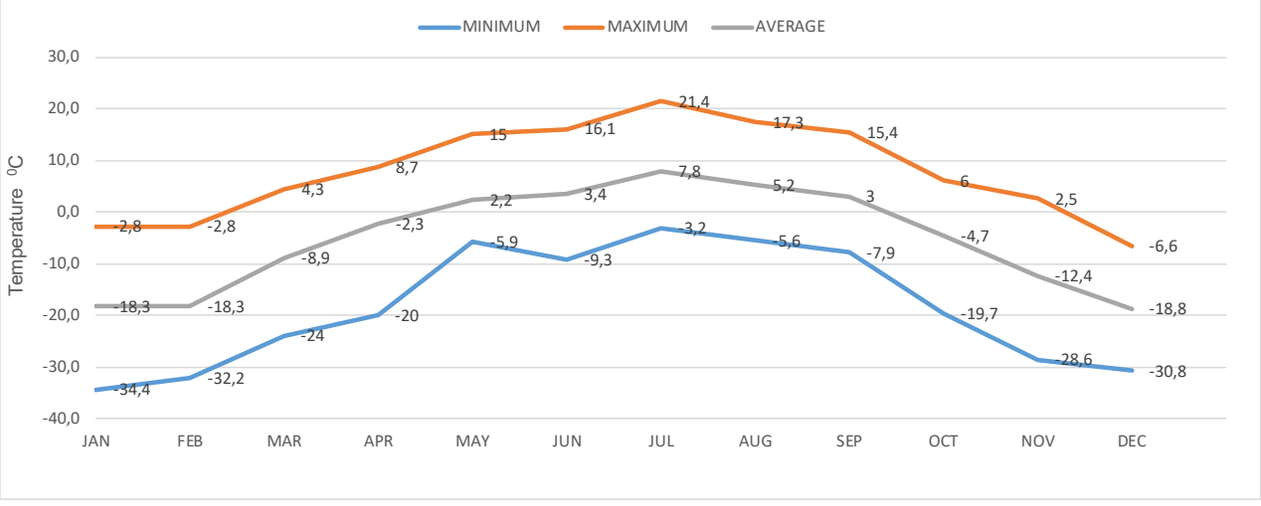


Table 8: "Kumtor" weather station summary data for 2022

2022		MONTHLY AVERAGE READINGS FOR 2022									Total precip., mm
		W. Spd., m/s	W. dir. deg. True	TEMPERATURE			Rel. hum., %	Solar rad., W/m2	Bar. Pr., mbar	Bar. Pr., mmHg	
				Avg	Max.	Min.					
JAN	max	8.35	351.7	-2.7	-2.5	-3.2	87.7	595.6	653.4	490.1	
	min	0	9.9	-34.4	-34.3	-34.7	26.3	0.0	641.4	481.1	
	avg	1.472	155.1	-18.3	-18.0	-18.6	64.1	84.2	648.5	486.4	
	tot										5.50
FEB	max	10.2	353.5	-2.9	-1.7	-3.7	87.9	679.4	653.3	490.0	
	min	0.0	4.6	-32.3	-31.8	-32.7	21.5	0.0	640.2	480.2	
	avg	2.0	182.1	-18.3	-18.0	-18.6	63.0	122.4	648.8	486.6	
	tot										10.30
MAR	max	17.0	352.6	4.3	4.6	3.9	99.3	823.0	663.1	497.3	
	min	0.0	0.0	-24.1	-23.7	-24.3	24.2	0.0	646.1	484.6	
	avg	3.3	199.1	-8.9	-8.7	-9.1	71.9	144.4	651.8	488.9	
	tot										34.40
APR	max	14.8	352.0	8.6	8.9	8.4	99.4	875.0	662.9	497.2	
	min	0.0	12.1	-17.3	-17.2	-17.4	17.8	0.0	652.2	489.2	
	avg	2.7	222.8	-2.3	-2.1	-2.5	65.6	195.3	657.5	493.2	
	tot										17.60
MAY	max	15.2	353.7	14.9	15.8	14.4	99.5	1044.0	662.2	496.7	
	min	0.0	0.0	-5.9	-5.8	-6.0	21.8	0.0	647.4	485.6	
	avg	2.6	180.6	2.2	2.4	2.1	74.5	180.2	656.8	492.7	
	tot										180.90
JUN	max	11.6	350.6	16.1	16.5	15.7	99.6	1039.0	662.0	496.5	
	min	0.0	0.0	-9.3	-9.0	-9.5	18.4	0.0	652.2	489.2	
	avg	2.3	195.0	3.4	3.6	3.2	72.0	218.2	657.9	493.5	
	tot										48.00
JUL	max	15.9	349.9	21.3	21.9	20.9	99.3	922.0	662.8	497.2	
	min	0.0	14.4	-3.2	-3.1	-3.2	8.0	0.0	654.0	490.5	
	avg	3.5	202.5	7.8	8.0	7.6	57.2	203.4	658.4	493.8	
	tot										33.80
AUG	max	15.7	350.4	17.2	17.7	17.0	99.3	947.0	663.0	497.3	
	min	0.0	6.5	-5.6	-5.5	-5.7	9.7	0.0	652.4	489.4	
	avg	3.0	189.5	5.2	5.4	5.0	65.7	170.2	658.2	493.7	
	tot										56.90
SEP	max	14.5	344.8	15.4	15.8	15.1	99.3	858.0	664.8	498.6	
	min	0.0	6.0	-7.9	-7.8	-8.1	9.1	0.0	653.7	490.3	
	avg	2.9	174.7	3.0	3.2	2.8	61.2	154.0	659.6	494.8	
	tot										27.30
OCT	max	11.1	343.4	6.1	6.4	5.6	99.3	694.2	663.6	497.7	
	min	0.0	14.6	-19.8	-19.2	-20.0	7.9	0.0	650.8	488.1	
	avg	2.7	187.2	-4.7	-4.5	-4.9	65.8	115.1	658.5	493.9	
	tot										25.80
NOV	max	12.8	335.9	2.6	3.4	1.6	93.2	581.1	657.7	493.3	
	min	0.0	19.6	-28.7	-28.1	-29.1	21.5	0.0	647.7	485.8	
	avg	2.4	178.9	-12.4	-12.2	-12.7	69.2	83.7	653.6	490.2	
	tot										29.44
DEC	max	13.4	349.9	-6.7	-6.0	-7.2	85.5	505.8	658.4	493.8	
	min	0.0	0.0	-30.7	-30.6	-31.0	27.6	0.0	646.9	485.2	
	avg	1.5	162.9	-18.8	-18.5	-19.1	61.5	71.9	652.6	489.5	
	tot										2.30
Yearly	Max	17.0	353.7	21.3	21.9	20.9	99.6	1044.0	664.8	498.6	
	Min	0.0	0.0	-34.4	-34.3	-34.7	7.9	0.0	640.2	480.2	
	Avg	5.3	180.7	-5.2	-4.9	-5.5	59.8	314.1	654.8	491.2	
	Tot										472.24

3.7 HYDROLOGICAL MONITORING

Kumtor River monitoring

To monitor the Kumtor River water discharge, a hydrometric post was installed below the bridge. There is also monitoring of water discharge for the hydrological regime of the main water bodies within the concession area: the Kumtor River and its main tributaries (including the Chon-Sary-Tor, Kichi-Sary-Tor and Lysiy), Petrov Lake, as well as Upper and Lower Diversion Channels, which divert the water of the Arabel River to the Tailings facility. The maximum water consumption in the reservoir usually falls during the period of May to September. In 2022 the total annual water consumption in the Kumtor River, registered at the hydrological post, within the limits of the concession area, amounted to 158.5 million m3.

The water consumption at point W 1.5.1 obtained by calculation was 215.4 million m3. Fluctuations in the water level in Petrov Lake, which serves as a source of fresh water for the Kumtor mine, are also monitored.

The maximum level of the water cut in the lake was 3,734,148 m above the sea level at the end of July 2022 (for comparison: 3,733,886 m − in 2021), the minimum level was 3,732,560 m in January 2022. (3,731,648 m − in 2021). Outside the concession area, numerous tributaries flow into the Kumtor River, which provide additional water supply to the river, increasing its frequency. Accurate measurement of water flow in the Kumtor River allows for maximum discharge of treated industrial wastewater from the ETP. If necessary, the pump capacity at the ETP is regulated taking into account the water flow in the Kumtor River, but, as a rule, the volume of discharge from the ETP is insignificant compared to the large water flow in the river. Carrying out measurements at the hydrological post, allow you to regulate the operation of the ETP and the volume of discharge of treated industrial drains so that the standards of water quality in the Kumtor River are observed.

Table 9: Water consumption in the Kumtor River

Monitoring station	Unit of measure	2020	2021	2022
Annual Flow in Kumtor River at flume (W1.4)	m3/year	85 820 446	113 569 746	158 500 000
Annual Flow in Kumtor River at compliance point (W1.5.1)	m3/year	127 300 413	162 020 166	215 400 000
Annual Peak instantaneous flow in Kumtor River at Flume	m3/year	19,58	49.20	59.89

Monitoring of Petrov Lake

An automatic water level monitoring system is installed in the pumping station of Petrov Lake, which provides continuous recording of fluctuations in the water level in the lake. These fluctuations of water in the lake are automatically recorded and transmitted to the computers of employees of the KGC Environment Department for permanent monitoring.

Diagram 7: Water level in Petrov Lake

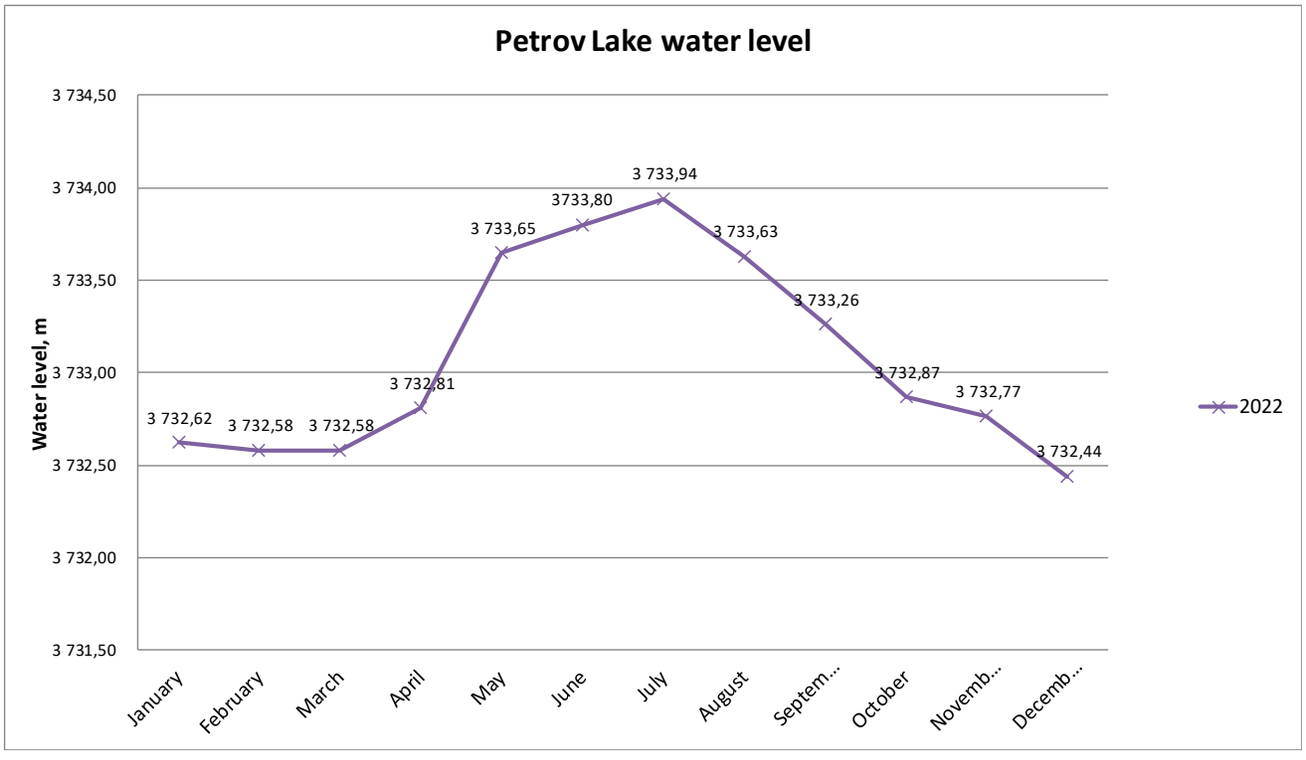
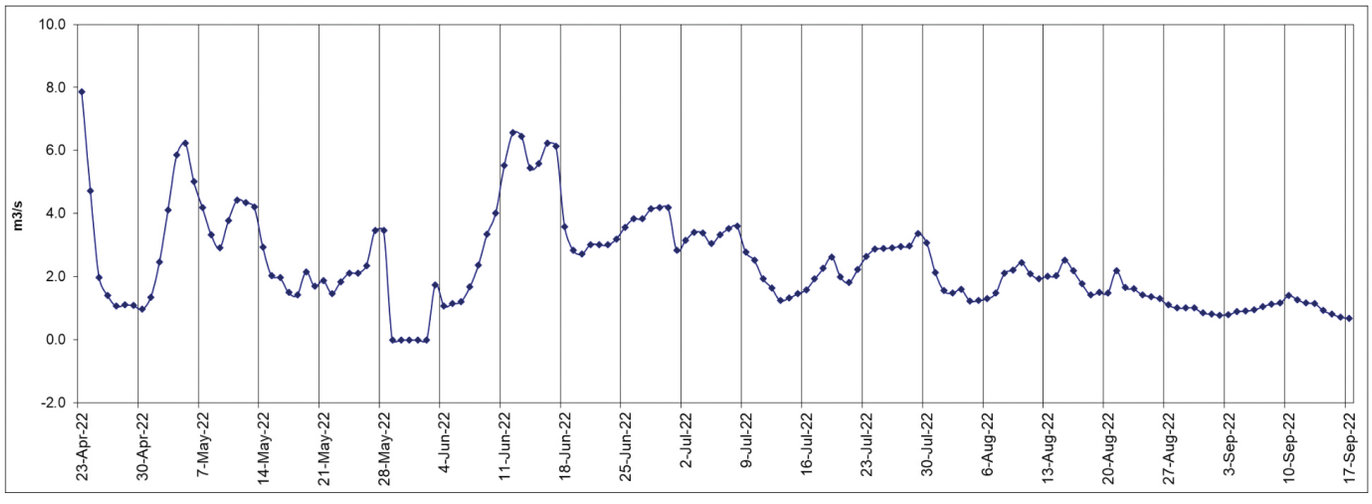


Diagram 7 illustrates the change in the water level of the Petrov Lake in 2022. As can be seen from the diagram, the water level of the Petrov Lake at the beginning of the year was at 3732.62, at the end of the year at 3732.44, i.e. 0.18 m higher than the average monthly maximum water level in the Petrov Lake of 3733.94 m was recorded in July 2022.

Upper and Lower Diversion Channels

Measurements of water flow in the Upper Diversion Channel (UDC) were carried out daily at four o'clock in the evening with the help of floats launched on the rod of the flow at the highest surface speed, according to the "Workshop on Hydrology, Hydrometry and flow regulation" (edited by E.E. Ovcharov. – M: Agropromizdat, 1988. – 224c.).
The maximum water flow in the channel was marked at 6.0 m^3/s on July 31, at the beginning of the flood season (Figure 8). The total water flow rate in the UDC in 2022, calculated on the basis of daily indicators, amounted to 22.55 million m^3.

Diagram 8: Hydrometric monitoring of the Upper Diversion Channel



3.8 RADIATION

The radiation monitoring program at the mine has been conducted since 1996.The level of absorbed radiation dose in microsiverts per hour (μSv/hour) was measured quarterly at 7 areas of the mine and the Balykchy Marshalling Yard (BMY).The dosimeter is installed above the earth's surface by about one meter and when the readings were stabilized, its data was recorded. The total level of gamma radiation on the territory of the mine and BMY is approximately less than the average background value accepted in the KR (0.255 μSv/hour or 25.5 μR/hour).

In the pit and on the territory of the Mill in 2022, the maximum radiation level was 0.25 μSv/hour or 25 μR/hour, inside the Mill building, the lowest radiation level was 0.16 μSv/hour or 16 μR/hour. In 2022, the radiation level was low and at the level of the background value at different observation points, regardless of the mark, location and time of year.

In 2022, the solar radiation intensity readings indicate that there is no tendency to increase solar radiation – on average 0.0 kW/m2 with maximum values up to 1.0 kW/m2. Over the past 26 years, readings of the intensity of solar radiation have been taken using a radiation sensor at the KGC weather station.

Table 10. Radiation measurement at the mine and BMY

Date	Unit	Top shop	MILL – outside	MILL – inside	Lysyi crusher	Weather Station	Camp	Pit	Total Site (Average, max, min)	BMY
18.03.2022	μSv/hr	0,23	0,22	0,16	0,21	0,21	0,18	0,23		0,18
22.05.2022	μSv/hr	0,24	0,25	0,17	0,18	0,24	0,19	0,25		0,17
21.08.2022	μSv/hr	0,24	0,23	0,16	0,18	0,19	0,19	0,23		0,18
19.10.2022	μSv/hr	0,23	0,23	0,18	0,16	0,18	0,17	0,22		0,16
Average		0,24	0,23	0,16	0,19	0,21	0,19	0,24	**0,21**	0,1725
max		0,24	0,25	0,17	0,21	0,24	0,19	0,25	**0,25**	0,18
min		0,23	0,22	0,16	0,18	0,19	0,18	0,23	**0,16**	0,16

- Average Background Value in Kyrgyzstan = 0.255 μSv/hr

During 26 years at the weather station KGC has been taking readings of the intensity of solar radiation using a radiation sensor.

In 2022, the readings of the intensity of solar radiation indicate that there is no tendency to increase solar radiation – on average **0,0 kW/m²** with maximum values up to **1.0 kW/m².**

3.9 WASTE MANAGEMENT

The main categories of wastes

As a result of the mine activities, three main types of waste are generated (not counting waste rock and enrichment tails): solid household (MSW), industrial and hazardous waste. MSW is food waste, various types of packaging, as well as disused items used in everyday life. Industrial waste includes scrap metal, plastic, waste oils and liquids, other waste with a low hazard class, formed in large volumes and subject to processing and further use as secondary raw materials. Hazardous waste includes packaging materials, polypropylene bags and wooden boxes used for the transportation of toxic reagents, batteries, mercury lamps, medical waste and reagents with expired shelf life.
Used tires belong to a separate category of waste. In order to effectively address the issues of recycling and recycling of tire waste, both heavy-duty and small-sized vehicles, KGC plans to build its own plant for the processing and disposal of all types of tires. More detailed information about the plant will be given in our next reports.

Types of waste:

- Scrap metal (black and non-ferrous)
- Wood waste
- Accumulator batteries
- Plastic waste
- Cardboard and paper waste
- Used oil and blends
- Oily rags
- Polypropylene bags (Big bags)

Waste Management Strategy

KGC developed an integrated waste management strategy with input from international consultants. This strategy includes principles such as minimizing the negative impact of waste on the environment and effective use of financial resources spent on labour and purchase of equipment. KGC achieved the previously set objectives for waste management, namely:

1. 100% recycling of industrial waste.
2. Reduction of the volume of solid domestic waste to be landfilled.
3. 100% composting of food waste from the camp kitchen on site.

Imrovement of waste handling practices

Reducing the negative impact on the environment and the effective use of financial resources related to waste management are the key priorities in improving our waste management strategy. As part of the implementation of the strategy objectives, KGC seeks partners who are able to provide waste processing/recycling services, contributing to reduction in waste volumes disposed at site landfills.

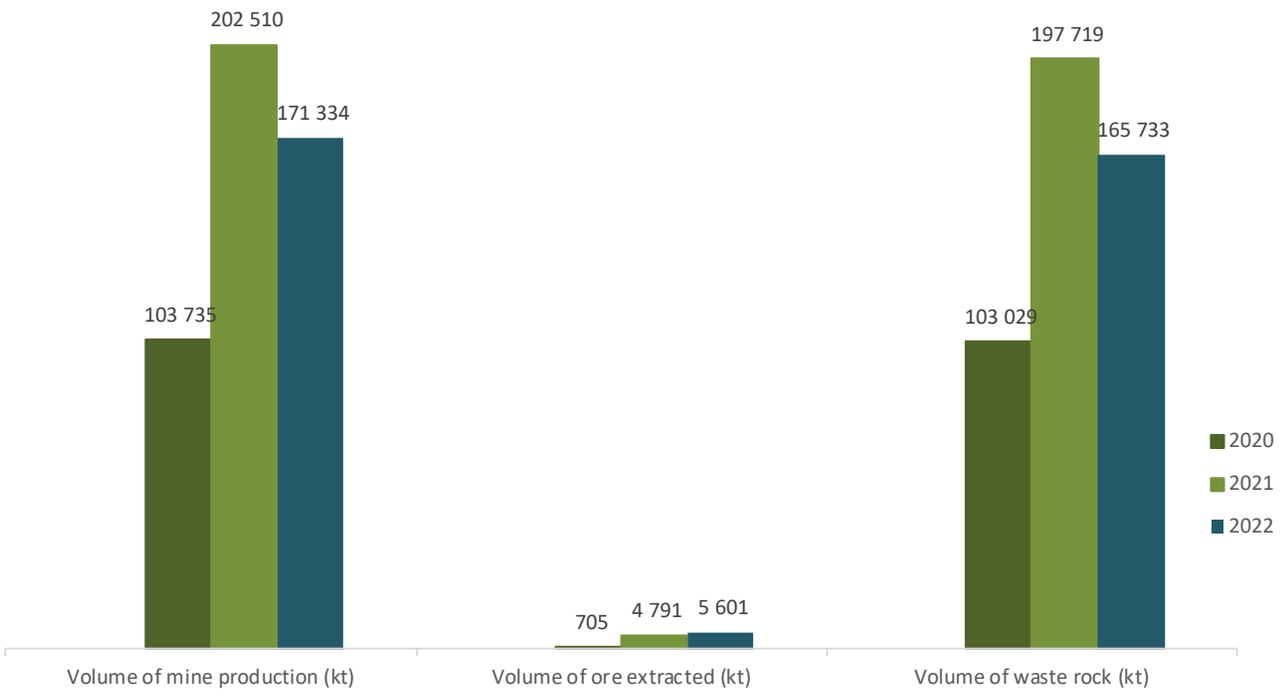
Since 2014, not a single kilogram of industrial waste has been disposed on site. Scrap metal, plastic, rubber, wood, paper, waste oil and other waste are removed from the mine and delivered to our local partners to reuse and recycle. The re-use of scrap metal in the production of grinding balls is of particular note. Before the transition of the KGC to “Temporary External Management” the local company “Vulkan Plus” produces different size steel balls used for ore grinding at the Mill.

Domestic and hazardous waste are disposed at two landfills commissioned in 2015. These landfills were designed and constructed in full compliance with all engineering and environmental requirements. When designing and constructing the landfills, the following factors were taken into account: prevention of negative impact on ground and surface water, minimization of pollutant emissions into the atmosphere, preservation of pasturelands, effect of runoff and melt water on generation of leachate products and their safe utilization, and prevention of negative impact on local fauna. The landfills are operated in full compliance with the approved design and required environmental, sanitary and technical standards. Operation of the landfills involves placing and compacting the waste in batches, followed by covering the waste with a 20-30 cm soil layer to prevent access by wild animals. Upon completion of operation, the landfill area is subject to reclamation in accordance with the Mine Closure Plan.

Waste rock dumps formation

In accordance with the KR Law on Subsoil Protection,as well as industrial safety standards, waste rock dumps shall have sufficient storage capacity, and be located at a minimum distance from a mining cutback. Mined waste rock shall not be placed in areas with mineralization, hinder mining operations in the pit and shall be formed according to the safety requirements. In addition, dumping methods and equipment shall ensure uninterrupted waste rock dumping in the required volume per time unit, and comply with limitations on dump capacity whilst maintaining dumping costs at the lowest level and labour/equipment productivities at the highest level. Modeling and assessment of waste dump stability are performed by specialists of the Research and Design Laboratory LLC of Geotechnical Objects Stability based on KGC’s monitoring data. In 2022, 165,410,384.462 tons of waste rock were generated, the total volume of waste rock at the end of 2022 was 2,594,031,000.572 tons.

Diagram 9: Key production statistics of Mine Operations, million tons



In 2022, 4,334.3 tons of industrial waste were generated at the mine, while KGC sends its industrial waste for processing. The introduction of a separate collection procedure from 2017 on all production areas of the mine site and BMY allowed achieving significant cost savings due to the reduction of labor and equipment previously involved. Currently, all industrial waste is collected separately locally in appropriate containers and, as they are filled, is removed from the mine site to processors, bypassing unnecessary operations related to loading/unloading and sorting.

Since 2022, a plastic recycling project has been implemented in Saruu village. Also, a project is being implemented to restore large-sized tires and recycle scrap tires in Tokmok town.

The volume of solid waste generation in 2022 amounted to 664.7 tons. In 2016, KGC assumed the obligation to reduce by 50% the volume of solid waste to be buried in the landfill of the Kumtor mine, which is currently being realized.The main goal of this program is to reduce the negative impact of waste on the environment and extend the period of operation of the landfill.
Such a reduction in the volume of solid waste became possible due to the introduction of separate collection and further processing of these wastes. Domestic waste can be segregated into three main categories:

1) Biodegradable waste - food;
2) Recyclable items - plastic, paper, glass, metal;
3) Non-recyclable items - multilayer packaging, domestic waste, etc.

At the same time, biodegradable and recyclable waste can be relatively easily recycled and reused.

Thus, when considering the composition of solid waste, it is easy to notice that about 75% of the waste mass can be recycled and reused, provided that their separate collection is organized, and only 25% cannot be recycled. This means that it is possible to reduce the volume of solid waste to be disposed of by 3-4 times. To implement the Strategy for Optimizing the Waste Management System, as well as to reduce the amount of waste to be buried at the Kumtor mine, in 2017, KGC introduced partial separate collection and processing of solid waste at the mine. In 2017, a biodegradable waste recycling station, or composting station, was designed and built.

Laboratory tests have confirmed that the final product – compost – fully corresponds to the properties of organic fertilizers in terms of chemical and biological composition. About 750 kilograms of food waste are processed in this way per day. In 2022, 261 tons of food waste were processed, and 66 tons of compost were obtained. Recyclable types of waste are usually sent to plastic, paper, and metal processors, which made it possible to significantly reduce the mass of waste to be buried at the mine, therefore, extend the period of operation of waste landfills, reduce the negative impact on the environment, reduce the cost of maintaining landfills and partially solve the problems of feeding wild animals with food waste.

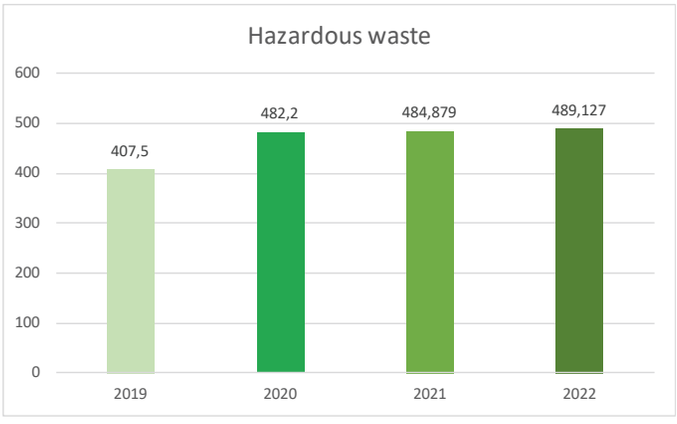
In 2022, 489.1 tons of hazardous waste were generated at the mine. Hazardous waste includes various packaging materials used in the transportation and storage of toxic reagents, car batteries and other types of batteries, mercury-containing lamps, as well as soil contaminated with hazardous materials. Disposal of packaging containers for reagents is carried out by dumping the sanctioned landfill hazardous waste of the mine. Car batteries and other types of batteries and lighting lamps are handed over for processing. In general, KGC significantly improved waste management procedures, adhering to the main priorities - reducing the negative impact on the environment, efficient use of financial resources and the introduction of advanced waste management methods.

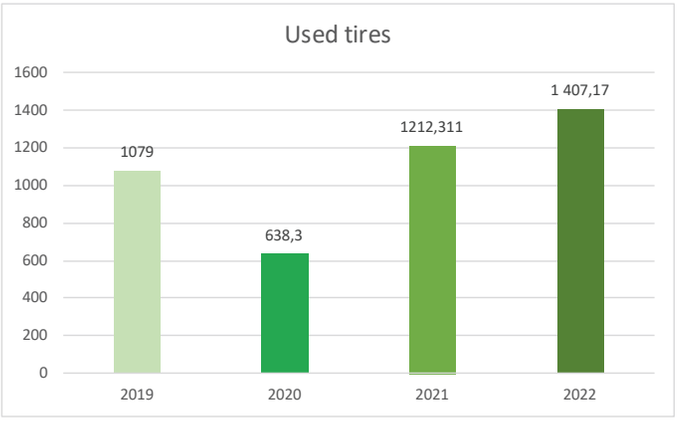
Table 11: Formation of basic waste in the KGC in 2022, tons.

Type of waste	Generated	Disposal method
Industrial waste		
Metal	1 898.7	78% Recycled
Paper	97.2	92% Recycled
Wood	301.723	100% Recycled
Plastic	237.660	69% Recycled
Rubber products	72.300	0% Recycled
Oily Rags	91.500	0% Recycled
Used oils and blends	1635.3	50% Recycled
Total	**4 334.38**	
Hazardous waste		
Packaging	476.595	Landfilled
Batteries	11.4	95% Recycled
Mercury lamps	1.132	0% Handed over for disposal
Total	**489.12**	
Tires		
Waste tires	1 402.17	0% Recycled

**Due to the revision of contracts and the search for new processing companies together with regulatory state bodies, not all waste was handed over for processing.*

Diagram 10: Waste produced at Kumtor Mine site (tons)





3.10 GROUNDWATER— BALYKCHY MARSHALLING YARD (BMY)

There are 9 wells on the territory of the BMY for assessing a nearby underground aquifer (Figure 11). Four wells (NSKV 3, NSKV 4, NSKV 5 and NSKV 6) are located outside the territory of the marshalling yard to determine the background indicators of water quality.The remaining 5 wells are located within the areas for the movement of chemicals and fuels and lubricants, and are used to determine the impact of the BMY operation on groundwaters. The depth of the wells is approximately from 12m to 20m.

As in previous years, in 2022 water sampling from wells was carried out once a quarter. A deep-water pump «MONSOON» was used for groundwater intake, with the help of which a thorough cleaning of the wells was carried out. Indicators of the concentration of basic ions in samples from different wells were relatively stable. In general, there are no standards for parameters from wells. But even according to these standards (MPC for municipal needs), the results from wells in Balykchy have indicators for aluminum and iron below the MPC. Diagrams 11 and 12 show the concentration of iron and aluminum in the NSCB7 for 2022.

Diagram 11: Results for aluminum,mg/l for 2022

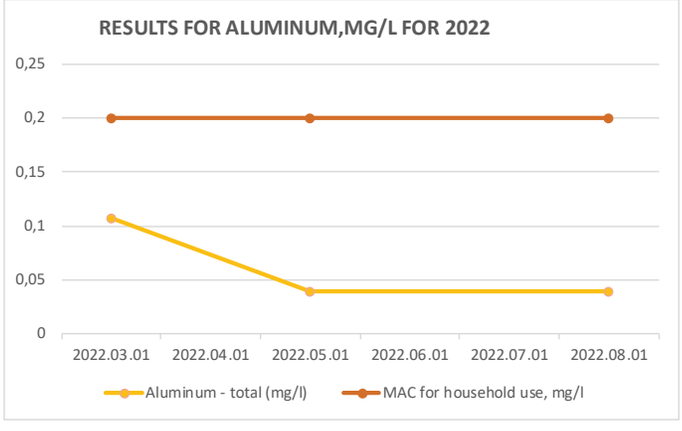
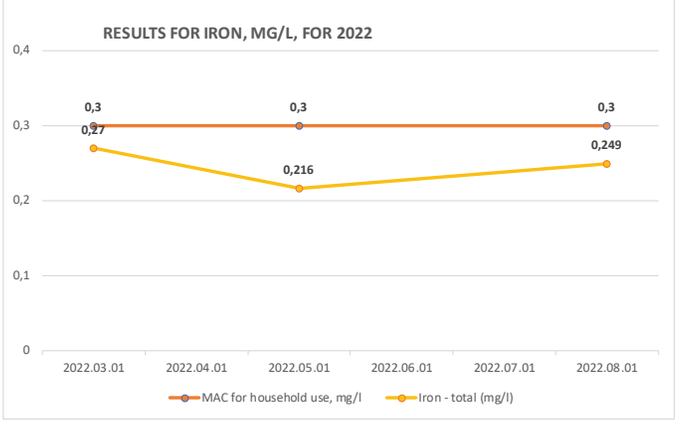


Diagram 12: Results for iron, mg/l, for 2022



Over the past years, the concentration of Al and Zn, TSP (total concentration of suspended particles in air), remained largely unchanged. The concentrations of CN, As and Hg in all wells were probably at or below the sensitivity limit of the analysis method.
The results of analyses using more advanced methods (with an increase in the sensitivity limit) showed that As and Hg are absent in the water from the well-ground waters on the BMY.

3.11 . INSTRUMENTAL MEASUREMENTS OF SOURCES OF EMISSIONS OF POLLUTANTS INTO THE ATMOSPHERIC AIR

A total of 110 emission sources have been registered at the mine, 62 (57 points) of them are subject to annual inspection. Dust and gas treatment units (DGTU) are installed on 28 emission sources. In the DGTU, the filters are being changed as they become dirty. In 2022 , on the recommendation of the authorized state body we have temporarily stopped cooperation with the Chui Ecological Laboratory (CEL). Previously, with the involvement of specialists, instrumental measurements of sources of emissions of polluting substances into the atmospheric air were regularly carried out in spring and autumn. Based on the results of the measurements, CEL presented Test Reports with the results and detailed information. Copies of Protocols on testing emission sources with notification of the replacement of filters at installations with the effect of cleaning of DGTU and their passport data were sent to the Mill managers.

3.12 MEASUREMENT OF THE MOTO VEHICLES EXHAUST GASES

The mine is constantly measuring the smokiness of the exhaust gases of the PBX with the META-01MP 0.2 device. In cases of exceeding the smoke norm, we notify the KGC Maintenance department managers on the conformity of the operation of the PBX engine. In 2022, there was no excess of the smoke norm. The results of the measurements of the smoke content of the exhaust gases of the PBX are given in Appendix 2.

3.13 REPORTING

In accordance with the Law of the Kyrgyz Republic “On Official Statistics” and the Program of Statistical Work approved by the Resolution # 206 of the KR Government dated May 4, 2012, KGC compiled statistical reports for 2022 in certain forms and submitted them to the Statistical Committee of the Kyrgyz Republic (Appendix 3).

4 ENVIRONMENTAL STUDIES

4.1 GLACIER RESEARCH

In 2022, the program of monitoring glaciers and hydrometeorological conditions of the KGC concession area, the Arabel and Uchkol river basins continued.The research is carried out by the Institute of Water Problems and Hydroelectric Power Engineering of the KR National Academy of Sciences with the involvement of experts from the Moscow State University named after Lomonosov. The purpose of monitoring is to assess the state of glaciers and to track the dynamics of their changes (velocity of movement, linear retreat and surface depression) in the zone of the mediated technogenic influence of KGC activity and to compare the data obtained with similar observations on glaciers located at a considerable distance from the mine.

In 2022, KGC continued to funding glacier research both in the concession area and beyond. The research was carried out by two scientific groups. One group is from the KR NAS Institute of Water Problems and Hydropower (IWPH), the second group was represented by researchers from Lomonosov Moscow State University and the Institute of Geography of the Russian Academy of Sciences. The work carried out by a group of researchers from the IWPH in 2022 was a continuation of the work of 2014-2022 and was carried out according to an expanded program of glacier monitoring and hydrometeorological conditions approved by both sides at the end of the KGC concession area.

In 2022, the purpose of monitoring was to assess the state of glaciers, track the dynamics of their change and compare the data obtained with the results of similar observations and studies on glaciers located at a considerable distance from this industrial facility; to build a prognostic model of glaciers. Of all the observed glaciers of the northern macro slope of the Ak-Shyrak peninsula (this is the Sary-Tor, Lysiy, Sarychat and Bordu glaciers), the Lysiy glacier underwent the greatest ablation. On the glaciers of the southern macroscline of Teskey Ala-Too ridge (Ashu-Tor and Chon-Kotur glaciers) in 2022, the most intense ablation was on the Ashuu-Tor glacier, which is associated with the greatest amount of solar radiation coming to them.

For almost a century period (1930-2022) of meteorological observations at the AMS Tien Shan Kumtor, a steady trend of increasing air temperature has been observed, and by now the average annual air temperature has increased by 1.7° C. This is certainly happening in connection with global warming. At the same time, the trend of increasing annual precipitation turned out to be insignificant. Analysis of the climatic conditions of the Inner Tien Shan in the temporal aspect allowed us to establish that, since 1978, there has been a steady increase in air temperature, especially pronounced in February, March, July and November.

In 2022, for the first time in the seven-year monitoring period, the ablation of the Lysiy Glacier turned out to be greater than that of the Chon-Kotur glacier, which is under the conditions of a large exposure and has so far had the largest ablation of all the glaciers we have observed. Fluctuations in the mass balance of the Sary-Tor and Bordu reference glaciers are closely related to changes in the meteorological conditions of the area where these glaciers are located, especially with the air temperature and the duration of the ablation period. For example, a steady downward trend has been observed in the change in the mass balance of the Sary-Tor glacier for almost a century, and it has been increasing in recent decades, which has occurred in unison with the increase in average annual air temperatures. This clearly indicates the dominance of the natural (natural) factor in the processes of the collapse of the glaciation of the Ak-Shyrak massif. Parallel monitoring according to a single program and methodological scheme confirms that the mass balances of the reference glaciers of the Sary-Tor and Bordus do not differ significantly.

Thus, the simultaneous increase in the surface temperature of the air, the total solar radiation calculated on the models of the global climate and brought to the region of Central Asia, will cause a significant retreat of the snowline and a reduction in the area of accumulation, which, in turn, will be the cause of the increasing degradation of the ice of the Inner Tien Shan in the coming years. During the period of our observations from 2014 to 2022, there was a retreat of the frontal lines of their tongue parts on all the glaciers we observed. This is one of the main and most obvious evidence of the retreat of glaciers and the collapse of the glaciation of the Kyrgyz Tien Shan in connection with global warming.

Of all the glaciers we observed during the monitoring period in 2014-2022, the largest retreat was recorded on the Lysiy Glacier, the smallest on the Sary-Chat Glacier.

The work carried out in 2022 to monitor glaciometeorological conditions on the concession area of the KGC CJSC and in the basins of the Kumtor, Arabel and Uchkol rivers as a whole made it possible to solve the tasks set for this year.
The research of glaciers surrounding the Kumtor glacier will be continued in 2023.

4.2 SOIL AND VEGETATION STUDIES

KGC is implementing a program of soil and vegetation cover studies at the Kumtor mine in order to further reclamation the disturbed lands, within the framework of which field expeditions have been conducted both at the mine and in the nearby territory, as well as high-mountain valleys of the Kyrgyz Republic.

The purpose of the expedition is to determine the types of plants suitable for reclamation work at the mine. Researches, expeditions, analyses of vegetation and soils at the mine are carried out by employees of the KGC Environment Department together with representatives of the Kyrgyz National Agrarian University named after K. I. Scriabin. The university staff has been conducting research at the mine since 2012. The research program on the most effective reclamation method includes the collection of native plant species and seeds, as well as sowing on experimental sites with different soils and conditions.

According to long-term observations of the germination of the sown grasses, it was determined that the bonfire and rhizomatous wheatgrass are characterized by weak adaptation to the conditions of the nursery. Bonfire boneless did not take root in the conditions of the mine. Of the plants sown at the mine (2018-2019), the Siberian volosnets have a larger coverage area (60%) than other types of grasses (tipchakvaleziysky (20%) and bluegrass (20%). In 2022, work continued on the implementation of the soil and vegetation research program. At the Kumtor mine, 5 hectares of the area of experimental plots and cavaliers of the soil and vegetation layer (PRS) were processed and sown with seeds of perennial slag grasses, consisting of the type of blackweed (Festuca sulcate), wheatgrass (Elytrigia), Siberian hair (Elymussibiricus L.) and rhizome bonfire (Bromus inermus L.).

Also in 2022, for the purposes of reproduction and increasing the bank of collected seeds, work continued on the site of the educational farm of the K. I. Scriabin KNAU in the Chui Valley and in the high-altitude areas of Suusamyr, Kara-Kuzhur. A complex of agrotechnical works has been carried out on these sites. The collected seeds from the experimental plots and from the places of natural growth (Suusamyr Kara-Kuzhur) were first cleaned, packaged in craft bags and transported to the Kumtor mine, to the storage site. Also on the territory of the mine, for the first time, the collection of seeds of Siberian volosnets and meadows of nobody turf was carried out. After threshing, the mass of the collected seeds was 91.8 kg.

For the information: *the program for the study of soil and vegetation cover consists of measures aimed at improving ecological conditions and restoring land suitable for land use during the operational period. After the work is completed, the restored lands and adjacent plots should be optimally organized, and the landscapes are sustainably balanced for further use.*

4.3 MONITORING AND MASS BALANCE STUDIES OF GLACIERS

AK-SHYRAK AND WESTERN SUEK MASSIF (DJETYM-BEL RIDGE)

The study was carried out by researchers of the Central Asian Institute of Applied Earth Research (CAIAER).

1. The Western Suek glaciers (No. 419), No. 418 and No. 354 are typical valley glaciers of medium and small sizes of the Tien Shan. The mass balance of these glaciers reflects the change in the mass of matter of the glacial systems of the northern and northwestern slopes of the Djetym-Bel and Ak-Shyrak ranges.

2. In 2022, the mass balance of glaciers remains negative, Western Suek (No. 419): - 0.73 mv, No. 354: -1.04 mv.

3. The glaciers considered retain the tendency of uneven retreat at different speeds. The maximum linear retreat of the fronts of the Western Suek glaciers (No. 419) and No. 354 in 2022 compared to 2022, in separate sections of the end of the tongue was 10-20 m, and the average rate of retreat was about 10 m/year.

The main reason for the degradation of glaciers is the unfavorable climatic conditions of the years under consideration. Monitoring of the mass balance of glaciers and their area will be continued in the following years.

4.4 STUDY OF THE VEGETATION COVER OF THE KUMTOR LOCATION AND THE BARSKOON GORGE

In 2022, G. A. Lazkov, Professor of the Biological and Soil Institute of the National Academy of Sciences of the Kyrgyz Republic, conducted a study of the vegetation cover of the mine and the Barskoon gorge.

The purpose of the study was to research the current state of the flora, to identify the main patterns and factors of influence on the surrounding environment of the Kumtor deposit, to determine the impact of mine activity on rare and endemic plant species, to determine the effect of dust on vegetation in the Barskoon Gorge, to determine the need for further measures to reduce the negative impact, recommendations on plant species suitable for use as a screen for protection from dust.

Influence on the vegetation cover is the result of dust exposure. However, this impact is not critical, especially since this effect is mitigated as a result of regular watering of the route with water. Beyond the limits of the production zone on the territory of the Kumtor mine, the vegetation cover does not experience a significant impact.

No significant impact of the KGC activities on the vegetation cover of the Barskoon Gorge has been revealed. Uncontrolled grazing of livestock, as well as recreational load, has a much greater impact.

4.5 MONITORING OF DANGEROUS EXOGENOUS GEOLOGICAL PROCESSES

Monitoring of exogenous geological processes (EGP) is carried out with the aim of studying the conditions for the development and activity of manifestations of hazardous processes, making forecasts of their development on the territory of the mountain slopes of the valley of the Barskoon Gorge and developing recommendations to prevent the development of dangerous EGP, or to mitigate the negative consequences of the impact of processes on farm facilities.

The objects of monitoring are sections of the Barskoon-Kumtor technological road where exogenous geological processes caused by natural and (or) anthropogenic factors are developing. In 2022, the assessment of the danger to the Barskoon-Kumtor highway from the operation of the EGP was carried out jointly with mining engineer Erokhin S., according to three directions:
1) assessment of avalanche danger.
2) assessment of the danger of rockfalls and landslides.
3) assessment of the danger of formation of ice and mudflows on some sections of the highway.

Monitoring of the EGP was carried out at seven sites (points) of observation. The observation area is determined by the type of processes being studied, the scale of their manifestations and includes a complex of both ground-based and remote research methods. Data on activations of dangerous exogenous geological processes in the Barskoon River Valley for 2022.

5 TAILINGS MANAGEMENT FACILITY AND TREATMENT PLANTS

5.1 TAILINGS MANAGEMENT FACILITY

Tails are liquid and solid materials, also called slurry, that remain after extraction of economically beneficial metals and minerals from crushed and processed ore.

Tails of the Kumtor mine are transported through a 6.7-kilometer slurry pipeline from the Mill to the Tailings Management Facility (TMF), where they are deposited, settled, and stored. The liquid component is treated before discharge and the solid component retained in the tailing pond until further reclamation and mine closure activities. The Kumtor TMF consists of two slurry pipelines (main tailings line and a spare one), a tailings dam supported by a buttress and a shear key, monitoring equipment and instruments, an effluent treatment plant, and two diversion ditches to direct surface water around the TMF.

In addition to general tailings management, two important aspects are monitored and controlled: (i) cyanide containing solutions, which are securely contained within the TMF, and (ii) dam stability. These issues are discussed below.

Cyanide residue management

The concentration of cyanide in the TMF is routinely monitored. In the tailings pond there is a natural disintegration of the chemical, or its decomposition, as a result of a chemical reaction and exposure to ultraviolet radiation. The liquid component is pumped and treated by the effluent treatment plant (ETP) to reduce cyanide and metals for safe discharge to the environment. More discussion of the cyanide concentrations discharged to the external environment is provided in the Water Quality and Compliance section.

Raising up the dam and stabilizing its movement

The dam is built and managed for the purpose of safe storage of tails. The length of the dam is 3,200 m, the maximum height under its crest is 46 m, and the crest is located at an altitude of 3,674 m above sea level. The dam is built mainly from dense granulated filler obtained from local soil. The surface of the dam (starting from the upper slope to the lower edge and further 100 m away from the tailings) is covered with a high-density polyethylene film (durable, impermeable synthetic material). The liner is glued into the frozen rock in order to minimize filtration through the dam. The height of the dam has been increased over time to ensure sufficient volume for waste storage. Along with the increase of the pond volume, the existing buttress downstream of the dam is also expanded, which helps to increase the strength and stability of the structure.

Some movement of the KGC dam was first observed in 1999, and since then, Kyrgyz specialist organizations and international engineering experts have been consulted on management and mitigation. In response, a shear key and buttress were constructed along the downstream toe to reduce, and eventually eliminate, the movement of the dam. Since 2006, a tendency of horizontal displacement velocity reduction has been observed. A branched network of sensitive instrumentation is installed to detect and record any movements in the dam structure. In 2022, work was underway to build up the body of the dam from the downstream toe.

Compliance with timelines for periodic topping of the tailings dam, construction of the shear key and the buttress will ensure increase of the dam overall stability. To implement the planned activities ensuring the dam stability at 3,677.5 m crest level, a sequence of construction operations has been developed, starting from 2022 to 2024. Dam construction operations and the technological process of tailings impounding are carried out in accordance with ecological, economic and technical standards and fulfillment of safety conditions.

Tailings balance

Accurate knowledge of what enters and leaves the TMF and the volumes of liquid and solids it contains, are an important part of safe management. We survey the extent and depth of the pond, and track the volume of tailings entering the TMF and volume of water leaving it after treatment at the ETP and by evaporation from the pond surface. Tailings slurry, 49% consisting of solids, is continuously added to the TMF throughout Mill operations (most of the year). Water treatment and removal (via the ETP) occurs only during summer months when the pond and Kumtor River is not frozen - usually May to October. Therefore, TMF water volume peaks in spring and reaches its lowest level at the start of winter.

Table 12: Tailings dam monitoring instrumentation (number of instruments)

Type	Purpose	2020	2021	2022
Inclinometrs	Measurement horizontal displacement	**50**	**50**	**48**
Settling plates	Identify dam base settlement	37	26	27
Piezometers	Measure water levels in dam body and base	38	41	39
Thermistors	Dam body and base temperature	53	65	63

	Unit of measurement	2020	2021	2022
Tailings discharged to Tailings Pond	Mln m^3	7.39	7.61	8.7
Net tailings remaining in Tailings Pond per year	Mln m^3	95.26	97.39	103.5
Total free water in Tailings Pond at year end	Mln m^3	6.22	3.63	5.8
Elevation of Tailings Dam Wall crest	Above sea level, m	3, 674	3, 674	3,674
Peak water level in Tailings Pond during year	Above sea level, m	3, 668.11	3, 668.43	3,669.18
Minimum water freeboard (Dam crest level - peak water level)	m	5.89	5.57	4.82

	2020	2021	2022
Free water at start of year (January 1)	7,343,746	6,217,081	3,630,683
Water added in tailings	5,180,891	5,057,452	6,507,211
Net precipitation/runoff less evaporation	1,507,603	930,763	1,510,073
Water remaining in tailings voids	-1,884,272	-2,164,504	-1,828,186
Water discharged from Tailings Pond to Effluent Treatment Plant	-6,500,081	-6,499,995	-6,499,996
Free water at the end of year (December 31)	6,217,081	3,630,683	5,760,354

Conclusions of independent experts

The analysis of geotechnical monitoring data is carried out by the Scientific and Project Laboratory “Stability of Geotechnical Objects”. The general condition of the tailings dam is assessed as suitable for operation. The international engineering company “Golder Associates Limited” conducted an inspection of the condition and safety level of the tailings dam, presenting recommendations on the introduction of changes and improvement, where necessary.

In their report for April 2022, the company’s specialists made the following conclusion: “... a visual inspection of the tailings dam and related facilities of the Kumtor mine TMF showed that they are in good condition and functioning according to the requirements. It is also recommended to continue to carry out annual inspections of the tailings facilities (TMF) of the Kumtor mine by external technical consultants, since the dam construction and expansion project is an ongoing process. At the Mine, effective work is being carried out on the implementation of complex inspection procedures, on the preparation of reports, data collection from instruments and monitoring tools, as well as on the implementation of any necessary measures for the purpose of safe operation of TMF”.

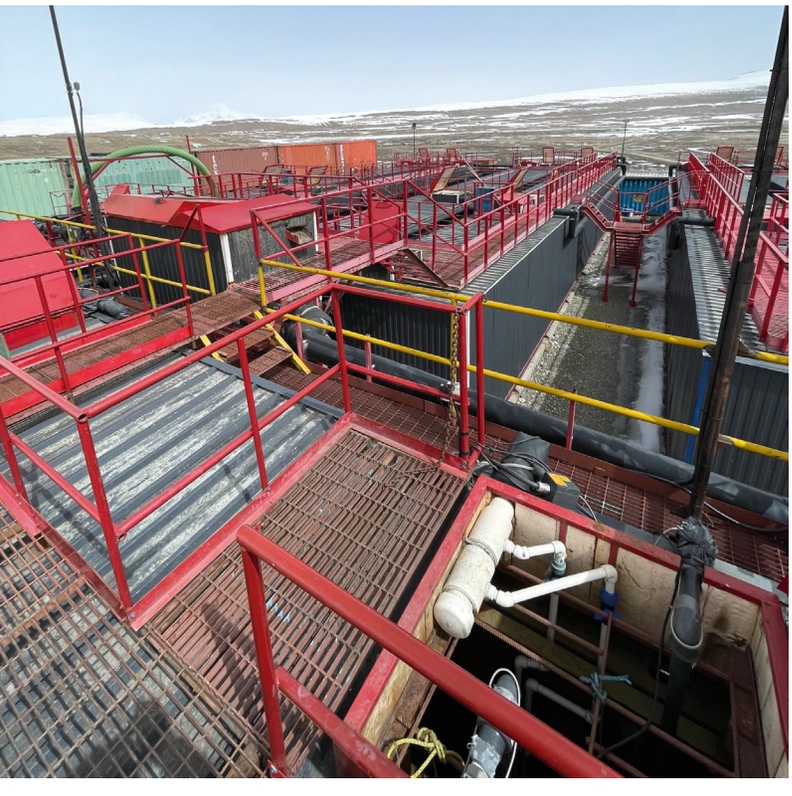
5.2 TREATMENT PLANTS

Sewage Treatment Plant

At the beginning of the second quarter of 2020, new sewage treatment plants were put into operation. This uses standard processes of biological treatment and disinfection (chlorination). The biological treatment improves the water quality by removing the 'oxygen demand' of organic matters, which would otherwise use up oxygen in the river and reduce its quality. Chlorination eliminates potentially harmful bacteria. Although challenging to operate in extreme conditions - high altitude with low oxygen and harsh weather conditions, treatment is achieved successfully through careful calculations and management. In winter, the treated wastewater is diverted to the tailings pond with subsequent cleaning in ETP. In summer, the treated wastewater is discharged into the Kumtor River. In 2022, 0.128 million m3 was treated and about 0.041 million m3 was discharged into the Kumtor River.

Effluent Treatment Plant

Industrial wastewater containing residual cyanide is a component of tailings slurry discharged by gravity flow from the Mill to the tailings management facility (TMF). The liquid component of tailings (approximately 51% of the slurry by weight) is pumped to and treated at the Effluent Treatment Plant (ETP), for compliance with the established standards - Maximum Allowable Discharge (MAD), before discharge to Kumtor River. Due to the freezing winter conditions, the treatment and discharge of wastewater is restricted only to the warmer season, typically from May to October. The main concerns of community regarding wastewater from the Kumtor mine are related to cyanide, a highly chemical used routinely in the processing of ore to recover gold.



Cyanide can be toxic at high concentrations. In 2022, 8.7 million m3 of tailings were produced and discharged into the tailings pond. The tailings containing remaining concentrations of cyanide and other chemical substances can harm the environment if discharged without treatment. The solid component is retained in the TMF, while the majority of liquid component is pumped out and treated at the ETP to reduce the concentration or completely remove cyanide, metals, and other pollutants. We use the patented INCO SO2 treatment process and operate one of the largest cyanide treatment plants outside of North America. In 2022, about 6.5 million m3 of industrial effluents were treated and discharged from the Tailings ponds into the environment.

6 GLACIERS AND WATER MANAGEMENT

6.1 WATER CONSUMPTION

We use water for operational activities (mostly in the Mill), as well as for domestic use (drinking and sanitation) in the mine camp, offices, and workshops. Water is removed from the mine pit in order to ensure safe and stable operations.

Our main water management responsibilities are:

1. Providing safe drinking water for our employees.
2. Removing water and moving ice from the open pit to ensure safe access to ore, and stable and safe working conditions.
3. Ensuring water returned to the natural environment is safe and meets specified quality criteria.
4. Managing run-off to reduce sediment load entering local creeks and rivers.

WATER SOURCES

We have two primary sources of water at the mine site. Most of the water we use is extracted from Petrov Lake. We also pump large volumes of water from the open mine pit to ensure its safe and stable operation, some of which we use at the Mill, thus reducing our demand from Petrov Lake. In 2022, we extracted approximately about 3.4 million m3 of water from Petrov Lake for the needs of the mine - almost 1.3 million m3 less than last year (4.76 million m3), 3.7 million m3 of water from the pit was used by the Mill, 0.8 million m3 – for watering roads.

Operational water usage

Our main use of water is as process water in the Mill, for crushing the ore and processing it to produce gold. In 2022, 3.22 million m3 of water from Petrov Lake, 3.7 million m3 of water from the pit, and 8.38 million m3 of circulating water were used at the technological facilities of the Mill. The use of pit water, which reduces our demand on water from Petrov Lake, has increased from zero in 2011 to 3.7 million m3 in 2022. The total amount of water used at the Mill in 2022 compared to 2021 is shown in the table below.

Drinking water

We also use treated water from Petrov Lake for domestic uses (drinking and sanitary) in the mine camp, the Mill, and other facilities. In 2022, about 0.18 million m3 of water was used for household needs, which is approximately only 5.59% of the volume of water used from Petrov Lake. The quality of drinking water is constantly monitored to ensure its safety and compliance with standards.

Table 13: Water usage at the Kumtor Mine Site

	Units	2020	2021	2022
Sources of Water				
Total water extracted from Petrov Lake	mln. m^3	5.63	4.76	3.22
Pit water pumped to the Mill	mln. m^3	1.42	2.29	3.7

Water used for Domestic Purposes (Petrov Lake)				
Water used for Camp domestic purposes	mln. m^3	0.13	0.15	0.14
Water used for Mill domestic purposes	mln. m^3	0.02	0.01	0.02
Water used for the Mega Workshop domestic purposes	mln. m^3	0.002	0.003	0.004
Water used for the Lower zone domestic purposes		0.01	0.02	0.01
Technical water for the Mill needs				
Raw water used at the Mill (from Petrov Lake)	mln. m^3	5.23	4.40	3.21
Total water used at the Mill (Petrov Lake + Pit water)	mln. m^3	6.65	6.68	7.01
Water internally recycled at the Mill	mln. m^3	9.10	7.71	8.38
Ore feed to the Mill	Mln tons	6.32	6.19	6.13
Raw water intensity ratio	Thousand Liters/ton	1,05	1,08	1.14
Water for other needs of the mine				
Water used for dust suppression (from Petrov Lake)	mln. m^3	0.04	0.02	0.000018
Water used for dust suppression (From pit water)	mln. m^3	0.068	0.97	0.804
Process water for drilling and blasting and geological exploration. (Petrov Lake)	mln. m^3	0.1925	0.14	0.00016
Wastewater discharged to Environment				
Treated wastewater discharged from ETP	mln. m^3	6.47	6.44	6.5
Treated wastewater discharged from STP	mln. m^3	0.13	0.04	0.04

Pit dewatering

We collect and discharge large quantities of water as a necessary part of our pit-dewatering program to keep the pit stable and safe. Some dewatering occurs throughout the year, but most occurs during the summer period when large quantities of glacial melt water collects in the open pit. The majority of the pit water is discharged to the environment.

Water use intensity

Our water intake from Petrov Lake has no significant impact on the average annual water level in the lake. During the year, the water level in it fluctuates naturally within 2 meters. Our total water use from Petrov Lake in 2022 amounted to 3.76 million m3, or about 2.42% of its natural outflow to the Kumtor River. The total volume of water returned to the environment amounted to 6.5 million m3 in the form of treated wastewater (STP and ETP). In 2022, we pumped out and transported 21.3 million m3 of water from the pit to the environment, including surface and glacial waters.

The gold extraction technology at the Kumtor mine limits our ability to increase water use through the reuse of industrial effluents from the tailings pond. Studies have shown that even a small cyanide content in the tailings pond adversely affects the gold extraction process.

Since July 2012, the Mill has started using pit water. To reduce the use of glacial water from the Petrov Lake for the needs of the mine, a project is being implemented to gradually increase the supply of water from the pit for the technological needs of the Mill. In 2022, 3.7 million m3 of pit water was pumped to the Mill, which is 62% more than in 2021. In 2023, it is planned to increase the pit water supply to the Mill up to 80% during the warm season.

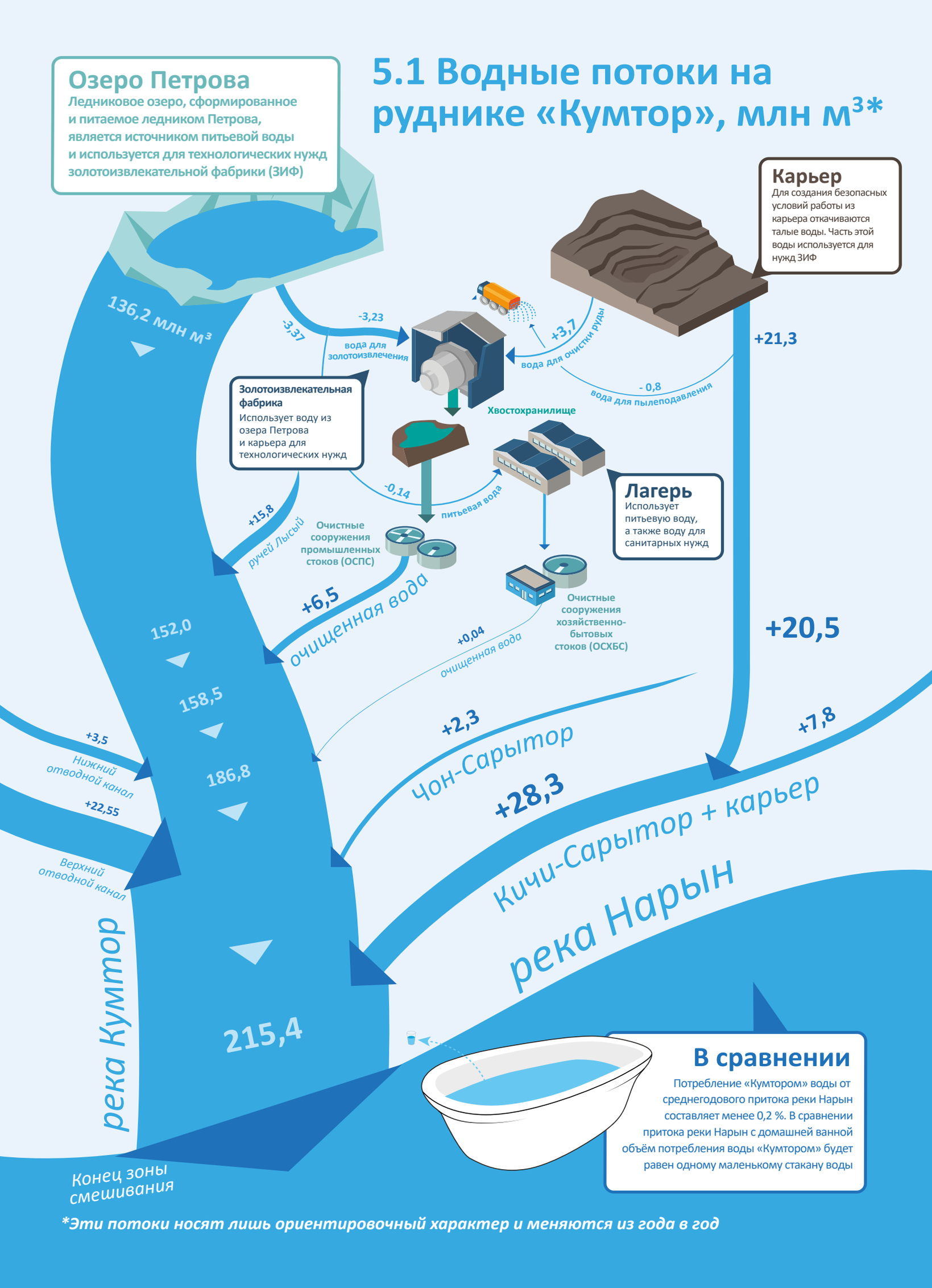
Payment for the use of surface water resources

According to the KR Cabinet Ministers Resolution “On Approval of the Procedure for determining and collecting fees for the Use of Surface water resources in the Kyrgyz Republic” #222 dated October 18, 2022, the Kumtor Gold Company CJSC (KGC) installed meters at all water consumption areas and paid the bills for the use of surface water resources. Starting from November 7, 2021 to December 31, 2022, the KGC paid 367,211,700 KGS for the use of surface water resources.

5.1 Водные потоки на руднике «Кумтор», млн м³*

Озеро Петрова

Ледниковое озеро, сформированное и питаемое ледником Петрова, является источником питьевой воды и используется для технологических нужд золотоизвлекательной фабрики (ЗИФ)



В сравнении

Потребление «Кумтором» воды от среднегодового притока реки Нарын составляет менее 0,2 %. В сравнении притока реки Нарын с домашней ванной объём потребления воды «Кумтором» будет равен одному маленькому стакану воды

***Эти потоки носят лишь ориентировочный характер и меняются из года в год**

6.2 GLACIERS

Kumtor's high altitude mining operation is in close proximity to active glaciers, with part of the ore deposit and associated infrastructure extending beneath or affected by moving glaciers.

Glaciological studies have shown that, compared to the natural melting caused by climatic changes, the removal and relocation of glacier ice to ice fields (practically at the same elevations) protects the relocated ice from excessive melting, significantly reducing their loss. In response to stakeholder concerns, and taking into account changes in the legislation of the Kyrgyz Republic prohibiting activities that result in the acceleration of glacier melting, or activities that may affect the condition of glaciers, KGC provides relevant information on mining operations.

Ice unloading

As visible on the map in the Environmental Monitoring section of this report (Figure 5), parts of five active glaciers are located within the Kumtor Concession area (Davydov, Lysiy, Sarytor, Petrov, Bordu). Ice is also present in extensive ice fields in the southern and eastern parts of the Concession area. Unloading of ice is carried out in order to ensure the safety of mining operations during stripping and mining operations, as well as to ensure the safety of mine infrastructures and facilities located near.

When unloading ice, KGC separates the waste rock from the ice, avoiding their mixing. Ice moved during mining operations is stored on ice areas. In 2022, about 0.3 million tons of ice material were moved, with subsequent placement in isolated territories. In the future, work on the movement of ice material in the unloading areas is planned to be carried out as the displacement of the ice mass increases, which may lead to the risks of blocking or limiting mining operations.

Table 14: Moving ice to isolated areas of the Kumtor mine

2020	Mln tons /year	4.4
2021	Mln tons /year	1.7
2022	Mln tons /year	0.3

The peculiarity of all glaciers is that they continuously move downhill, in many ways resembling a sedentary river. Monitoring of the movement of the Davydov and Lysiy glaciers has been carried out since 1995 (before the start of mining operations).

In recent years, the Sary-Tor glacier has been included in the monitoring program.The speed of their movement, like that of other glaciers, has a seasonal dependence, increasing in summer and slowing down in the winter months.

In 2014, KGC built a retaining safety berm to reduce the speed of movement of the southern arm of the Davydov glacier. The results of regular monitoring show that this was an effective engineering solution that contributes to reducing the amount of ice that needs to be removed to ensure safety in the open pit.

On the graph (Figure 13) the averaged velocities of glaciers determined by fixed points (ablation stakes No. 1, 3, 6) for the years 2019-2022 are shown.

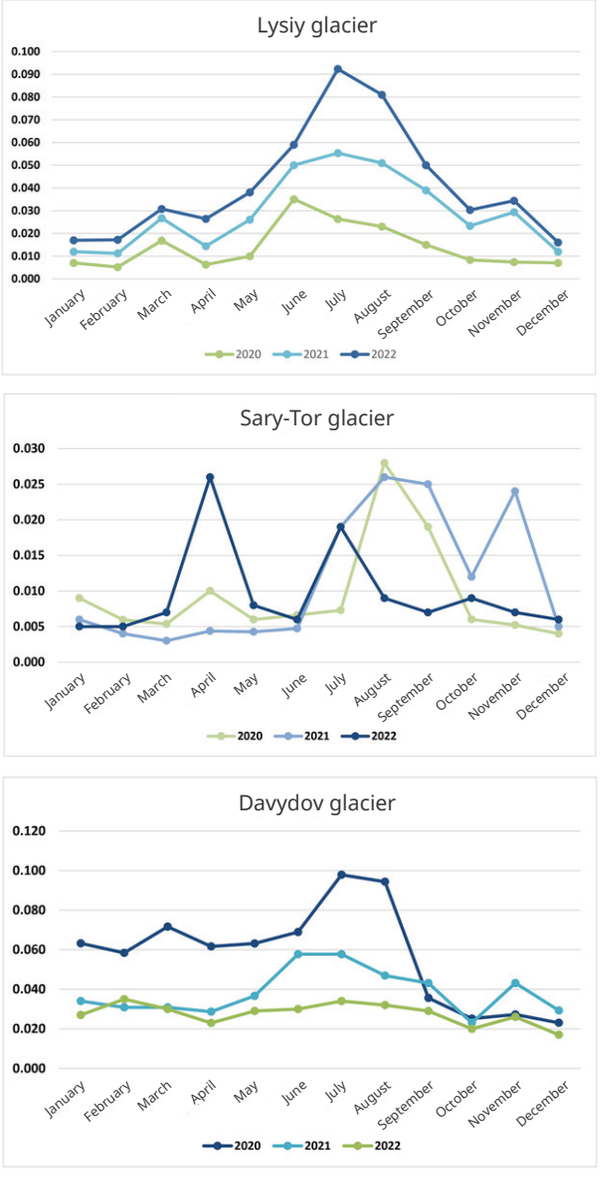


Diagram 13: Average monthly speed of glaciers, m/day

6.3 PETROV LAKE WATER BALANCE

The assessment of the water balance of Petrov Lake was carried out taking into account data on water consumption in the river, its consumption and discharge to determine the total volume of water used for the needs of the Mill in 2022. To determine the impact of water intake by the Kumtor mine on the Petrov Lake water balance, the Company took measurements at points of water outflow from the lake. We used readings from sensors installed at the Petrov Lake for measurement of water level fluctuations, water meters at the water supply pipeline to the Mill, data taken from the Kumtor River flume, as well as measurements of precipitation and evaporation. Volume of water flow measured at the Kumtor River flume is determined by:

* Volume of treated effluents discharged from Effluent Treatment Plant (ETP);
* Inflow of water from the Lysiy Creek;
* Volume of precipitation;
* Inflow of glacial melt water into the Petrov Lake;
* Inflow of spring meltwaters or surface waters into the Petrov Lake.

Total inflow into the Petrov Lake is calculated using the following formula: V Inflow = V Water according to Kumtor River flume – V Water discharged from ETP – V Lysyi Creek Flow +V water consumption by the Mine – P Precipitation + E evaporations from the Lake ± V Lake water volume fluctuations.

Outflow calculation

Kumtor River

Volume of inflow into the Kumtor River is obtained by summing outflow from the Petrov Lake, discharge from ETP, and Lysiy Creek flow. Kumtor River flow in 2022, according to measurements at the flume comprised 158.5 million m^3.

Effluent Treatment Plant
Volume of water discharged from ETP is obtained by summing up readings of flowmeters installed at the pump station #3. Total volume comprised 6.5 million m^3 (for the period from May to October).

Lysiy Creek

Lysyi Creek flows into the Kumtor River upstream of the flume. Total flow of the Lysyi Creek throughout the season comprised 15,8 million m^3.

Consumption of water at the Mill, Camp and other facilities.
The total water consumption by the Mill and the camp was measured by flow meters at the pump station on the Petrov Lake and the Potable Water Treatment Plant (WTP). In 2022, the total volume of water consumed by all facilities at the Mine was 3.37 million m^3.

Precipitation

Volume of water evaporated from the surface of the Petrov Lake was calculated according to Meyer's equation (equation for determination of evaporation from water surface). Evaporation from the surface of the Petrov Lake throughout May to September comprised 260.5 mm or 1.05 million m^3. This value does not contradict the data of A. M. Molchanov, who notes that evaporation from the surface of mountain lakes in the area of the Petrov Lake is below 400 mm/year (A. M. Molchanov, «Central Asian Lakes», Gidrometizdat, Leningrad, 1987).

With precipitation of 472.24 m, the volume of water in Petrov Lake increased by 1.43 million m^3 due to precipitation. During the year, the water level in Petrov Lake changed by 1,588 m, from 3732.56 m to 3734.148 m. Applying the above formula, the calculated total inflow to Petrov Lake in 2022 amounted to 132.98 million $m^{3.}$

The volume of water consumed by the mine in 2022 amounted to 2.42% of the total inflow of water into the lake. The above calculations of the water balance show that the volume of water consumed by the mine facilities from Petrov Lake for production, household and other needs is insignificant. Basic data on water consumption, sanitation, and wastewater treatment are given in the "Water resources use" section.
Risks associated with the Petrov Lake outburst and preventive activities conducted by KGC, understanding the concerns of the population, as well as state and regulatory agencies, conducts constant monitoring of the water level of Petrov Lake, water flow in the Kumtor River, data of thermistors installed at three different points of the natural moraine dam.

In addition, prior to the development of an engineering design for a gradual lowering of water level in the Petrov Lake and its implementation, by the order KGC, the Canadian consulting company BGC developed a system for early prevention of a possible outburst of the Lake Petrov dam, which was successfully implemented.

At present, constant monitoring of the data of this warning system is carried out, which is based on regular comparison of the results of measurements of the Kumtor River water flow in Qism with the water flow according to the developed mathematical model of the dependence between the Petrov Lake water level and in the Kumtor River water flow Qmod.

If the difference between the Qism and Qmod exceeds a certain amount, this will mean the appearance of an additional flow of water in the Kumtor River caused by filtration or seepage through the body of a natural dam. In 2015, commissioned by KGC, the head of the research and design laboratory «Geotechnical Objects Stability» Ph.D. Chukin B.A. developed recommendations for a system of instrumental monitoring of the condition of the Petrov Lake natural dam. In accordance with these recommendations, KGC has repeatedly taken steps to develop design solutions for lowering water level in the Petrov Lake. In 2017, commissioned by KGC, the "Kyrgyzsuudolboor" JSC developed a design for a gradual lowering of water level in the Petrov Lake. The design has obtained all expert opinions and approvals in the relevant state authorities, as required by the KR legislation.

7 KUMTOR MINE CLOSURE

7.1 INTRODUCTION

As outlined in the Environmental Management Action Plan (EMAP), KGC is required to update the Conceptual Closure Plan (CCP) for the operation every three years, and complete a Final Closure Plan (FCP) two years prior to closure.

This approach allows for a period for testing and monitoring of several years to evaluate the various options provided by the CCP, and time to consider any changes to the environmental, regulatory, and social environment that may have occurred over the life of the mine. KGC has been preparing CCPs since 1999 with the most recent CCP in 2019, covering the existing components of the Kumtor operations including the open pits, waste rock dumps, tailings management facility and related water treatment facilities, and the Mill complex and associated mine site infrastructure.

On February 24, 2021, an updated Technical Report was posted in the SEDAR search system, reflecting the extension of the life of the Kumtor mine.

According to the new plan, the life of the mine is extended until 2031. All data from the Technical Report will be included in the new CCP, the development of which will be completed at the end of 2023.

Given that the report publishes data for 2022 and the CCP is updated every three years, this chapter provides information on the CCP of the 2019 edition.

- *materially comply with regulatory requirements.*
- *minimize residual environmental impacts.*
- *ensure mine site features are geotechnically stable.*
- *ensure the protection of public health and safety.*
- *return the land to suitable post-mining land use.*
- *identify and mitigate social risks/impacts on the community, the business, and the overall success of the closure process.*

All CCPs have been previously submitted to the relevant Kyrgyz regulatory agencies for their information.

The 2019 update to the CCP is based on the 2015 NI 43-101 Technical Report, and incorporates new data and information, changes to the facilities, an analysis of closure risks, and changes to the environmental and social context of the project.

The primary closure consideration will be the long-term stability of the TMF, and the waste rock dumps. Key changes to the 2019 CCP update include the following:

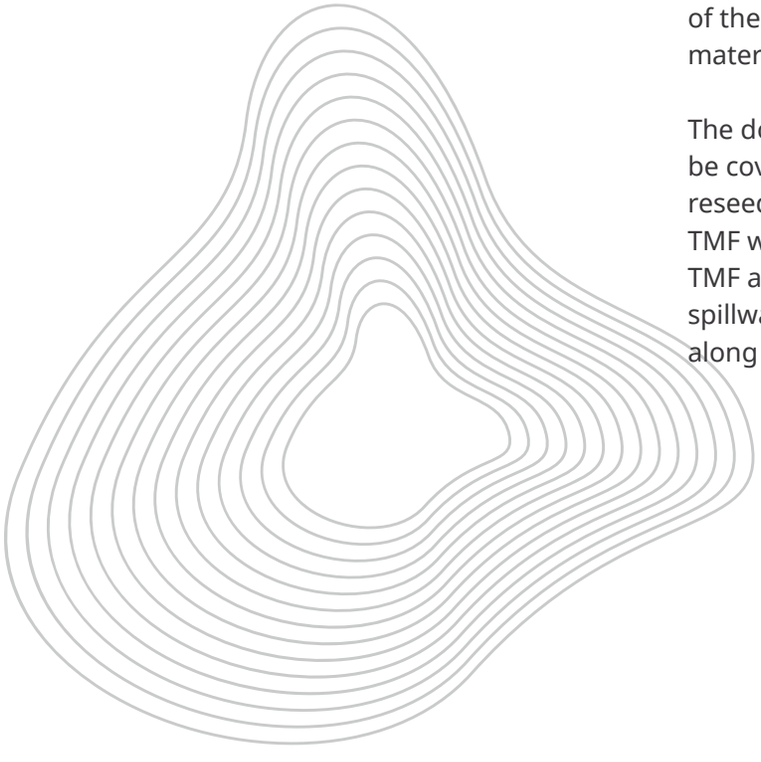
Waste Rock Dumps (WRD) configuration – this CCP update includes updated dump configurations predicted at the end of mining by Institute of Geomechanics and Mineral Resources of Kyrgyz National Academy of Science (IGMR) (2017, 2019). Because of the movement on the dumps highly irregular dump surfaces will exist at closure and this CCP assumes that surface regrading will be required to blend the dumps into the surrounding topography.

New facilities - closure actions for several new facilities constructed since the 2016 CCP were incorporated.

Socioeconomic transitioning- this 2019 CCP builds on the social and socio-economic context of the Kumtor mine closure.

7.2 TAILINGS MANAGEMENT FACILITY (TMF) CLOSURE

Earlier CCPs have used a 100-yr/24-hr storm event plus 50% as the design event for the TMF spillway system. The 2016 CCP update conservatively used a probable maximum flood (PMF) as the design storm event for the TMF spillway design. The updated CCP uses the PMF design event. The post-closure land use chosen for the TMF is industrial because of the potential hazards that could exist after closure for agricultural or wildlife habitat use. Therefore, the primary objective of the TMF cover is to limit erosion and preclude dust generation to reduce the risk of exposure to tailings by wildlife and grazing animals. Based on this objective, the cover design includes a single layer of crushed gravel.



Reclamation of the TMF will begin with growth media placement on the outer embankment. Following the completion of processing additional actions will begin in 2026 including the following actions:

• Placement of the final cover on top of TMF, and on the final slopes of the containment embankment;

• Construction of the water management system, which will include the final spillway to convey water both from the TMF and its watershed;
• Demounting and reclamation of the Effluent Treatment Plant;

• Reclamation of the industrial and hazardous waste facility.

The cover will comprise a single 300 mm layer of waste rock crushed in the grinding circuit. The cover material will be conveyed to the TMF via the existing tailings deposition system. A network of causeways will be constructed across the surface of the TMF to facilitate distribution of the cover material.

The downstream embankment of the TMF will be covered with alluvial and topsoil material and reseeded. A water management system around TMF will ensure that all the surface water from TMF and its catchment area is conveyed into the spillway diversion ditch located on native ground along the northwest edge of TMF.

7.3 WASTE ROCK DUMP CLOSURE

Waste rock dump creep resulting from movement in glacial till beneath the dumps was used to update predictions on future dump footprints. The current movement creates a rough dump surface with overall slope angles much shallower than the constructed slopes of the dump. Therefore, major slope regrading will not be necessary. Instead, once the movement has stopped, general recontouring will be performed over the dump as needed to blend the slopes into the surrounding topography. Select areas of the waste rock dump will then be revegetated using approximately 300 ha of soil/alluvium "islands", primarily focusing on the south-facing portions of the dumps. Water discharging from the pits will be collected and conveyed in lined, riprapped engineered channels adjacent to the northern edges of the dumps and natural ground.

7.4 POST-MINING LAND USE

The primary objective of the Kumtor reclamation and revegetation process is to bring the land back to its former use as high alpine wildlife habitat, free of unusual hazards. However, the diversity of conditions across the site and variety of closure methods that must be used for different facilities requires that the post-closure condition of each facility be considered separately when selecting a postclosure land use.

This is considered good industry practice and will typically result in a variety of post-closure land uses across the mine site. In order to prepare a more complete assessment of the conditions of land use after decommissioning, KGC also took into account the provision of the Kyrgyz Republic "On the reclamation (restoration) of land and its return to circulation" to determine achievable and rational methods of land use in the post-operational period. The proposed types of land use on the territory of the industrial site after decommissioning are shown in Table 15.

Table 15: Post-closure land use for project components

Facility	Post-closure land use
Open Pit	Lake
TMF	Industrial (consistent with the 'construction' land use category defined by KR legislation)
Waste Rock Dumps	Local wildlife habitat
Camp	Wildlife research center to monitor wildlife in the region and the neighboring Sarychat Eertash Nature Reserve
Roads to Camp and Nature Reserve	Access to wildlife research center
Infrastructure	Part of the infrastructures (including high voltage power line, roads, and culverts) will be part of wildlife research center.
Rest of infrastructure will be decommissioned	

7.5 SOCIO-ECONOMIC IMPACTS OF MINE CLOSURE

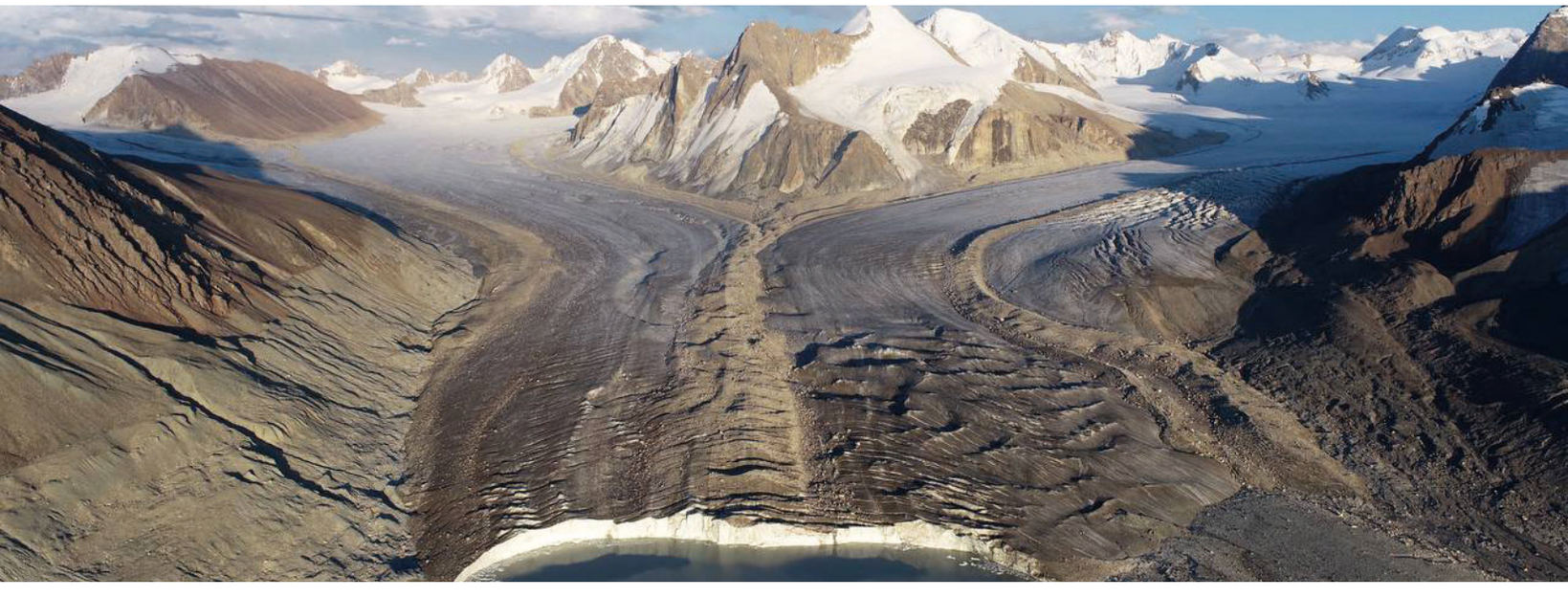
Closure of the Kumtor mine will have local and national economic and social impacts. The social baseline of communities in areas surrounding the mine was characterized by primary data collection and secondary data review. This included aspects related to social welfare, social change, population movement, community cohesion, social conflicts, poverty levels, vulnerability, and adaptability of communities.

The Kumtor mine and its upcoming closure affect a wide range of stakeholder in KR with varying levels of impact.

Table 16 is a summary of those affected and the key issues surrounding each stakeholder group.

Table 16: Stakeholders and key issues

Stakeholder Group	Key issues
Employees	Compensation and working environment, support of family
Suppliers	Revenue from Kumtor, current and future capacity for non- Kumtor busines
Issyk-Kul Region: Balykchy, Ton, Djety-Oguz Residents	Social programs and infrastructure supported by Kumtor, livelihoods of resident employees, contractors and suppliers, tax revenue
KR State Agencies	Environmental and technical closure issues. Responsible for sign-off on closure plan
KR Public Sector (including KyrgyzAltyn)	Revenues from Kumtor – tax receipts and refinery payments
Non-governmental organizations (NGO)	Ways to maximize the impact of Kumtor's contributions prior to closure
General Public	Social programs supported by Kumtor's payments to government



7.6 CLOSURE COSTS

In preparation of the reclamation and closure cost estimate,the Standardized Reclamation Cost Estimator (SRCE) Version 1.4, developed in the state of Nevada, USA and verified by the U.S. Bureau of Land Management, has been used to estimate quantities and hours corresponding to reclamation and closure activities based on first principles and productivities per the Caterpillar Performance Handbook Edition 35 (Caterpillar, 2004) and RS Means Heavy Construction Cost Data (RSMeans 2015) as applicable.

For the most part, the prices for equipment and labor correspond to the current costs of the KGC. In the absence of appropriate equipment to perform certain works at the mine, the cost assessment provides for the involvement of contractors on the terms used by KGC in the past. Since the cost estimate is based on a conceptual plan, it is necessary to determine a number of assumptions regarding the costs of decommissioning the mine during the life of mine (LOM). The main assumptions include:

• final footprints of waste rock dumps
•reserves of the soil and vegetation layer
• diversion channels to manage water collected in the catchments of the TMF, pits and waste rock dumps
• berms along the accessible areas around the perimeter of the pits
• buildings not identified for a post-mining land-use
• monitoring of water quality and geotechnical stability.

LOM Closure Cost

Closure cost estimates include closure activities that will primarily be completed within a five-year period following the cessation of operation, but some activities such as placement of growth media on the outer tailings embankment and closure planning will occur before the start of the closure period. An additional five-year period will extend post-operational monitoring to ten years beginning from the first year of closure.

The total closure and post-closure cost estimate for the project is US$58.7 million, with the largest costs being associated with tailings (US$20.5 million), waste rock dumps (US$7.5 million), pits (US$6.1 million), water treatment (US$5.6 million), general and administration costs (US$6.0 million), and monitoring and maintenance (US$3.5 million). Of this total, approximately US$1.3 million will be spent during the 5-year post-closure period for monitoring and inspections. The methodology used, correction factors applied, and input parameters selected result in this estimate being conservative. This is a common practice for conceptual closure plan cost estimates and limits the need for arbitrarily applied contingencies.

Taking into account the calculation methodology, clarifying coefficients and the choice of input parameters, this estimate it is conservative. Such an assessment is often practiced when drawing up estimates of conceptual plans for the decommissioning of the mine, which reduces the need for subjective application of unforeseen costs.

Current Obligations

In addition to the LOM closure cost estimate, KGC also prepared an assessment of its current obligation. This is based on the configuration of the site as of December 31, 2019 and applies the commitments made in the CCP to that configuration. This is consistent with methods used for financial reporting of Asset Retirement Obligations (ARO) under International Financial Accounting Standards (IFRS).

The methodology and assumptions are the same as those used for the LOM estimate; however, there are differences relating to facilities that have yet to reach their final configuration.

For example, the current TMF covers a smaller area than the LOM TMF will, and therefore, the amount of cover required would be less. The ARO for endof-year 2019 is estimated at US$54.9 million. As of January 31, 2023, the balance of the Reclamation Fund was 59 049989.77 US dollars. The Company pays an annual contribution to the Reclamation Fund in the amount of 6.0 million US dollars, according to the Strategic Agreement.

GLOSSARY OF TERMS AND ABBREVIATIONS

Albedo - is the coefficient of spectral whiteness (reflection) of surface used as a key parameter in climate surveys to estimate the Earth's energy budget, radiation transfer in earth-atmosphere system and glacier balance. HDMM - heavy duty machinery maintenance.

Biodiversity - Short for "biological diversity," the variability among living organisms and the ecosystems of which they are part. This includes diversity within species, between species, and within ecosystems.

BMY - Balykchy Marshalling Yard.

CAP - Change Acceleration Process.

Capacity Building - Activities and initiatives that strengthen the knowledge and skills of individuals and improve structure and processes such that communities can grow and develop in a sustainable way.

CCP or MCP - Conceptual Closure Plan (see also Closure Plan).

CG - Centerra Gold Inc.

CJSC - Closed Joint Stock Company.

Closure Plan - A plan designed to ensure public safety and restore the physical, chemical, and biological quality.
of the area disturbed by mining to an acceptable level. It must aim at leaving the area in such a way that the rehabilitated property does not become a burden to society after the mining operation is over.

Code of Ethics - A policy that sets out Centerra's dedication to upholding high moral and ethical standards and specifies basic business conduct and behaviour.

Collective Bargaining Agreement - An agreement between a company and one or more workers' organizations or, in absence of such organizations, the representatives of the workers duly elected and authorized by them in accordance with national laws and regulations.

Corporate Responsibility - A form of corporate selfregulation integrated into a business model where companies embrace the responsibility forth impact of their activities on the environment, consumers, employees, communities, and stakeholders.

Currencies - Kyrgyz som (KGS): 2019 average exchange rate 1 USD = 69.84 KGS.

Cyanide - A chemical compound containing carbon and nitrogen used to dissolve gold from ore.

Derived Air Concentration (DAC) - A derived limit on the activity concentration in air (in Bq/m3) of a specified radionuclide - calculated such that a typical worker, breathing air with constant contamination at the DAC while performing light physical activity for a working year, would receive the annual limit on intake for the radionuclide in question.

EBRD - European Bank for Reconstruction and Development.

Economic Value Retained - Component of GRI Economic Indicator EC1 and calculated as economic value generated less economic value distributed (see also www.globalreporting.org for further details).

EITI - Extractive Industries Transparency Initiative.

EMAP - Environmental Management Action Plan.

Engagement - A process of contact, dialogue, and interaction that ensures all parties of interest are informed and participate in decisions that affect their future.

Environmental Assessment -The process of identifying, predicting, evaluating, and mitigating the biophysical, social, and other relevant effects of development proposals prior to making major decisions and commitments.

Environmental Incident - An event that has caused or could cause environmental harm. Ranges in scale and severity from Type I (Insignificant) to Type V (Catastrophic).

Environmental Management System (EMS) – A framework developed by an organization to help improve its environmental performance by taking environmental considerations into account when making decisions and managing risks.

ETP - Effluent treatment plant.

First Aid Injury (FA) - A work related injury that requires first aid treatment.

GDP - Gross Domestic Product.

GHG - Greenhouse gas - Emissions commonly reported as CO2 equivalents (CO2e).

GIIP - Good International Industry Practice. Defined in the International Finance Corporation Environmental, Health and Safety Guidelines for Mining as "the exercise of professional skill, diligence, prudence, and foresight that would be reasonably expected from skilled and experienced professionals engaged in the same type of undertaking under the same or similar circumstances globally. The circumstances that skilled and experienced professionals may find when evaluating the range of pollution prevention and control techniques available to a project may include, but are not limited to, varying levels of environmental degradation and environmental assimilative capacity as well as varying levels of financial and technical feasibility."

Global Reporting Initiative (GRI) - A global network-based organization that has developed a widely used sustainability reporting framework consisting of principles and indicators to measure and report on an organization's economic, environmental, and social performance (see also www.globalreporting.org for further details and definitions of the GRI framework and indicators).

Governance - A set of processes, customs, policies, laws, and institutions affecting the way a company is directed, administered, or controlled.

Hazard - A source of potential damage, harm, or adverse effects on something or someone under certain conditions at work.

HSE - Health, Safety and Environment.

ICMI - International Cyanide Management Institute.

IFC - International Finance Corporation, a member of the World Bank Group.

ISO - International Organization for Standardization, the world's largest developer of voluntary International Standards.

ISO 31000 standard - Standard developed by ISO Technical Management Board Working Group.

IWP & HP - Institute of Water Problems and Hydropower.

IUCN - International Union for Conservation of Nature.

JSC - Joint Stock Company.

KR NAS - Kyrgyz National Academy of Sciences.

KGC - Kumtor Gold Company.

Local Suppliers - Suppliers based in the same country as the operation that they supply.

Lost Time Injury (LTI) - A work related injury resulting in the employee being unable to attend work on the next calendar day after the day of the injury. If a suitably qualified company medical professional advises that the injured person is unable to attend work on the next calendar day after the injury, regardless of the injured person's next rostered shift, a lost time injury is deemed to have occurred. Site and company medical advisors will determine when a lost time injury is no longer recorded as a lost time injury. This includes fatalities.

LTI Frequency Rate - Number of LTIs x200,000/hours worked.

LTI Severity Rate - Number of days lost to injury x200,000/hours worked.

MAC - Maximum allowable concentration standards which apply at KGC's surface water quality compliance point (referred to as W.1.5.1) downstream of the Kumtor mine.

MAD - Maximum allowable discharge standards which apply to treated effluent discharges from the effluent treatment plant and the sewage treatment plant.

MAE - Maximum allowable emission standards which apply to airborne emissions from Kumtor.

Materiality - The threshold at which an economic, environmental, or social issue or indicator becomes sufficiently important that it warrants disclosure in the corporate responsibility report.

Medical Aid (MA) - A work related injury or illness that requires medical treatment administered by an off-site physician or by registered medical personnel. Site and company medical advisors are to be consulted a final decision as to how a medical aid injury is to be managed will be determined by the company medical team in consultation with senior site management.

Millimeter/Millimetre (mm) - International System unit of length, 1000th of a meter.

NGO - Non-Governmental Organization, a not-for profit group largely funded by private contributions and operating outside of institutionalized government or political structures. NGOs focus on environmental, social, and economic issues at local, regional, national, and international levels.

Near Miss - An event not causing harm but has the potential to cause injury.

Oblast - Administrative division, which in English translates as province or region.

OJSC - Open Joint Stock Company.

Open Pit - A mine where the minerals are mined entirely from the surface.

Ore - A naturally occurring solid material (usually rock) from which a metal or valuable mineral can be extracted profitably.

QA/QC - Quality assurance and quality control program for collection, handling, and analysis of samples to ensure a consistent approach and accurate results.

Reclamation - The restoration of a site after the completion of mining or exploration activity.

Reportable Injury - The sum of the number of Medical Aid Injuries and Lost Time Injuries in a given period. Reportable Injury Frequency Rate (RIFR) – Number of Reportable Injuries per 200,000/Hours Worked Responsible Mining - A comprehensive and transparent minerals activity that respects the rights of all stakeholders, especially those of local people, operates safely, protects the environment, minimizes the impact on human health, embraces the best international practices, and upholds the rule of law while generating benefits for host countries (see also Corporate Responsibility).

Restricted work injury - Temporary transfer to lighter work.

SAEL - Stewart Assay and Environmental Laboratories LLC (part of the ALS international group of laboratories), located in Kara-Balta, Kyrgyz Republic.

SAEPF - State Agency of Environment Protection and Forestry.

SCER - Sarychat-Eertash Reserve, a strictly protected Zapovednik neighboring Kumtor Concession. Sometimes referred to as SCEZ, with Zapovednik replacing Reserve. Zapovednik is a work of Russian origin meaning protected wilderness.

SEDAR - System for Electronic Document Analysis and Retrieval.

Significant Spill - Any spill that is Level III or higher, as defined by Centerra's incident reporting system, Level III spills are significant enough that they must be reported to Centerra's Board of Directors.

SME - Small or medium sized enterprise, referring usually to small businesses. Definitions vary, but typically they have less than 50 employees.

Stakeholder - Any person or group of people who may be affected in a good or bad way by the financial, safety, environmental, and social aspects of our operations and those who have an interest in or an influence on our activities.

Stakeholder Engagement -The communication with stakeholders, through various means, to find out what social and environmental issues matter most to them, with a view to a company improving decision-making and actions to address these concerns.

STP - Sewage Treatment Plant.

Sustainable Development - As used in the report Our Common Future (also known as the Brundtland Report): "Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (see also Corporate Responsibility). Kumtor develops mineral deposits in a manner that does not restrict communities' efforts to sustain themselves and strives to catalyze economic activity that promotes long term sustainability among our communities and their surroundings.

Sustainability - An approach to decision-making that integrates economic, environmental, and social considerations (see also Corporate Responsibility).

Tailings - The material that remains after recoverable metals or minerals of economic interest have been removed from ore through milling.

Threshold Limit Values (TLV) - The level/ concentration of a chemical substance to which it is believed a worker can be exposed day after day for a working lifetime without adverse health effects.

TMF - The Tailings Management Facility is the combination of infrastructure to hold and manage semi-liquid tailings to avoid negative health and environmental impacts, consisting of delivery infrastructure, storage ponds, holding dam, water and waste treatment facilities, and discharge facilities for treated effluent.

TSP - Total suspended particulates.

USD - US Dollars.

WTP - Water Treatment Plant.

APPENDIX 1
MONTHLY AVERAGE WATER QUALITY INDICATORS

W 1.1 Petrov Lake (2022)

W1.1 Petrov Lake (2022)		Jan	Feb	Mar	Aor	May	Jun	Jul	Aug	Sep	Oct	Npv	Dec	Annual Avg
Field data														
Temperature	°C	2,9	3,3	4,6		8,1	5,9	6,6		5,2	4,5	4,5	4,0	5,0
Conductivity	mS/cm	0,143	0,140	0,700		0,2	0,110	0,750		0,22	0,1	0,1	0,100	0,3
pH		7,8	8,3	8,1		7,8	7,2	8,3		7,4	7,8	8,6	8,8	8,0
Major Constituents														
Catcium	mg/L	16,3	16,9	18,4	15,5	16,5	13,00	17,2	16,2		13,2	17,5	16,0	16,1
Chloride	mg/L	0,70	0,60	0,60	0,60	0,50	0,60	0,60	0,60		0,60	0,50	0,60	0,591
Carbonate	mg/L	0,50	0,50	0,50	0,50	0,50	0,50	0,50	0,50		0,50	0,50	0,50	0,5
Bicarbonate	mg/L	43,0	43,0	43,0	39,0	40,0	39,0	42,0	37,0		35,0	39,0	40,0	40
Potassium	mg/L	1,79	1,60	1,69	1,47	1,52	1,37	1,93	3,53		1,94	1,95	1,65	1,9
Magnesium	mg/L	1,80	1,60	1,82	1,56	1,59	1,32	1,47	2,61		1,60	1,91	1,71	1,726
Sodium	Sodium	19,00	18,00	19,00	18,00	19,00	20,00	22,00	16,00		17,00	17,00	17,00	18,364
Sulphate	mg/L	51,0	52,0	51,0	48,0	51,0	49,00	56,0	42,0		44,0	46,0	47,0	48,818
Hardness -Total	mg/L	35,5	35,2	35,3	32,3	32,6	32,0	34,8	30,3		28,4	31,8	33,0	32,836
Alkalinity - Total	mg/L	3,0	2,9	3,2	2,7	3,0	2,6	3,7	4,0		2,8	3,1	2,8	3,072
Total - Metals														
Silver - Total	mg/L	0,00150	0,00150	0,00150	0,00150	0,00150	0,00150	0,00150	0,00150		0,00150	0,00150	0,00150	0,0015
Hardness -Total	mg/L	0,89	0,78	0,79	0,39	0,81	1,06	0,49	4,00		2,26	1,19	1,07	1,2479
Alkalinity - Total	mg/L	0,00050	0,00050	0,00050	0,00050	0,00050	0,00050	0,00100	0,00200		0,00300	0,00050	0,00050	0,0009
Arsenic Total	mg/L	0,00015	0,00015	0,00015	0,00015	0,00015	0,00015	0,00015	0,00015		0,00	0,00015	0,00015	0,0002
Cadmium Total	mg/L	0,00400	0,00400	0,00400	0,00400	0,00400	0,00400	0,00400	0,00400		0,00400	0,00400	0,00400	0,0040
Chloride	mg/L	0,00250	0,00250	0,00250	0,00250	0,00250	0,00250	0,00250	0,00500		0,00	0,00250	0,00250	0,0027
Iron - Total	mg/L	0,43	0,41	0,36	0,26	0,37	0,58	0,63	3,65		1,26000	0,71	0,60	0,8411
Mercury - Total	mg/L	0,00025	0,00025	0,00025	0,00025	0,00025	0,00025	0,00025	0,00025		0,00	0,00025	0,00025	0,0003
Manganese - Total	mg/L	0,01600	0,01500	0,01400	0,01100	0,01100	0,02000	0,02800	0,09900		0,03900	0,02200	0,02000	0,0268
Molibdenum - Total	mg/L	0,00200	0,00200	0,00300	0,00200	0,00200	0,00200	0,00200	0,00200		0,00	0,00200	0,00500	0,0024
Nicket - Total	mg/L	0,00250	0,00250	0,00475	0,00250	0,00250	0,00250	0,00250	0,00250		0,00250	0,00800	0,01200	0,0041
Lead - Total	mg/L	0,00100	0,00100	0,00100	0,00100	0,00100	0,00100	0,00300	0,00400		0,01	0,00100	0,00100	0,0018
Antimony - Total	mg/L	0,00050	0,00050	0,00050	0,00050	0,00050	0,00050	0,00050	0,00050		0,00050	0,00050	0,00050	0,0005
Selenium - Total	mg/L	0,00200	0,00200	0,00050	0,00050	0,00050	0,00050	0,00050	0,00050		0,03	0,00050	0,00050	0,0036
Zinc - Total	mg/L	0,00300	0,00200	0,00300	0,00100	0,00900	0,00500	0,00400	0,01400		0,00700	0,00700	0,00500	0,0055
Nutrients														
Ammonia - N	mg/L	0,02	0,02	0,02	0,02	0,02	0,02	0,02	0,02		0,02000	0,02	0,02	0,0200
Nitrite - N	mg/L	0,002	0,001	0,001	0,001	0,002	0,003	0,006	0,004		0,00	0,013	0,005	0,0036
Nitrate - N	mg/L	0,3	0,3	0,3	0,4	0,4	0,3	0,3	0,3		0,3	0,3	0,3	0,3182
Solids														
Turbidity	NTU	17,0	18,0	12,0	12,00	23,00	18,0	56	217		90,0	26,2	20,0	46,291
TDS Total Dissolved Solids	mg/L	79	83,0	80,0	83,0	80,0	78,0	96	107		128,0	77,0	75,0	87,818
TSS Total Suspended Solids	Sodium	0,50	4,00	4,00	5,00	5,00	6,00	22,0	55,0		18,00	6,0	9,0	12,227
Trace Constituents														
Cyanide - Free	mg/L					0,0025								0,0025
Cyanide - Total	mg/L					0,0025								0,0025
Cyanide - WAD	mg/L					0,0025								0,0025

W 1.2 Petrov Lake Headwater (2022)

W1.2 Peyrov Lake Headwater		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Avg
Field data														
Temperature	°C			1,5			4,6	4,0		4,2	2,5	1,4	9,0	2,0
Conductivity	mS/cm			0,098			0,092	0,200		0,200	0,100	0,120	0,100	3,869
pH				7,9			6,8	7,9		7,6	7,1	8,4	7,6	7,6
Major Constituents														
Catcium	mg/L	16,4	17,6	21,6	16,5	16,8	13,9	16,6	15,8		14,1	17,1	15,6	16,5
Chloride	mg/L	0,6	0,6	0,6	0,6	0,7	0,6	0,5	0,6		0,6	0,5	0,6	0,591
Carbonate	mg/L	0,50	0,50	0,50	0,50	0,50	0,50	0,50	0,50		0,50	0,50	0,50	0,5
Bicarbonate	mg/L	44	43	43	42	40	41	42	35		35	38	40	40,273
Potassium	mg/L	1,69	1,6	1,65	1,52	1,54	1,53	1,96	3,29		3,06	1,85	1,61	1,9
Magnesium	mg/L	3,01	2,98	3,12	2,83	3,02	2,56	3,5	3,47		3,63	3,05	2,68	3,077
Sodium	mg/L	1,82	1,6	1,81	1,66	1,61	1,41	1,61	2,56		2,52	1,79	1,68	1,8
Sulphate	mg/L	19	18	18	18	19	17	19	14		17	17	17	17,545
Hardness -Total	mg/L	52	52	52	50	51	51	52	39		45	46	47	48,8
Alkalinity - Total	mg/L	35,9	35,5	35,5	34,4	33,1	33,4	34,2	28,3		28,9	30,9	32,5	32,964
Total - Metals														
Silver - Total	mg/L	0,00150	0,00150	0,00150	0,00150	0,00150	0,00150	0,00150	0,00150		0,00150	0,00150	0,00150	0,0015
Alkalinity - Total	mg/L	0,89	0,75	0,773	1,06	0,63	1,38	0,47	7,62		5,39	1,06	1,11	1,9212
Arsenic - Total	mg/L	0,00050	0,00050	0,00050	0,00050	0,00050	0,00050	0,00050	0,00050		0,00050	0,00050	0,00050	0,0005
Cadmium Total	mg/L	0,00015	0,00015	0,00015	0,00015	0,00015	0,00015	0,00015	0,00015		0,00015	0,00015	0,00015	0,0002
Chrome Total	mg/L	0,00400	0,00400	0,00400	0,00400	0,00400	0,00400	0,00400	0,00400		0,00400	0,00400	0,00400	0,0040
Copper - Total	mg/L	0,00250	0,00250	0,00250	0,00250	0,00250	0,00250	0,00250	0,00250		0,00250	0,00250	0,00250	0,0025
Iron - Total	mg/L	0,482	0,49	0,364	0,93	0,407	0,808	0,482	6,65		2,95	0,749	0,561	1,3521
Mercury - Total	mg/L	0,00025	0,00025	0,00025	0,00025	0,00025	0,00025	0,00025	0,00025		0,00025	0,00025	0,00025	0,0003
Manganese - Total	mg/L	0,017	0,018	0,013	0,029	0,014	0,028	0,027	0,163		0,074	0,02	0,019	0,0384
Molibdenum - Total	mg/L	0,004	0,00200	0,00200	0,00200	0,00200	0,00200	0,00200	0,00200		0,00200	0,00200	0,00200	0,0022
Nicket - Total	mg/L	0,013	0,00250	0,00250	0,00250	0,00250	0,00250	0,00250	0,00250		0,00250	0,00250	0,00250	0,0035
Lead - Total	mg/L	0,00100	0,00100	0,00100	0,00100	0,00100	0,00100	0,00100	0,00500		0,00500	0,00500	0,00500	0,0025
Antimony - Total	mg/L	0,00050	0,00050	0,00050	0,00050	0,00050	0,00050	0,00050	0,00050		0,00050	0,00050	0,00050	0,0005
Selenium - Total	mg/L	0,006	0,00050	0,00050	0,00050	0,00050	0,00050	0,00050	0,00050		0,00050	0,00050	0,00050	0,0010
Zinc - Total	mg/L	0,002	0,001	0,004	0,005	0,002	0,004	0,004	0,026		0,012	0,004	0,002	0,0060
Nutrients														
Ammonia - N	mg/L	0,02	0,02	0,02	0,02	0,06	0,02	0,02	0,02		0,02	0,02	0,02	0,0236
Nitrite - N	mg/L	0,003	0,002	0,001	0,001	0,002	0,004	0,004	0,003		0,003	0,003	0,005	0,0028
Nitrate - N	mg/L	0,4	0,3	0,3	0,4	0,4	0,3	0,3	0,3		0,3	0,3	0,3	0,3273
Solids														
Turbidity	NTU	17	19	12	20	28	27	79	263		97	25	21	55,2727
TDS Total Dissolved Solids	mg/L	76	81	81	79	76	94	100	105		111	70	75	86,1818
TSS Total Suspended Solids	mg/L	0,50	43	4	19	7	27	39	85		22	9	10	24,1364
Trace Constituents														
Cyanide - Free	mg/L					0,0025								0,0025
Cyanide - Total	mg/L					0,0025								0,0025
Cyanide - WAD	mg/L					0,0025								0,0025

W 1.3 Kumtor River above ETP Discharge (2022)

W1.3 Kumtor River above ETP Discharge (2022)		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Avg
Field data														
Temperature	°C					5,7	7,0	6,1	5,8	5,0	1,1			5,1
Conductivity	mS/cm					0,200	0,130	0,150	0,170	0,200	0,600			0,242
pH						7,7	8,1	7,754	7,6	7,88	7,98			7,8
Major Constituents														
Catcium	mg/L					92,6	29,07	21,82	20,97	25,7	40,7			38,5
Chloride	mg/L					9,6	2,02	0,9	0,825	2,05	3,06			3,075833333
Carbonate	mg/L					0,5	0,5	0,5	0,5	0,5	0,5			0,5
Bicarbonate	mg/L					151	62,75	47,2	43	52	76,33			72,04666667
Potassium	mg/L					92,6	29,07	21,82	20,97	25,7	40,7			38,5
Magnesium	mg/L					149	12,35	9,036	10,41	28,1	55,36			44,04266667
Sodium	mg/L					6,68	2,19	1,83	1,93	2,1	3,14			3,0
Sulphate	mg/L					688	81	47,8	54	132,5	267			211,7166667
Hardness - Total	mg/L					871	130,75	86	89,72	187	316			280,1
Alkalinity - Total	mg/L					124	51,57	38,66	35,22	42,6	62,53			59,09666667
Total - Metals														
Silver - Total	mg/L					0,00150	0,00150	0,00150	0,00150	0,00150	0,00150			0,00150
Alkalinity - Total	mg/L					4,31	1,32	4,89	7,48	8,41	5,27			5,28000
Arsenic - Total	mg/L					0,006	0,00087	0,00260	0,00325	0,00300	0,00400			0,00329
Cadmium Total	mg/L					0,00015	0,00015	0,00015	0,00015	0,00015	0,00015			0,00015
Chrome Total	mg/L					0,00400	0,00400	0,00400	0,00400	0,00400	0,00400			0,00400
Copper - Total	mg/L					0,00250	0,00250	0,00250	0,00250	0,00031	0,00250			0,00214
Iron - Total	mg/L					7,75	1,39	4,52	6,49	6,50	6,27			5,48667
Mercury - Total	mg/L					0,00025	0,00025	0,00025	0,00025	0,00025	0,00025			0,00025
Manganese - Total	mg/L					2,39000	0,19000	1,16000	0,32000	0,75000	1,44000			1,04167
Molibdenum - Total	mg/L					0,00200	0,00140	0,00200	0,00200	0,00200	0,00200			0,00190
Nicket - Total	mg/L					0,10800	0,01100	0,00085	0,01250	0,03200	0,06300			0,03789
Lead - Total	mg/L					0,005	0,001	0,005	0,0065	0,0045	0,0037			0,00428
Antimony - Total	mg/L					0,0005	0,0005	0,0005	0,0005	0,0005	0,0005			0,00050
Selenium - Total	mg/L					0,002	0,0005	0,0005	0,0005	0,0005	0,0115			0,00258
Zinc - Total	mg/L					0,015	0,005	0,0144	0,031	0,017	0,017			0,01657
Nutrients														
Ammonia - N	mg/L					0,17	0,02	0,0096	0,036	0,046	0,17			0,075266667
Nitrite - N	mg/L					0,0005	0,00026	0,0048	0,0028	0,0045	0,0028			0,00261
Nitrate - N	mg/L					0,7	0,37	0,36	0,4	0,35	0,6			0,463333333
Solids														
Turbidity	NTU					124	38,25	218,4	230,25	171,5	142,3			154,1166667
TDS Total Dissolved Solids	mg/L					1186	189,5	139,2	140,5	273	478			401,03
TSS Total Suspended Solids	mg/L					218	41	240,4	168,25	152,5	273			182,2
Trace Constituents														
Cyanide - Free	mg/L					0,0025	0,0025	0,0025	0,0025	0,0025	0,0025			0,0025
Cyanide - Total	mg/L					0,0025	0,0025	0,0025	0,0025	0,0025	0,0025			0,0025
Cyanide - WAD	mg/L					0,0025	0,0025	0,0025	0,0025	0,0025	0,0025			0,0025

W 3.4 Lysiy Creek above the Kumtor River (2022)

W 3.4 Lysiy Creek above the Kumtor River (2022)		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Avg
Field data														
Temperature	°C				3,3	4,5	8,6	8,8	5,7	4,2	0,7			5,1
Conductivity	mS/cm				2,500	1,300	1,200	1,010	1,500	3,100	3,100			1,959
pH					7,6	7,7	8,1	7,4	7,5	7,3	7,2			7,5
Major Constituents														
Catcium	mg/L													
Chloride	mg/L				17,0	17,7	13,3	7,50	8,2	22,0	16,0			14,529
Carbonate	mg/L				0,50	0,50	0,50	0,50	0,50	0,50	0,50			0,500
Bicarbonate	mg/L				250	246	206	129	132	238	243			206,200
Potassium	mg/L				6,74	6,90	4,90	3,80	4,40	8,40	6,80			5,991
Magnesium	mg/L				325	365	196	150,7	199	450	372			293,814
Sodium	mg/L				15,80	12,80	4,90	5,70	6,5	14,5	11,1			10,186
Sulphate	mg/L				1476	1688	1075	777,0	1000	2280	1715			1430,100
Hardness - Total	mg/L				1664	2021	1244	892	1108	2495	1948			1624,586
Alkalinity - Total	mg/L				205	201	169	106	108	195	199			169,057
Total - Metals														
Silver - Total	mg/L				0,00150	0,00150	0,00150	0,00150	0,00150	0,00150	0,00150			0,0015
Alkalinity - Total	mg/L				3,87	4,3	7,0	1,57	5,09	6,05				4,6467
Arsenic - Total	mg/L				0,00700	0,00800	0,00900	0,00120	0,01100	0,01000	0,14500			0,0273
Cadmium Total	mg/L				0,00015	0,00015	0,00015	0,00015	0,00015	0,00015	0,00015			0,0002
Chrome Total	mg/L				0,00400	0,00400	0,00400	0,00500	0,00500	0,00400	0,01000			0,0051
Copper - Total	mg/L				0,00250	0,00250	0,00250	0,00210	0,00900	0,00250	0,04900			0,0100
Iron - Total	mg/L				11,90	10,90	13,7	13,70	13,80	21,40	16,33			14,5321
Mercury - Total	mg/L				0,00025	0,00025	0,00025	0,00025	0,00025	0,00025	0,00025			0,0003
Manganese - Total	mg/L				6,54000	5,60	3,10	3,09	4,60	10,04	8,88			5,9779
Molibdenum - Total	mg/L				0,00400	0,00200	0,00300	0,00300	0,00400	0,00200	0,00200			0,0029
Nicket - Total	mg/L				0,27800	0,24000	0,15000	0,13000	0,20000	0,40000	0,41500			0,2590
Lead - Total	mg/L				0,00500	0,00600	0,00700	0,00800	0,00500	0,00400	0,00900			0,0063
Antimony - Total	mg/L				0,00050	0,00050	0,00050	0,00050	0,00100	0,00200	0,00100			0,0009
Selenium - Total	mg/L				0,00300	0,00500	0,00400	0,00300	0,00400	0,00600	0,02100			0,0066
Zinc - Total	mg/L				0,02300	0,01000	0,00300	0,02600	0,02500	0,03000	0,04500			0,0231
Nutrients														
Ammonia - N	mg/L				0,42	0,40	0,20	0,44	0,70	0,80	1,22			0,5971
Nitrite - N	mg/L				0,00050	0,00050	0,00050	0,00050	0,00050	0,00050	0,00100			0,0006
Nitrate - N	mg/L				0,80	1,50	1. 3	1,20	1,90	2,40	3,40			1,8667
Solids														
Turbidity	NTU				149,0	338	297	829	260	280	276			347,0
TDS Total Dissolved Solids	mg/L				2418	2802	1783	1272	1610	3582	2776			2320
TSS Total Suspended Solids	mg/L				328,0	583	463	1361	384	330	433,5			554,6
Trace Constituents														
Cyanide - Free	mg/L				0,0025	0,0025	0,0025	0,0025	0,0025	0,0025	0,0025			0,003
Cyanide - Total	mg/L				0,0025	0,0025	0,0025	0,0025	0,0025	0,0025	0,0025			0,003
Cyanide - WAD	mg/L				0,0025	0,0025	0,0025	0,0025	0,0025	0,0025	0,0025			0,003

T8.1 Tailings Pond -Feed to ETP (2022)

T8.1 Tailings Pond -Feed to ETP(2022)		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Avg
Field Data														
Temperature	°C					3,2	8,3	10,7	13,0	12,7	9,6	4,1		9,7
Conductivity	mS/cm					0,920	1,900	2,040	1,800	2,100	2,700	2,800		2,223
pH						9,7	9,0	8,5	8,5	8,3	8,4	8,2		8,7
Major Constituents														
Calcium	mg/L	110,0	102,0	99,7	51,8	95,6	87,6	92,1	88,9	92,3	92,0			91,2
Chloride	mg/L	27,0	26,0	27,0	9,8	21,5	22,3	22,0	25,8	28,7	33,3			24,3
Carbonate	mg/L	8,0	8,0	9,0	5,0	7,0	5,8	5,25	8,50	5,00	4,00			6,6
Bicarbonate	mg/L	138	130	127	39	86,3	115	140	140	143	136			119
Potassium	mg/L	97,6	87	84,2	27,2	71,6	65,2	69,7	74,8	78,5	66,1			72,2
Magnesium	mg/L	14,20	11,60	10,80	6,51	11,15	10,61	12,24	13,93	16,17	17,40			12,5
Sodium	mg/L	547	478	485	150	413	354	383	414	424	392			404
Sulphate	mg/L	1140	1147	1097	364	907	870	764	906	930	1031			916
Hardness - Total	mg/L	333	348	343	153	291	287	295	294	319	345			301
Alkalinity - Total	mg/L	128	120	120	41	83	104	124	130	120	114			108
Total metals														
Silver - Total	mg/L	0,03900	0,04200	0,03600	0,00150	0,02100	0,02325	0,01660	0,01633	0,01733	0,02133			0,02344
Aluminum - Total	mg/L	0,14	0,14	0,16	0,12	0,19	0,14	0,14	0,30	0,30	0,19			0,18
Arsenic - Total	mg/L	0,00600	0,00050	0,00600	0,00050	0,00425	0,00200	0,00220	0,00367	0,00367	0,00433			0,00331
Cadmium - Total	mg/L	0,00130	0,00050	0,00060	0,00050	0,00065	0,00040	0,00040	0,00043	0,00043	0,00065			0,00059
Chromium - Total	mg/L	0,00400	0,00400	0,00400	0,00400	0,00400	0,00400	0,00400	0,00400	0,00400	0,00400			0,00400
Copper - Total	mg/L	20,4000	21,7000	24,0000	4,4900	14,5875	14,5750	13,6000	12,0950	14,5667	16,6333			15,6648
Iron - Total	mg/L	3,71	3,65	3,69	0,70	1,88	0,85	0,52	0,62	0,47	0,52			1,66
Mercury - Total	mg/L	0,00510	0,00130	0,00200	<0.0005	0,00160	0,00110	0,00156	0,00130	0,00170	0,00163			0,00192
Manganese - Total	mg/L	0,02300	0,01400	0,01600	0,01900	0,01900	0,01850	0,02880	0,03950	0,04333	0,04500			0,02661
Molybdenum -Total	mg/L	0,52500	0,49800	0,59400	0,16600	0,48075	0,46075	0,48260	0,50850	0,54933	0,53567			0,48006
Nickel - Total	mg/L	0,80500	0,81600	0,90600	0,18500	0,55650	0,56125	0,55260	0,48300	0,48733	0,47400			0,58267
Lead - Total	mg/L	0,00100	0,00100	0,00100	0,00100	0,00100	0,00100	0,00200	0,00275	0,00400	0,00467			0,00194
Antimony - Total	mg/L	0,35600	0,40600	0,43500	0,06500	0,23025	0,20300	0,21600	0,19050	0,17100	0,15133			0,24241
Selenium - Total	mg/L	0,04100	0,02900	0,02600	0,00700	0,02650	0,02075	0,02360	0,02500	0,02933	0,04533			0,02735
Zinc - Total	mg/L	0,00800	0,00600	0,00800	0,00900	0,01575	0,01325	0,02180	0,00500	0,00300	0,00400			0,00938
Nutrients														
Ammonia - N	mg/L	15,0	16,9	16,1	5,6	12,68	11,2	11,6	11,4	11,0	12,0			12,4
Nitrite - N	mg/L	0,00600	0,00300	0,01600	0,00400	0,03133	0,02733	0,18820	0,34475	0,07100	0,04450			0,07361
Nitrate - N	mg/L	19,0	20,0	19,0	5,6	19,0	17,0	16,8	18,3	20,7	22,0			17,7
Solids														
Turbidity	NTU	0,5	0,41	2,9	7,8	13,5	8,2	9,0		9,9	10,4			7,0
TDS Total Dissolved Solids	mg/L	2228	2382	2350	776	1907	1754	1797	1832	1896	2049			1897
TSS Total Suspended Solids	mg/L	0,5	10,0	6,0	9,0	35,8	5,50	7,2		8,0	9,7			10,18
Trace Constituents														
Cyanide-Free	mg/L	10,30	7,20	7,2	2,1	4,10	4,30	2,66	2,20	2,13	2,10			4,43
Cyanide-Total	mg/L	43,0	48,0	49,0	9,3	30,8	21,5	17,5	15,2	18,2	21,0			27,3
Cyanide - WAD	mg/L	34,0	36,0	35,0	9,0	26,3	20,1	16,8	14,2	16,8	19,6			22,8

T8.4 ETP Discharge into Kumtor River (2022)

T8.4 ETP Discharge into Kumtor River (2022)		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Avg
Field Data														
Temperature	°C					7,2	10,0	13,3	11,9	9,8				10,4
Conductivity	mS/cm					1,76	1,90	1,92	2,10	2,65				2,066
pH						8,1	7,1	7,4	7,3	7,0				7,4
Major Constituents														
Calcium	mg/L					97,2	92,2	94,2	87,6	98,1				93,9
Chloride	mg/L					18,0	21,0	21,0	25,5	30,0				23,1
Carbonate	mg/L					1,5	0,5	0,5	0,5	0,5				0,7
Bicarbonate	mg/L					68,0	71	43	39	39				52
Potassium	mg/L					59,7	62,5	67,0	72,3	83,4				69,0
Magnesium	mg/L					10,50	10,20	11,40	12,70	13,10				11,6
Sodium	mg/L					381	387	392	420	426				401
Sulphate	mg/L					853	1005	957	1004	1073				978
Hardness - Total	mg/L					287	297	273	279	305				288
Alkalinity - Total	mg/L					57	59	35	31	32				43
Total metals														
Silver - Total	mg/L					0,00150	0,00150	0,00150	0,00150	0,00150				0,0015
Aluminum - Total	mg/L					0,21	0,07	0,06	0,10	0,11				0,111
Arsenic - Total	mg/L					0,00200	0,00100	0,00100	0,00100	0,00100				0,00120
Cadmium - Total	mg/L					0,00100	0,00040	0,00040	0,00040	0,00040				0,00052
Chromium - Total	mg/L					0,00400	0,00400	0,00400	0,00400	0,00400				0,004
Copper - Total	mg/L					0,14150	0,13175	0,09320	0,09925	0,11500				0,1
Iron - Total	mg/L					0,25	0,16	0,21	0,18	0,19				0,20
Mercury - Total	mg/L					0,00120	0,00193	0,00256	0,00168	0,00170				0,00181
Manganese - Total	mg/L					0,02400	0,01425	0,01360	0,01325	0,01400				0,01582
Molybdenum -Total	mg/L					0,36250	0,41600	0,44740	0,47425	0,46600				0,433
Nickel - Total	mg/L					0,01450	0,02825	0,02100	0,02050	0,02000				0,021
Lead - Total	mg/L					0,00100	0,00100	0,00100	0,00100	0,00100				0,00100
Antimony - Total	mg/L					0,15450	0,15550	0,15960	0,15700	0,14100				0,1535
Selenium - Total	mg/L					0,02100	0,01775	0,01900	0,02075	0,02300				0,02030
Zinc - Total	mg/L					0,01150	0,01025	0,01780	0,01025	0,00100				0,01016
Nutrients														
Ammonia - N	mg/L					17,6	18,4	17,2	16,4	16,5				17,2
Nitrite - N	mg/L					0,11600	0,17900	0,54600	0,72750	0,65000				0,444
Nitrate - N	mg/L					13,50	15,5	14,6	16,8	18,0				15,7
Solids														
TSS Total Suspended Solids	mg/L					13,0	3,25	3,20	3,67	2,00				5,02
Trace Constituents														
Cyanide-Free	mg/L					0,01000	0,01050	0,01100	0,01100	0,01100				0,0107
Cyanide-Total	mg/L					0,06750	0,09450	0,16300	0,15225	0,31000				0,1575
Cyanide - WAD	mg/L					0,02000	0,01975	0,02460	0,02475	0,02100				0,0220

W1.4 Kumtor River Flume (2022)

W1.4 Kumtor River Flume (2022)		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Avg
Field Data														
Temperature	°C					6,6	6,4	7,4	7,7	5,3	0,9			5,7
Conductivity	mS/cm					0,600	0,200	0,180	0,200	0,800	0,400			0,397
pH						8,184	8,03	7,75	7,7	7,8	8			7,9
Major Constituents														
Calcium	mg/L					66,2	106,8	23,24	24,5	28,6	43,5			48,8
Chloride	mg/L					9,3	7,07	1,31	2,1	3,7	3,8			4,546666667
Carbonate	mg/L					0,5	0,5	0,5	0,5	0,5	0,5			0,5
Bicarbonate	mg/L					108	86,5	40,6	41,5	50	77			67,26666667
Potassium	mg/L					2,48	9,27	4,23	5,3	4,71	2,2			4,7
Magnesium	mg/L					68	49,05	6,8	9,1	17,8	44			32,45833333
Sodium	mg/L					5,43	43,7	13,6	23,2	21,6	3,7			18,5
Sulphate	mg/L					336	489,7	60,5	95,5	141,5	199,7			220,4833333
Hardness - Total	mg/L					550	490	77,1	92	155,5	270,5			272,5
Alkalinity - Total	mg/L					88,4	70,8	34,7	33,9	41,1	63,2			55,35
Total metals														
Silver - Total	mg/L					0,0015	0,0015	0,0015	0,0015	0,0015	0,0015			0,00150
Aluminum - Total	mg/L					0,59	46,12	3,7	7,32	4,76	2,4			10,81500
Arsenic - Total	mg/L					0,005	0,026	0,002	0,003	0,0015	0,0011			0,00643
Cadmium - Total	mg/L					0,0002	0,0008	0,0002	0,0002	0,00015	0,0002			0,00026
Chromium - Total	mg/L					0,004	0,063	0,004	0,004	0,004	0,004			0,01383
Copper - Total	mg/L					0,0025	0,107	0,0025	0,0025	0,0042	0,0025			0,02020
Iron - Total	mg/L					0,782	62,27	5,57	7,05	3,31	1,9			13,48033
Mercury - Total	mg/L					0,0003	0,0004	0,0003	0,0003	0,00025	0,0003			0,00028
Manganese - Total	mg/L					0,651	2,59	0,21	0,28	0,34	0,6			0,77850
Molybdenum -Total	mg/L					0,002	0,044	0,014	0,026	0,025	0,0027			0,01895
Nickel - Total	mg/L					0,027	0,016	0,008	0,011	0,014	0,025			0,01683
Lead - Total	mg/L					0,001	0,0056	0,007	0,006	0,0035	0,001			0,00402
Antimony - Total	mg/L					0,0005	0,015	0,004	0,006	0,0062	0,0005			0,00537
Selenium - Total	mg/L					0,001	0,005	0,0007	0,0013	0,0012	0,008			0,00286
Zinc - Total	mg/L					0,002	0,156	0,0126	0,022	0,011	0,007			0,03510
Nutrients														
Ammonia - N	mg/L					0,05	1,92	0,42	0,8	0,73	0,055			0,66250
Nitrite - N	mg/L					0,002	0,0156	0,014	0,03	0,025	0,003			0,01493
Nitrate - N	mg/L					0,7	3,25	0,75	1,15	1,25	0,47			1,26167
Solids														
Turbidity	NTU					15	5228,2	299	220,5	145,5	62			995,03333
TDS Total Dissolved Solids	mg/L					607	852,2	172	211,7	305	383,7			421,93333
TSS Total Suspended Solids	mg/L					22	6413	434,2	215,2	114	57			1209,23333
Trace Constituents														
Cyanide-Free	mg/L					0,0025	0,0076	0,0025	0,0036	0,007	0,0025			0,00428
Cyanide-Total	mg/L					0,0025	0,043	0,019	0,036	0,03	0,0025			0,02217
Cyanide - WAD	mg/L					0,0025	0,011	0,0055	0,006	0,01	0,0025			0,00625

W4.1 UDC at Headwater of Arabel Suu Diversion Channel (2022)

W4.1 UDC at Headwater of Arabel Suu Diversion Channel (2022)		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Avg
Field Data														
Temperature	°C								9,4					9,4
Conductivity	mS/cm								0,100					0,100
pH									7,8					7,8
Major Constituents														
Calcium	mg/L								18,3					18,300
Chloride	mg/L								1,60					1,600
Carbonate	mg/L								0,50					0,500
Bicarbonate	mg/L								51,0					51,000
Potassium	mg/L								0,51					0,510
Magnesium	mg/L								2,32					2,320
Sodium	mg/L													
Sulphate	mg/L								6,0					6,000
Hardness - Total	mg/L								47,0					47,000
Alkalinity - Total	mg/L								41,7					41,700
Total metals														
Silver - Total	mg/L								0,00150					0,0015
Aluminum - Total	mg/L								0,14					0,1400
Arsenic - Total	mg/L								0,00050					0,0005
Cadmium - Total	mg/L								0,00015					0,0002
Chromium - Total	mg/L								0,00400					0,0040
Copper - Total	mg/L								0,00250					0,0025
Iron - Total	mg/L								0,13					0,1310
Mercury - Total	mg/L								0,00025					0,0003
Manganese - Total	mg/L								0,00900					0,0090
Molybdenum -Total	mg/L								0,00200					0,0020
Nickel - Total	mg/L								0,00250					0,0025
Lead - Total	mg/L								0,00100					0,0010
Antimony - Total	mg/L								0,00050					0,0005
Selenium - Total	mg/L								0,00050					0,0005
Zinc - Total	mg/L								0,00050					0,0005
Nutrients														
Ammonia - N	mg/L								0,02					0,020
Nitrite - N	mg/L								0,00200					0,002
Nitrate - N	mg/L								0,20					0,200
Solids														
Turbidity	NTU								2,4					2,400
TDS Total Dissolved Solids	mg/L								59,0					59,000
TSS Total Suspended Solids	mg/L								3,0					3,000
Trace Constituents														
Cyanide-Free	mg/L													
Cyanide-Total	mg/L													
Cyanide - WAD	mg/L													

W4.2.1 NLDC New Lower Diversion Channel (2022)

W4.2.1 NLDC New Lower Diversion Channel (2022)		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Avg
Field Data														
Temperature	°C								10,8					10,8
Conductivity	mS/cm								0,180					0,180
pH									8,1					8,1
Major Constituents														
Calcium	mg/L								30,5					30,500
Chloride	mg/L								3,70					3,700
Carbonate	mg/L								0,50					0,500
Bicarbonate	mg/L								86,0					86,000
Potassium	mg/L								1,38					1,380
Magnesium	mg/L								5,18					5,180
Sodium	mg/L								2,20					2,200
Sulphate	mg/L								14,0					14,000
Hardness - Total	mg/L								85					85,000
Alkalinity - Total	mg/L								70,3					70,300
Total metals														
Silver - Total	mg/L								0,09000					0,090
Aluminum - Total	mg/L								0,00					0,001
Arsenic - Total	mg/L								0,00015					0,000
Cadmium - Total	mg/L								0,00400					0,004
Chromium - Total	mg/L								0,00250					0,003
Copper - Total	mg/L													
Iron - Total	mg/L								0,07					0,0680
Mercury - Total	mg/L								0,00025					0,0003
Manganese - Total	mg/L								0,00700					0,0070
Molybdenum -Total	mg/L								0,00200					0,0020
Nickel - Total	mg/L								0,00250					0,0025
Lead - Total	mg/L								0,00100					0,0010
Antimony - Total	mg/L								0,00050					0,0005
Selenium - Total	mg/L								0,00050					0,0005
Zinc - Total	mg/L								0,00050					0,0005
Nutrients														
Ammonia - N	mg/L								0,04					0,0400
Nitrite - N	mg/L								0,00100					0,0010
Nitrate - N	mg/L								0,20					0,2000
Solids														
Turbidity	NTU								0,57					0,57
TDS Total Dissolved Solids	mg/L								96					96,00
TSS Total Suspended Solids	mg/L								0,50					0,50
Trace Constituents														
Cyanide-Free	mg/L													
Cyanide-Total	mg/L													
Cyanide - WAD	mg/L													

W4.3.1 Discharge from the UDC sediment pond into the Kumtor River (2022)

W4.3.1 Discharge from the Upper Diversion Channel sediment pond into		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Avg
Field Data														
Temperature	°C								9,5					9,5
Conductivity	mS/cm								0,106					0,106
pH									8,0					8,0
Major Constituents														
Calcium	mg/L								18,3					18,30
Chloride	mg/L								1,60					1,60
Carbonate	mg/L								0,50					0,50
Bicarbonate	mg/L								51,0					51,00
Potassium	mg/L								0,51					0,51
Magnesium	mg/L								2,32					2,32
Sodium	mg/L													
Sulphate	mg/L								6,0					6,000
Hardness - Total	mg/L								47					47,000
Alkalinity - Total	mg/L								41,7					41,700
Total metals														
Silver - Total	mg/L								0,00150					0,0015
Aluminum - Total	mg/L								0,14					0,1400
Arsenic - Total	mg/L								0,00050					0,0005
Cadmium - Total	mg/L								0,00015					0,0002
Chromium - Total	mg/L								0,00400					0,0040
Copper - Total	mg/L								0,00250					0,0025
Iron - Total	mg/L								0,13					0,1310
Mercury - Total	mg/L								0,00025					0,0003
Manganese - Total	mg/L								0,00900					0,0090
Molybdenum -Total	mg/L								0,00200					0,0020
Nickel - Total	mg/L								0,00250					0,0025
Lead - Total	mg/L								0,00100					0,0010
Antimony - Total	mg/L								0,00050					0,0005
Selenium - Total	mg/L								0,00050					0,0005
Zinc - Total	mg/L								0,00050					0,0005
Nutrients														
Ammonia - N	mg/L								0,02					0,020
Nitrite - N	mg/L								0,00200					0,002
Nitrate - N	mg/L								0,20					0,200
Solids														
Turbidity	NTU								2,40					2,400
TDS Total Dissolved Solids	mg/L								59					59,000
TSS Total Suspended Solids	mg/L								3,00					3,000
Trace Constituents														
Cyanide-Free	mg/L													
Cyanide-Total	mg/L													
Cyanide - WAD	mg/L													

W2.6.1 New Chon-Sarytor Creek in Central Valley before joining Kumtor River (2022)

W2.6.1 New Chon-Sarytor Creek in Central Valley (from under the waste dumps) before joining Kumtor River (2022)		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Avg
Field Data														
Temperature	°C					5,7	9,3	10,5	9,3	4,0				7,8
Conductivity	mS/cm					1,529	1,330	1,270	1,138	1,561				1,366
pH						8,1	8,1	8,2	7,9	7,7				8,0
Major Constituents														
Calcium	mg/L					268	263	162	266	270				245,7333
Chloride	mg/L					21,0		11,1	9,8	13,2				13,7646
Carbonate	mg/L					0,50	0,50	0,88	0,50	0,50				0,5750
Bicarbonate	mg/L					157,00	155,20	136,00	125,50	140,00				142,7400
Potassium	mg/L					5,3	5,2	4,6	5,2	5,4				5,1352
Magnesium	mg/L					140		68	116	115				109,9104
Sodium	mg/L					9,3	8,3	15,9	7,4	7,6				9,7016
Sulphate	mg/L					1071	1066	623	998	974				946,3233
Hardness - Total	mg/L					1211	1235	729	1119	1100				1078,6867
Alkalinity - Total	mg/L					129	127	112	103	115				117,2633
Total metals														
Silver - Total	mg/L					0,00150		0,00150	0,00150	0,00150				0,0015
Aluminum - Total	mg/L					69,0	47,6	18,7	10,2	31,05				35,3147
Arsenic - Total	mg/L					0,06100	0,04480	0,01488	0,00983	0,02020				0,0301
Cadmium - Total	mg/L					0,00160	0,00093	0,00034	0,00039	0,00064				0,0008
Chromium - Total	mg/L					0,08800	0,06720	0,02725	0,01267	0,04040				0,0471
Copper - Total	mg/L					0,16100	0,14050	0,04188	0,02042	0,06820				0,0864
Iron - Total	mg/L					105,0	75,4	23,3	13,3	46,25				52,6505
Mercury - Total	mg/L					0,00050	0,00047	0,00025	0,00025	0,00025				0,0003
Manganese - Total	mg/L					7,15000	4,05300	1,29225	1,20650	1,76260				3,0929
Molybdenum -Total	mg/L					0,00200	0,00360	0,01400	0,00400	0,00500				0,0057
Nickel - Total	mg/L					0,16200	0,12720	0,05200	0,02650	0,06910				0,0874
Lead - Total	mg/L					0,10600	0,06240	0,02225	0,02600	0,03500				0,0503
Antimony - Total	mg/L					0,00100	0,00130	0,00388	0,00042	0,00060				0,0014
Selenium - Total	mg/L					0,01200	0,00920	0,00338	0,00417	0,00420				0,0066
Zinc - Total	mg/L					0,23300	0,17460	0,06400	0,03667	0,11120				0,1239
Nutrients														
Ammonia - N	mg/L					1,05	0,65	0,63	0,31	0,25				0,57793
Nitrite - N	mg/L					0,00050	0,00050	0,00675	0,00050	0,00350				0,00235
Nitrate - N	mg/L					5,6	5,4	3,1	4,7	4,3				4,59300
Solids														
Turbidity	NTU					24955		1722	8924	3840				9860,321
TDS Total Dissolved Solids	mg/L					1769	1767	1076	1601	1575				1557,637
TSS Total Suspended Solids	mg/L					25968	15691	1967	9623	5466				11743,080
Trace Constituents														
Cyanide-Free	mg/L													
Cyanide-Total	mg/L													
Cyanide - WAD	mg/L													

W2.4N New Creek east side water from under the waste dumps in the Central Valley (2022)

W2.4N New Creek east side water from under the waste rock dumps in the Central Valley (2022)		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Avg
Field Data														
Temperature	°C					8,9	13,7	12,3	10,3	4,6	0,7			8,4
Conductivity	mS/cm					2,320	1,533	1,809	2,835	3,558	4,140			2,699
pH					8,3	7,8	7,4	7,7	7,8	7,8	7,4			7,7
Major Constituents														
Calcium	mg/L				425	386	224	384	440	410	475			391,9
Chloride	mg/L				25,0	71,3	81,0	42,2	56,0	65,5	82,5			60,49285714
Carbonate	mg/L				0,50	0,50	0,50	0,50	0,50	0,50	0,50			0,5
Bicarbonate	mg/L				282	180	133	273	321	340	392			274,3
Potassium	mg/L				26,9	20,6	7,5	24,6	30,4	27,7	28,7			23,8
Magnesium	mg/L				253	232	115	283	349	309	360			271,4828571
Sodium	mg/L				37,9	45,2	27,6	39,8	46,8	40,1	46,0			40,5
Sulphate	mg/L				1790	1633	853	1576	2121	1951	2395			1759,614286
Hardness - Total	mg/L				2064	1961	1059	2148	2575	2437	2754			2142,3
Alkalinity - Total	mg/L				232	148	109	224	263	279	323			225,4035714
Total metals														
Silver - Total	mg/L				0,00150	0,00150	0,00150	0,00150	0,00150	0,00150	0,00150			0,0015
Aluminum - Total	mg/L				0,82	0,2	0,7	11,0	2,9	1,41	0,6			2,5288
Arsenic - Total	mg/L				0,00200	0,00075	0,00113	0,02240	0,00400	0,00225	0,00150			0,0049
Cadmium - Total	mg/L				0,00015	0,00015	0,00015	0,00015	0,00015	0,00015	0,00015			0,0002
Chromium - Total	mg/L				0,00400	0,00400	0,00400	0,01100	0,00400	0,00400	0,00400			0,0050
Copper - Total	mg/L				0,00250	0,00250	0,00250	0,03140	0,00250	0,00250	0,00250			0,0066
Iron - Total	mg/L				1,2	0,4	1,3	24,7	3,7	1,68	0,9			4,8172
Mercury - Total	mg/L				0,00025	0,00025	0,00049	0,00025	0,00025	0,00025	0,00093			0,0004
Manganese - Total	mg/L				0,66100	0,18875	0,11700	1,20300	0,56850	0,48425	0,57450			0,5424
Molybdenum -Total	mg/L				0,01800	0,00550	0,00550	0,02200	0,01750	0,01700	0,01850			0,0149
Nickel - Total	mg/L				0,05900	0,01725	0,00588	0,09000	0,08925	0,09800	0,09600			0,0651
Lead - Total	mg/L				0,00100	0,00100	0,00100	0,01520	0,00250	0,00125	0,00100			0,0033
Antimony - Total	mg/L				0,00100	0,00050	0,00100	0,00190	0,00113	0,00088	0,00075			0,0010
Selenium - Total	mg/L				0,00200	0,00550	0,00225	0,00740	0,00625	0,00600	0,02150			0,0073
Zinc - Total	mg/L				0,00600	0,00338	0,00600	0,03860	0,00925	0,00550	0,00400			0,0104
Nutrients														
Ammonia - N	mg/L				3,50	0,85	0,21	2,08	1,36	1,27	1,27			1,5032
Nitrite - N	mg/L				0,00050	0,00125	0,00188	0,00230	0,00150	0,00188	0,00075			0,0014
Nitrate - N	mg/L				27,0	38,8	16,9	44,3	54,5	33,8	33,5			35,5293
Solids														
Turbidity	NTU				31	9	19	941	123	55	21			171,1243
TDS Total Dissolved Solids	mg/L				3159	2944	1645	3176	3807	3496	3879			3157,9643
TSS Total Suspended Solids	mg/L				31	10	34	1177	158	83	51			220,5893
Trace Constituents														
Cyanide-Free	mg/L													
Cyanide-Total	mg/L													
Cyanide - WAD	mg/L													

SWS.2.2 Kichi-Sarytor water from under the waste rock dumps (2022)

SWS.2.2 Kichi-Sarytor water from under the waste rock dumps (2022)		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Avg
Field Data														
Temperature	°C					2,1	4,8	4,8	2,4	3,2				3,5
Conductivity	mS/cm					1,703	2,680	2,680	5,370	2,050				2,897
pH						8,0	7,7	7,9	6,9	8,1				7,7
Major Constituents														
Calcium	mg/L					162	70	271	410	179				218,4
Chloride	mg/L					14,9	3,0	23,0	36,0	11,0				17,580
Carbonate	mg/L					0,50	0,50	0,50	0,50	0,50				0,5
Bicarbonate	mg/L					242	64	320	229	156				202,200
Potassium	mg/L					7,9	1,3	12,0	23,8	6,3				10,3
Magnesium	mg/L					255	23	455	1315	228				455,200
Sodium	mg/L					10,5	2,2	14,7	29,3	11,8				13,7
Sulphate	mg/L					1217	206	2168	5792	1201				2116,700
Hardness - Total	mg/L					1496	270	2602	6231	1401				2399,9
Alkalinity - Total	mg/L					199	52	262	188	128				165,720
Total metals														
Silver - Total	mg/L					0,00015	0,00015	0,00015	0,00015	0,00015				0,0002
Aluminum - Total	mg/L					1,7	1,4	0,2	22,0	1,80				5,4170
Arsenic - Total	mg/L					0,0025	0,0010	0,0005	0,0490	0,0030				0,0112
Cadmium - Total	mg/L					0,0002	0,0002	0,0002	0,0017	0,0002				0,0005
Chromium - Total	mg/L					0,0040	0,0040	0,0040	0,0130	0,0040				0,0058
Copper - Total	mg/L					0,0548	0,0025	0,0025	0,2360	0,0025				0,0597
Iron - Total	mg/L					2,4055	2,4700	0,3630	62,4000	2,6200				14,0517
Mercury - Total	mg/L					0,0003	0,0003	0,0003	0,0003	0,0003				0,0003
Manganese - Total	mg/L					0,5325	0,0630	1,6800	7,3300	0,8740				2,0959
Molybdenum -Total	mg/L					0,0055	0,0050	0,0090	0,0160	0,0260				0,0123
Nickel - Total	mg/L					0,1865	0,0060	0,4150	1,8700	0,1420				0,5239
Lead - Total	mg/L					0,0025	0,0010	0,0010	0,0040	0,0010				0,0019
Antimony - Total	mg/L					0,0050	0,0050	0,0050	0,0020	0,0040				0,0042
Selenium - Total	mg/L					0,0125	0,0050	0,0140	0,0660	0,0040				0,0203
Zinc - Total	mg/L					0,0220	0,0080	0,0290	0,1850	0,0090				0,0506
Nutrients														
Ammonia - N	mg/L					0,35	0,02	0,32	1,05	0,27				0,4010
Nitrite - N	mg/L					0,00125	0,00300	0,06800	0,00050	0,00700				0,0160
Nitrate - N	mg/L					5,4	0,8	7,2	15,0	3,6				6,3900
Solids														
Turbidity	NTU					928	40	17	783	39				361,400
TDS Total Dissolved Solids	mg/L					2204	388	3728	9335	1916				3514,1
TSS Total Suspended Solids	mg/L					1613	93	41	298	34				415,700
Trace Constituents														
Cyanide-Free	mg/L													
Cyanide-Total	mg/L													
Cyanide - WAD	mg/L													

POR1 Sump Collection Point for Central Pit Waters Prior to Discharge (2022)

POR1 Sump Collection Point for Central Pit Waters Prior to Discharge (2022)		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Avg
Field Data														
Temperature	°C			2,3					6,9					4,6
Conductivity	mS/cm			2,160					1,680					1,920
pH				8,3					7,7					8,0
Major Constituents														
Calcium	mg/L			176,000		229			158		128			172,8
Chloride	mg/L			41,000		19,0			10,0		6,70			19,175
Carbonate	mg/L			0,500		0,50			0,50		0,50			0,5
Bicarbonate	mg/L			226,000		123			125		146			155,000
Potassium	mg/L			5,280		5,50			4,47		3,53			4,7
Magnesium	mg/L			249,000		116,0			106		84			138,775
Sodium	mg/L			15,200		15,40			8,61		7,8			11,8
Sulphate	mg/L			1682,000		957			704		638			995,250
Hardness - Total	mg/L			1889,000		1026			801		741			1114,3
Alkalinity - Total	mg/L			185,000		101,0			103		119			127,000
Total metals														
Silver - Total	mg/L			0,00150		0,00150			0,00150		0,00150			0,002
Aluminum - Total	mg/L			0,11000		0,82			0,21		0,06			0,300
Arsenic - Total	mg/L			0,00400		0,00300			0,00400		0,00600			0,004
Cadmium - Total	mg/L			0,00015		0,00015			0,00015		0,00015			0,000
Chromium - Total	mg/L			0,00400		0,00400			0,00400		0,00400			0,004
Copper - Total	mg/L			0,00250		0,00250			0,00250		0,00250			0,003
Iron - Total	mg/L			0,10800		1,20			0,23		0,12			0,413
Mercury - Total	mg/L			0,00025		0,00025			0,00025		0,00025			0,000
Manganese - Total	mg/L			0,41000		0,30300			0,14900		0,14200			0,251
Molybdenum -Total	mg/L			0,03700		0,03700			0,02700		0,02500			0,032
Nickel - Total	mg/L			0,08500		0,06100			0,06700		0,04900			0,066
Lead - Total	mg/L			0,00100		0,00100			0,00100		0,00100			0,001
Antimony - Total	mg/L			0,006000		0,00600			0,00500		0,00500			0,006
Selenium - Total	mg/L			0,003000		0,00400			0,00300		0,03200			0,011
Zinc - Total	mg/L			0,00300		0,00700			0,00600		0,00500			0,005
Nutrients														
Ammonia - N	mg/L			0,08		0,11			0,12		0,04			0,088
Nitrite - N	mg/L			0,001		0,00050			0,00200		0,00050			0,0
Nitrate - N	mg/L			2		1,90			1,30		0,60			1,450
Solids														
Turbidity	NTU			5,00		42,0			8,1		16,0			17,775
TDS Total Dissolved Solids	mg/L			2799,00		1530			1206		1026			1640,3
TSS Total Suspended Solids	mg/L			8,0		50,0			11		20			22,250
Trace Constituents														
Cyanide-Free	mg/L													
Cyanide-Total	mg/L													
Cyanide - WAD	mg/L													

SWS.3.1 Kichi-Sarytor Creek joining Kumtor River (2022)

SWS.3.1 Kichi-Sarytor Creek joining Kumtor River (2022)		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Avg
Field Data														
Temperature	°C					1,6	4,4	4,4	3,9	3,6				4
Conductivity	mS/cm					1,800	1,322	0,797	0,673	1,891				1,3
pH						8,3	8,1	7,9	6,8	7,6				8
Major Constituents														
Calcium	mg/L					166	150	105	88	141				130
Chloride	mg/L					11,0	6,45	2,95	2,82	10,7				6,8
Carbonate	mg/L					0,50	0,50	0,50	0,50	0,50				1
Bicarbonate	mg/L					178	138	75,3	79,2	141				122,4
Potassium	mg/L					5,79	4,02	2,64	2,59	5,28				4
Magnesium	mg/L					203	165	82	63	190				140,4
Sodium	mg/L					8,1	4,58	2,68	2,97	9,1				5
Sulphate	mg/L					1029	1076	519	392	1108				824,7
Hardness - Total	mg/L					1253	1183	580	469	1395				976
Alkalinity - Total	mg/L					146	113,2	61,7	65,1	116				100,4
Total metals														
Silver - Total	mg/L					0,00150	0,00150	0,00150	0,00150	0,00150				0,0015
Aluminum - Total	mg/L					0,93	3,92	3,91	3,28	2,17				2,8409
Arsenic - Total	mg/L					0,00200	0,00600	0,00550	0,00480	0,00525				0,0047
Cadmium - Total	mg/L					0,00015	0,00015	0,00015	0,00015	0,00015				0,0002
Chromium - Total	mg/L					0,00400	0,00400	0,00400	0,00400	0,00400				0,0040
Copper - Total	mg/L					0,00250	0,00250	0,00742	0,00380	0,00663				0,0046
Iron - Total	mg/L					1,51	6,22	7,42	5,05	4,53				4,9465
Mercury - Total	mg/L					0,00025	0,00025	0,00025	0,00025	0,00025				0,0003
Manganese - Total	mg/L					0,38380	1,18350	0,70717	0,37820	1,08075				0,7467
Molybdenum -Total	mg/L					0,01360	0,01300	0,00850	0,01040	0,02000				0,0131
Nickel - Total	mg/L					0,10580	0,11350	0,05933	0,04400	0,16500				0,0975
Lead - Total	mg/L					0,00100	0,00400	0,00533	0,00280	0,00125				0,0029
Antimony - Total	mg/L					0,00130	0,00125	0,00075	0,00120	0,00300				0,0015
Selenium - Total	mg/L					0,00800	0,00500	0,00233	0,00180	0,00500				0,0044
Zinc - Total	mg/L					0,00700	0,02100	0,02100	0,01240	0,01375				0,0150
Nutrients														
Ammonia - N	mg/L					0,29	0,21	0,15	0,08	0,27				0,199
Nitrite - N	mg/L					0,00170	0,00400	0,00458	0,00200	0,00413				0,003
Nitrate - N	mg/L					3,82	2,20	1,25	1,00	3,08				2,269
Solids														
Turbidity	NTU					350	144	188	110,0	72				172,7
TDS Total Dissolved Solids	mg/L					1751	1714	842	662	1804				1355
TSS Toal Suspended Solids	mg/L					328	181	351	142,8	67				213,9
Trace Constituents														
Cyanide-Free	mg/L													
Cyanide-Total	mg/L													
Cyanide - WAD	mg/L													

W1.5.1 Kumtor River Downstream of Kumtor Concession Area-Voluntary Compliance Point (2022)

W1.5.1 Kumtor River Downstream of Kumtor Concession Area-Voluntary Compliance Point (2022)		Jan	Feb	Mar	Apr	May	Jun	Jun	Aug	Sep	Oct	Nov	Dec	Annual Avg
Field Data														
Temperature	°C					8,0	7,7	6,6	6,8	4,6	0,4			5,7
Conductivity	mS/cm					0,350	0,314	0,239	0,225	0,460	0,552			0,357
pH						8,0	8,3	8,1	7,8	8,0	8,0			8,0
Major Constituents														
Calcium	mg/L					44,0	50,4	31,0	29,7	35,5	48,7			39,9
Chloride	mg/L					10,4	9,95	1,70	2,30	4,30	6,38			5,83
Carbonate	mg/L					0,50	0,50	0,50	0,50	0,50	0,50			0,50
Bicarbonate	mg/L					79	79,3	53,2	48,8	61,0	84,8			67,6
Potassium	mg/L					2,61	6,91	3,28	4,29	4,10	2,59			3,96
Magnesium	mg/L					19,4	19,8	11,9	11,8	23,1	41,2			21,2
Sodium	mg/L					10,20	36,9	12,6	19,2	18,9	5,25			17,18
Sulphate	mg/L					120	193	95	106	179	210			150
Hardness - Total	mg/L					189	214	122	118	209	290			190
Alkalinity - Total	mg/L					64,5	64,8	43,6	40,1	50,1	69,5			55,4
Total metals														
Silver - Total	mg/L					0,0015	0,0015	0,0015	0,0015	0,0015	0,0015			0,002
Aluminum - Total	mg/L					7,4350	2,9000	6,3417	7,4100	5,8150	0,6775			5,097
Arsenic - Total	mg/L					0,0068	0,0030	0,0054	0,0080	0,0020	0,0010			0,004
Cadmium - Total	mg/L					0,0002	0,0002	0,0002	0,0002	0,0002	0,0002			0,000
Chromium - Total	mg/L					0,0360	0,0040	0,0040	0,0040	0,0040	0,0040			0,009
Copper - Total	mg/L					0,0400	0,0200	0,0200	0,0200	0,0200	0,0200			0,023
Iron - Total	mg/L					10,9775	4,1240	8,1398	7,7925	4,1200	0,5748			5,955
Mercury - Total	mg/L					0,0003	0,0003	0,0003	0,0003	0,0003	0,0003			0,000
Manganese - Total	mg/L					0,3875	0,2968	0,3318	0,2983	0,4380	0,4365			0,365
Molybdenum -Total	mg/L					0,0310	0,0383	0,0175	0,0220	0,0225	0,0040			0,023
Nickel - Total	mg/L					0,0210	0,0200	0,0193	0,0128	0,0210	0,0210			0,019
Lead - Total	mg/L					0,0097	0,0037	0,0080	0,0065	0,0050	0,0010			0,006
Antimony - Total	mg/L					0,0060	0,0125	0,0047	0,0063	0,0100	0,0010			0,007
Selenium - Total	mg/L					0,0043	0,0018	0,0020	0,0020	0,0025	0,0220			0,006
Zinc - Total	mg/L					0,0290	0,0140	0,0263	0,0228	0,0115	0,0260			0,022
Nutrients														
Ammonia - N	mg/L					0,7050	1,5975	0,6817	1,0100	0,6950	0,0500			0,79
Nitrite - N	mg/L					0,0030	0,0138	0,0117	0,0275	0,0275	0,0020			0,01424
Nitrate - N	mg/L					0,85	1,85	0,85	1,13	1,40	0,90			1,16
Solids														
Turbidity	NTU					416,8	89,3	278	233,3	105,5	27,4			191,60
TDS Total Dissolved Solids	mg/L					293	419	212	230	368	388			318
TSS Total Suspended Solids	mg/L					448	170	482	265	92,5	23,3			246,60
Trace Constituents														
Cyanide - Free	mg/L					0,00250	0,0070	0,0070	0,0070	0,0090	0,0025			0,00583
Cyanide - Total	mg/L					0,02300	0,0215	0,0228	0,0373	0,0640	0,0025			0,02851
Cyanide - WAD	mg/L					0,00250	0,0080	0,0065	0,0080	0,0120	0,0025			0,00658

W6.1 Arabel Suu River - 6km from Kumtor Concession Area (2022)

W6.1 Arabel Suu River - 6km from Kumtor Concession Area (2022)		Jan	Feb	Mar	Aor	May	Jun	Jul	Avg	Sep	Oct	Nov	Dec	Annual Avg
Field data														
Temoerature	°C						7,3	10,9	7,0	4,8	1,0			6,2
Conductivity	мСм/см						0,176	0,101	0,100	0,160	0,350			0,177
pH							8,2	7,9	7,7	7,6	8,1			7,9
Major constituents														
Caclum	mg/L						31,0	22,0	26,2					26,400
Chloride	mg/L						9,50	1,30	1,40					4,067
Carbonate	mg/L						0,50	0,50	0,50					0,500
Bicarbonate	mg/L						95,0	63,0	66,0					74,667
Potassium	mg/L						0,59	0,83	1,41					0,943
Magnesium	mg/L						3,73	2,44	3,28					3,150
Sodium	mg/L						2,18	1,18	1,51					1,623
Sulphate	mg/L						83,0	10,0	15,0					36,000
Hardness - Total	mg/L						106,0	62,0	70,0					79,333
Alkalinty - Total	mg/L						77,9	51,6	54,5					61,333
Total Metals														
Silver Total	mg/L						0,00150	0,00150	0,00150					0,002
Aluminum - Total	mg/L						1,31	1,38	1,8					1,500
Arsenic - Total	mg/L						0,00100	0,00200	0,00200					0,002
Cadmium - Total	Total						0,00015	0,00015	0,00015					0,000
Chromium TotAL	mg/L						0,00400	0,00400	0,00400					0,004
Copper - Total	mg/L						0,00250	0,00250	0,00250					0,003
Iron - Total	mg/L						1,48	2,29	2,7					2,147
Mercury - Total	mg/L						0,00180	0,00025	0,00025					0,001
Manganese - Total	mg/L						0,06500	0,08900	0,06900					0,074
Molidbenum - Total	mg/L						0,00200	0,00200	0,00200					0,002
Nickel - Total	mg/L						0,00250	0,00250	0,00250					0,003
Lead - Toal	mg/L						0,00100	0,00400	0,00200					0,002
Antimony - Total	mg/L						0,00050	0,00050	0,00050					0,001
Selenium - Total	mg/L						0,00050	0,00050	0,00050					0,001
Zinc - Total	mg/L						0,01000	0,00800	0,00800					0,009
Nutrients														
Ammonia - N	mg/L						0,02	0,02	0,02					0,020
Nitrite - N	MM						0,00400	0,00400	0,00400					0,004
Nitrate - N	mg/L						0,20	0,20	0,30					0,233
Solids														
Turbidity	NTU						39,00	80,00	94,0					71,000
TDS Total Dissolved Solids	mg/L						151	81,0	97,0					109,667
TSS Total Supsended Solids	mg/L						81,00	136,00	85,0					100,667
Trace Constituents														
Cyanide free	mg/L						0,0025							0,003
Cyanide Total	mg/L						0,0025							0,003
Cyanide WAD	mg/L						0,0025							0,0025

W1.6 Kumtor River above Taragai River (2022)

W1.6 Kumtor River above Taragai River (2022)		Jan	Feb	Mar	Apr	May	Jun	Jul	Avg	Sep	Oct	Nov	Dec	Annual Avg
Field data														
Temoerature	°C							8,2	6,0	2,6	0,4			4,3
Conductivity	mS/cm							0,213	0,307	0,380	0,540			0,360
pH								8,1	7,815	7,7	8,2			7,9
Major constituents	mg/L													
Caclum	mg/L							31,7	33,6					32,7
Chloride	mg/L							1,7	2,3					2
Carbonate	mg/L							0,5	0,5					0,5
Bicarbonate	mg/L							63	57					60
Potassium	mg/L							2,6	3,27					2,9
Magnesium	mg/L							9,29	12,8					11,045
Sodium	mg/L							9,72	13,5					11,6
Sulphate	mg/L							73	90					81,5
Hardness - Total	mg/L							112	120					116,0
Alkalinty - Total	mg/L							51,5	46,9					49,2
Total Metals														
Silver Total	mg/L							0,00150	0,00150					0,0015
Aluminum - Total	mg/L							9,09	6,2					7,6
Arsenic - Total	mg/L							0,009	0,02					0,0145
Cadmium - Total	mg/L							0,00015	0,00015					0,0
Chromium TotAL	mg/L							0,013	0,004					0,0085
Copper - Total	mg/L							0,018	0,01					0,0
Iron - Total	mg/L							14,6	6,91					10,755
Mercury - Total	mg/L							0,00025	0,00025					0,0
Manganese - Total	mg/L							0,473	0,268					0,3705
Molidbenum - Total	mg/L							0,011	0,014					0,0
Nickel - Total	mg/L							0,022	0,011					0,0165
Lead - Toal	mg/L							0,013	0,005					0,0
Antimony - Total	mg/L							0,003	0,004					0,0035
Selenium - Total	mg/L							0,0005	0,003					0,0
Zinc - Total	mg/L							0,033	0,023					0,028
Nutrients														
Ammonia - N	mg/L							0,47	0,47					0,47
Nitrite - N	mg/L							0,007	0,014					0,0105
Nitrate - N	mg/L							0,7	0,8					0,75
Solids														
Turbidity	NTU							282	191					236,5
TDS Total Dissolved Solids	mg/L							176	197					186,5
TSS Total Supsended Solids	mg/L							733	213					473
Trace Constituents														
Cyanide free	mg/L													
Cyanide Total	mg/L													
Cyanide WAD	mg/L													

W1.7 Taragay River below Kumtor River (2022)

W1.7 Taragay River below Kumtor River (2022)		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Avg
Field data														
Temoerature	℃					8,5			6,5	4,5	0,5			5,0
Conductivity	mS/cm					0,282			0,262	0,300	0,793			0,409
pH						8,0			7,6	7,6	8,1			7,8
Major constituents											0			
Caclum	mg/L						40	30,1	35					35,0
Chloride	mg/L						16	2	3,5					7,167
Carbonate	mg/L						0,5	0,5	0,5					0,5
Bicarbonate	mg/L						109	67	68					81,333
Bicarbonate	mg/L						1,36	1,65	2,32					1,8
Potassium	mg/L						8,98	7,05	10					8,677
Magnesium	mg/L						7,62	5,14	8,88					7,2
Sulfate	mg/L						56	44	63					54,333
Harshness - Total	mg/L						62	98	110					90,0
Alkalinity - Total	mg/L						89,8	54,8	56,2					66,933
Total Metals														
Silver - Total	mg/L						0,00150	0,00150	0,00150					0,0015
Aluminum - Total	mg/L						3,24	6,72	4,86					4,9400
Arsenic - Total	mg/L						0,003	0,006	0,018					0,0090
Cadmium - Total	mg/L						0,00015	0,00015	0,00015					0,0002
Chrome - Total	mg/L						0,004	0,01	0,004					0,0060
Copper - Total	C						0,009	0,015	0,008					0,0107
Iron - Total	mg/L						3,98	11,2	6,25					7,1433
Mercury - Total	mg/L						0,00025	0,00025	0,00025					0,0003
Manganese - Total	mg/L						0,213	0,323	0,194					0,2433
Molidbenum - Tota	mg/L						0,005	0,005	0,008					0,0060
Nickel - Total	mg/L						0,009	0,013	0,008					0,0100
Lead - Toal	mg/L						0,002	0,009	0,005					0,0053
Antimony - Tota	mg/L						0,0005	0,0005	0,002					0,0010
Selenium - Total	mg/L						0,0005	0,0005	0,002					0,0010
Zinc - Total	mg/L						0,013	0,027	0,016					0,0187
Nutrients														
Ammonia - N	mg/L						0,28	0,25	0,31					0,28000
Nitrite - N	mg/L						0,006	0,006	0,011					0,00767
Nitrate - N	mg/L						0,4	0,4	0,6					0,46667
Solids														
Turbidity	NTU						110	254	168					177,333
DS Total Dissolved Solids	mg/L						232	137	162					177,000
TSS Total Supsended Solids	mg/L						23	381	173					192,333
Trace Constituents														
Cyanide free	mg/L													
Cyanide Total	mg/L													
Cyanide WAD	mg/L													

W1.8 Compliance point according to the Kyrgyz Republic Legislation (Naryn River 1km upstream of Naryn town) 2022

W1.8 Compliance point according to the KR Legislation (Naryn River 1km upstream of Naryn town) 2022		Jan	Fab	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Avg
Field data														
Temoerature	℃	0,9	0,8	1,8	8,2	9,5	12,6	14,2	11,2	10,7	5,5	0,8	0,1	6,4
Conductivity	mS/cm	0,298	0,294	0,298	0,296	0,177	0,288	0,266	0,290	0,286	0,372	0,286	0,280	0,286
pH		8,3	8,6	8,7	7,9	8,2	8,9	8,6	7,0	7,9	7,9	9,6	7,6	8,3
Major constituents														
Caclum	mg/L	55,9	57,1	51,1	48,1	40,9	46,3	55,3	54,1	49,9	51,5	55,4	57,3	51,9
Chloride	mg/L	7,10	6,20	8,20	7,4	4,20	4,30	5,10	7,70	5,23	6,30	7,1	8	6,41
Carbonate	mg/L	0,50	0,50	3,00	2,33	0,50	5,00	2,00	3,00	3,00	3,00	3,00	2	2,32
Bicarbonate	mg/L	155	152	137	130	113	124	121	131	129	137	154	154	136
Potassium	mg/L	1,53	1,67	1,48	2,13	1,49	1,33	1,68	1,80	1,46	1,52	1,49	1,60	1,60
Magnesium	mg/L	16,3	16,3	15,1	13,6	10,1	11,9	11,74	12,9	13,0	14,7	15,5	16,0	13,9
Sodium	mg/L	9,64	9,12	10,40	8,4	5,18	6,95	7,07	10,08	7,40	8,6	9,5	10,50	8,57
Sulphate	mg/L	74,0	71,0	65,0	58,4	40,4	52,5	51,3	59,0	67,0	70,5	71,0	71	62,6
Hrdness - Total	mg/L	195	190	179	166	135	156	150	165	174	187	203	197	175
Alkalinity - Total	Alkalinit	127	125	118	109	93	105,7	99,7	109	108	117	132	129	114
Total metals														
Sikver - Total	mg/L	0,00150	0,00150	0,00150	0,00150	0,00150	0,00150	0,00150	0,00150	0,00150	0,00150	0,00150	0,00150	0,00150
Aluminium Total	mg/L	0,11	0,23	0,59	2,98	2,21	2,73	6,23	5,45	2,82	0,10	0,14	0,08	1,97
Arsenic - Total	mg/L	0,0005	0,0005	0,0005	0,0020	0,0030	0,0030	0,0078	0,0035	0,0035	0,0005	0,0005	0,0005	0,0021
Cadmium - Total	mg/L	0,0002	0,0002	0,0002	0,0002	0,0002	0,0002	0,0002	0,0002	0,0002	0,0002	0,0002	0,0002	0,0002
Chromium Total	mg/L	0,0040	0,0040	0,0040	0,0130	0,0080	0,0040	0,0150	0,0120	0,0040	0,0040	0,0040	0,0040	0,0067
Copper - Total	mg/L	0,0025	0,0025	0,0090	0,0138	0,0025	0,0025	0,0167	0,0025	0,0110	0,0025	0,0025	0,0025	0,0059
Iron - Total	mg/L	0,1130	0,2830	0,5570	3,6486	2,9470	3,6860	9,5420	7,7025	3,6013	0,1185	0,1470	0,2060	2,7127
Mercury - Total	mg/L	0,0003	0,0003	0,0003	0,0003	0,0003	0,0003	0,0003	0,0003	0,0003	0,0003	0,0003	0,0003	0,0003
Manganese Total	mg/L	0,0130	0,0180	0,0240	0,1510	0,1502	0,1325	0,3895	0,2243	0,1110	0,0145	0,0180	0,0140	0,1050
Molibdenum - Total	mg/L	0,0040	0,0040	0,0020	0,0020	0,0020	0,0020	0,0060	0,0045	0,0045	0,0020	0,0050	0,0020	0,0033
Nickel - Total	mg/L	0,0025	0,0025	0,0025	0,0025	0,0025	0,0025	0,0025	0,0025	0,0025	0,0025	0,0025	0,0025	0,0025
Lead - Total	mg/L	0,0010	0,0010	0,0010	0,0077	0,0040	0,0040	0,0086	0,0048	0,0110	0,0010	0,0010	0,0010	0,0038
Antimony - Total	mg/L	0,0005	0,0005	0,0005	0,0005	0,0005	0,0005	0,0005	0,0005	0,0005	0,0005	0,0005	0,0005	0,0005
Selenium - Total	mg/L	0,0005	0,0011	0,0005	0,0030	0,0063	0,0015	0,0023	0,0020	0,0035	0,0205	0,0010	0,0020	0,0037
Zinc - Total	mg/L	0,0030	0,0010	0,0040	0,0352	0,0090	0,0105	0,0278	0,0225	0,0195	0,0025	0,0005	0,0130	0,0124
Nutrients														
Ammonia - N	mg/L	0,02	0,02	0,07	0,11	0,06	0,06	0,20	0,12	0,06	0,24	0,02	0,19	0,10
Nitrite - N	mg/L	0,00300	0,00500	0,00400	0,00980	0,00700	0,01500	0,00967	0,02025	0,01000	0,01300	0,00200	0,003	0,00848
Nitrate - N	mg/L	0,80	0,70	0,90	0,68	0,58	0,80	3,52	1,38	0,80	1,05	0,90	1,1	1,10
Solids														
Turbidity	NTU	2,70	2,00	15,00	138,2	283,8	129,0	627,5	340	68,7	1,62	3,50	4,20	134,68
TDS - Total Dissolved Solids	mg/L	243	254	250	235	181	208	203	259	227	247	263	269	237
TSS - Total Suspended Solids	mg/L	1,00	7,00	23,00	203,6	534,0	134,5	745	397	133,7	19,00	4,00	3	183,78
Trace Constituents														
Cyanide - Free	mg/L	0,00250	0,00250	0,00250	0,00250	0,00250	0,00250	0,00250	0,00250	0,00250	0,00250	0,00250	0,00250	0,00250
Cyanide - Total	mg/L	0,00250	0,00250	0,00250	0,00250	0,00250	0,00250	0,00250	0,00250	0,00250	0,00250	0,00250	0,00250	0,00250
Cyanide- WAD	mg/L	0,00250	0,00250	0,00250	0,00250	0,00250	0,00250	0,00250	0,00250	0,00250	0,00250	0,00250	0,00250	0,00250

P5.2N New Camp Tap Water (2022)

P5.2N New Camp Tap Water (2022)		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sen	Oct	Nov	Dec	Annual Avg
Field Data														
Temperature	°C	10,2	10,7	10,3	11,7	10,9	11,0	13,6	12,2	10,8	9,9	9,8	9,6	10,9
Conductivity	mS/cm	0,101	0,105	0,116	0,104	0,098	0,103	0,110	0,107	0,120	0,115	0,117	0,133	0,111
pH		7,9	8,2	8,2	8,3	8,6	8,3	8,1	8,5	7,8	8,0	8,1	8,2	8,2
Major Constituents														
Calcium	mg/L	17,3	17,8	16,9	16,8	15,4	15,1	17,0	14,9	14,2	13,8	15,7	16,8	16,0
Chloride	mg/L	1,42	1,60	1,43	2,40	1,95	1,93	1,98	1,85	1,93	2,08	2,00	2,15	1,8924
Carbonate	mg/L	0,50	0,50	0,50	0,50	0,50	0,50	0,50	0,50	0,50	0,50	0,50	0,50	0,5000
Bicarbonate	mg/L	37,8	39,5	37,5	33,3	32,8	33,3	34,2	28,8	27,3	28,5	31,0	33,5	33,1111
Potassium	mg/L	1,47	1,52	1,35	2,58	1,29	1,20	1,29	1,17	1,03	1,09	1,22	1,27	1,3719
Magnesium	mg/L	3,00	3,02	2,86	2,89	2,71	2,68	3,07	2,42	2,21	2,29	2,66	2,65	2,7039
Sodium	mg/L	2,60	2,79	2,51	2,72	3,11	2,81	2,94	2,62	2,27	2,51	2,79	2,86	2,7101
Sulphate	mg/L	22,8	23,0	23,0	23,5	23,5	30,0	25,8	24,0	22,3	23,0	23,0	24,0	23,9944
Hardness - Total	mg/L	50,4	52,3	57,5	48,0	46,5	49,8	51,4	44,3	42,7	42,8	45,0	48,3	48,2
Alkalinity - Total	mg/L	31,0	32,6	31,0	27,4	27,0	27,3	27,8	23,6	22,6	23,2	25,4	27,4	27,185
Total metals														
Silver - Total	mg/L	0,00150	0,00150	0,00150	0,00150	0,00150	0,00150	0,00150	0,00150	0,00150	0,00150	0,00150	0,00150	0,0015
Aluminum - Total	mg/L	0,16	0,14	0,09	0,11	0,11	0,10	0,12	0,14	0,14	0,11	0,07	0,08	0,1138
Arsenic - Total	mg/L	0,00050	0,00050	0,00050	0,00050	0,00050	0,00050	0,00050	0,00050	0,00050	0,00050	0,00050	0,00050	0,0005
Cadmium - Total	mg/L	0,00015	0,00015	0,00015	0,00015	0,00015	0,00015	0,00015	0,00015	0,00015	0,00015	0,00015	0,00015	0,0002
Chromium - Total	mg/L	0,00400	0,00400	0,00400	0,00400	0,00400	0,00400	0,00400	0,00400	0,00400	0,00400	0,00400	0,00400	0,0040
Copper - Total	mg/L	0,00320	0,00250	0,00250	0,00250	0,00250	0,00250	0,00250	0,00250	0,00250	0,00250	0,00250	0,00250	0,0026
Iron - Total	mg/L	0,06	0,05	0,04	0,04	0,04	0,04	0,07	0,12	0,07	0,06	0,03	0,03	0,0547
Mercury - Total	mg/L	0,00025	0,00025	0,00025	0,00025	0,00025	0,00025	0,00044	0,00025	0,00040	0,00025	0,00025	0,00025	0,0003
Manganese - Total	mg/L	0,00380	0,01000	0,00250	0,00225	0,00233	0,00200	0,00860	0,00650	0,00333	0,00275	0,00200	0,00225	0,0040
Molybdenum -Total	mg/L	0,00200	0,00400	0,00300	0,00200	0,00200	0,00200	0,00240	0,00200	0,00200	0,00200	0,00200	0,00300	0,0024
Nickel - Total	mg/L	0,00250	0,00600	0,00538	0,00250	0,00250	0,00250	0,00250	0,00250	0,00250	0,00313	0,00250	0,00488	0,0033
Lead - Total	mg/L	0,00100	0,00100	0,00100	0,00100	0,00100	0,00175	0,00100	0,00100	0,00100	0,00100	0,00100	0,00100	0,0011
Antimony - Tota	mg/L	0,00050	0,00050	0,00050	0,00050	0,00050	0,00050	0,00050	0,00050	0,00050	0,00050	0,00050	0,00050	0,0005
Selenium - Total	mg/L	0,00050	0,00050	0,00050	0,00063	0,00063	0,00050	0,00050	0,00050	0,00050	0,00050	0,00050	0,00050	0,0005
Zinc - Total	mg/L	0,00270	0,00088	0,00188	0,00275	0,00100	0,00225	0,00220	0,00263	0,00117	0,00138	0,00163	0,00050	0,0017
Nutrients														
Ammonia - N	mg/L	0,02	0,02	0,02	0,02	0,02	0,02	0,02	0,02	0,02	0,02	0,02	0,02	0,0200
Nitrite - N	mg/L	0,00050	0,00050	0,00050	0,00050	0,00075	0,00050	0,00050	0,00050	0,00067	0,00050	0,00050	0,00050	0,0005
Nitrate - N	mg/L	0,30	0,30	0,30	0,35	0,33	0,30	0,30	0,28	0,30	0,30	0,30	0,30	0,3042
Solids														
Turbidity	NTU	1,62	0,95	0,87	0,31	0,33	0,28	1,41	2,02	0,52	1,13	0,29	0,29	0,8345
TDS Solids	mg/L	73,0	75,5	75,0	71,3	74,0	78,8	78,4	70,0	61,0	66,8	64,5	71,3	71,6
TSS Total Suspended Solids	mg/L	1,00	0,88	0,88	0,50	0,50	0,50	1,10	1,50	0,50	0,63	0,50	0,50	0,747916667
Trace Constituents														
Cyanide - Free	mg/L													
Cyanide - Total	mg/L													
Cyanide- WAD	mg/L													

P5.3 Mill Kitchen Tap (2022)

P5.3 Mill Kitchen Tap (2022)		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sen	Oct	Nov	Dec	Annual Avg
Field Data														
Temperature	°C	13,6	12,8	13,1	12,8	15,1	14,6	15,9	15,5	14,1	10,5	11,1	11,3	13,4
Conductivity	mS/cm	0,114	0,115	0,202	0,116	0,109	0,222	0,105	0,108	0,123	0,119	0,119	0,127	0,132
pH		8,0	8,2	8,0	8,0	8,0	7,6	7,9	8,0	7,5	8,0	8,3	8,1	8,0
Major constituents														
Calcium	mg/L	16,8	18,8	16,4	16,6	15,4	15,3	16,8	14,3	14,2	13,7	15,8	16,3	15,9
Chloride	mg/L	2,08	1,85	2,13	2,33	1,43	1,38	1,82	1,98	2,27	2,30	2,10	1,80	1,953
Carbonate	mg/L	0,50	0,50	0,50	0,50	0,50	0,50	0,50	0,50	0,50	0,50	0,50	0,50	0,5
Bicarbonate	mg/L	32,2	23,8	28,8	19,8	18,5	20,5	29,2	25,5	18,3	31,0	27,0	34,3	25,728
Potassium	mg/L	1,42	1,48	1,84	2,56	1,39	1,19	1,43	1,12	1,13	1,12	1,27	1,36	1,4
Magnesium	mg/L	3,02	3,01	2,79	2,92	2,78	2,71	3,01	2,30	2,23	2,34	2,66	2,66	2,702
Sodium	mg/L	3,08	3,04	2,77	2,75	2,48	2,31	2,55	2,65	2,53	2,71	2,87	3,02	2,7
Sulphate	mg/L	28,0	35,8	30,3	35,0	35,8	33,5	28,8	24,8	30,3	20,3	26,8	23,3	29,365
Hardness - Total	mg/L	50,6	52,5	57,5	47,5	47,3	49,0	51,0	42,8	43,0	43,3	45,3	48,5	48,2
Alkalinity - Total	mg/L	26,3	19,6	23,7	16,3	15,3	17,0	24,2	21,0	15,0	25,5	22,2	28,1	21,162
Total metals														
Silver - Total	mg/L	0,00150	0,00150	0,00150	0,00150	0,00150	0,00150	0,00150	0,00150	0,00150	0,00150	0,00150	0,00150	0,00150
Aluminum - Total	mg/L	0,17	0,13	0,13	0,10	0,08	0,28	0,09	0,09	0,21	0,17	0,19	0,14	0,148161111
Arsenic - Total	mg/L	0,00050	0,00050	0,00050	0,00050	0,00050	0,00050	0,00050	0,00050	0,00050	0,00050	0,00050	0,00050	0,00050
Cadmium - Total	mg/L	0,00015	0,00015	0,00015	0,00015	0,00015	0,00015	0,00015	0,00015	0,00015	0,00015	0,00015	0,00015	0,00015
Chromium - Total	mg/L	0,00400	0,00400	0,00400	0,00400	0,00400	0,00400	0,00400	0,00400	0,00400	0,00400	0,00400	0,00400	0,00400
Copper - Total	mg/L	0,00250	0,00450	0,00363	0,00500	0,00250	0,00250	0,00250	0,00250	0,00250	0,00250	0,00250	0,00250	0,00296875
Iron - Total	mg/L	0,04	0,04	0,04	0,03	0,03	0,06	0,06	0,04	0,15	0,07	0,08	0,05	0,05753
Mercury - Total	mg/L	0,00025	0,00025	0,00025	0,00025	0,00025	0,00025	0,00025	0,00025	0,00025	0,00025	0,00025	0,00025	0,00025
Manganese - Total	mg/L	0,00340	0,00325	0,00275	0,00267	0,00225	0,00350	0,00440	0,00350	0,00633	0,00375	0,00350	0,00113	0,00337
Molybdenum -Total	mg/L	0,00260	0,00200	0,00200	0,00200	0,00200	0,00200	0,00200	0,00200	0,00200	0,00200	0,00400	0,00275	0,002279167
Nickel - Total	mg/L	0,00520	0,00250	0,00250	0,00438	0,00250	0,00250	0,00250	0,00250	0,00250	0,00250	0,00538	0,00250	0,00312
Lead - Total	mg/L	0,00120	0,00100	0,00100	0,00100	0,00100	0,00100	0,00100	0,00100	0,00100	0,00100	0,00100	0,00100	0,001016667
Antimony - Total	mg/L	0,00050	0,00050	0,00050	0,00050	0,00050	0,00050	0,00050	0,00050	0,00050	0,00050	0,00050	0,00050	0,00050
Selenium - Total	mg/L	0,00080	0,00050	0,00050	0,00050	0,00050	0,00050	0,00050	0,00050	0,00050	0,00875	0,00050	0,00050	0,0012125
Zinc - Total	mg/L	0,00500	0,00413	0,00575	0,00700	0,00263	0,00575	0,00420	0,00213	0,00300	0,00150	0,00238	0,00088	0,00369
Nutrients														
Ammonia - N	mg/L	0,02	0,02	0,02	0,02	0,02	0,02	0,02	0,02	0,02	0,02	0,02	0,02	0,02000
Nitrite - N	mg/L	0,00050	0,00050	0,00050	0,00050	0,00050	0,00050	0,00050	0,00050	0,00050	0,00050	0,00050	0,00050	0,0005
Nitrate - N	mg/L	0,34	0,30	0,33	0,40	0,40	0,30	0,30	0,30	0,30	0,30	0,30	0,30	0,32208
Solids														
Turbidity	NTU	0,61	0,28	0,24	0,17	0,22	1,17	1,04	0,33	2,36	1,87	1,52	0,37	0,84707
TDS Total	mg/L	77,6	80,5	85,8	77,3	79,5	83,5	77,4	66,8	67,7	68,0	70,8	68,0	75,22222222
TSS Total	mg/L	0,50	0,50	0,50	0,50	0,50	1,13	0,80	0,50	2,50	1,25	1,25	0,50	0,86875
Trace Constituents														
Cyanide - Free	mg/L	0,00250	0,00250	0,00250	0,00250	0,00250	0,00250	0,00250	0,00250	0,00250	0,00250	0,00250	0,00250	0,00250
Cyanide - Total	mg/L	0,00250	0,00238	0,00250	0,00250	0,00250	0,00250	0,00250	0,00250	0,00250	0,00250	0,00250	0,00250	0,002489583
Cyanide - WAD	mg/L	0,00250	0,00250	0,00250	0,00250	0,00250	0,00250	0,00250	0,00250	0,00250	0,00250	0,00250	0,00250	0,00250

P5.4 Mega Shop Kitchen Tap (2022)

P5.4 Mega Shop Kitchen Tap (2022)		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Avg
Field data														
Temperature	°C	11,3	11,5	13,8	14,2	12,5	13,2	17,1	16,8	14,7	8,9	12,8	10,2	13,1
Conductivity	mS/cm	0,112	0,120	0,123	0,116	0,113	0,113	0,122	0,107	0,120	0,163	0,130	0,132	0,123
pH		8,1	8,2	8,1	8,3	8,8	8,5	8,4	8,1	7,4	8,5	8,2	7,9	8,2
Major Constituents														
Calcium	mg/L	17,3	17,7	16,4	16,7	15,1	15,2	16,1	14,5	15,1	14,1	15,6	16,1	15,8
Chloride	mg/L	4,14	4,03	3,80	7,03	4,13	3,55	2,58	3,73	3,80	4,65	4,00	3,40	4,068
Carbonate	mg/L	0,50	0,50	0,50	0,50	0,50	0,50	0,50	0,50	0,50	0,50	0,50	0,50	0,5
Bicarbonate	mg/L	21,6	22,8	22,3	17,5	18,3	20,5	25,6	23,5	16,7	15,5	20,0	24,0	20,676
Potassium	mg/L	1,41	1,96	3,30	4,39	1,25	1,19	1,24	1,16	1,04	1,08	1,21	1,21	1,7
Magnesium	mg/L	3,00	3,00	2,80	2,89	2,72	2,70	2,98	2,40	2,28	2,34	2,63	2,68	2,701
Sodium	mg/L	5,10	5,02	5,05	6,58	5,75	4,68	3,52	4,38	3,89	4,88	4,62	3,88	4,8
Sulphate	mg/L	37,6	37,3	37,0	39,5	36,5	31,3	30,2	28,0	33,7	36,5	32,0	32,0	34,289
Hardness-Total	mg/L	50,6	51,8	57,0	48,3	46,5	48,8	49,0	43,5	44,7	43,8	45,0	49,0	48,1
Alkalinity-Total	mg/L	17,6	18,8	18,3	14,4	14,8	16,9	21,2	19,2	13,7	12,9	16,5	19,8	17,005
Total metals														
Silver-Total	mg/L	0,0015	0,0015	0,0015	0,0015	0,0015	0,0015	0,0015	0,0015	0,0015	0,0015	0,0015	0,0015	0,0015
Aluminum-Total	mg/L	0,0150	0,0248	0,0313	0,0310	0,0150	0,0375	0,0150	0,1225	0,0317	0,0388	0,0350	0,0563	0,0378
Arsenic-Total	mg/L	0,0005	0,0005	0,0005	0,0005	0,0005	0,0005	0,0005	0,0005	0,0005	0,0005	0,0005	0,0005	0,0005
Cadmium-Total	mg/L	0,0002	0,0002	0,0002	0,0002	0,0002	0,0002	0,0002	0,0002	0,0002	0,0002	0,0002	0,0002	0,0002
Chromium-Total	mg/L	0,0040	0,0040	0,0040	0,0040	0,0040	0,0040	0,0040	0,0040	0,0040	0,0040	0,0040	0,0040	0,0040
Copper-Total	mg/L	0,0025	0,0025	0,0025	0,0025	0,0025	0,0025	0,0025	0,0025	0,0025	0,0025	0,0025	0,0025	0,0025
Iron-Total	mg/L	0,3190	0,2055	0,2398	0,3253	0,2180	0,1778	0,1410	0,2743	0,2043	0,2523	0,2505	0,2210	0,2357
Mercury-Total	mg/L	0,0003	0,0003	0,0003	0,0003	0,0003	0,0003	0,0003	0,0003	0,0003	0,0003	0,0003	0,0003	0,0003
Manganese-Total	mg/L	0,0148	0,0085	0,0100	0,0113	0,0073	0,0063	0,0082	0,0073	0,0080	0,0078	0,0070	0,0085	0,0087
Molybdenum-Total	mg/L	0,0020	0,0020	0,0020	0,0020	0,0020	0,0020	0,0020	0,0020	0,0020	0,0020	0,0020	0,0020	0,0020
Nickel-Total	mg/L	0,0025	0,0025	0,0044	0,0113	0,0025	0,0025	0,0025	0,0025	0,0025	0,0025	0,0044	0,0025	0,0035
Lead-Total	mg/L	0,0010	0,0010	0,0010	0,0010	0,0010	0,0010	0,0010	0,0020	0,0010	0,0010	0,0010	0,0010	0,0011
Antimony-Total	mg/L	0,0005	0,0005	0,0005	0,0005	0,0005	0,0007	0,0005	0,0005	0,0005	0,0005	0,0005	0,0005	0,0005
Selenium-Total	mg/L	0,0005	0,0005	0,0005	0,0005	0,0009	0,0005	0,0005	0,0005	0,0005	0,0084	0,0005	0,0005	0,0012
Zinc-Total	mg/L	0,0176	0,0090	0,0138	0,0150	0,0130	0,0110	0,0086	0,0058	0,0117	0,0128	0,0110	0,0077	0,0114
Nutrients														
Ammonia - N	mg/L	0,02	0,02	0,02	0,02	0,02	0,02	0,02	0,02	0,02	0,02	0,02	0,02	0,0200
Nitrite - N	mg/L	0,00050	0,00050	0,00075	0,00050	0,00050	0,00050	0,00060	0,00050	0,00050	0,00050	0,00050	0,00050	0,0005
Nitrate - N	mg/L	0,30	0,30	0,30	0,38	0,33	0,33	0,32	0,30	0,20	0,23	0,28	0,33	0,2975
Solids														
Turbidity	NTU	0,40	0,24	0,22	0,79	0,34	0,19	0,42	1,50	0,40	0,42	0,34	8,45	1,140
Solids	mg/L	80,6	82,3	83,3	87,8	85,5	85,5	80,2	70,3	75,3	76,0	76,3	78,3	80,1
Suspended Solids -Total (TSS)	mg/L	0,50	0,50	0,50	0,88	0,50	0,50	0,50	1,13	0,50	0,50	0,50	0,50	0,583
Trace Constituents														
Cyanide-Free	mg/L													
Cyanide-Total	mg/L													
Cyanide - WAD	mg/L													

SDP Treated Sewage Discharge into Kumtor River (2022)

SDP Treated Sewage Discharge into Kumtor River (2022)		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Avg
Field data														
Temperature	°C							17,1	14,0	11,4	12,5			13,7
Conductivity	mS/cm							0,324	0,351	0,287	0,252			0,303
pH								7,8	7,9	7,9	8,2			7,9
Major Constituents														
Chloride	mg/L							33,8	33,5	31,3	31,0			32,4
Magnesium	mg/L							19,4	42,5	6,58	3,76			18,047
Sodium	mg/L							38,0	30,9	35,6	35,5			35,013
Sulphate	mg/L							135	246	58,7	41,0			120,042
Total metals	mg/L													
Aluminum-Total	mg/L							0,490	0,498	0,187	0,606			0,445
Copper-Total	mg/L							0,0066	0,0025	0,0025	0,0075			0,005
Iron-Total	mg/L							0,66	0,40	0,19	0,45			0,426
Manganese-Total	mg/L							0,0558	0,0630	0,0313	0,0579			0,052
Nickel-Total	mg/L							0,0025	0,0025	0,0025	0,0107			0,005
Antimony-Total	mg/L							0,0006	0,0005	0,0005	0,0005			0,001
Zink-Total	mg/L							0,0530	0,0385	0,0753	0,1359			0,076
Nutrients														
Ammonia- N	mg/L							0,84	0,21	0,12	4,45			1,404
Nitrite - N	mg/L							0,0300	0,0254	0,0167	0,0080			0,020
Nitrate - N	mg/L							7,98	6,20	8,13	22,00			11,077
Solids														
Suspended Solids (TSS)	mg/L							22,00	12	12,33	23,0			17,208
Biochemical Oxygen Demand (BODS)	mg/L							7,75	9,0	10,5	5,0			8,1
MBAS	mg/L							0,24	0,24	0,42	0,06			0,24

Laboratory sensitivity limit (2022)

Parameter	Units	Method Detection Limit
Major Constituents		
Calcium	mg/l	0,05
Chloride	mg/l	0,5
Carbonate	mg/l	1
Bicaronate	mg/l	1
Potassium	mg/l	0,09
Magensium	mg/l	0,5
Sodium	mg/l	0,5
Sulphate	mg/l	1
Alkanlinity-Total	mg/l	1
Hardness-Total	mg/l	1
Total metals		
Silver-Totals	mg/l	0,003
Aluminum-Total	mg/l	0,03
Arsenic-Total	mg/l	0,005
Cadmium-Total	mg/l	0,0003
Chromium-Total	mg/l	0,008
Copper-Total	mg/l	0,005
Iron-Total	mg/l	0,004
Mercury-Total	mg/l	0,0005
Manganese-Total	mg/l	0,003
Molybdenum-Total	mg/l	0,005
Nikel-Total	mg/l	0,005
Lead-Total	mg/l	0,002
Antimony-Total	mg/l	0,001
Selenium-Total	mg/l	0,001
Zinc-Total	mg/l	0,001
Nutrients		
Ammonia- N	mg/l	0,04
Nitrite - N	mg/l	0,001
Nitrate - N	mg/l	0,1
Solids		
Turbidity	NTU	0,35
TDS Total Dissolved Solids	mg/l	1
TSS Total Suspended Solids	mg/l	1
Trace Constituents		
Cyanide-Free	mg/l	0,2
Cyanide-Total	mg/l	0,005
Cyanide - WAD	mg/l	0,005

APPENDIX 2

THE “KUMTOR” MINE MOTOR VEHICLES EXHAUST GASES SMOKE MEASUREMENTS

Measurement of exhaust gas smoke

Measure date	Vehicle brand	On-board Number	Atmospheric pressure kPa/mm Hg	Ambient temperature ºC	Attenuation coefficient %	Absorption coefficient 1/m	Smokiness rate 1/m	Mass concetration g/m3
02.03.2022	CAT	117	63,4	8	49,00%	1,58	≤3.00	0,256
	CAT	143	63,4	8	44,20%	1,37	≤3.00	0,22
	CAT	60	63,4	8	15,00%	0,38	≤3.00	0,057
	CAT	58	63,4	8	15,90%	0,40	≤3.00	0,057
	CAT	72	63,4	8	34,80%	0,99	≤3.00	0,156
20.03.2022	Mack	4048	65,24	7	35,15%	1,01	≤3.00	0,162
	Mack	4083	65,24	7	19,00%	0,50	≤3.00	0,076
	Mack	4056	65,24	7	27,00%	0,73	≤3.00	0,117
	Mack	4050	65,24	7	33,40%	0,94	≤3.00	0,15
	Mack	4096	65,24	7	17,30%	0,43	≤3.00	0,066
	Mack	4057	65,24	7	25,00%	0,67	≤3.00	0,106
	Mack	4085	65,24	7	18,60%	0,49	≤3.00	0,076
	Mack	4074	65,24	7	20,25%	0,52	≤3.00	0,081
	Mack	4042	65,24	7	41,00%	1,23	≤3.00	0,199
	Mack	4049	65,24	7	45,00%	1,40	≤3.00	0,227
27.03.2022	CAT	48	63,39	3	26,80%	0,73	≤3.00	0,111
	CAT	52	63,39	3	14,60%	0,37	≤3.00	0,052
	CAT	111	63,39	3	43,10%	1,31	≤3.00	0,213
	CAT	159	63,39	3	26,30%	0,71	≤3.00	0,111
	CAT	133	63,39	3	22,00%	0,58	≤3.00	0,091
17.04.2022	CAT - самосвал	117	64,38	20	18,50	0,48	≤3.00	0,071
	CAT - самосвал	120	64,38	20	2,30	0,05	≤3.00	0,111
	CAT - самосвал	84	64,38	20	13,80	0,35	≤3.00	0,048
	CAT - самосвал	126	64,38	20	9,4	0,23	≤3.00	0,033
	CAT - самосвал	155	64,38	20	2,9	0,07	≤3.00	0,111
	CAT - бульдозер колесный	1432	64,38	20	99,7	0	≤3.00	0,091
24.04.2022	CAT	59	64,14	7	19,80%	0,51	≤3.00	0,076
	CAT	138	64,14	7	54,40%	1,83	≤3.00	0,086
	CAT	76	64,14	7	13,70%	0,34	≤3.00	0,047
	CAT	137	64,14	7	63,80%	2,36	≤3.00	0,255
	CAT	121	64,14	7	35,50%	1,02	≤3.00	0,162
22.05.2022	CAT	159	63,39	10	42,10%	1,27	≤3.00	0,206
	CAT	110	63,39	10	54,80%	1,84	≤3.00	0,202
	CAT	108	63,39	10	46,40%	1,47	≤3.00	0,234
	CAT	123	63,39	10	44,30%	1,38	≤3.00	0,22
	CAT	119	63,39	10	19,10%	0,49	≤3.00	0,076
10.06.2022	CAT	16079	63,82	7	18,20%	0,47	≤3.00	0,076
	CAT	16165	63,82	7	55,20%	1,87	≤3.00	0,062
	CAT	16128	63,82	7	13,80%	0,35	≤3.00	0,047
	CAT	16124	63,82	7	13,60%	0,32	≤3.00	0,162
03.07.2023	CAT	118	64,4	14	20,1	0,5	≤3.00	0,081
	CAT	58	64,4	14	41,2	1,24	≤3.00	0,199
	CAT	81	64,4	14	34	0,98	≤3.00	0,156
	CAT	62	64,4	14	12	0,3	≤3.00	0,042
	CAT	79	64,4	14	38	1,11	≤3.00	0,181
17.07.2022	CAT	157	63,39	12	26,80%	0,73	≤3.00	0,111
	CAT	150	63,39	12	14,60%	0,37	≤3.00	0,052
	CAT	96	63,39	12	43,10%	1,31	≤3.00	0,213
	CAT	90	63,39	12	26,30%	0,71	≤3.00	0,111
	CAT	129	63,39	12	22,00%	0,58	≤3.00	0,091

APPENDIX 3

STATISTICAL REPORTS FOR 2022

STATE STATISTICAL REPORTING

in accordance with the Law of the Kyrgyz Republic "On State Statistics"

Confidentiality is guaranteed

Violation of the procedure, deadlines for the submission of information, its distortion and non-compliance with confidentiality entails liability established by the legislation of the Kyrgyz Republic	

FORM No. 1 – WASTE		**6125729**
"System of designations of objects of administrative – territorial and territorial units of the Kyrgyz Republic"		**SDOAT**
ANNUAL		

Approved by the Resolution of the National Statistical Committee of the Kyrgyz Republic dated 04.06.2014 No. 15	

ON THE FORMATION AND MANAGEMENT OF PRODUCTION WASTE AND CONSUMPTION

Report

for 2022 (year)

all economic entities, regardless of the form of ownership, carrying out activities in the field of production and consumption waste management, as well as enterprises and organizations that generate, neutralize (destroy) toxic industrial waste no later than January 30 to the territorial body of state statistics at the location or to the Main Computing Center of the National Statistical Committee.	

CJSC Kumtor Gold Company		**2 0 3 1 2 7 7 6**
National classifier of enterprises and organizations		**NCEO**
Name of the enterprise, organization		
Jety-Oguz district, Issyk-Kul region, Kumtor mine		
Territory (region, district, city, us. point)	(to be completed by the statistical office	
720031, Bishkek, 24 Ibraimov Street, 0312 90-07 -07;		
	Phone: E-mail	
Address (postal code, street, house number)		
Industrial gold mining		
Actual type of economic activity (main)	STATE CLASSIFIER OF TYPES OF ECONOMIC ACTIVITY	**SCTEA**

«_06_»_February_2022__. (Year)

Akjol Aidzigit Uulu

Executor Name

Director D.B. Kasymaliev **Applied**

(Signuture)

Coordinates of the statistical body receiving statistical reports ***February 6,2022***

6.02.2022 Н.

Phone_____, Fax_____, e-mail_____, Website of the National Statistical Committee-www.stat.kg

Section 1. Generation and movement of production and consumption waste by type (ton/ly) (tons/year)

Name of types and hazard classes of waste	Line code	Waste Classification Statistical Code	Availability of waste at the enterprise at the beginning of the reporting year	Waste generated at the enterprise during the reporting year	Received waste from other enterprises and organizations		Used in the enterprise			Allocated in the enterprise			Waste transferred to other enterprises/individuals						Availability of waste at the enterprise at the end of the reporting period
					Total	*including import*	**Total**	Reworked	Defused	**Total**		For storage	**Total**	*Including:by export*	To use	For neutralization	For burial	For storage	
A	B	C	1	2	3	4	5	6	7		8	9	10	11	12	13	14	15	16
Total, waste of all hazard classes	**1**		**2 572 826 381,576**	**178 066 709,478**	**0,000**	**0,000**	**6 500 270,787**	**263,787**	**6 500 007,000**	**171 563 982,241**	**7 981,888**	**171 556 000,353**	**3 532,730**	**0,000**	**3 532,730**	**0,000**	**0,000**	**0,000**	**2 744 389 287,538**
Including:: **Solid**	**1.1.**		**2 428 635 018,483**	**165 416 171,791**	**0,000**	**0,000**	**263,787**	**263,787**	**0,000**	**165 413 950,414**	**1 141,505**	**165 412 808,909**	**2 406,930**	**0,000**	**2 406,930**	**0,000**	**0,000**	**0,000**	**2 594 048 519,558**
Liquid	**1.2.**		**144 191 363,093**	**12 650 537,687**	**0,000**	**0,000**	**6 500 007,000**	**0,000**	**6 500 007,000**	**6 150 031,827**	**6 840,383**	**6 143 191,444**	**1 125,800**	**0,000**	**1 125,800**	**0,000**	**0,000**	**0,000**	**150 340 767,980**
Pasty	1.3.																		
Including from the total amount of waste of all hazard classes																			
Total,waste of all hazard classes	**2**		**0,686**	**0,446**	**0,000**	**0,000**	**0,000**	**0,000**	**0,000**	**0,446**	**0,000**	**0,446**	**0,000**	**0,000**	**0,000**	**0,000**	**0,000**	**0,000**	**1,132**
Including othdy, about the name																			
Fluorescent and other mercury containing	2,1	20261	**0,686**	**0,446**						**0,446**	0,000	0,446	**0,000**	0,000	0,000	0,000	0,000	0,000	**1,132**
Waste II hazard class all	**3**		**144 161 636,781**	**12 645 308,407**	**0,000**	**0,000**	**6 500 009,652**	**2,652**	**6 500 007,000**	**6 144 799,895**	**1 463,251**	**6 143 336,644**	**1 125,800**	**0,000**	**1 125,800**	**0,000**	**0,000**	**0,000**	**150 305 809,736**
including wastes, by name																			
Enrichment tails (incl. cyanides and hydroxide).metals (sediment from ETP)	3.1.	1032	**144 149 951,507**	**12 642 062,000**	0,000	0,000	**6 499 997,000**	0,000	6 499 997,000	**6 142 065,000**		6 142 065,000	**0,000**	0,000	0,000	0,000	0,000	0,000	**150 292 016,507**
Waste oils	3.2.	13082	**626,940**	**1 635,304**	0,000	0,000	**10,000**	0,000	10,000	**1 126,444**	0,000	1 126,444	**1 125,800**	0,000	1 125,800	0,000	0,000	0,000	**1 126,444**
Battery acid	3.3.	6062	**13,264**	**1,404**	0,000	0,000	**0,000**	0,000	0,000	**1,404**	1,404	0,000	**0,000**	0,000	0,000	0,000	0,000	0,000	**14,668**
Automotive filters	3.4.	15992	**64,800**	**145,200**	0,000	0,000	**0,000**	0,000	0,000	**145,200**	0,000	145,200	**0,000**	0,000	0,000	0,000	0,000	0,000	**210,000**
Non-organ waste from Lab (monkton/crucibles)	3.5.	6992	**0,000**	**2,652**	0,000	0,000	**2,652**	2,652	0,000	**0,000**	0,000	0,000	**0,000**	0,000	0,000	0,000	0,000	0,000	**0,000**
Chemical waste (organ. Drain	3,6	18062	**34,025**	**1,282**	0,000	0,000	**0,000**	0,000	0,000	**1,282**	1,282	0,000	**0,000**	0,000	0,000	0,000	0,000	0,000	**35,307**
Sludge from the car wash	3,7	5012	**7 654,925**	**983,800**	0,000	0,000	**0,000**	0,000	0,000	**983,800**	983,800	0,000	**0,000**	0,000	0,000	0,000	0,000	0,000	**8 638,725**
Material from reagents	3,8	15072	**3 291,320**	**476,765**	0,000	0,000	**0,000**	0,000	0,000	**476,765**	476,765	0,000	**0,000**	0,000	0,000	0,000	0,000	0,000	**3 768,085**
Waste of III hazard class of all	**4**		**33 573,432**	**8 196,482**	**0,000**	**0,000**	**0,000**	**0,000**	**0,000**	**6 627,277**	**5 853,897**	**773,380**	**1 938,545**	**0,000**	**1 938,545**	**0,000**	**0,000**	**0,000**	**39 831,369**
Including wastes by name																			
Used batteries **	4.1.	20153	**12,000**	**11,460**	0,000	0,000	**0,000**	0,000	0,000	**1,200**	0,000	1,200	**22,260**	0,000	22,260	0,000	0,000	0,000	**1,200**
Scrap	4.2.	17133	**200,000**	**1 898,725**	0,000	0,000	**0,000**	0,000	0,000	**460,440**	0,000	460,440	**1 638,285**	0,000	1 638,285	0,000	0,000	0,000	**460,440**
Polyethylene, polypropylene	4.3.	17163	**135,000**	**237,660**	0,000	0,000	**0,000**	0,000	0,000	**117,000**	0,000	117,000	**255,660**	0,000	255,660	0,000	0,000	0,000	**117,000**
Rubber products (hoses)	4.4.	17193	**41,000**	**72,300**	0,000	0,000	**0,000**	0,000	0,000	**72,300**	0,000	72,300	**0,000**	0,000	0,000	0,000	0,000	0,000	**113,300**
Used electric cable	4.5.	17123	**10,000**	**3,100**	0,000	0,000	**0,000**	0,000	0,000	**3,100**	0,000	3,100	**0,000**	0,000	0,000	0,000	0,000	0,000	**13,100**
Packaging material: polypropylene (big-bag)	4,6	15072	**93,000**	**119,340**	0,000	0,000	**0,000**	0,000	0,000	**119,340**	0,000	119,340	**22,340**	0,000	22,340	0,000	0,000	0,000	**190,000**
Drilling sludge	4,7	1043	**918,647**	**123,897**	0,000	0,000	**0,000**	0,000	0,000	**123,897**	123,897	0,000	**0,000**	0,000	0,000	0,000	0,000	0,000	**1 042,544**
Waste of anaerobic waste treatment (mineralized silt)	4,8	19053	**32 163,785**	**5 730,000**	0,000	0,000	**0,000**	0,000	0,000	**5 730,000**	5 730,000	0,000	**0,000**	0,000	0,000	0,000	0,000	0,000	**37 893,785**
Waste IV hazard class all	**5.**		**2 428 621 498,584**	**165 412 186,768**	**0,000**	**0,000**	**0,000**	**0,000**	**0,000**	**165 411 798,383**	**0,000**	**165 411 798,383**	**468,385**	**0,000**	**468,385**	**0,000**	**0,000**	**0,000**	**2 594 033 216,967**
Including wastes by name																			
Forest, chunks	5.1.	20254	**40,000**	**301,723**	0,000	0,000	**0,000**	0,000	0,000	**0,043**	0,000	0,043	**341,680**	0,000	341,680	0,000	0,000	0,000	0,043
Used tires	5.2.	20294	**792,777**	**1 402,178**	0,000	0,000	**0,000**	0,000	0,000	**1 402,178**	0,000	1 402,178	**0,000**	0,000	0,000	0,000	0,000	0,000	2 194,955
Paper/cardboard/paper bags	5.3.	20024	**40,000**	**97,205**	0,000	0,000	**0,000**	0,000	0,000	**10,500**	0,000	10,500	**126,705**	0,000	126,705	0,000	0,000	0,000	10,500
Paper bags from under the reagents	5,4	15013	**9,697**	**1,200**	0,000	0,000	**0,000**	0,000	0,000	**1,200**	0,000	1,200	**0,000**	0,000	0,000	0,000	0,000	0,000	10,897
Substandard ore, overburden (waste rock dumps)	5,5		**2 428 620 616,110**	**165 410 384,462**	0,000	0,000	**0,000**	0,000	0,000	**165 410 384,462**	0,000	165 410 384,462	**0,000**	0,000	0,000	0,000	0,000	0,000	2 594 031 000,572
Waste V hazard class all	**6.**		**9 672,094**	**1 017,375**	**0,000**	**0,000**	**261,135**	**261,135**	**0,000**	**756,240**	**664,740**	**91,500**	**0,000**	**0,000**	**0,000**	**0,000**	**0,000**	**0,000**	**10 428,334**
Including wastes by name																			
Rags	6.1.	20075	**301,871**	**91,500**	0,000	0,000	**0,000**	0,000	0,000	**91,500**	0,000	91,500	**0,000**	0,000	0,000	0,000	0,000	0,000	**393,371**
Solid domestic waste	6.2.	20015	**9 370,223**	**925,875**	0,000	0,000	**261,135**	261,135	0,000	**664,740**	664,740	0,000	**0,000**	0,000	0,000	0,000	0,000	0,000	**10 034,963**

		Total	The main site for temporary storage	Organized burial	Organized storage	Unorganized (unauthorized) landfill
5.Financial receipts from the sale of sorted waste (thousand soms)	5.	**51 839 222,000**	**51 839 222,000**	**0**	**0**	**0**
I hazard class	5.1.	**0,000**	0,000	0	0	0
II hazard class	5.2.	**22 734 920,000**	22 734 920,000	0	0	0
III hazard class	5.3.	**28 037 983,600**	28 037 983,600	0	0	0
IV hazard class	5.4.	**1 066 318,400**	1 066 318,400	0	0	0
V hazard class	5.5.	**0,000**	0,000	0	0	0

Section 3.

Characteristics of individual objects of waste disposal of the enterprise (from page 1 of section 2)

Line code	Name of the object	Waste disposal area, hectare	Mass of waste placed, at the end of the year, tons	Financial costs for the removal, use of waste, thousand soms	Financial receipts from the sale of sorted waste, thousand soms
А	Б	1	2	3	4
3.1.	Temporoary storage site	**0,568**	**3 645,471**	**1 143,925**	**51 839 222,000**
3.2.	Organized storage (tailings storage and mining dumps)	**717,214**	**2 744 323 017,079**	**9 428 567,405**	**0,000**
3.3.	Organized burial (3 landfills)	**1,162**	**61 713,948**	**1 143,925**	**0,000**
2.6.					

Section 2. General characteristics of the waste disposal sites of the enterprise

Naming of indicators	Line code	Total	Including			
			The main (production) site for temporary storage	Organized burial	Organized storage	Unorganized (unauthorized) landfill
А	Б	1	2	3	4	5
1. Number of waste disposal sites, total (units) of them: own facilities	1.1.					
Total area of waste disposal sites, total (hectares)	2	**718,944**	**0,568**	**1,162**	**717,214**	
Hazard class I	2.1	**0,001**	0,001	0	0	0
Hazard classes II	2.2.	**462,601**	0,333	0,268	462	0
Hazard classes III	2.3.	**0,158**	0,158	0	0	0
Hazard classes IV	2.4.	**255,260**	0,046	0	255,214	0
Hazard classes V	2.5.	**0,924**	0,03	0,894	0	0
From page 2 on own objects	2.6.	**718,944**	**0,568**	**1,162**	**717,214**	0
3. Mass of waste disposed, at the end of the year, total (tons)	3.	**2 744 388 376,498**	**3 645,471**	**61 713,948**	**2 744 323 017,079**	0,000
Hazard class I	3.1.	**1,132**	1,132	0,000	0,000	0,000
Hazard class II	3.2.	**150 305 809,736**	1 336,444	12 456,785	150 292 016,507	0,000
Hazard class III	3.3.	**38 936,329**	0,000	38 936,329	0,000	0,000
Hazard class IV	3.4.	**2 594 033 216,967**	2 216,395	0,000	2 594 031 000,572	0,000
Hazard class V	3.5.	**10 412,334**	91,500	10 320,834	0,000	0,000
4. Financial costs for the removal, use, disposal of waste, total (thousand soms)	4.	**9 430 855,255**	**1 143,925**	**1 143,925**	**9 428 567,405**	0,000
Hazard class I	4.1.	**0,355**	0,355	0,000	0,000	0,000
Hazard class II	4.2.	**222 505,381**	419,367	230,898	221 855,116	0,000
Hazard class III	4.3.	**721,721**	0,000	721,721	0,000	0,000
Hazard class IV	4.4.	**9 207 407,779**	695,490	0,000	9 206 712,289	0,000
Hazard class V	4.5.	**220,018**	28,712	191,306	0,000	0,000

STATE STATISTICAL REPORTING

Article 11 of the KR Law on State Statistics

Confidentiality is guaranteed by the recipient of the information

Violation of the deadlines for the submission of information or its distortion entails liability, according to the Kyrgyz Republic Code "On Administrative responsibility" # 114 dated 4.08.98

FORM #2-TP (WATER MANAGEMENT)

SCTEA 6125122

The "Kumtor Gold Company" CJSC 20312776
Name of the company, association NCEO

Djety-Oguz Region
Territory (region,district,city,locality) SDOAT

Bishkek city, Ibraimov Street, 24
Address (postal code, street, house number)

Approved by the Resolution of the National Statistical Committee of the Kyrgyz Republic # 32 dated 01.08. 2002

POSTAL - ANNUAL
BEING PRESENTED BY
Legal entities-water users no later than the 10th day after the reporting period:
1. Basin (regional) water management organization at the location of the water user.

2.Your higher-level organization.
3. Department of Water Management April 1-National Statistical Committee of the Kyrgyz Republic

WATER USE REPORT for 2022

TABLE 1.WATER CONSUMPTION BALANCE

thousand cubic meters

Name of water supply	CODES					Permitted intake of water consumption for 1 year	Actual water consumption for the reported period	including by month										
	Lines	Water body 08a	Type of water body 09a	Given to other water user O6	Water quality categories 11			January	February	March	April	May	June	July	August	September	October	November	December
A	B	C	D	E	F	1	2	3	4	5	6	7	8	9	10	11	12	13	14
From Petrov Lake							3 402,751	372 524	366 153	348 649	305 001	301 696	333 240	327 343	227 108	200 307	211 717	207 558	201 455
Surface waters							4 828,640	301 685	281 498	299 649	359 531	368 585	323 071	474 264	539 950	472 059	541 822	434 141	432 385
BMY							3 210	0,125	0,170	0,179	0,263	0,248	0,301	0,314	0,318	0,789	0,273	0,076	0,154

thousand cubic meters

Water used during the reporting period						The remainder of the water in bulk reservoirs	Transferred to other water users				After usage	Allocated to water bodies								Transportation losses
Total	Including for the needs of						Without using					Without using					Without using			
	Communal drinking needs	Industrial	Regular irrigation	Agricultural water supply	Other		Water users in the region on the territory of this district	Water users of neighboring districts (regions)	To another country			Water object code	Amount	CODE Sewage farms and other storage facilities	Amount	Water object code	Amount	CODE Sewage farms and other storage facilities	Amount	
									Code	Amount										
15	16	17	18	19	20	21	22	23	G	24	25	H	26	I	27	J	28	K	29	30
Petrov Lake	181 117	3 221,634																		
BMY	3 210																			
Surface waters		4 828,640																		

Получено 20.01.2023

TABLE 2.WASTEWATER DISPOSAL AND DISCHARGES OF POLLUTANTS.

Name of the receiving water body	CODES				Water disposal for a year thousand m3	Water discharged, thousand m3							The content of pollutants, tons.							
	Lines	Water object	Type of water object	Quality categories		Total for reported period	Without treatment			Without treatment			Biological oxygen demand in 5 days test	Iron	Suspended particles	Free Cyanide	Sulphates	Chlorides	Copper	Nikel
							Normatively treated/clean	Puluted ных	Not enough treated	Normatively treated at Treatment facilities										
										biological	physical-chemical	mechanical								
A	B	C	D	E	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Sewage Treatment Plant	O1	43	81	6	91,8	41 924				41 924			0,218	0,012	0,783	-	1,864	1,657	0,000	0,000
Industrial effluents Treatment Plant	O2	43	81		6500	6 499,997					6 499,997		-	1,242	27,828	0,070	6340,341	146,250	0,726	0,136
	O3																			
	O4																			
	O5																			

TABLE 3. OTHER INDICATORS.

thousand cubic meters

Line code	Name of indicators	Amount
A	B	1
O1	Volume of water in circulating water supply systems (without subfeed)	8 382,388
O2	Volume of water in re-water supply systems	
O3	The actual capacity of wastewater treatment plants discharged into water bodies	7606,8
O4	including those providing regulatory wastewater treatment	7606,8
O5	The actual capacity of treatment plants for wastewater treatment discharged into Sewage farms and other storage facilities	

January 19, 2023 MANAGER _____
(Stamp, signature)

Checked by:

_____ _____
(Name, position) (Signature)

Пастушенков Р., менеджер ООО _____
(Name, position, Executor telephone number) (Signature)

90-07-07

OFFICIAL STATISTICAL REPORTING

In accordance with the Law of the Kyrgyz Republic "On Official Statistics"

Confidentiality is guaranteed

Violation of the procedure, deadlines for the submission of information, its distortion and non-compliance with confidentiality entails liability established by the legislation of the Kyrgyz Republic	

FORM №#2-TP (AIR)		**6125271** **SCAR**
ANNUAL		
Approved by the Order #15 issued by the National Statistical Committee of the Kyrgyz Republic on June 04, 2014		

b

ABOUT THE PROTECTION OF ATMOSPHERIC AIR .

REPORT

for 2022

PRESENT enterprises and organizations with stationary sources of atmospheric air pollution (according to established criteria), regardless of the form of ownership and organizational and legal form, on January 20, the National Statistical Center or the territorial body of state statistics at the location

The "Kumtor Gold Company" CJSC — **NCEO**: 2 0 3 1 2 7 7 6

Name of the company, organization

Issyk-Kul region, Dzhety-Oguz district

COATE (to be filled in by the statistical authority)

Territory (region, district, city, locality)

24 Ibraimov str., Bishkek, 720031. *(312) 90-08-08*

Address (postal code, street, building number)

Industrial gold mining — **SCTEA**

Actual type of economic activity (basic one)

«19» января 2022-(Year)

Манапов К. К.

First, last name and phone number of the executor

0312 90-08-08
996 24289

Manager Кадыралиев Д. Б.

Full name

Signature

Coordinates of the statistical authority receiving statistical reporting:

Phone_____, Fax_____, e-mail_____ Website of the National Statistical Committee - www.stat.kg

20. 01. 2023

Получил:

1. Emissions of pollutants into the atmosphere, their treatment and disposal tons/year (with three decimal places)

Pollutants	Line code	Contaminant code	*Total pollutants released into the atmosphere (2+3+4)*	Pollutants released into the atmosphere without treatment		Released pollutants after treatment	Established standards for emissions of pollutants for the reporting year	Sent to treatment facilities, total	From those sent for treatment	
				from unorganized sources of pollution	*from organized sources of pollution*		*Maximum Allowable Emission /MAE/*		Caught	Disposed
A	Б	В	1	2	3	4	5	6	7	8
Total /102+103/	101	0001	760,963	665,936	69,311	25,716	857,575	135,347	109,631	-
Including: solids	102	0002	655,623	589,801	40,106	25,716	722,635	135,347	109,631	-
Gaseous, liquid /sum of lines 104-111/	103	0004	105,340	76,135	29,205	-	134,940	-	-	-
of these: sulphurous anhydride	104	0330	2,458	-	2,458	-	3,245	-	-	-
hydrogen sulfide	105	0333	-	-	-	-	-	-	-	-
ammonia	106	0303	1,114	-	1,114	-	1,427	-	-	-
carbon monoxide	107	0337	40,811	31,683	9,128	-	65,609	-	-	-
nitrogen oxides /v converted to NO2/	108	0301	55,707	42,805	12,902	-	56,360	-	-	-
hydrocarbons /without volatile organic compounds/	109	0401	4,987	1,591	3,396	-	8,071	-	-	-
volatile organic compounds/VOCs/	110	0006	-	-	-	-	-	-	-	-
other gaseous and liquid	111	0005	0,263	0,056	0,207	-	0,228	-	-	-

2. Emissions of specific pollutants into the atmosphere, tons/year (with three decimal places)

Pollutants	Line code	Contaminant code	Specific pollutants were released into the atmosphere	Established emission standards for the reporting year, tons/year Maximum Allowable Emission /MAE/
А	Б	1	2	3
	202	183		
Cadmium	203	133		
Vanadium pentoxide	204	110		
Sulfuric acid (according to the H2SO4 molecule0	205	322		
Manganese and its compounds (in terms of manganese dioxide)	206	143	0,047	0,06
Copper oxide (in terms of copper)	207	146		
Nickel metal	208	163		
Nitric acid	209	302		
Soot	210	328	0,597	0,752
Selenium dioxide	211	329		
Arsenic, inorganic compounds	212	325		

Pollutants	Line code	Contaminant code	Specific pollutants were released into the atmosphere	Established emission standards for the reporting year, tons/year Maximum Allowable Emission /MAE/
А	Б	1	2	3
Carbon disulfide	213	334		
Lead and its compounds (except tetraethy lead in terms of lead)	214	184	0,001	0,027
Gaseous fluoride compounds (hydrogen fluoride, silicon tetrafluoride)	215	342	0,056	0,071
Hexavalent chromium (in terms of chromium trioxide)	216	203		
Hydrogen cyanide (prussic acid)	217	317	0,005	0,003
Chlorine	218	349		
Bhutan	219	402		
Butylene	220	502		

Pollutants	Line code	Contaminant code	Specific pollutants were released into the atmosphere	Established emission standards for the reporting year, tons/year Maximum Allowable Emission /MAE/
А	Б	1	2	3
Hydrogen chloride (hydrochloric acid by HCl molecule)	221	316	0,059	0,011
Benzene	222	602		
Xylene	223	616		
Styrene	224	620		
Toluene	225	621		
Benz(a)pyrene	226	703	0,000012	0,000013
Phenol	227	1071		
Slate ash	228	2903		
Butyl Acetate	229	1210		
Ethyl Acetate	230	1240		
Formaldehyde	231	1325	0,143	0,144
Acetone	232	1401		
Phthalic anhydride (vapors, aerosol)	233	1508		
Acetic acid	234	1555		
Mineral oil oil	235	2735		
Diethylbenzene	236	609		

Pollutants	Line code	Contaminant code	Specific pollutants were released into the atmosphere	Established emission standards for the reporting year, tons/year Maximum Allowable Emission /MAE/
А	Б	1	2	3
Gasoline (petroleum, low-sulfur in terms of carbon)	237	2704		
Ethylbenzene	238	627		
Calcium oxide	239	128	0,474	0,507
Nitrobenzene	240	1905		
Acrylonitrile	241	2001		
Turpentine	242	2204		
Pyridine	243	2418		
Furfural	244	2425		
Mixed feed dust	245	2912		
Пыль лубяная, хлопчатобумажная, хлопковая,льняная	246	2918		
Abrasive dust	247			
Paper dust	248			
Wood dust	249			
Grain dust, starch	250			
Rubber dust	251			

Pollutants	Line code	Contaminant code	*Specific pollutants were released into the atmosphere*	Established emission standards for the reporting year, tons/year Maximum Allowable Emission /MAE/
А	Б	1	2	3
Methyl Mercaptan	252			
Flour dust	253			
Meat and bone meal dust	254			
Vegetable dust	255			
Lime and gypsum dust	256			
Coal dust	257			
Ash of coal and unburned fuel	258			
Wool, down, fur dust	G			
Dust of press powders	260			
Polystyrene dust	261			

Note: The section reflects all substances entering the atmosphere, except sulfur dioxide, carbon monoxide, ammonia, hydrogen sulfide and nitrogen oxide, emissions for which are given in section 1.

	Line code	Contaminant code	Specific pollutants were released into the atmosphere	Established emission standards for the reporting year, tons/year Maximum Allowable Emission /MAE/
А	Б	1	2	3
Inorganic dust containing silicon dioxide in %: above 70% (dinas et al.)	262	2910	0,015	0,019
from 20% to 70% (cement, clinker, sand, olivine, apatite, clay, paolin chamotte)	263		653,536	717,248
Below 20% (limestone, cinders, dolomite, etc.)	264			
Fiberglass dust	265			
Tobacco dust	266			
Other substances - solid	267	8888	0,953	1,258
Other substances- liquid	268	9999	4,987	8,071

3. Sources of emissions of pollutants into the atmosphere

	Line code	*Number of emission sources at the end of the year, units*		*Number of treatment facilities*	*of these the current*	Permitted emission of pollutants into the atmosphere , tons/year	Actual pollutants released into the atmosphere Substances, tons/year	
		Total	of them organized					
А	Б	1	2	3	4	5	6	А
Total	301	110	62	24	24	857,575	760,963	
from line 301: with established standards	302	110	62	24	24	857,575	760,963	
from line 302: maximum permissible emission /MPV/	303	110	62	24	24	857,575	760,963	

4. Implementation of measures to reduce emissions of pollutants into the atmosphere

	Line code	The total cost of the estimated costs for the measures taken, thousand KGS	Actually spent since the beginning of the implementation of the measures, thousand KGS	Reduction of pollutants emissions into the atmosphere after measures taken, tons/year		
				Expected (calculated)	Actual	
А	Б	1	2	3	4	А
Implementation (introducing) of measures that are set according to the plan in the reporting year - total	401					
including: improvement of technological processes (including reduction of unorganized sources of emissions)	402					
commissioning of new treatment plants	403					
improving the efficiency of existing treatment plants	404					
elimination of pollution sources	405					
upgrade of the workshop, work areas	406					
other activities	407					

OFFICIAL STATISTICAL REPORTING | **ОФИЦИАЛЬНАЯ СТАТИСТИЧЕСКАЯ ОТЧЕТНОСТЬ**

In accordance with the Law of the Kyrgyz Republic "On Official Statistics"

Confidentiality is guaranteed

в соответствии с Законом Кыргызской Республики «Об официальной статистике»

Конфиденциальность гарантируется

Violation of the procedure, deadlines for the submission of information, its distortion and non-compliance with confidentiality entails liability established by the legislation of the Kyrgyz Republic	**Нарушение порядка, сроков представления информации, ее искажение и несоблюдение конфиденциальности влечет ответственность, установленную законодательством Кыргызской Республики**

FORM #2-TP-RECLAMATION	**ФОРМА №-2-ТП-РЕКУЛЬТИВАЦИЯ**	**6125352**
		SCAR
ANNUAL	**ГОДОВАЯ**	
Approved by the Order #6 issued by the National Statistical Committee on July 24, 2020.	Утверждена Постановлением Нацстаткома Кыргызской Республики от 24. 07. 2020 г. № 6	

ON LAND RECLAMATION, REMOVAL AND USE OF THE FERTILE SOIL LAYER **RRPORT** **FOR 2022** **О РЕКУЛЬТИВАЦИИ ЗЕМЕЛЬ, СНЯТИИ И ИСПОЛЬЗОВАНИИ ПЛОДОРОДНОГО СЛОЯ ПОЧВЫ**

State Inspectorate of Environmental Supervision under the State Committee on Ecology and Climate of the Kyrgyz Republic **PRESENTS** a summary report – March 15, CID of the National Statistical Committee of the Kyrgyz Republic

ПРЕДСТАВЛЯЮТ Государственная инспекции экологического контроля при Государственном комитете по экологии и климату Кыргызской Республики сводный отчет – 15- марта ЦИД Нацстаткома Кыргызской Республики

The «Kumtor Gold Company» CJSC	**2 0 3 1 2 7 7 6**
Name of the company, organization Наименование предприятия, организации	**NCEO**
Issyk-Kul oblast, Dzhety-Oguz district, Kumtor mine	
Territory (region, district, city, locality) Территория (область, район, город, нас. пункт)	**COATE** (to be filled in by the statistical authority) (заполняется статистическим органом)
720031, город Bishkek city, Ibraimov Street 24, +996 312 90 07 07;	
Address (postal code, street, building number) Адрес (почтовый индекс, улица, № дома)	Telephone E-mail
	SCTEA
Actual type of economic activity (basic one) Фактический вид экономической деятельности (основной)	

«1» февраля 2023 (year)

Акжол Актилек уулу 0312 90-07-07 доб 23333

First, last name and phone number of the executor
фамилия и № телефона исполнителя

Manager Касымалиев Д. Б.
Руководитель (Full name)

Signature

Coordinates of the statistical authority receiving statistical reporting:
Координаты статистического органа, принимающего статистическую отчетность:

Phone_____, fax_____, e-mail_____, Website of the National Statistical Committee -**www.stat.kg**
Веб-сайт Нацстаткома-**www.stat.kg**

1. LAND RECLAMATION (hectares)

The name of ministries, departments, organizations, and enterprises by administrative-territorial units	Line code	Number of enterprises, organizations, units	At the beginning of the year		For the reported period									At year-end	
							Land reclamation - total								
									Out of total – have been used for:						
			Disturbed lands	Disturbed lands developed	Disturbed lands	Disturbed lands developed	Plan	Actual (8+9+10+11)	Farm lands	Another farmland	Forest shrub plantations	Water bodies, other purposes	Including those whose use has been discontinued	Disturbed lands (2+4–7)	Disturbed lands developed (3+5–7)
А	Б	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Kumtor mine		**1**	**604,7364**	**0**	**74,1061**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**678,8425**	**0**

2. RECLAMATION OF LANDS DISTURBED DURING DEVELOPMENT OF MINERAL DEPOSITS AND EXPLORATION (hectares)

The name of ministries, departments, organizations, and enterprises by administrative-territorial units	Line code	Number of enterprises, organizations, units	At the beginning of the year		For the reported period						At year-end	
								Including				
			Disturbed lands	Disturbed lands developed	Disturbed lands	Disturbed lands developed	Reclaimed land in fact, total. (7+8+9)	Farm lands	Another farmland	Forest shrub plantations	Disturbed lands (2+4–6)	Disturbed lands developed (3+5–6)
A	Б	1	2	3	4	5	6	7	8	9	10	11
Kumtor mine		**1**	**604,7364**	**0**	**74,1061**	**0**	**0**	**0**	**0**	**0**	**678,8425**	**0**

3. REMOVAL AND USE OF THE FERTILE SOIL LAYER

The name of ministries, departments, organizations, and enterprises by administrative-territorial units	Line code	Number of enterprises, organizations, units	At the beginning of the year, the deposited soil layer (thousand cubic meters)	For the reported period						At year-end	
				Removed the fertile soil layer		Improved unproductive lands with a removed fertile soil layer. (Thousand cubic meters)	Including		Used fertile soil layer. (Thousand cubic meters)	The fertile soil layer has been deposited (Thousand cubic meters).	At the end of the year, the deposited fertile soil layer (Thousand cubic meters) graps (2+4–8)
				From the area, ha	Thousand cubic meters		Farmlands	Another farmland			
A	Б	1	2	3	4	5	6	7	8	9	10
Kumtor mine		**1**	**1300,555**	**74,1061**	**389,775**	**0**	**0**	**0**	**0**	**389,775**	**1690,33**

STATE STATISTICAL REPORTING	ГОСУДАРСТВЕННАЯ СТАТИСТИЧЕСКАЯ ОТЧЕТНОСТЬ
In accordance with the Kyrgyz Republic Law "On State statistics"	в соответствии с Законом Кыргызской Республик "О государственной статистике"
Confidentiality is guaranteed	***Конфиденциальность гарантируется***

Violation of the procedure, deadlines for the submission of information, its distortion and non-compliance with confidentiality entails liability established by the legislation of the Kyrgyz Republic	**Нарушение порядка, сроков представления информации, ее искажение и несоблюдение конфиденциальности влечет ответственность, установленную законодательством Кыргызской Республики**

FORM # 4-Environmental Protection	**ФОРМА № 4-ОС**	**6125346** **SCMD**
ANNUAL	**ГОДОВАЯ**	
Approved by the Resolution of the National Statistical Committee #15 dated June 11, 2015	Утверждена Постановлением Нацстаткома 11 июня 2015 года за №15	

ABOUT THE COSTS FOR ENVIRONMENT PROTECTION **О РАСХОДАХ НА ОХРАНУ ПРИРОДЫ**

For 202_2__

PRESENT enterprises, organizations, institutions that carry out environmental protection measures regardless of the form of ownership and organizational and legal form on January 25 to the territorial body of state statistics at the location	**ПРЕДСТАВЛЯЮТ** предприятия, организации, учреждения, осуществляющие природоохранные мероприятия независимо от формы собственности и организационно-правовой формы 25 января территориальному органу государственной статистики по месту нахождения

The "Kumtor Gold Company" CJSC	**2 0 3 1 2 7 7 6**
Name of the company, organization	**ОКРО**
Dzhety-Oguz district, Issyk-Kul region, Kumtor mine	
Territory (region, district, city, locality)	**COATE** Territory (region, district, city, locality) (to be filled in by the statistical authority)
720031, Bishkek city, Ibraimova Street 24, 0312 90-07-07; info@kumtor.com; doccontrol@kumtor.com	
Address (postal code, street, buildings number) Telephone E-mail	
Address (postal code, street, house number)	
Actual type of economic activity (basic one)	**SCTEA**

«13» марта 20_23__-ж. (г.)

D. Kasymaliev 90-07-07 (доп. 4852)

First, last name and phone number of the executor

Manager____ **Daniyar Kasymaliev**

First, last name Signature

Coordinates of the statistical authority receiving statistical reporting:

Telephone_____, Fax_____, e-mail_____, Statistcial Committee website-www.stat.kg

Agreed with: Territorial Administration of the Agency for Environmental Protection and Forestry

The name of the manager and his/her signature, phone number

14.03.2023 Н.

Section 1. Investments (capital investments) in environmental protection activities

(KGS)

Name	Line code	Total (columns 2+3+4)	Including			
			Construction (new environmental facilities)	Equipment (modernization, reconstruction, replacement and expansion of basic environmental funds)	Other	
A	B	1	2	3	4	A
Total investment expenses sum of lines (02+20+-35)	01	**609792,1**	**74330,7**	**192090,6**	**343370,7**	
Investment costs in wastewater treatment plants, total (sum of lines 03+04+05+ 08+09+13+14+15+16+17+18+19)	02	**515078,1**	**11757,5**	**192090,6**	**311230,0**	
Protection of atmospheric air and climate	03					
Wastewater treatment, total	04	11757,5	11757,5			
Waste management (sum of lines 06+07)	05	0,0	0,0	0,0		
waste collection and transportation	06					
waste recycling	07	0,0	0,00	0,00		
Protection of surface and underground waters	08	192090,6		192090,6		
Protection and restoration of soils (sum of lines 10+11+12)	09					
soil erosion	10					
salinization and waterlogging of soils	11					
soil reclamation	12					
Protection and rational use of forest resources	13					
Protection of mineral resources and rational use of mineral resources	14					
Protection and reproduction of wild animals and birds	15					
Noise and vibration limitation	16					
Protection against radiation pollution	17					
Research and development in the field of environmental protection	18					
Other*	19	311230,0			311230,0	
Investment expenses (capital investments) **for integrated technologies, total** (sum of lines 21+22+23+26+27+31+32+33+34)	20					
Protection of atmospheric air and climate	21					
Wastewater treatment, total	22					
Waste management (sum of lines 24+25)	23					
Waste collection and transportation	24					

	$	Currency rate	Thousand KGS
Payment to the Nature Conservation Fund of $3.7 million. US dollars	3 700 000,000	84,1162	311 230,0
			311 230,0

Name	Line code	Total (columns 2+3+4)	Including			
			Construction (new environmental facilities)	Equipment (modernization, reconstruction, replacement and expansion of basic environmental funds)	Other	
Recycling and storage of waste	25					
Protection of surface and underground waters	26					
Protection and restoration of soils (sum of lines 28+29+30)	27					
Soil erosion	28					
Salinization and waterlogging of soils	29					
Soil reclamation	30					
Noise and vibration limitation	31					
Protection against radiation pollution	32					
Research and development in the field of environmental protection	33					
Other	34					
Investment costs for the protection and rational use of land, total (sum of lines 36+37+38+39)	35	**94714,0**	**62573,3**		**32140,7**	
Hydraulic structures	36	94714,0	62573,3		**32140,7**	
Anti-settlement, anti-landslide and anti-avalanche structures	37					
Shore protection structures	38					
Other	39	0		0		

2.Financing of investments (capital investments)

(Thousand KGS)

Name	Line code	Total (columns 2+3+4+5+ 6+7)	Including						
			The Republican budget	Local budget	Foreign grants and humanitarian aid	Foreign loan	Own funds of enterprises	Other	
A	B	1	2	3	4	5	6	7	A
Total investment expenses (sum of lines 02+20+35)	01	**609792,1**					**609792,1**	-	
Investment expenses in treatment plants total (sum of lines 3+04+05+08+09+13+14+15+16+17+18+19)	02	**515078,1**					**515078,1**		
Protection of atmospheric air and climate	03								
Wastewater treatment, total	04	11757,5					11757,5		
Waste management (sum of lines 06+07)	05								
Waste collection and transportation	06								
Waste recycling	07								
Protection of surface and underground waters	08	192090,6					192090,6		
Protection and restoration of soils (sum of lines 10+11+12)	09								
Soil erosion	10								
Salinization and waterlogging of soils	11								
Soil reclamation	12								
Protection and rational use of forest resources	13								
Protection of mineral resources and rational use of mineral resources	14								
Protection and reproduction of wild animals and birds	15								
Noise and vibration limitation	16								
Protection against radiation pollution	17								
Research and development in the field of environmental protection	18								
Other	19	**311230,0**					**311230,0**		
Investment expenses (capital investments) **for integrated technologies, total** (sum of lines 21+22+23+26+27+31+32+33+34)	20								
Protection of atmospheric air and climate	21								
Wastewater treatment, total	22								
Waste management (sum of lines 24+25)	23								
waste collection and transportation	24								
Waste processing and storage	25								

Name	#	Total (columns 2+3+4+5+6+7)	Including at the expense of:						
			The Republican budget	Local budget	Foreign grants and humanitarian aid	Foreign loan	Own funds of enterprises	Other	
Protection of surface and underground waters	26								
Protection and restoration of soils (sum of lines 28+29+30)	27								
Soil erosion	28								
Salinization and waterlogging of soils	29								
Soil reclamation	30								
Noise and vibration limitation	31								
Protection against radiation pollution	32								
Research and development in the field of environmental protection	33								
Other	34								
Investment costs for the protection and rational use of land, total (sum 36+37+38+39)	35	**94 714,0**					**94 714,0**		
Hydraulic structures	36	94 714,0					94 714,0		
Anti-settlement, anti-landslide and anti-avalanche structures	37								
Shore protection structures	38								
Other	39								

3. Current environmental protection costs

(Thousand KGS)

Name	Line code	Current expenses, total (columns 2+3)	Including at the expense of:			
			Own environmental expenses	Payments to companies providing environmental services	Among them: Payments to municipal and other state budget organizations for environmental services	
A	B	1	2	3	4	A
Total (sum of lines 02+20)	01	**10267134,2**	**10257803,5**	**9330,7**	**54,6**	
Pollution control and reduction, total (sum of lines 03+04+05+08+09+13+14+15+16+17+18+19)	02	**9867196,6**	**9857865,9**	**9330,7**	**54,6**	
Protection of atmospheric air and climate	03	**44786,2**	**37326,2**	**7460,0**		
Wastewater treatment, total	04	**477787,7**	**477787,7**	**522,0**	**0,0**	
Waste management (sum of lines 06+07)	05	**9322116,9**	**9322116,9**	**1348,8**	**54,6**	
Waste collection and transportation	06	9263740,2	9263740,2	0,0		
waste processing and storage	07	58376,7	58376,7	1348,8	54,6	
Protection of surface and underground waters	08	**4091,0**	**4091,0**			
Protection and restoration of soils (sum of lines 10+11+12)	09	**1419,9**	**1419,9**			
Soil erosion	10					
Salinization and waterlogging of soils	11					
Soil reclamation	12	1419,9	1419,9			
Protection and rational use of forest resources	13					
Protection of mineral resources and rational use of mineral resources	14					
Protection and reproduction of wild animals and birds	15					
Noise and vibration limitation	16					
Protection against radiation pollution	17	**4645,2**	**4645,2**			
Research and development in the field of environmental protection	18	**7704,3**	**7704,3**			
Other	19	**4645,2**	**4645,2**			
Protection and rational use of land (sum of lines 21+22+23+24)	20	**399937,5**	**399937,5**			
Hydraulic structures	21	114055,9	114055,9			
Anti-settlement, anti-landslide and anti-avalanche structures	22					
shore protection structures	23					
Other	24	285881,7	285881,7			

4. Financing of current (operational) expenses

(Thousand KGSom)

Name	№	Total (columns 2+3+4+5)	Including at the expense of:				Revenues from the sale of by-products	
			The Republican budget	Local budget	Own funds of enterprises	Other		
A	B	1	2	3	4	5	6	A
Total (sum of lines 02+20)	01	**10267134,2**			**10267134,2**	**0,0**	**51839,2**	
Pollution control and reduction, total (sum of lines (03+04+05+08+09+13+14+15+16+17+18+19)	02	**9867196,6**			**9867196,6**	**0,0**	**51839,2**	
Protection of atmospheric air and climate	03	44786,2			44786,2			
Wastewater treatment, total	04	477787,8			477787,8			
Waste management (sum of lines 06+07)	05	9322116,9			9322116,9			
Waste collection and transportation	06	9263740,2			9263740,2			
Waste processing and storage	07	58376,7			58376,7		51839,2	
Protection of surface and underground waters	08	4091,0			4091,0			
Protection and restoration of soils (sum of lines 10+11+12)	09	1419,9			1419,9			
Soil erosion	10							
Salinization and waterlogging of soils	11							
Soil reclamation	12	1419,9			1419,9			
Protection and rational use of forest resources	13							
Protection of mineral resources and rational use of mineral resources	14							
Protection and reproduction of wild animals and birds	15							
Noise and vibration limitation	16							
Protection against radiation pollution	17	4645,2			4645,2			
Research and development in the field of environmental protection	18	7704,3			7704,3			
Other	19	4645,2			4645,2			
Protection and rational use of land (sum of lines 21+22+23+24)	20	399937,5			399937,5			
hydraulic structures	21	114055,9			114055,9			
Anti-settlement, anti-landslide and anti-avalanche structures	22							
Shore protection structures	23							
Other	24	285881,7			285881,7			

5.Payments, fines and lawsuits for environmental pollution and rational use of natural resources

(Thousand KGS)

Name	#	Payments		Fines (for violation of environmental legislation)	Lawsuits (for violation of environmental legislation)	
		cash	non-monetary (barter, offset)			
A	B	1	2	3	4	A
Payments for regulatory discharges, emissions and waste disposal (sum of lines 02+03+04)	**01**	**26076**				
including:for water pollution	02					
for air pollution	03					
for waste disposal	04					
Payments for excess discharges, emissions and waste disposal (sum of lines 06+07+08)	**05**					
including: for the pollution of water resources	06					
for air pollution	07					
for waste disposal	08					
Payments for the use of natural resources the sum of the lines (10+11+12+13+14)	**09**					
including: for the use of water resources	10					
for the use of forest resources	11					
for the use of mineral resources and mineral resources	12					
for the use of biological resources	13					
for the use of land (non-agricultural purposes)	14					
Total payments (sum of lines 01+05+09)	**15**	**26076**		**-**	**-**	

SECTION 6

6-БЛІМ Маалымдоо **SECTION 6 For reference**

Costs of capital repairs of fixed production assets for environmental protection	01	26775,6	
including: on the protection and rational use of water resources	02	24114,6	
for the protection of atmospheric air	03	1064,4	
Others (specify which ones)	04	1596,6	