

Date: February 14, 2013



DELIVERED BY HAND

WITHOUT PREJUDICE

To: Mr. O. M. Artykbaev, Director
State Inspectorate for Environmental
and Technical Safety under KR Government

Copy: His Excellency, Zhantoro Satybaldiyev,
Prime Minister of the Kyrgyz Republic

Dear Mr. Artykbaev,

This letter and its appendices comprise our response to the key Conclusions and Recommendations contained in the State Commission's Environmental and technical Working Group, Final Report (Report) received by Kumtor on January 18, 2013. As you are aware, Kumtor has been fully cooperating with all the recent Commissions; has been subject to dozens of recent mine site inspections, audits and assessments; and made voluminous submissions to the State Commissions (and previous Commissions) in response to over 120 letters of request for information. This is in addition to KOC's routine disclosures and submission of plans and updates to a variety of state agencies.

We note also that most of the key issues raised in the Report were already covered in reports issued by previous Commissions. Also, many of these issues have been reviewed and discussed in an environmental due diligence report published by ERM and Independent Assessments by Prizma LLC. These reports have been translated and published, and are readily available on KOC's web site.

The purpose of this letter is not to reiterate the information we have already provided to the State Commission and its experts, or the independent assessments and studies which were carried out by Prizma and ERM. Instead, we have attempted to identify common ground so that we can move the discussion forward in a constructive way.

The key issues we have addressed relate to the Conclusions and Recommendations of the State Commission established by Government Decree of the Kyrgyz Republic of July 3, 2012 #465: State Commission on Kumtor 2012 – Environmental and Mining Technical Working Group Report, Received on January 18, 2013.

Preliminary Matters

Kumtor Project Agreements and Release Agreement

At the outset, we point out that the Kumtor Project is governed by the terms of a Restated Investment Agreement among the Government of the Kyrgyz Republic (the "Government") on behalf of the Kyrgyz Republic), KGC, and KOC dated June 6, 2009 (the "Restated Investment Agreement"). The Restated Investment Agreement provides a complete regime of payments to be made directly to the Government for the Kumtor Project.

Next, Centerra, KGC, KOC, Cameco Corporation, Cameco Gold Inc., Kumtor Mountain Corporation, the Government and Kyrgyzaltyn JSC are parties to a Release Agreement dated as of June 6, 2009 (the “Release Agreement”), whereby the parties agreed to release each other from any claims, including any legal, tax and fiscal matters, in respect of any matter arising or existing prior to June 6, 2009, whether such matters were known or unknown as of June 6, 2009 (except for unknown environmental damages, as defined below). The parties also agreed never to arbitrate or litigate, directly or indirectly, on any of the matters so released. Unknown environmental damages is defined to be “material damage to natural environment and/or human health caused by Kumtor Project operations that arises or is discovered after April 24, 2009 (being the date of the Agreement of New Terms, the framework agreement for the restated project agreements that now govern the Kumtor Project), but only to the extent that such damage was not reported or actually known to any governmental authority in the Kyrgyz Republic as of April 24, 2009.

In the spirit of cooperation, however, Centerra, KOC and KGC have nonetheless reviewed the various allegations that relate to matters prior to June 6, 2009 which are raised in the Report and have provided the general responses noted below. However, we note that, Centerra, KOC and KGC are relying on the provisions of the Release Agreement, which as noted above was executed in connection with a duly convened and conducted international arbitration proceeding settled as contemplated by the rules of the arbitration.

Lastly, we note that Kumtor has operated, and continues to operate, in compliance with Kyrgyz Laws on environmental, safety, and health standards.

Actions of Prior Governments

Some of the allegations in the Report appear to rely on the premise that the current government of the Kyrgyz Republic should not be responsible for obligations undertaken by prior governments. Under public international law, however, it is well established that “the legal rights and responsibility of States are not affected by changes in the head of State or the internal form of government.” (Ian Brownlie, *Principles of Public International Law* 80 (5th ed. 1998)). Arbitral tribunals have reached the same conclusion, even in cases in which the argument was made that a prior government was corrupt. E.g., *Sistem Muhendislik Sanayi Ve Ticaret A.S. v. Kyrgyz Republic*, ICSID Case No. ARB(AF)/06/1, Award of 30 September 2009 (noting that it would be problematic for a state to rely on the corruption of its own officials to preclude the admissibility of an investor’s claim) (summary at <http://cisarbitration.com/2012/07/23/icsid-tribunal-kyrgyzstans-judiciary-decisions-amounted-to-expropriation/>). Accordingly, a national government presently in power must recognize the obligations and agreements undertaken by prior governments that acted as authorized representatives of that state. Kyrgyzstan has been a member state of the United Nations since February 3, 1992, and the Government of Kyrgyzstan that was in power in 2009 – when Centerra entered into the ANT and related agreements with the Government – was the duly authorized representative of the Kyrgyz Republic, recognized not only by the United Nations but also by all 192 member states then admitted to the United Nations. Thus, it is clear that the Kyrgyz Government in 2009 had the full authority to bind – and did bind – itself and successive governments of the Kyrgyz Republic by the acts and contracts it entered into, including the ANT and related agreements, and those obligations remain applicable to this day

notwithstanding any change in the head of state or allegations of malfeasance, criminal activity or negligence on the part of previous governments.

We would welcome an opportunity to further discuss these matters with a view of constructively progressing the current situation.

Sincerely yours,

Ian Atkinson,
President and Chief Executive Officer
Centerra Gold Inc.

Copy: Almambet Shykmatov, Kyrgyz Republic, Minister of Justice
Michael Fischer, President, Kumtor Operating Company

Response to Conclusions and Recommendations of the State Commission established by Government Decree of the Kyrgyz Republic of July 3, 2012 #465: State Commission on Kumtor 2012 – Environmental and Mining Technical Working Group Report, Received on January 18, 2013

The following are responses by Centerra Gold Inc. (hereinafter “Centerra”) and Kumtor Gold Company CJSC (hereinafter “KGC”) and Kumtor Operating Company (hereinafter “KOC” or “Kumtor”) to the 22 Conclusions and Recommendations of the State Commission on Kumtor 2012 – Environmental and Mining Technical Working Group (the “Commission” or the “Working Group”) Final Report, received on January 18, 2013 (the “Report”). In addition to these responses, we welcome the opportunity to meet with members of the Working Group to further discuss these matters.

For convenience, we have set out below the Conclusion in the Report and our response. Conclusions of the State Commission appear in bold below:

Conclusion 1 – As a result of unlawful decisions taken by some Kyrgyz officials (A. Akaev, T. Chyngyshev, A. Jumagulov, E. Omuraliev, D. Sarygulov, N. Tanaev, M. Davletov) and Cameco Corporation management (A. Lewis, L. Homeniuk), development of the Kumtor gold deposit was commenced on the basis of two documents:

- **Master Agreement of December 31, 1992 with changes and amendments of January 16, 1993 and May 30, 1994 (no reflection of KR legislation requirements with regard to land use and environment protection);**
- **Concession Agreement of May 30, 1994.**

Centerra/ KOC Response:

No response is required by Centerra, KOC or KGC, as this is a statement and refers to agreements of 1992 and 1994, which predate the Release Agreement.

Conclusion 2 – Mine Site was built in 1997 with having no license and engineering design based on Feasibility Study. KOC, referring to a concession, was making decisions on mining operations contradicting legislative and standard acts of the KR, in particular, of the article 19 of Subsoil Law of the Kyrgyz Republic. As a result of that, over expenditure to the amount of USD 176 million was committed at the construction of mine site facilities.

KOC spent USD 170.1 million for construction of access ramps No. 1 and No. 2 as of July 2012 and ceased preparatory works for moving to underground mining. In accordance with information given by M. Fischer, KOC President, underground mining is planned to be started not earlier than in 2018 (letter’s outgoing No. EXE 3966 dtd. 30.10.2012). At the same time KOC started mining operations at the South-West Zone with development of one more glacier called Sarytor.

KOC Response:

First, with regards to the over expenditures of US\$ 176 million, we disagree with the implicit argument contained in the above statement that there was some impropriety or mismanagement of the

development which resulted in the over expenditure. However, even if there were cost over expenditures, which we express deny, we refer to the existence of the Release Agreement.

We note that construction of the Kumtor Mine was based on a Feasibility Study¹ which was approved by the KR Government, and subjected to all required expertise and endorsements, in compliance with the Concession Agreement as per Article 16 of KR Law 'On Concessions and Foreign Concessionaries in the Republic of Kyrgyzstan', dated March 6, 1992. As per the legislation effective at the moment when the concession was obtained by KGC, a technical design was required when developing subsoil on the basis of a license, and not with a concession². At the applicable time in question, the Kumtor Project was subject to a Concession Agreement dated May 10, 1993 and not a license. Accordingly, no engineering design was required.

We note that the issue of US\$176 M over expenditure was reviewed by a Government Commission established pursuant to KR Government Decree # 737, dated December 16, 1997, 'On establishment of commission to audit actual construction cost of the Kumtor Gold Mine'. Having reviewed the documents produced by the Commission, in its Decree # 470, dated July 15, 1998, the Government decided as follows:

1. Agree with the conclusions of the Commission to audit actual construction cost of the Kumtor Gold Mine.
2. Submit materials on audit of actual construction cost of the Kumtor Gold Mine for review by the National Representatives Assembly of KR Parliament.
3. Appoint A. S. Moiseev, Director, State Inspectorate for Architecture and Construction, as KR Government representative during review of the aforesaid issue by the National Representatives Assembly of KR Parliament.³

The result of this Government ordered audit was that the government approved the aforementioned cost over-run. Thus, this issue was already audited and resolved by another Government Commission in 1997/8.

We also note that, a look at other mining projects around the world demonstrates that Kumtor's experience of cost-overruns is not unusual without even considering Kumtor's unique, high-altitude

¹ Kumtor Operating Company Kumtor Gold Project Feasibility Study. Kilborn Western Inc. 357 Third Avenue South Saaskatoon, Saskatchewan S7K 1M6. November 1993, Revised April, 1994

² (Art. 13, Law 'On Subsoil', 1992).

³ Decree # 470, dated July 15, 1998. Results of commission to audit actual construction cost of the Kumtor Gold Mine

location. For example, Ernst and Young recently reported that the average cost overrun in the mining industry is about 71% of the original project cost estimate.⁴

Conclusion 2.1 In accordance with information given by M. Fischer, KOC President, underground mining is planned to be started not earlier than in 2018 (letter's outgoing No. EXE 3966 dtd. 30.10.2012). At the same time KOC started mining operations at the South-West Zone with development of one more glacier called Sarytor. (Repeated question from above for convenience).

KOC response:

For clarification, the information provided regarding the future of underground mining of pre-evaluated resources below 3,500 meters stated that any underground development would depend on drilling and detailed survey results – which would not occur before the completion of mining at the SB Zone, which is not expected before 2018. This means that there is no finalized plan on the part of Kumtor at this point to develop the underground. Such decision cannot be made until after Kumtor has carried out additional drilling and survey work, which is not expected to start until after 2018. This is Kumtor's current plan but it may change in the future depending on many factors, some of which are beyond the control of the Company, such as gold prices.

This issue of an underground potential and the timing of any consideration thereof is also discussed in greater detail in the most recent Technical Report on the Kumtor Mine, which is publically available information.⁵

As a result of exploration work over the past three years, which included work from the underground declines, there was an increase of reserves and resources in the area of the SB zone. In November 2012, Centerra announced an expansion of the boundaries of the Central Pit at Kumtor which increased the reserves by 58% or 3.6 million contained ounces of gold, for total open pit reserves of 9.7 million contained ounces of gold (see Centerra news release dated November 7, 2012). The increase in the open pit reserves is entirely within the Central Pit. The successful exploration drilling of the SB zone over the last three years has doubled the strike length of the SB zone and extended the SB zone resource down dip, resulting in an expansion of the resources. The resource expansion, in conjunction with the decision made in March 2012 to unload the ice above the Southeast highwall of the Central Pit, created the opportunity to expand the Central Pit with the resulting significant increase in the reserves and the extension of the mine life an additional five years to 2026.

While the expanded pit encompasses a significant part of existing SB inferred resources (which were contemplated for the underground), the option of developing an underground project in the Stockwork zone and the deeper extensions of the SB zone has been maintained. Currently, close to 1.9 million contained ounces of inferred high grade underground resources remain below the expanded pit bottom.

⁴ Effective Capital Project Execution: Mining and Metals. Ernst and Young.
[http://www.ey.com/Publication/vwLUAssets/Effective_capital_project_execution/\\$FILE/Effective_Capital_Project_Execution_Mining_and_Metals.pdf](http://www.ey.com/Publication/vwLUAssets/Effective_capital_project_execution/$FILE/Effective_Capital_Project_Execution_Mining_and_Metals.pdf)

⁵ Kumtor Technical Report dated December 20, 2012. Srathcona Mineral Services Limited, Toronto, Canada

The Company will assess this opportunity to develop the Stockwork and SB Zones underground once mining of the SB Zone is completed in the open pit, which as described above, will not be until 2018, at the earliest.

Mining at the South-West Zone, which was carried out in 2006-2008, in accordance with the “Technical Design of the South-West zone of Kumtor Deposit” (2005), which went through “positive expert conclusion” on Industrial and Environmental Safety (i.e. authorization by the appropriate KR authority), according to the Annual Mine Development Plan, which is approved by the State Inspection of Subsoil Use. As described in the 2012 Technical Report on the Kumtor Gold Project, the next stage of development of the South-West Pit is not planned before 2018.

Conclusion 3 – Inspections revealed discrepancies in the assessment of the deposit reserves. Due to the lack of proper software in the KR State Reserves Committee for Geology and Minerals Resources to estimate reserves, it was not possible to conduct appropriate reconciliation of the reserves reports provided by KOC. This is extremely unacceptable.

KOC Response:

No response required as this statement pertains to lack of software of the KR State Reserves Committee for Geology and Mineral Resources.⁶

Conclusion 4 – Formation of Unprocessed Rock Deposition Areas.

In defiance of §4, §79 of Unified Safety Regulations and article 47 of Water Law, KOC changed an area of waste disposal which was provided for in FS conditions of waste disposal, relocating it from Lysyi and Chong Sary-Tor Creeks lower reaches to glaciers.

Paragraph #4 “...It is prohibited to carry out mining operations in deviation from the approved design without preliminary approval obtained with the appropriate design organization and GGTN”;

Paragraph #7 “Selection of the location to place unprocessed rock deposition areas should be made by taking into consideration landscape, seismic, tectonic, engineering and geological, hydrogeological, climatic and other area conditions. Location of the unprocessed rock deposition areas should not hinder mining operations at the pit (cross-section). It is prohibited to place unprocessed rock deposition areas in the shaft failure and movement areas. Unprocessed rock deposition areas should be protected from ground and surface water floods. Selection of the location to place unprocessed rock deposition should be forerun by the engineering-geological and hydrogeological studies”.

⁶ Note that it is common in large international mining projects that on-going exploration continues after the initiation of a project and very often the result of this activity is the size of deposit and reserves is increased. The capacity of KR software is not a factor here.

Unprocessed rock deposition areas on the glacier were placed with no additional exploration for minerals, within the glacier movement area. Waste disposal on Davydov glacier has led to destruction of the glacier itself, walls of South-West Zone of the Central pit, frustration of current annual mine production plan and ungrounded expenditures on unprocessed rock displacement from one place to another. At the same time a number of state bodies and authorities (the list is presented in Attachment 8) issued their opinions and recommendations for waste disposal on glaciers.

Recommendation: It is recommended to identify a scope of officials guilty in mentioned violations and ascertain extent of their responsibility.

KOC Response regarding “Unprocessed rock deposition areas” being placed on the Glaciers in violation of KR Law:

First, we point out that Kumtor ceased placing unprocessed rock on glaciers from 2009 onwards.

Secondly, we point out that this Commission Conclusion discusses unprocessed rock and does pertain to “waste” or “waste disposal” as discussed more fully in KOC response to Conclusion 13 below. The Issue of placing unprocessed rock on glaciers was known by state authorities of the Kyrgyz Republic since 1994, which is referenced in the documents in Appendix # 8 of the Report of the Working Group on Environmental and Mining Expertise. In addition, project plans on the dumping of unprocessed rock are provided in the Technical Designs of the pit development and in the annual Mine Development Plans which go through relevant expert examination and thus, approval by the state authorities of the Kyrgyz Republic. Therefore, we submit that the KR Government had full knowledge of Kumtor placing unprocessed rock on the glacier, as early as 1994.

Thirdly, unprocessed rock deposition areas were located outside the limits of the designed pit contour at the time (Pit design under FS-95) and did not hinder mining operations.

Lastly, in 1994, designs on formation of “unprocessed rock deposition areas” on the Davidov glacier were developed in accordance with reports and recommendations produced by scientific research organizations (‘Ken-Too’ Engineering and Research Center, Geomechanics and Subsoil Use Institute under KR NAS (formerly Institute of Rock Physics and Mechanics under KR NAS) Water Issues Institute under KR NAS). These designs were endorsed in terms of industrial safety with GGTM KR during approval of the Annual Mine Plans. The necessity for reports and recommendations by scientific research organizations is set forth in §85, of the Uniform Safety Regulations for Open Pit Mining: ‘In case dump formation occurs in specific natural environment (high altitude, sharply stiff terrain, permafrost, glaciers, etc.) dump parameters shall be defined by a design approved by GGTM on the basis of recommendations provided by a scientific research organization.’

KOC Response on Unprocessed rock deposition areas on Glaciers with no additional exploration for minerals:

As discussed above, Kumtor’s intentions of placing unprocessed rock on the glacier has been known to the KR Government since 1994. Mine and unprocessed rock deposition plans for the period in question were considered in Kumtor’s annual mine plans that were approved annually by the required local

government officials and were located outside of the Ultimate Pit designs and economic reserves at the time. We also point out that based on Soviet era drill holes of that area, which were available to both Kumtor and the KR Government, there was no indication that a viable mineral deposit was located where the unprocessed rock was deposited. In addition, traditional methods for exploration that occur throughout the mining industry are not practical through a moving glacier as drill rods shear off due to the plastic flow of the ice.

KOC Response on Placing of Dumps on Davidov Glacier resulting in wall failure:

First, we point out that glaciers in Kyrgyzstan are moving according to natural processes of plastic flow, which is not limited to glaciers in the vicinity of Kumtor. Research carried out by leading scientific research institutes, including the KR NAS (National Academy of Sciences) and international advisors, such as the Institute of Geomechanics and Subsoil Use under KR NAS, Water Issues Institute under KR NAS, Golder Associates, and BGC, have increased the understanding of Kumtor glaciology and the reasons for the ice movement experienced at the Kumtor Project. This research has shown over the last few years that the displacement of the South-West wall of the Central Pit is not related to Kumtor depositing unprocessed rock on the Davidov Glacier, but rather is caused by the creeping of the Davydiv Glacier itself over the relatively steeply dipping bed observed in this area. “The area of the large bench slumps at the southwest corner of Central Pit ... coincides with a location where the till bed locally dips steeply toward the open pit...”⁷, i.e. the SW wall is mostly subjected to creeping and deformation under the influence of plastic flow of ice itself. As per BGC reports and monitoring results, the glacier is expected to move by itself even without unprocessed rock deposits having been placed on it. The degree of movement may have been slower, but still of material effect to operations, which would require management.

The Commission conclusion that **“Unprocessed Rock deposition on Davydiv glacier has led to destruction of the glacier itself”** is incorrect and is misleading.

We do not agree with the assertion that unprocessed rock deposited on the Davidov Glacier has resulted in the destruction of the glacier. The State Commission raised a number of concerns about Kumtor’s impact on glaciers. As is well known, portions of five glaciers are located in part within the concession area of the Kumtor Mine. The need for removal of glacial materials was already described in the Kilborn Feasibility Study (1993, 1994) and has been approved by the appropriate authorities on numerous occasions since the Feasibility Study and publically disclosed in the various 43-101 Technical Reports. The additional removal of glacial materials has become necessary to protect and enable safe mining operations, access high-grade ore, and has enabled the expansion of the Life of Mine (currently 2026).

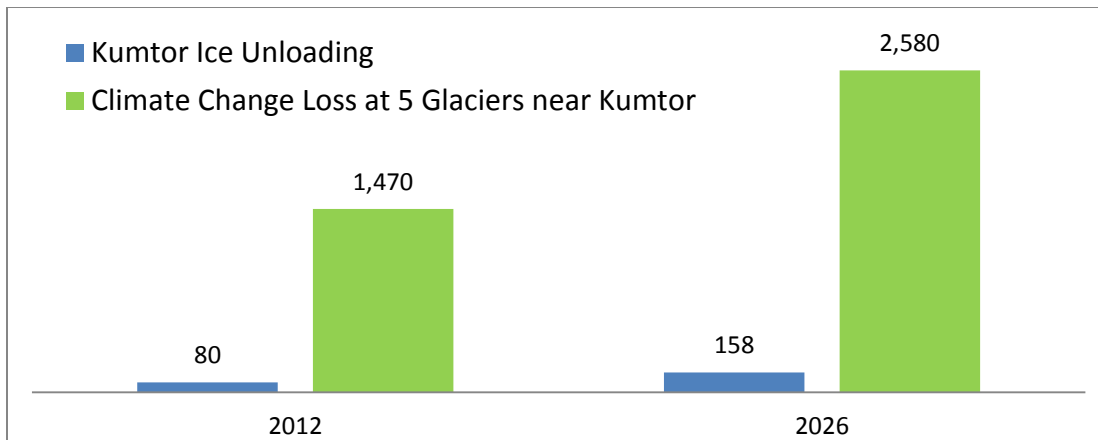
For perspective, the following bar chart compares (a) Kumtor’s ice removal and (b) the expected natural loss of ice mass of the five glaciers near Kumtor using data and predictions contained in the Kyrgyz Government’s submission to the United Nations Framework Convention on Climate Change (UNFCCC).

⁷ BGC Project Memorandum on March 26, 2012 “Kumtor Central Pit 2012 Glacier Stability Assessment”, Clause 3.3.1, page 7

The data highlights that, overall, Kumtor’s impacts on glaciers is immaterial when compared to climate change impacts in the region and across the country.

The past and future quantity of ice to be removed by Kumtor is approximately 6% of the ice volume which is predicted to be lost by the five glaciers during the years of operation in the immediate vicinity of Kumtor as a result of climate change impact. In a national context, Kumtor’s total ice removal is approximately 0.09% of the predicted loss of the country’s glacial ice due to climate change through the current Life of Mine (2026), as depicted in Figure 4.1 below. This percentage becomes even smaller when considering predicted loss of glaciers from climate change after the closure of the Kumtor mine.

Figure 4.1: Estimated Cumulative Glacial Ice Loss (Mt)⁸



Conclusion 5 – Industrial discharges from unprocessed rock deposition areas and pit waters are the major mine pollutants in terms of volume. This constitutes a serious contamination threat to surface waters in the Kumtor-Naryn Rivers and can cause irreversible environmental impact on water resources.

KOC Response:

Kumtor is broadly within acceptable compliance levels at the monitoring site W 1.5.1 (official compliance point) and at the monitoring site W 1.8.1 (near Naryn). We disagree with the Conclusion raised by the Working Group alluding to “irreversible environmental impact on water resources”.

This Conclusion reflects the State Commission’s focus on Kumtor and takes the issue of water quality out of context by not discussing the results of the Kumtor monitoring program, and additionally not discussing other significant issues, particularly in the Naryn River basin⁹.

⁸ Iliasov, S., and Yakimov, V., 2009. The Kyrgyz Republic’s Second National Communication to the United Nations Framework Convention on Climate Change, ISBN 978-9967-25-326-1

With regard to water quality issues in the Kumtor - Naryn rivers, we note that the German Institute for Environmental Hygiene and Toxicology, which was commissioned by the State Commission to collect and analyze samples within the Kumtor Concession area and adjacent areas, describes the results as follows, quote: “The results do not provide evidence of the presence of undue high concentrations of cyanide and toxic elements in surface waters at the sampling locations in this study”. This shows that if the observation of poor water quality that is being reported from Naryn can be substantiated, which it has not actually proven, additional water treatment at Kumtor which has requested by the State Commission would not solve the real problems which are apparently being experienced in Naryn.¹⁰

In addition, on 25 January 2013, the Head of the State Inspectorate for Environmental and Technical Safety Osmonbek Artykbaev announced at a meeting of the Parliamentary Majority Coalition that "Water of the [Naryn] River is mixed with mud, that’s why it looks to be unclean. But the pollution is not related to the activities of Kumtor”.

Conclusion 5.1 - About 20-30% of the unprocessed rocks have the potential for acid formation. Therefore long term acid contamination cannot be excluded: Sulfite rich ores are subject to chemical oxidation with the formation of sulfates and sulfuric acid.

KOC Response:

With respect to possible acid generation from unprocessed rock deposition areas, KOC specialists and independent experts have conducted scientific studies on Potential Acid Generation (PAG). The results of such studies do not support the State Commission’s conclusion regarding long term acid contamination. In particular, in 1993, tests were carried out by Kilborn Engineering and Lakefield Research (Canada); in 1998 and 1999, by SENES; and in 2004 and 2010, by Lorax Environmental). ARD (acid rock drainage) is not indicated by these numerous studies, and this is attributed to the high neutralization potential (70%) of the unprocessed rock. This is indirectly confirmed by results of water sample assays conducted for the State Commission, which indicate a weakly alkaline nature in rivers and streams sampled (pH of more than 8).

State Commission experts did not carry out any experiments of Acid-Base Accounting as is typical for mining projects (test on acid generation and acid neutralization potential). Therefore, their conclusion that “long-term acid contamination cannot be excluded” has not been supported by any scientific research. Further, acid pollution is not demonstrated by the Commission water samples:

⁹ (e.g. see: UNICEF, 2011. Baseline assessment of Access to Water, Sanitation and Hygiene in Schools and Hospitals in the Northern Oblasts of Kyrgyzstan (Issyk Kul, Naryn and Talas). / I. Domashov, V. Korotenko, G. Gorborkova, M. Ablezova, A. Kirilenko Bishkek, Altyn Tamga Publishing House, 2011, 104 pp.; see also: Environmental Management Plan of Naryn Oblast.

¹⁰ See citation 9

Table 2, Part 2. Results of physicochemical and chemical analyses of the water samples.

		SK 8w	SK 9w	SK 10w	SK 11w	SK 12w *)	SK 13w	SK 16w *)
Parameter	Unit	Outlet of southwest open pit	Bridge over the Kumtor River	Outlet of the central open pit	Deepest point ultimate pit	Arabel River	Spring under the tailings dam	Barskoon River
pH		8,51	8,65	7,7	8,29	8,5	7,58	8,31

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Note: pH of 8.65 at SK 9w (Kumtor River bridge)- which is the compliance point (W 1.5.1) will only have a cumulative effect of buffering the river from acid (i.e. net neutralization) – including that which is NOT related to Kumtor.

According to the results of a 15-year monitoring program at the Kumtor project, samples taken from the compliance point (W 1.5.1), which also includes pH measurements, are within acceptable compliance of International Standards for pH (6.0- 9.0).

KOC is continually exploring additional options to maintain, and ensure long-term, environmental stability of water resources. We understand the value of water resources and look for ways to continue our protection of it, in the context of our operations.

Conclusion - 5.2 Unpurified water flows from the unprocessed rock deposition areas. They have heightened content of heavy metals, ammonium nitrate and oil products

KOC Response:

Neither the results of the State Commission water samples analysis nor the results of KOC’s monitoring (carried out over a 15-year history) indicate a high concentration of heavy metals or oil products in the results from samples taken at the compliance point.

Background levels of iron and aluminum (naturally occurring) are moderately high throughout the region. KOC has acknowledged increased concentrations of sulfate, ammonia nitrogen (NH₃-N), at some of the sampling locations within the infrastructure (i.e. above the compliance point), but these are broadly within acceptable compliance of MAC standards (i.e. at compliance point W 1.5.1). In 2012, KOC monitoring at W 1.5.1 (and results from State Commission samples) found sulphate to be within MAC standards (see Table 6.1 below). The German Institute for Environmental Hygiene and Toxicology, sponsored by the State Commission, reported, quote:

¹¹ Analysis of samples of surface water, waste water, sediment, landfill and sludge collected in the area of the Kumtor Gold Mine, Kyrgyz Republic, in October 2012. Institute for Environmental Hygiene and Toxicology (Hygiene-Institut des Rehrgebiets, Gelsenkirchen; Institute für Umwelthygiene und Toxikologie), Gelsenkirchen, Germany. Page 11.

“The increased concentration of sulfates presumably are related to the oxidation of sulfidic minerals such as pyrite, which are constituents of rocks and sediments in the area, and which are mobilized by mining and milling... the water of these rivers may be used as water for human consumption and as water for feeding animals without concern. The elevated levels of ammonia, sulfate and iron do not represent hazard for humans”¹² (underlining added in this response letter for emphasis).

KOC monitoring does not support that there is any non-compliance for oil products in water at the compliance point W 1.5.1. In addition, KOC has not been provided any details as to the data that supports this allegation.

Conclusion - 5.3 There is gradual and long-term accumulation of acid and sulphate contaminations in the area of bottom sediments, biota and their further migration downstream of the Naryn River.

KOC Response:

The sediment data from the State Commission-sponsored sampling does not support “contamination” as described by the above conclusion. The report cited above by the German Institute for Environmental Hygiene and Toxicology states, quote: “The data do not provide evidence of sediments and landfill with undue high concentrations of toxic elements and cyanide at the sampling locations of this study”.¹³

A second report, dated December 16, 2012, provided by the Josef Stefan Institute (JSI) Ljubljana Slovenia, which provided an analysis of river and stream sediment samples taken for the Commission as indicators for environmental pollution from the Kumtor Industrial area concluded:

“The results showed a tendency of increasing element levels at the sampling points affected by the Kumtor milling and ore processing operations over an extended period of time. It should be noted that the concentration levels of the elements analyzed in the environment were within the limits typical for such industrial operations and were below the values which indicate an environmental pollution or contamination situation”¹⁴. (underlined added in this response for emphasis).

¹² Analysis of samples of surface water, waste water, sediment, landfill and sludge collected in the area of the Kumtor Gold Mine, Kyrgyz Republic, in October 2012. Institute for Environmental Hygiene and Toxicology (Hygiene-Institut des Rehrgebiets, Gelsenkirchen; Institute für Umwelthygiene und Toxikologie), Gelsenkirchen, Germany. Page 22.

¹³ Analysis of samples of surface water, waste water, sediment, landfill and sludge collected in the area of the Kumtor Gold Mine, Kyrgyz Republic, in October 2012. Institute for Environmental Hygiene and Toxicology (Hygiene-Institut des Rehrgebiets, Gelsenkirchen; Institute für Umwelthygiene und Toxikologie), Gelsenkirchen, Germany. Page 13.

¹⁴ Kumtor Final report. Analysis of river and stream sediments from the Kumtor gold mine area, Kyrgyz Republic. 16, December, 2012. Peter Stegnar, PhD., Professor, Scientific Advisor of the Jozef Stefan Institute and Head of projects at Technomedica, Ljubljana, Slovenia

A cumulative contamination effect from discharged treated effluent water, in-pit and unprocessed rock deposition areas run-off waters is not demonstrated by any data provided by the State Commission members or by experts. In fact, the State Commission did not carry out any investigation on determination of the cumulative effect of the “long-term accumulation of acid”. Acid Rock Drainage is not predicted due to the high neutralization potential of the unprocessed rock materials (70%), which is described above (Section 5.1), and this fact is also supported by the pH data of the State Commission samples from 2012 (see above response).

With respect to “gradual and long-term accumulation of... sulphate contaminations in the area of bottom sediments, biota and their further migration downstream of the Naryn River” (which we do not agree is occurring), as per many scientific publications, including those of the World Health Organization¹⁵, it is established that sulphates are commonly found in drinking water – elsewhere in the world and at similar concentrations reported by Kumtor and the State Commission water sample analysis at the compliance point (W 1.5.1) and that sulphates in the drinking water at these concentrations do not exhibit toxic or cumulative effects. This is also demonstrated by the results over the 17-year baseline sampling and monitoring of qualitative and quantitative content of aquatic biota in the Kumtor area aquatic habitats, which do not show impact from industrial and domestic activities associated with the Kumtor Mine. It is baseless to assert any cumulative effect, especially regarding further migration of polluted stream sediments downstream of the Naryn River. We also point out that a number of commercially available bottled mineral waters in Kyrgyzstan have sulfate contents of up to 1700 mg/L (over three times more than levels at the KOC compliance point) and that San Pellegrino bottled water, which is consumed throughout the world, has concentrations of 500mg/L.¹⁶

Conclusion 5.4 - In what follows ecological problems will aggravate because of increase of a number of unprocessed rock deposition areas, destruction and contamination of glaciers. By the moment of mine closure it is expected that total rock mass in unprocessed rock deposition areas will be 1.7 billion tons.

KOC Response:

Although the Report does not specifically define “ecological problems” - we assume this is a reference to water quality in general in a regional context. With regard to water quality issues in Naryn (also discussed in section 5.2), we reiterate that the German Institute for Environmental Hygiene and Toxicology, which was retained by the State Commission to collect and analyze samples within the Kumtor Concession and adjacent areas, describes the results as follows: “The results do not provide evidence of the presence of undue high concentrations of cyanide and toxic elements in surface waters at the sampling locations in this study”.

¹⁵e.g. http://www.who.int/water_sanitation_health/dwq/chemicals/sulfate.pdf

¹⁶ http://www.finewaters.com/Mineral_Water.asp (San Pellegrino is exported to most countries in Europe, the Americas, the Middle East, and Australasia, as well as to Japan, Taiwan, and Hong Kong)

Conclusion 6 - Soil, water and bottom sediments analysis, carried out by local and foreign laboratories, showed that high density metals distribution by sampling points downwards the sources of anthropogenic pollution exceeds maximum allowable concentrations (MAC) in the range between 2 and 6.5 times as much. Particularly, with regard to water at the end of mixing zone: exceedence of MAC of arsenic is 2 times, manganese and ammonium nitrates – 1.7 times, iron – 4 times, sulphates – 1.4 times.

- in bottom sediments at the End of Mixing Zone (EMZ) as compared with background: exceedence of MAC of tungsten is 6.5 times as much, molybdenum – 6.12 times, cadmium – 4.68 times, cobalt – 4.27 times, chromium – 4.24 times, arsenic – 4 times, lead – 3.43 times as much.

KOC Response:

Conclusion No 6 is inaccurate and misleading. As stated in section 5, the Laboratories did not find “undue concentrations of cyanide and toxic elements in the surface water”¹⁷; nor did they indicate “an environmental pollution or contamination situation”¹⁸ from the sediment samples. First, there is no discussion of natural (background) conditions in this Commission Conclusion for both water and sediment in the Kumtor area, which is more fully discussed in laboratory reports described above from “both local and foreign laboratories”. Evaluation of the complete data set from these laboratories demonstrates high background concentrations of iron and aluminum in water - both above and below Kumtor - the Arabel River and the bridge over the Barskoon River, and the Kumtor compliance point (see Table 6.1 below). With respect to bottom sediments at the End of Mixing Zone (EMZ) described above, we point out that the relatively high background concentrations of arsenic, cobalt, chromium and lead are demonstrated by the Commission sampling – which does not indicate “anthropogenic pollution” (ie: is not pollution causes by humans) (see Table 6.2 - below).

Results for water sample analysis:

Results from these laboratories did not report arsenic concentrations at 2 times above MAC¹⁹ (which is 0.01 mg/L). Data from the German Institute for Environmental Hygiene and Toxicology reported arsenic at 0.002 mg/L (KOC data reports < 0.005 mg/L). Regarding manganese (for which MAC is 0.1 mg/L), data from the German laboratory reported manganese concentrations of 0.171 mg/L at the compliance point (EMZ) (KOC reports 0.175 mg/L) from this one sampling event. KOC monitoring from 2012 and 2011 reports annual average manganese concentrations of 0.154 mg/L to 0.371 mg/L. We point out that at this concentration of manganese is harmless and does not indicate “pollution”. For comparison, the

¹⁷ Analysis of samples of surface water, waste water, sediment, landfill and sludge collected in the area of the Kumtor Gold Mine, Kyrgyz Republic, in October 2012. Institute for Environmental Hygiene and Toxicology (Hygiene-Institut des Rehrgebiets, Gelsenkirchen; Institute für Umwelthygiene und Toxikologie), Gelsenkirchen, Germany

¹⁸ Kumtor Final report. Analysis of river and stream sediments from the Kumtor gold mine area, Kyrgyz Republic. 16, December, 2012. Peter Stegnar, PhD., Professor, Scientific Advisor of the Jozef Stefan Institute and Head of projects at Technomedica, Ljubljana, Slovenia

¹⁹KR MAC Standards (Maximum Allowable Concentration) for “Communal Use” have historically been the criteria for compliance at Kumtor W 1.5.1

World Health Organization reports that an average cup of tea will typically contain manganese concentrations between 1.6- 5.2 mg/L²⁰, or over 10 times more than the highest levels observed at the compliance point.

We acknowledge that the results from the Commission samples for iron reported concentrations of 1.050 mg/L – which is described by the German laboratory report as lower than background (naturally occurring) levels - again not anthropogenic pollution. Sulphate and ammonia-N (we assume the Commission reference to ammonium-nitrate is ammonia-N) are acknowledged by Kumtor and discussed in detail in section 5 above. We also point out that the results below from Commission samples and KOC monitoring show sulphate in compliance with MAC Standards for water.

Table 6.1 Comparative results of water sampling from Commission sponsored international laboratory (Institute for Environmental Hygiene and Toxicology – German Laboratory) and KOC’s data for October 2012 (Alex Stewart Assayers Laboratory) and averaged annual monitoring results for 2011-2012.

Analyte	Description	Units	Maximum Allowable Concentration (MAC) for Communal Use	Petrov Lake Outlet Sample SK1		End of Mixing Zone - EMZ Sample SK9 KOC Monitoring Pt: W1.5.1		Arabel River Sample SK12 KOC Monitoring Pt: W4.1		End of Mixing Zone - EMZ KOC Monitoring Pt: W1.5.1 ASA Laboratory Data	
				ASA Laboratory	Germany Laboratory	ASA Laboratory	Germany Laboratory	ASA Laboratory	Germany Laboratory	2011 Average	2012 Average
SO4	Sulphate	mg/L	500	15	14	400	416	6	9	317	240
NH3-N	Ammonia - N	mg/L	1.5	<0.04	0.08	3.00	4.34	<0.04	0.10	1.98	1.67
As	Arsenic	mg/L	0.01	<0.005	0.002	<0.005	0.002	<0.005	0.001	0.005	0.005
Fe	Iron	mg/L	0.3	3.50	2.79	2.85	1.05	0.297	1.77	2.82	2.15
Mn	Manganese	mg/L	0.1	0.107	0.103	0.175	0.171	0.020	0.112	0.371	0.154

Results for bottom sediment sample analysis:

In addition to the issue of high background concentrations of the elements discussed above in bottom sediments, the Commission describes “Exceedance of MAC” for bottom sediments, when in fact there is no MAC Standard established in Kyrgyzstan for sediments. We point out that in addition to absence of MAC standards for sediments and data that is typical for background conditions, the data reported by the Laboratory from Slovenia that analyzed the sediment samples also had a qualification that results for Tungsten, Barium, Cadmium, Molybdenum, Bromine, Tellurium and Gallium were from non-accredited activity: “# results relate to non-accredited activity”²¹. Thus it is unreasonable to describe this date set as depicting “exceedances of MAC”, given that 1) there are no KR MAC Standards for sediments and 2) some of the data is un-accredited.

Table 6.2 Comparative results from Commission sponsored sediment analysis and average composition of the earth’s crust. Laboratories referred to below are: Alex Stewart Assayers (ASA); Institute for Environmental Hygiene and Toxicology (German Laboratory); and Jozef Stefan Institute (Slovenia).

²⁰ http://www.who.int/water_sanitation_health/dwq/chemicals/manganese.pdf

²¹ Kumtor Final report. Analysis of river and stream sediments from the Kumtor gold mine area, Kyrgyz Republic. 16, December, 2012. Peter Stegnar, PhD., Professor, Scientific Advisor of the Jozef Stefan Institute and Head of projects at Technomedica, Ljubljana, Slovenia

Analyte	Description	Units	End of Mixing Zone - EMZ Sample SK9 KOC Monitoring Pt: W1.5.1			Arabel River Sample SK12 KOC Monitoring Pt: W4.1			Barskoon Sample SK16	Natural Composition of the Earth's Crust (Extract from Wedephol, 2004)			
			ASA Lab	Germany Lab	Slovenia Lab	ASA Lab	Germany Lab	Slovenia Lab	Germany Lab	Shales	Granitic Rocks	Limestones	Continental Crust
			As	Arsenic	ppm	14	16	16.5	14	13	15.3	16	10
Cd	Cadmium	ppm	<0.5	<0.2	<4.48#	<0.5	<0.20	1.87#	<0.2	0.13	0.1	0.16	0.1
Co	Cobalt	ppm	11	13	14.2	14	12	14.4	7.4	19	4	2	24
Cr	Chromium	ppm	15	20	58.1	33	34	71.3	19	90	12	11	126
Pb	Lead	ppm	7	11		16	16		7.5	22	32	5	15
Mo	Molybdenum	ppm		2.2	3.00#		0.53	<0.9#	<0.5	1.3	1.8	0.4	1.1
W	Tungsten	ppm			6.11			2.50					

results relate to non-accredited activity

In summary, the data collected during the Commissions site visit are either similar to background conditions or there is insufficient data to make statistically valid assertions relating to “anthropogenic pollution”. Finally, as we have pointed out in the response to Conclusion 5.3, water organisms act as indicators of water and sediment environmental contamination. Kumtor conducts hydro-biological research, i.e. study of zooplankton and zoobenthos in rivers and water bodies in the vicinity of the Kumtor Mine. The results of these studies reflect the purity of the natural water courses and water bodies, on the basis of species diversity and the quantity of aquatic biota present. The fact that species composition and quantitative development of invertebrates inside water courses and water bodies within the territory of the Kumtor Mine remains virtually invariable since 1993 (before commissioning of the Mine) until present, despite regular discharge of treated effluents since 1999, suggests that the Kumtor Mine discharges have had no material impact on the aquatic fauna of water bodies within the Kumtor mine and the immediate downstream aquatic habitats. Based on the available data, there is also no material impact from Kumtor as far away as Naryn or beyond.

Conclusion 7 – Mill. From 1997 to 2012 Kumtor Open Pit Mine produced 260 tons of gold. More than 400 tons of gold are to be produced.

7.1 In the meantime, gold recovery target of 80.1% is not always achieved (for example, in 2007 gold recovery was 72.9%, in 2008 – 72.7%). As a consequence, above-standard losses for the whole period of KOC operation calculated to be 5.543 tons of gold.

Centerra/ KOC Response:

Recovery of gold from ore depends on many factors, most importantly the ore type and its grade. We believe that comparison of the so called “standard” of gold recovery set out in the Feasibility Study with the actual gold recovery throughout the mine life cycle (to date) is faulty because of many reasons. First, the gold recovery indicator specified in the Feasibility Study was based on the evaluation of a specific ore type (the Stockwork area). The Feasibility Study expressly states that ‘Data on recovery of gold from ores of the Northern and Southern areas are incomplete and require confirmation’. As the mine was developed, ore with absolutely different features and from different ore areas of the pit was fed into the Mill, for instance, from the Northern and Southern areas, South-West Pit, and from the SB zone. For example some of the ores were found to have finely embedded sulfides contained in ores.

Secondly, the gold recovery rate of 80.1% in the Feasibility Study was determined for ore with an average grade of 4g/tonne. The 15-year experience of the Mine development shows that ores with grades both above and less than 4 g/tonne were fed into the Mill, which, naturally, influenced recovery.

In order to ensure further improvement of the technological process the Company continuously reviews and implements, where appropriate, measures to increase recoveries. KOC management has analyzed and optimized processing to maintain or improve recovery with changing ore characteristics through flotation reagent changes and the addition of the IsaMill. We note that the reconfiguring of the two carbon-in-leaching (CIL) circuits to provide additional pre-aeration, as required for concentrate processing, results in lower cyanide usage, which provides environmental benefits (less cyanide to treat) and lower operating costs.

Conclusion 7.2 - In addition, by-product minerals are not recovered at all (tellurium, trioxide of tungsten, sulphur). On the side of state authorities no supervision is provided on ore content, recovery efficiency and recovery target achievement.

KOC Response:

The Kumtor Gold Project Feasibility Study (November 1993, Revised April 1994) Section 5.3.4 – By-Product Recovery states the following, quote:

“Tellurium (Te) – The estimated operating costs without consideration of capital payback exceed the projected revenues by 50 times and therefore the economics of recovery of Te are Dismal.”

“ Tungsten (WO₃) – The operating costs without consideration for payback of the capital costs exceed revenue by three times and therefore further investigation of the recovery of tungsten is not warranted.”

“Sulphur – Kilborn has examined the economics of acid production for similar projects. The required acid plant would probably cost about US\$ 30 million to install.----- Using a realized value of \$10/t for sulphuric acid produced at the Kumtor site, a net revenue of about \$4 million per year might be possible. Based on a capital cost of \$30 million, this is clearly a poor return on investment.” In addition, sulphuric acid is a dangerous chemical and its production would likely increase environmental risks at the mine.

The Feasibility Study is quite explicit on the unfavorable economics associated with Tellurium, Tungsten, and Sulphur. In addition, the Feasibility Study evaluated other metals of potential interest, including Silver, minor amounts of Copper, Lead, Zinc and Selenium. All were determined to not be sufficient to justify any incorporation of special processing techniques to recover them as saleable products. KOC sees no fundamental reason why the economics of extraction would have changed and hence agrees with the original Feasibility Study. If the Working Group wishes to study this further then they should do so at their own cost.

Conclusion 8 - KOC management did not introduce a water recycling system

In defiance of §4 of the Unified Safety Regulations, KOC with the view of funds savings did not introduce recycling water supply system, which was provided for in FS, and which would have reduced effluents discharge to the Kumtor River basin.

KOC Response:

For clarification, the Feasibility Study described “Reclaim/ Process water”²² and also states: “Tailings supernatant will be reclaimed using vertical turbine pumps located on a barge within the tailings disposal area.Flotation concentrate wash thickener overflow and flotation tailings thickener overflow will be recycled to the process water tank for reuse in the process. Fresh Water can be added to the process water if sufficient reclaim water is not available.”

A mill “Process water” recycling system has been implemented.

Other recycling strategies – such as reclaiming of treated TMF water or TMF supernatant have not been adopted for reasons described in detail below. Kumtor has reviewed this process in the past (in one case at the request of a board member of Centerra) and has determined that the process would not be appropriate based on both economic and environmental concerns.

1. Recirculating treated water could negatively impact gold recovery - The presence of even minor quantities of residual cyan-ions (free cyanide) significantly impacts the recovery of gold in the flotation process. For instance, results of the research held in 2012 at the metallurgical lab of the Kumtor Mine suggests that the availability of cyanides in water in concentrations of 0.012 mg/l, led to reduced gold recovery by approximately 10% - 12% due to suppression of pyrite flotation by cyanide.
2. Recirculating treated water can occur for only 4- 4.5 months of the year - Due to harsh climate conditions at the Kumtor mine, the effluent treatment plant (“ETP”) can only function for 4 to 4.5 months of the year (early June to early October) - During the remaining period, the Kumtor River is frozen. Therefore, treated water could only be used in this period. During the rest of the year, i.e. for 7.5 - 8 months, water to the Kumtor mill will still have to be supplied from Petrov Lake. We also note that for the 4-4.5 month period, approximately 5 million m³ of effluents are treated, whereas the Kumtor mill only consumes approximately 2 million m³ of water. Therefore, when the recirculating water system could be used (during the 4-4.5 period per year), more water would be treated than could be used by the Kumtor mill during this period, resulting in the treated effluent (approximately 3 million cubic meters) being discharged into the Kumtor River.
3. Additional environmental risks would be created - In order to feed water from the ETP into the recycle water supply system Kumtor would have to build an additional water pumping station near the ETP. Pressure within this pipeline would be considerably higher as compared to the pressure in the pipeline supplying water to the mill from the Petrov Lake, as the 3rd pond is located at the elevation of 3,660 m, i.e. approximately 74 meters lower than the pumping station at the Petrov Lake (3734 m). The resulting high pressure in the pipeline, which would be located next to the 2 tailings pipelines supplying

²² Kilborne Feasibility Study 1994. Volume 1. Section 5.10.2. Page 5-51.

tailings to the TMF would create additional environmental risks in the case of a breach of the suggested ETP pipeline to the mill.

The allegation that Kumtor has not complied with this condition, which we expressly disagree with, is more fully described below: We understand that there is considerable complexity around this issue of “water recycling” and would like to help clarify the requirement and to show that Kumtor complies with the condition in the water permit.

There are (at least) two meanings for “water recycling” that can be carried out at Kumtor, both of which serve the purpose of using less water from Lake Petrov:

- a) Circulating water supply (“оборотное” in Russian): This is a water supply system implementing the re-use of water treated after its use in technological processes.
- b) Repeating water supply (“повторное” in Russian): This is a closed system implementing the re-use of water in a technological process without any interim treatment

The permit for water use from the Petrov Lake was conditioned by the usage/utilization of repeating water supply (the Russian word, “повторное” is specifically used). Kumtor is in full compliance with this condition. In particular, we note that the repeating water supply process is being fully exploited by Kumtor in the mill (in-mill water circulation):

- approximately three (3) million m³ of water after the flushing thickener and the tailings flotation thickener is re-directed to the grinding process annually; - about one (1) million m³ of water after the final tailings thickener is re-directed to the leaching process annually;
- approximately one point four (1.4) million m³ of water after the concentrate thickener is re-directed to the technical water tank annually for subsequent use for the mill’s technological needs.

Thus, about five point four (5.4) million m³ of water is recycled at the mill. This volume is comparable to the entire volume of water used by Kumtor for industrial purposes (about 5.5-6 million m³ of water per year).

Conclusion 9 –Tailings Management Facility: “Tailings Pond”

At the end of 2012 Second Quarter the volume of material contained in the tailing pond was 60 M m3. Further increase in tailing volume (up to 93M m3) will lead to load increment, enhancement of load increment influence upon tailing pond dam condition and may result in destabilization of both tailing pond and tailing pond dam.

Dam displacement was observed as early as 1998. From 1998 to 2006 it came to 280 mm, from January 2007 to July 2012 displacement rate was 124 mm. In this connection in 2006 there was arranged a bottom shear key up to 38 m long and 10-12 m deep. In 2009 shear key was widened on bottom by 40 m more at a depth of 10-12 m, and buttress was constructed 14 m high along the whole dam length. In the period from January 2007 to March 2012 the maximum dam displacement was 124 mm.

Due to errors made in a designing and construction stage, KOC executed strengthening works, spending considerable funds (about USD 5M per year), in total there were spent more than USD 43M, whereas construction cost came to USD 9.6M.

Dam strengthening works are to be completed in 2016, which will be accompanied with additional expenditures, whereas according to KOC information USD 60-70M are required for construction of new tailing pond.

KOC Response:

KOC has studied this issue at great length, with expert review and recommendations from both national and international experts and maintains that increasing the capacity of the existing TMF, which is stable, is the preferred management option compared to all other studied alternatives. The determination of whether to construct a new tailings facility (TMF) should be based on:

1. Relevant engineering estimates and monitoring data confirming the danger of further utilization of the existing dam;
2. The inability to ensure stability of the existing dam resulting from further raising of the dam;
3. Lack of space in the current tailings dam in the case of expanding mine production; and
4. Acceptable levels of environmental impact resulting from the additional increase of the project footprint and loss of habitat, (including soil, pastures and vegetation cited elsewhere in the Conclusions of the Commission Report).

KOC has explored the option of constructing a new TMF and has determined it to be unnecessary, especially in light of the additional unnecessary environmental impact. In 2006-2007, specialists from BGC Engineering, ECO-Service, and 'GEOPRIBOR' Scientific Engineering Center (Director I. A. Torgoev) under the Institute of Geomechanics and Subsoil Use, studied 10 alternative locations for a new tailings facility. The preferred location of this study is outside the Kumtor Concession and is therefore not practical. Given the consideration of environmental impacts associated with a new TMF, which we feel would be substantial, Kumtor has endorsed the alternative of increasing the capacity of the existing TMF. This opinion is also supported in the most recent Kumtor 43-101 Technical Report.²³

We submit that the concerns regarding dam instability are based on allegations and fears of some experts that are not confirmed by investigation findings and engineering. Kumtor has reviewed at length over the years this issue of the dam stability, including obtaining expert advice from local and international experts. The decision made by Kumtor to raise the height of the dam rather than building a new one is supported by such international opinions.

With respect to concerns raised by the Commission relating to stability of the existing tailings dam: Estimates by specialists of the Institute of Geomechanics and Subsoil Development (IGSD) under KR National Academy of Science, "BGC Engineering" Company of Canada and by designers of Geoservice SDC IGSD in 2006 and 2007 carried out in accordance with advanced methods and software indicate that

²³ Kumtor Technical Report dated December 20, 2012. Srathcona Mineral Services Limited, Toronto, Canada

the dam movement rate should decrease gradually to the lowest values (less than 3 mm per year) by 2025, subject to compliance with the schedule of work on construction of the shear key and buttress including dam raising works planned for a period before 2016. By raising the dam, the shear key and buttress will effectively become part of the dam basement, which is expected to increase the stability of the dam.

Specialists of the “Mehanobr Engineering” CJSC (former Lenmehanobr), St. Petersburg, Russia, together with the scientists of the Laboratory of Soil Mechanics and Stability of Tailings Facilities of St. Petersburg State Polytechnical University have issued a positive expert opinion regarding the dam stabilization and dam increase design (based on their own engineering estimates).

Furthermore, monitoring data confirms the gradual decrease of the dam movement rate. From January 2007 until November 2012, the maximum movement experienced at the dam was 2.7 cm (about 2.1 cm/year), i.e. the dam movement rate decreased twice in comparison with 1999-2006 (3.5-4.5 cm/year), as predicted, and the current state of the dam is stable.

KOC offers to arrange a meeting on tailings dam stability involving local and international experts for discussions and modeling of the dam crest raise up to a final level sufficient to accommodate all future tailings produced from the operations – considering all relevant environmental, economical, logistical and safety issues.

Conclusion 10 – Petrov Lake

The results of the studies carried out in 2006-2009 by local and international experts and research institutes ascertain that there is the probability of Lake dam damage, which may create a hazardous situation for tailing dump. Recommendations were made to decrease Petrov Lake water level.

KOC involved in pre-design decisions preparatory work the Institute on water management and reclamation construction OJSC “Sevkavgirovodhoz”. KOC is planning to complete development of the project on scheduled water level decrease in Petrov Lake in 2-3 Quarter 2013.

KOC implements pumping out water from Petrov Lake for its own use, but that is not enough for stabilization of water level in Petrov Lake. At present Petrov Lake water volume is increasing (1.8 M m³/per annum) and the probability of natural dam failure is on the rise as well.

If appropriate measures are not taken on prevention of mud flow formation at inevitable Petrov Lake outburst, ecological catastrophe on a regional scale as pollution of the Naryn River basin by Kumtor tailing dump cyanides will be unavoidable.

KOC Response:

First, it should be noted that the annual increase of water volume in Petrov lake doesn't influence on increase of possibility of natural moraine dam break since this increase of water volume is occurred due to retreat of the end of Petrov Glacier tongue in eastern part of lake. The relief of the lake bottom will not allow for major portion of the water to go out of the lake towards Kumtor valley.

The following specific actions are underway as of December 2012:

In October 2012 KOC concluded a contract with the “Sevkavgiprovodhoz” Design Institute for development of the pre-design concepts on planned decrease of the Petrov lake water level. This Design Institute is experienced in designing hydro technical constructions in mountain areas for protection of local communities residing at areas susceptible to mountain river and/or mountain lake outburst hazards. As per the request of their specialists we have provided them with essential material including an orthophotomap of the Mine’s current infrastructure, a set of geodesic profiles of the Petrov Lake moraine dam relief, planned and high-altitude position of the Kumtor riverbed (from its source to the lower bridge) and its main tributaries, data on water discharge of the Kumtor River and its main tributaries at the mine site, water intake construction, actual geometric parameters of under-bridge openings at the mine site, general location plans of constructions etc. required for completion of pre-design concepts.

Based on the pre-design concept prepared by “Sevkavgiprovodhoz”, a local design company that has all necessary licenses and designing permits will develop the engineering project on Petrov lake water level decrease, and the project will be submitted to authorities for the construction, operational and environmental safety expert review. KOC is planning to finish the Petrov Lake water level decrease design in the second or third quarter of 2013. KOC will be able to launch the project of planned water level decrease at the Petrov Lake only after obtaining all required positive expert opinions.

At the same time, in accordance with the recommendations of the Consulting Company “BGC”, the Petrov lake moraine dam monitoring program will be continued including the LiDAR program and geotechnical prospecting (well drilling); the emergency moraine dam outburst warning system will be developed and installed; tailings dam downstream enforcement, tailings bridge footing stabilization, and electric poles foundation enforcement projects will be implemented.

Conclusion 11 - Emissions.

Main sources of atmospheric air pollution are Pits, Unprocessed rock deposition areas, Mill, Crusher area, Laboratory, Batch Plant and vehicles. Great bulk of contaminants is inorganic dust derived from blasting in volume of 849.5 tons per year. Within the work of the State Commission there were adjusted calculations and specified payments for emissions to the air over the period from 2009 to 2011. According to experts’ calculations, there were revealed unrecorded volumes of emissions to the air from the stationary and mobile sources. Discrepancies were observed in standard-technical documentation (ecological certificates, Maximum Permissible Discharge standards adjustments), data adequacy and comprehensiveness is not ensured. There are infringements of keeping emissions record and filling in dust and gas collectors system certificates. Emissions volumes at Kumtor Mine determined using calculation method are understated, which result in understated values of the detriment from emissions. State environmental protection agencies of the KR have not specified coordinated list of methodologies to be applied when calculating emissions rates. In the course of activity KOC exceeded emissions standards by 12.5 tons (actual quantity is 875.146 t) in 2010. Calculations of emissions charges are not accurate regarding definition of coefficients, which are

undervalued many times. Calculations of emissions charges are not accurate regarding definition of coefficients, which are undervalued many times

KOC Response:

Rates for emissions from mobile and stationary sources, beginning from 2009, are provided by the Restated Investment Agreement of 2009, which defines the procedure for the calculation of fees for environmental pollution. In accordance with the Restated Investment Agreement, KOC transfers 310,000 U.S. dollars annually to the Treasury of the Kyrgyz Republic as payment for environmental pollution, including fees for emissions, discharges and waste disposal. Accordingly, no additional response is needed for the above conclusion.

As contemplated in the Restated Investment Agreement (and endorsed by the Parliament pursuant to the New Kumtor Law dated as of April 30, 2009, as defined in the Restated Investment Agreement) if the Agreement of New Terms for the Kumtor Project dated April 24, 2009 among the Government, Centerra, KOC, KGC and Kyrgyzaltyn, or any restated project agreement, one of which is the Restated Investment Agreement, specify different rules than the legislation promulgated by the KR, the rules of the agreements shall apply to the relations so regulated.

Conclusion 12 - Disturbance of land resources.

Conclusion 12.1 In accordance with the requirements of Land Code of the KR, Unified Safety Regulations and Regulations “On land reclaiming (rehabilitation) and procedure of land acceptance for use”, there was the necessity to remove and stockpile fertile soil layer prior to construction of facilities (roads, tailing dump, structure, etc.). KOC has not documented the fact of removing and stockpiling fertile soil layer. Recently, State Inspectorate on Environmental and Technical Safety rose a claim for harm caused to land resources...

State Commission observes that the unprocessed rock deposition areas were stockpiled in the valleys of the rivers Lysyi, Chong Sarytor, Kichi Sarytor having not removed fertile soil layer. To assess damage caused additional survey is required.

KOC Response:

KR Government Authorities have been aware that over the years, Kumtor did not remove top soil in various areas due to the nature of the top layer not being fertile top soil. In 2005 an ad hoc committee composed of the head of the Jety-Oguz District Administration, the Officer-in-Chief of the Jety-Oguz District Land Management & Real Estate Title Registration Office for the Jety-Oguz District, and a member of KOC’s exploration department inspected the Akbel land lot and determined (among other things) that approximately 15,560m² of land was disturbed and accordingly, calculated damages of 79,083.7 KgS. We note that in its assessment of damages, they assumed a thickness of topsoil to be 15 cm. In response to this report, KOC wrote a letter dated November 30, 2005 to the Issyk-Kul Zonal Centre for Real Estate & Land Resources Management, State Agency for Real Estate Title Registration under the KR Government, which (among other things), stated that the area in question is characterized

by very lean topsoil and is not “fertile” as claimed in the report but rather quite thin and poor, with organic substances only occurring in the upper 8cm stratum. The response did note that the construction of the mine installations did contemplate removal of top soil when possible. No further response was received on this matter until October 2008.

In October 2008, Kumtor received a report from the Officer-in-Chief of the Jety-Oguz District Department of Land Management and Real Estate Title Registration, and the Senior Inspector for State Control over Land Management for Jety-Oguz District. This letter reiterated the findings of the 2005 report (with respect to the Akbel land lot) and also claimed damages for failure to remove top soil with respect to other land parcels comprising the Kumtor project, including one parcel (the Sarytor land lot). The 2008 report requested payment of damages. KOC responded to this letter in 2009, noting that the issue of damages for failure to remove top soil was previously discussed in 2005 and provided a copy of the 2005 response.

Thus, we note that from at least 2005, KR Government authorities were aware of Kumtor’s practice of, and reasoning for, not removing “top soil” in all areas due to the nature of the top soil in such areas not being fertile top soil. (In any event, the claim for damages discussed above was conclusively settled by the June 6, 2009 Release Agreement, and cannot be claimed now.)

Conclusion 12.2 - In ecological passport of KOC it is recorded that reclamation of disturbed land is being carried out in the area of the old disassembled bridges on technological road Barskoon – Kumtor. While inspecting the area it was revealed that stipulated works are not in process. KOC has not submitted reclamation project and information on works performed.

We assume this conclusion relates to three Soviet Era bridges (Bridge # 4, # 5 and # 7) over the Barskoon River that were removed during the road improvements performed by Kumtor in 2003-2004, which was completed in 2005. KOC never disturbed these lands and tried to plant seedlings of some bushes and fir tree from both sides of removed bridges. But due to multiple passages of Barskoon livestock through these areas most of seedlings were destroyed.

Conclusion 12.3 - According to Regulations requirements on water protection zones and water body belts, construction of new, expansion and reconstruction of existing industrial enterprises and execution of other types of works, exerting harmful influence upon water bodies’ state is prohibited within the water protection zones and water body belts.

KOC Response:

We assume this statement is in reference to the State bodies of Environmental Control, or the authorized State agencies that provided expert opinion, constituting approval of Kumtor activities within these zones. We note that Article 3 of the Regulations on “Water Protection Zones and Strips of Water Facilities in KR”, approved by the KR Government Order # 271 on July 7, 1995, Chapter 3, paragraph 10, sub-paragraph N says: “within the limits of water protection zones and strips of water facilities it is prohibited to... construct quarries without agreement with the state control over the protection of nature and natural resources”. Therefore, we submit that KOC did not violate the requirements of the

Regulation and KR Legislation, as all sand & gravel pits development projects went through approvals and obtained positive conclusions of the environmental control regulations.

Conclusion 12.4 - However, in defiance of abovementioned Regulations, authorized state agencies issued positive expert reports on environmental impact assessment for implementation of the projects on sand-gravel pit development. Laboratory test results on the Kumtor River water at the EMZ showed that concentration of oil products exceeds the standard 1.7 times as much

KOC Response:

The above conclusion demonstrates that the implementation of projects relating to the sand-gravel pit development was given government approval by the appropriate State Agencies. The above Commission Conclusion is also addressed in the Response to Conclusion 12.3 and the Response to Conclusion 5.2.

KOC monitoring does not support that there is any non-compliance for oil products in water at the compliance point W 1.5.1. In addition, KOC has not been provided any details as to the data that supports this allegation.

Conclusion 13 – Waste.

In accordance with the Law “On production and consumption waste in the KR”, wastes representing the sources of environmental pollution are subject to destruction, reprocessing, treatment, deposit or disposal at the special landfill areas or other areas allotted for waste disposal, or incineration in special plants.

As the result of the inspection the following violations of waste handling legislation were revealed:

13.1. Requirements of item 4 of article 10 are not observed “Disposal of hazardous waste is only permitted at facilities specially equipped to this effect”: KOC has not arranged the special areas, landfill areas for disposal of toxic and nontoxic wastes. At present there is the only one special place for waste disposal – it is an accumulator of liquid toxic waste (tailing dump), the design for disposal of toxic and nontoxic waste is missing.

KOC Response:

As background, Kumtor produces the following types of wastes:

- Domestic Wastes – including food scraps, paper and packaging generated by the camp facilities and offices.
- Industrial wastes – including empty plastic containers, wood, scrap metal, tires, waste oil, oily rags, batteries and expired paints/chemicals past their useful life.
- Hazardous Wastes – including tailings, used batteries, Cyanide (CN) packaging, xanthate barrels, soda ash bags, other various packing materials from the mill and sewage sludge.

It should be noted that Kumtor does not consider Unprocessed Rock as consumer waste or industrial waste because it is not produced by an end consumer of a material, and it is not waste material left over

after a manufacturing process, where the end material has lost its usefulness. In the case of KOC, there is no processing or milling of Unprocessed Rock which would render it useless or which changes its nature or features. Unprocessed Rock is simply extracted and moved to another location as part of the open-pit mining process. Furthermore, as per Article 5 of the KR Law “On Tailings Facilities and Mining Dumps”, Unprocessed Rock and deposition areas at KOC cannot be classified as mining waste, as these do not have (a) any radionuclides, nor (b) other toxic substances. Therefore, this legislation does not apply to KOC as the Unprocessed Rock generated from the open-mine pit operations is neither consumer waste, industrial waste, nor mining waste.

KOC maintains a License (No. 014) for disposal of Hazardous Waste Discharge (Dated May 30, 2011; and a License (No. 013) for Disposal of Tailings Waste (dated May 30, 2011).

In addition to the licensed/approved TMF, KOC operates a sanitary landfill for domestic wastes as well as separate lined landfills for oily rags, and CN packaging. These are located within the final planned footprint of the TMF, are underlain by permafrost and monitored on a daily basis. KOC also maintains temporary separate storage/holding areas for most types of industrial waste prior to removal from site by licensed contractors including scrap metal, wood, waste oil, plastic, tires, and batteries.

We acknowledge that Kumtor does not currently have a permit for waste disposal. However, we submit that this is due to the absence of normative documents regulating development of design for waste disposal limits. Without such regulatory standards, it is impossible for Kumtor to develop a design for waste disposal, which is required for a permit for waste disposal to be issued under KR legislation. According to Article 3 of the KR Law #72 “On Procedure for Conducting Inspections of Business Entities” dated May 25, 2007, inconsistencies and ambiguity of the KR legislation setting mandatory requirements cannot be used against entrepreneurs.

Furthermore, in 2012 KOC sent two letters to the KR State Agency on Environmental Protection and Forestry under the KR Government requesting clarification of the process to obtain a permit for disposal of wastes generated at Kumtor mine. The response letters were received on November 26, 2012 and January 24, 2013 signed by A. Rustamov, Deputy Director of SAEPF (Appendix 1) who admitted lack of approved “Instructions on rate fixing procedure for waste treatment” and the guidelines on development of waste disposal rating projects.

In 2012, based on review of KR Commissions, independent expert review and internal review, KOC has upgraded its waste management practices and has engaged international consultants to assist with further improvement. Expert review in 2012 also noted that: “Unlike most, if not all, of its Kyrgyz ‘counterparts’, Kumtor’s principal waste management facility is contained within the envelop of an engineered structure (Tailings Management Facility), has sufficient capacity, is located far from any populated areas or groundwater users, has adequate financial resource allocation, is actively managed on a daily basis, is routinely monitored/inspected and has also made provision for its eventual

closure.”²⁴ KOC is also in the process of developing an integrated Waste Management Strategy that will be completed in 2013.

13.2. Failure to comply with the requirements of item 5 of article 8 of the KR Law “On production and consumption waste in the KR”, which read as follows “At waste disposal monitoring of the disposal areas is obligatory. Monitoring is carried out by the owner of the waste disposal facility in order coordinated with a competent authority.” Monitoring of the waste disposal areas is not carried out; monitoring plan is not drawn up.

KOC Response:

KOC has a comprehensive monitoring program in place for waste disposal/storage areas including:

- Daily visual inspection of the landfills for domestic waste, CN packaging and oily rags to ensure wastes are being covered.
- Daily visual inspection of the temporary waste storage/holding areas, to ensure wastes are being segregated correctly prior to removal from site.
- Daily visual inspection of the TMF to check tailings are being deposited correctly.
- Weekly check of 32 TMF monitoring wells – for water level and quality.
- Weekly check of the water quality of the historic TMF seepage collection area.
- Daily measurement/estimation of the volume/quantity of waste being produced – tailings, domestic waste, scrap metal, wood, batteries, plastic, CN packaging, oily rags, electric cable, tires, and waste oil.

Records of these inspections and monitoring results are kept on site. Solid Waste Disposal is also discussed in the Kumtor Annual Environmental Reports.

13.3. Contrary to the requirement of item 1 of article 10 of the Law of the KR “On production and consumption waste in the KR”, - “To the effect of the atmospheric air protection, disposal, neutralization and incineration of production waste on the territory of economic entities and settlements is prohibited”, domestic wastes were incinerated till 2009 (as per KOC’s data).

KOC Response:

As indicated in the above conclusion, KOC ceased burning waste on site from 2009.

13.4 A special emphasis should be made that in the course of its activity KOC is not charged for waste disposal. (The “Environmental Protection Law” of the KR, article 15).

KOC Response:

We note that all wastes generated and disposed of are considered in the KOC’s annual environmental charge of US\$310,000 which is provided under the Restated Investment Agreement, excluding toxic

²⁴ Prizma Independent Assessment of Parliament Commission Report. 22 September 2012. Page 69.

industrial wastes, which are disposed of in the tailings dam, used oil, scrap metal and waste batteries. For each of these items, we note below the reason why payment is not required for these items:

(a) Calculation of payment for disposal of toxic industrial wastes in the tailings dam is not required due to Clause 7.8. of the “KR Environmental payment determination guidelines”²⁵, which provides that “payment for disposing of various toxic materials in special landfills, sludge dumps, tailings dam and dumps meeting the Construction Norms and Rules (SNiP)²⁶ and other regulations is not collected from the subsoil users if they ensure the wastes are disposed against various environmental risks in accordance with the applicable procedure”. KOC has a special engineered waste facility that meets all KR requirements including SNiP requirements, and ensures the tailings are appropriately managed and contained. Therefore payment for toxic materials disposed of in the tailings dam is not relevant.

Moreover, according to the current “Payment calculation method” (2011): “the waste disposal payment is not collected for the waste disposed of in temporary disposal areas (facilities), if these disposal areas (facilities) meet the environmental safety requirements as per the instrumental monitoring results (impact on ambient air, soil layer, water resources)”. Results of the long-term monitoring conducted by the Kumtor environmental department and analysis of the results of water and soil samples conducted by laboratories of the state controlling agencies, confirm the lack of adverse impact on ambient air, soil layer and water resources.

b) We point out that the Kumtor Project is governed by the terms of the Restated Investment Agreement which provides a complete regime of payments to be made directly to the Government. Kumtor pays an environmental pollution charge which covers (among other things) the disposal of waste. Accordingly, no additional fees can be charged with respect to this activity at the Kumtor Project.

c) Calculation of payment for used oil, metal scrap and waste batteries disposal was not conducted as these wastes are not disposed of on site, but are temporarily and securely stored within the mine territory until they were donated or sold to third parties. No waste is disposed of at the project.

d) As discussed earlier, Unprocessed Rock generated from the open-mine pit operations is neither consumer waste, industrial waste, nor mining waste. Therefore, payment for movement of this material is not required.

Conclusion 14 – KOC implements water withdrawal from Petrov Lake on a constant basis for industrial and domestic consumption without adequate payment

KOC Response:

The key law governing the water use regime in the Kyrgyz Republic is the Water Code of the KR #8 dated January 12, 2005 (the “Water Code”). According to Article 7 and Section 1 of Article 48 of the Water Code, the payment for water as a natural resource shall be established annually by the Parliament per

²⁵ Note: This clause was legal until September 2011.

²⁶ Stroitelnye Normy i Pravila (Construction Norms and Rules) i.e. Kyrgyz Construction Codes and Regulations

each water basin on the basis of actual costs of study, assessment and protection of water resources as well as costs related to operation of the State Water Administration. The payment for water as natural resource has never been established by Parliament. Therefore, currently there are no legal grounds for the request to pay for water used by the Mine, and, consequently, calculation of such payment.

Regardless of issues revolving around water as a natural resource, we refer to the provisions of the Restated Investment Agreement which take precedence over KR law to the extent there is an inconsistency and the following provisions and conclusions:

1. The Restated Investment Agreement provides a complete regime for direct payments to the Kyrgyz Republic. Section 5.1 of the Restated Investment Agreement expressly provides that except for the payments provided in Article 5, the Project Companies [KOC and KGC] shall be exempt from all other present or future Taxes...in respect of the New Tax Regime Activities.
2. Use of Water is a New Tax Regime Activity, and therefore covered under the New Tax Regime. New Tax Regime Activities is defined in Annex 1 (Definitions) of the Restated Investment Agreement as:

... “means all of the business, undertakings and activities of any Project Company [includes KOC and KGC] in relation to the Kumtor Project, contemplated in or authorized by this Agreement [the Restated Investment Agreement] and the Restated Concession Agreement, including without limitation:

(a) exploration (including feasibility studies) for, mining, production, milling, processing and sale of Products [as defined in the Restated Investment Agreement] within the Concession Area [as defined in the Restated Investment Agreement]

(p) activities directly related to those activities listed in (a)-(o) above.

Kumtor uses water for industrial and domestic purposes in direct relation to its activity at the Kumtor Deposit. Therefore this activity is a New Tax Regime Activity and no further payments other than that provided in the New Tax Regime should be applied.

3. The activity in question is permitted by the relevant water use permits issued to Kumtor by the relevant Kyrgyz Republic authority. Kumtor uses the water from Petrov Lake in accordance with the permits issued by the Department of Water Resources and Melioration and its predecessors since 1996. The most recent permission is for the period from March 1, 2012 until March 1, 2013. During the entire period of time when water from Lake Petrov has been used for Kumtor’s operations, this activity has been approved and permitted and Kumtor has not received any claims or refusals to issue water use permits. None of the said permits required payment for use of water.

Conclusion 15 – As per survey carried out by Biology and Soil Institute of the National Academy of Sciences of the Kyrgyz Republic, two species of plant of special significance not only for Kyrgyz but for world flora as well, grow in the anthropogenic areas of Kumtor Mine - they are Tulip Tetraphyllous (Tulipa Tetraphylla), Dandelion Syrtovyi (Taraxacum Syrtorum), endemic - species, recorded in the Red Data Book (Endangered Species List) of the Kyrgyz Republic.

To eliminate negative influence upon vegetation and soil cover in the area affected by KOC activity, it is recommended to:

- Undertake dust suppression arrangements to ensure plants have full vegetation period in the anthropogenic areas of Kumtor Mine;
- Lay with asphalt 20 km of the road (from Balykchy - Karakol road till the environmental post "Sary-Moinok") for protection of vegetation-soil cover from dust in the passage Barskoon, forest-meadow-steppe zone;
- Undertake activities on establishing quantity, rehabilitation and conservation of species of plant, entered in the Red Book of Kyrgyzstan - *Tulipa tetraphylla* in Barskoon passge and *Taraxacum syrtorum* - Kyrgyzstan endemic in the Arabel River valley, Kumtor
- Carry out annual geobotanical monitoring for investigation of the vegetable cover in the anthropogenic areas of Kumtor Mine.

KOC Response:

KOC currently does carry out routine dust suppression measures and monitoring with reference to Maximum Allowable Emission (MAE) Standards. Monitoring from 2002-2011 (in Annual Environmental Reports produced by Kumtor) reports the samples taken from Barskoon Road to be well in compliance of MAE standards (500 ug/m³ per day). Kumtor will also commit to review and improve its dust mitigation measures in 2013. Kumtor will be ready to consider additional mitigation measures, should these be indicated by the planned flora studies and monitoring results.

Further, in our opinion, the State Commission geobotanical study did not provide convincing and scientifically-based data on the negative anthropogenic impact of KOC operations on vegetation cover of the Barskoon Gorge that also considered other sources of impacts. In this regard, KOC offers to conduct such studies during various growing seasons of vegetation and has initiated such studies in 2012.

With regard to the request to pave the Barskoon gorge, we are conscious that Prof Shukurov, the most eminent Kyrgyz scientist, and Dr. Laskov, one of the most eminent botanists of the Kyrgyz Republic, noted that overgrazing and overharvesting are likely to be the main impacts to the plants of concern mentioned above²⁷. They also point out that these plants are not particularly threatened and/or have larger ranges. In short, their comments suggest that paving the road in the Barskoon gorge would not protect the vegetation and soil cover in the Barskoon gorge, although it would result in significant and, we believe, unnecessary expenditures.

Notwithstanding the above, the two species of plants identified above (*Tulipa tetraphylla* in the Barskoon Gorge and *Taraxacum syrtorum* in the Arabel valley) are included in the species specific plans in the Kumtor Biodiversity Management Strategy and Plan (2012).

²⁷ Kumtor Biodiversity Management Strategy and Plan 20, December 2012. Page 55. (Personal Communication. Kumtor Biodiversity Workshop, October 19, 2012).

On the issue of geobotanical monitoring, KOC has adopted annual vegetation studies into its environmental monitoring and has, in addition, included important vegetation related components, including both on-site studies with emphasis on regional flora in the Kumtor Biodiversity Management Strategy and Plan (2012), which will be fully integrated into operations and closure planning in 2013. KOC has also completed a vegetation study in 2012²⁸ that related specifically to reclamation activities. The goal of future studies will include the identification of the main drivers of impacts to plant species so that the most appropriate solutions for their conservation can be identified.

Conclusion 16 - To date, a project of mine facilities restoration following mine closure is not available in KOC.

KOC Response:

KOC is in compliance with requirements pertaining to mine decommissioning (including “facilities restoration”) in accordance with good international mining practice, Good International Industry Practices (GIIP), and the Restated Investment Agreement provisions (Clause 3.3), and the New Terms Agreement of 2009 (Clause 5.4), which states: KOC shall develop a Kumtor Mine Conceptual Closure Plan (CCP) together with international consultants and experts experienced in development of such plans and projects. These include: initial closure/decommissioning criteria provided by the Feasibility Study (1993- and revision dated November 1994) (the Reclamation Plan); updated closure strategies and closure strategies by Conor Pacific; iterations of CCP prepared by Lorax (2004), Golder (2007-2008), Lorax (2010)²⁹, and the latest mandated update, which is planned for 2013. The 2013 CCP is scheduled to also include elements of the Kumtor Biodiversity Management Strategy and Plan, Social aspects and progressive reclamation, including wetland enhancement components as part of the integrated water management strategy.

The Mine closure process will be staged and it will include development of a Conceptual Closure Plan (CCP), testing the range of CCP provisions, monitoring for further CCP improvement and revising the CCP every three years, applying up-to-date survey and monitoring data, as required in the Kumtor Environmental Management Action Plan (EMAP).

In accordance with the above mentioned agreements of the RIA (2009), no less than two years before the reclamation works, KOC shall submit the final detailed engineering design and detailed Final Closure Plan (FCP) to state regulators for expertise (i.e. approval by the appropriate authorities) of issues related to construction, industrial and environmental safety.

Given that the life of mine at the Kumtor Mine is scheduled to be until 2026, development of the final reclamation plan at this time would be impractical.

²⁸ Turgunbaev K.T, and Mursaliev, M.A., 2012. Report on study of vegetative ground cover for reclamation activities at Kumtor Mine Site (from 1.06.2012 y. to 30.09.2012 y.)

²⁹ KOC Annual Environmental Report. 2011 pages 84-85.

Closure cost estimates are produced with each iteration of the CCP, by credible external international experts and incorporate each mine site infrastructure component including: open pit, unprocessed rock deposition areas, Tailings Management Facility (including water management structures), as well as other site infrastructure decommissioning, short and long-term maintenance and inspections and environmental compliance monitoring. While developing the closure cost estimate, standard assumptions, expert rationale and information are utilized. No salvage value is included in the closure cost estimates. Kumtor maintains a dedicated Reclamation Trust Fund. Currently, the balance of the Reclamation Trust is approximately US\$11.3 million. The balance of closure costs is expected to be funded in full over the LOM period.

Conclusion 17 - To carry out unified state policy in the field of mining engineering it is advisable to establish a special state organization, which will control legitimacy of economic entities activities on mineral resources development and have relevant authority and facilities and equipment (laboratory). This organization will have the authority to establish close control with regard to:

- a) **percentage of gold contained in ore supplied to the Mill;**
- b) **effective gold recovery and fix recovery rate at least 85%;**
- c) **achievement of ore processing targets.**

Establishment of such government body will increase effectiveness of mining operations.

KOC Response:

See also response to Conclusion 7. In that response, we note that the Company continually studies ways to maintain and improve gold recovery, mindful that there are differing characteristics of ore that will be fed into the Mill.

We dispute the conclusions of the State Commission with regard to establishing a throughout recovery standard of 85%, and assumptions related to excessive loss during recovery, which are made without any relevant studies. The Company also believes that the issue of recovery efficiency may only be considered after a comprehensive study of technological features of ores at the Kumtor deposit.

We would also like to point out that Kumtor has continued to invest in improving project economics which also benefits the Kyrgyz Republic. Examples include exceeding the original design capacity of 4.8 million tons of annual ore throughput by 1.0 million tonnes per year to the current throughput capacity of 5.8 million tons in 2011. KOC has also improved the plant flow-sheet to reflect the fine-grained nature of the gold. This resulted in introducing an ultrafine re-grinding circuit that helped achieve historical gold recovery of approximately 79%, which is expected to continue.

We would welcome the opportunity to work with the State Commission and its experts to identify other economically feasible opportunities for further improvements, such as processing of a large volume of carbon fines (currently stored at the Kumtor mine) which contain residual gold.

Conclusion 18 – Terminate the revised concession agreement as of June 6, 2009.

KOC Response:

KOC notes that the Kumtor Project is governed by restated project agreements entered into by the KR Government, Centerra, KOC and KGC in June 2009 (the “Project Agreements”). The Project Agreements include the Restated Investment Agreement discussed earlier in this response and the Restated Shareholders Agreement for Centerra. The Project Agreements were reviewed and approved by the KR Government and Parliament, and are the subject matter of a decision by the KR Constitutional Courts and a legal opinion by the KR Department of Justice. The Project Agreements constitute valid and legally enforceable obligations of the KR Government.

KOC, KGC and Centerra expressly reserve their rights to bring any claim to arbitration under Article 11 of the Restated Investment Agreement. As provided in Article 11, any disputes and claims relating to the Kumtor Project are subject to international arbitration.

Conclusion 19 – Establishment of Kumtor Mine Scientific Production Center to ensure science-based decisions for solving production tasks, including gold recovery increase, mining operations costs reduction, environmental protection effectiveness, conservation of biodiversity.

KOC Response:

No response as it refers to the Government.

Conclusion 20 - The Government is to eliminate legislation deficiencies, in particular:

- **Elaborate the “Glacier protection and conservation” Law of the Kyrgyz Republic;**
- **Amend the “Mineral resources” Law of the Kyrgyz Republic regarding:**
 - **prohibition of disposal of solid and other pollutants on glaciers;**
 - **carrying out underground mining operations under glaciers and in the woodland.**

KOC Response:

No response as it refers to the Government.

Conclusion 21 - To the effect of elimination of violations revealed, State Environmental and Technical Safety Inspectorate issued Direction as of December 11 No. 09/1498 comprising 19 items

KOC Response:

KOC responded to the 19 items cited above (the Directions #109/1498 (the “Direction”) issued by the State Inspectorate of Environmental and Technical Safety (“SIETS”) under the Kyrgyz Republic Government (dated December 11, 2012) on January 28th, 2013. This response was provided in

furtherance of the KOC notice of appeal to SIETS and the Government dated January 4, 2013 (effective date of delivery January 8, 2013). The full response submitted to SIETS is attached as Appendix 2.

Conclusion 22 - In addition to this, State Environmental and Technical Safety Inspectorate rose the claim for damage caused to environment through KOC activities:

- **destruction of soil and vegetable layer on the territory of 7,797,924.4 m² (one hundred and six million eight hundred forty thousand nine hundred fifty four Soms);**
- **water use without payment (188 thousand Soms);**
- **industrial and household effluents treatment plants waste disposal (one million four thousand 500 Soms);**
- **disposal of waste dump on glaciers without permission (six billion six hundred ninety eight million 878 thousand 290 Soms);**
- **air pollutant emissions to the atmospheric air (SAEP&F);**
- **pollution and destruction of glaciers (additional investigations will be carried out).**

State Commission observes that KOC implements its activity without supervision and appropriate permissions of authorized state agencies and thereby causes significant environmental damage and harm towards society.

KOC Response:

The issue of the afore mentioned claim for damage has been addressed by KOC in four separate documents submitted to: His Excellency, Zhantoro Satybaldiyev, Prime Minister of the Kyrgyz Republic; the Ministry of Economics, Chairman State Commission, Mr. T.A. Sariev, Minister; and to the State Inspectorate for Environmental and Technical Safety under KR Government, Mr. O. M. Artykbaev, Director. KOC acknowledged receipt of the claims relating to Land Damage, Water Use, Unprocessed Rock and Unrecorded Wastes from the State Inspectorate Office for Environmental and Technical Safety under the Kyrgyz Republic Government (“SIETS”).

These responses were provided further to our notices of appeal to SIETS and the Government of the Kyrgyz Republic (“KR”) dated January 4, 2013 (delivered to SIETS on January 8, 2013). For convenience we have also attached these Responses in full as Appendix 3.

The issue of air pollutant emissions is addressed in the response to Conclusion 11 (Emissions) above.

Finally, in response to the Commission assertion that “KOC implements its activity without supervision and appropriate permissions of authorized state agencies and thereby causes significant environmental damage and harm towards society”, we strongly disagree with this position.

KOC has operated and continues to operate in accordance with Kyrgyz and international standards. This has been proven over the years in systematic audits by Kyrgyz and international experts. KOC supports

and contributes to important aspects of cultural and natural heritage of the KR people and is indeed a significant contributor to both the Kyrgyz economy and society in a broader perspective. We consider ourselves both a part of Kyrgyz society and a key partner with the Kyrgyz people and point out that Kumtor contributes 11.7 % of GDP; 26.1% of total industrial output; and accounts for 51.1 % of total foreign exchange earnings. We offer to explore opportunities to engage with the Commission, and more broadly with the Kyrgyz Government to explore opportunities to achieve common goals that benefit the people of the Kyrgyz Republic, their natural and cultural heritage, and promote economic stability for the present and into future.