**TERMS OF REFERENCE**

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| **Item****№** | **List of basic** **data and requirements** | **Basic data and requirements** |
| 1. | Location  | Issyk-Kul region, Balykchy, Balykchy Marshalling Yard (BMY) |
| 2. | Client  | Kumtor Gold Company CJSC |
| 3. | Contractor | To be selected according to the competition results. |
| 4. | Purpose of the purchase | Purchase of lubricants to be used by the Mill technological and auxiliary equipment in high altitude environment (4,000+ meters above sea level), including low temperatures (-35 °C) and significant altitude difference, at the Kumtor Mine in Kyrgyzstan. |
| 5. | Types of equipment | * SAG Mill.
* Ball Mill.
* Regrind Mill.
* ISA Mill.
* Vertical Mills.
* Lime Mill.
* Horizontal, Vertical Slurry Pumps.
* Bearing Units.
* Compressors.
* Thickener Rake Drives.
* Agitator Reducers on tanks.
* Primary Crusher, Pebble Crusher.
* Press-filters.
* Electrical motors.
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| 6. | General Requirements/Regulations and Standards | 1. **Gear oil requirements:**
	1. Base oil: Mineral

ISO viscosity: ISO VG 150Volume: Barrel 200 (l)Compliance with requirements and classifications: ISO 12925-1, DIN 51517 (CLP).* 1. Base oil: Mineral

ISO viscosity: ISO VG 220Volume: Barrel 200 (l)Compliance with requirements and classifications: ISO 12925-1, DIN 51517 (CLP).* 1. Base oil: Mineral

ISO viscosity: VG ISO 320Volume: Barrel 200 (l)Compliance with requirements and classifications: ISO 12925-1, DIN 51517 (CLP).* 1. Base oil: Synthetic (hydrotreated neutral oil base).

ISO viscosity: ISO VG 220Volume: Barrel 200 (l)Compliance with requirements and classifications: ISO 12925-1, DIN 51517 (CLP).* 1. Base oil: Synthetic (hydrotreated neutral oil base).

ISO viscosity: VG ISO 320Volume: Barrel 200 (l)Compliance with requirements and classifications: ISO 12925-1, DIN 51517 (CLP).* 1. Base oil: Synthetic

ISO viscosity: ISO VG 46 to ISO 3448Volume: Barrel 200 (l)Comply with requirements and classifications: AGMA 14R, 15R. ISO 12925–1, (CKT), DIN 51517 (CLP).* 1. Base oil: Mineral

ISO Viscosity: Viscosity, Kinematic cSt at 40°C (with diluent) 4125 to ISO 3448 Volume: Barrel 200 (l)Compliance with requirements and classifications: ISO 6743/3/1A class L-DAH.1. **Hydraulic oil requirements:**
	1. Base oil: Mineral base oil group 2

ISO viscosity: ISO VG 46Volume: Barrel 200 (l)Compliance with requirements and classifications:DIN 51515/T1 L-TDDIN 51515/T2 L-TGAdditives: corrosion and oxidation inhibitors, anti-foaming additives. 1. **Turbine oil requirements:**
	1. Base oil: Synthetic

ISO viscosity: ISO VG 32Volume: Barrel 200 (l)Compliance with requirements and classifications:DIN 51524-2 HLPAdditives: Corrosion and oxidation inhibitors, anti-seize additives, anti-foam additives.* 1. Base oil: Synthetic

ISO viscosity: ISO VG 100Volume: Barrel 200 (l)Compliance with requirements and classifications:DIN 51524-2 HLPAdditives: Corrosion and oxidation inhibitors, anti-seize additives, anti-foam additives.1. **Compressor oil requirements:**
	1. Base oil: Mineral

ISO viscosity: ISO VG 68Volume: Canisters 20 (l)Compliance with requirements and classifications:ISO 6743/3/1A class L-DAH* 1. Base oil: Mineral

ISO viscosity: ISO VG 55Volume: Barrel 200 (l)Compliance with requirements and classifications:ISO 6743/3/1A class L-DAH1. **Motor oil requirements:**
	1. Base oil: Synthetic

SAE viscosity: SAE 20W-50Volume: Barrel 5 (l)Compliance with requirements and classifications:API SF/CD1. **Peristaltic pump oil requirements:**
	1. Base oil: Synthetic glycerin-based oil

Volume: Barrel 1 (l)Compliance with requirements and classifications:NSF category H11. **Greases (solidol) requirements:**
	1. Base oil: Mineral

Thickener: Lithium complexNLGI class: NLGI 0Volume: Barrel 200 (l)Compliance with requirements and classifications:DIN 51502 GP 0 K-30/KP 0K-30* 1. Base oil: Mineral

Thickener: Lithium complexNLGI class: NLGI 2Volume: Tubes 380-400 (g)Compliance with requirements and classifications:DIN 51502 KP 2 K-30* 1. Base oil: Mineral

Thickener: Lithium complexNLGI class: NLGI 3Volume: Tubes 380-400 (g)Compliance with requirements and classifications:DIN 51502 KP 3 K-30* 1. Base oil: Synthetic

Thickener: Aluminum complexNLGI class: NLGI 1.5Volume: Buckets 18-20 (kg)Compliance with requirements and classifications:DIN 51825 KP 1.5 R-30Operating temperature range: 10 °F (-12 °C) to 750 °F (400 °C).1. **Single point lubricators (solidol) requirements:**
	1. Base oil: Mineral

Thickener: Lithium complexNLGI class: NLGI 2Volume: Cartridge 125 (g)Drive type: GasCompliance with requirements and classifications:DIN 51502 KP 2 K-30 |
| 7. | Individual requirements | 1. **Quality and Compliance**:
* Lubricants supplied shall comply with international quality standards (e.g. AGMA, API, SAE, ISO).
* Products shall be certified according to international safety standards and environmental requirements.
* Product quality shall be confirmed by quality passports for each batch.
* Guarantee of stability of physical and chemical properties and characteristics of the oil during the entire service life.
1. **Technical support and consultation**:
* Supplier shall provide technical consultation on the selection of optimal lubricants, considering the specifics of the Mill technological equipment operation and the mine climatic conditions.
* Supplier shall, at the written request of the Client, provide a safe plan for transitioning to a new lubricant, considering the risks of mixing different types of oils, to prevent downtime. The plan shall consider the specifics of the Mill operation processes and the mine climatic conditions.
* Supplier shall organize “Lubricant Fundamentals” and “Oil Analysis Programs” trainings for Mill Maintenance Department personnel.
* Technical Audit: A team of specialists from the supplier's plant shall arrive to the mine site to improve the lubricant replacement processes during the transition period, the specialists shall provide reports on lubricant usage, analyze lubricant consumption and propose process optimization to reduce maintenance costs.
* Supplier shall maintain a high level of service and promptly resolve all issues arising related to delivery and product quality.
1. **References and confirmation of reliability**:
* Supplier shall provide references from other clients confirming successful experience in supplying similar lubricants.
* References shall include examples of materials used to demonstrate that there are no equipment problems related to their quality.
* Particular attention will be paid to information on the maximum oil change intervals and component run times achieved when using the proposed lubricants.

It is advisable to provide data on improvements in equipment performance and economic efficiency based on the use of the supplier's products, as well as contacts of key clients to confirm this information. |
| 8. | Warranty and Liability: | * In case of delivery of lubricants that do not meet the requirements specified in the Terms of Reference, related to the use of low-quality lubricants and if it leads to downtime or failure of the main units of the Mill technological and auxiliary equipment, Supplier shall compensate the losses caused by the use of low-quality oil, including equipment downtime and possible breakdowns.
* Supplier shall provide a warranty for its products with the obligation to replace materials in case of non-compliance with technical specifications or presence of defects at its own expense.
* Supplier shall guarantee the stability of the oil characteristics throughout the service life.
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|  | Trial and testing requirements  | * Supplier shall provide samples for laboratory testing prior to the first delivery.
* Oil shall be tested in real conditions on the Mill equipment.
* In case of negative test results, Supplier shall provide an alternative product or refund the prepayment.
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| 9. | Warranty period | According to the Agreement. |
| 10. | * Payment procedure
 | According to the Agreement. |
| 11. | Confidentiality | All data obtained during the work conducted by the Contractor shall be the Client's property and confidential, disclosure to third parties shall be prohibited.  |
| 12. | Safety  | According to the Agreement.  |