

White Paper

Kazakhstan Mining Compliance & KAZRC/JORC Standard Conversion Guide

Pre-Amble: Brief History of KAZRC

2013 — The Code is Drafted

KAZRC was developed using the CRIRSCO International Reporting Template 2013 by three founding organizations: the Association of Production Geological Organizations of Kazakhstan, the Republic Association of Mining and Mining-Metallurgical Enterprises, and the National Exploration Company Kazgeology.

2016 — Kazakhstan Joins CRIRSCO

Kazakhstan's KAZRC Code was adopted into the CRIRSCO family in 2016 — making Kazakhstan the tenth member of CRIRSCO, joining Australia, Canada, USA, South Africa, Russia, India, Turkey, New Zealand, and Europe. [CrirSCO](#)

29 June 2018 — Legally Enacted

Starting June 29th, calculation and reporting on reserves under new licences must be made in accordance with KAZRC. By January 1st, 2024 all existing investors in Kazakhstan mining must re-calculate their reserves in accordance with the KAZRC requirements.

January 1 2024 — Full Transition Deadline

The original deadline for ALL existing license holders to transition from Soviet-era GKZ standards to KAZRC.

Post-2024 — Extended Transition for Pre-2023 Licenses

A temporary transition period initially provided until January 2024 to allow reporting on resources and reserves under soviet-era GKZ standards has been extended for mining contracts and licences issued before 31 December 2023 — and there is a mandate for the GeoCom to consider and reject KAZRC reports on resources and reserves before registering them at state mineral records. [Chambers and Partners](#)

How It Works — Pre vs Post 2024:

Pre-2024 licenses (issued before 31 December 2023):

- Grandfathered — may continue using GKZ for state balance registration

- However must use KAZRC for any international capital raising, public listing, or institutional investor reporting
- Creates a dual-standard situation — GKZ for the state, KAZRC for the market

Post-2024 licenses (issued from 1 January 2024):

- KAZRC mandatory from day one — no GKZ option
- All reserve estimates, exploration results, and public reporting must meet KAZRC/CRIRSCO standards
- Signed off by a qualified Competent Person

The practical implication: Although the KAZRC standard was being implemented alongside the GKZ standard, the latter was fully phased out in 2024. The KAZRC Association's Executive Director emphasized that the transition to KAZRC would improve transparency and reliability of the information on the state of the mineral resource base of Kazakhstan — and that the information provided to the government and potential investors should be the same, without double standards.

1. Drilling Requirements to Maintain a Subsoil License

In modern Kazakhstan, maintaining a solid minerals exploration license requires fulfilling mandatory annual minimum work programs and expenditure commitments rather than dictating a single, rigid "type" of drilling. However, core-drilling (diamond core or reverse circulation with rigorous QA/QC sampling) is practically indispensable because regulatory compliance and resource estimation demand verifiable physical and geochemical samples. The regulatory framework is governed by the Code on Subsoil and Subsoil Use, transitioning the country toward international transparency.

- ****Minimum Work Program:** **When an exploration license is issued, the subsoil user commits to a specific yearly schedule of geological, geophysical, and invasive work (such as a minimum meterage of core drilling) registered with the Geology Committee.
- ****Expenditure/Activity Quotas:** **License retention depends on executing the specific volume of work outlined in your approved exploration project. Failing to complete the scheduled drilling footage or reporting minimal progress can lead to license revocation by the Ministry of Industry and Construction.
- ****Data Submittal:** **All drilling logs, downhole surveys, and assay pulps must be systematically recorded and uploaded to state geological information repositories.

2. Understanding the KAZRC Reporting Standard

The KAZRC Standard (Kazakhstan Code of Public Exploration Results, Mineral Resources, and Mineral Reserves) is fully aligned with CRIRSCO (Committee for Mineral Reserves International Reporting Standards). Converting historical or conventional data to KAZRC involves several structural steps:

- ****Employ Competent Persons (QP):** **Resource and reserve estimates must be prepared and signed off by accredited "Competent Persons" who belong to recognized professional self-regulated organizations in Kazakhstan (such as PONEN).
- ****Audit and Upgrade QA/QC Data:** **Legacy or non-compliant drilling data must be verified. This requires certified laboratory assaying, comprehensive QA/QC protocols (blanks, duplicates, standards), and verifiable chain-of-custody documentation for drill core samples.
- ****Re-interpret Geological and Grade Models:** **Transform traditional Soviet-style GKZ block models into modern 3D computerized geological and grade estimation models (using software like Micromine, Datamine, or Leapfrog) that reflect reasonable prospects for eventual economic extraction.
- ****Submit for State/Public Compliance Review:** **File the KAZRC-compliant Public Report or Competent Person's Report (CPR) with the Geology Committee and relevant regulatory bodies, ensuring data transparency meets both national registry rules and international stock exchange requirements (like KASE).

3. Assessing the Complexity of Conversion

If an exploration license holder has successfully fulfilled their license's minimum drilling requirements, the baseline data exists, but the complexity of converting that data to the KAZRC standard ranges from straightforward to highly complex. The transition is rarely a simple reformatting exercise; it depends entirely on how the drilling was conducted, how the data was managed, and whether it relies on legacy Soviet-era archives.

Scenario A: Low Complexity — The "Born-Digital" Modern Project

If your drilling program was designed from day one using modern Western mining practices, conversion is straightforward. If you used standard international software (like Micromine or Leapfrog), performed standard downhole surveys, and implemented a strict, independent QA/QC protocol (using certified blanks, duplicates, and CRM standards sent to an accredited international lab), the data is already structured properly. A Kazakhstan-accredited Competent Person (CP) simply audits your database, verifies geological continuity, and drafts the report.

Scenario B: Medium Complexity — The "Compliant-But-Loose" Project

If you met your physical meterage quotas for the license but treated it purely as a compliance tick-box to satisfy the Geology Committee, conversion becomes moderately complex. You have the physical core and the drill logs, but you might have cut corners on international-grade data verification.

- ****QA/QC Deficiencies:** **If you did not include systematic duplicate samples or didn't use an ISO-certified laboratory, the KAZRC standard will view the data as low confidence.
- ****Missing Metadata:** **Lack of precise downhole surveying or digital structural core logging.
- ****Resolution:** **To convert this data, you will likely need to perform a twin-drilling campaign (re-drilling a percentage of the holes to verify historical grades), re-assay archived core pulps at a certified lab, and build a brand-new 3D geological block model from scratch.

Scenario C: High Complexity — Integrating Legacy Soviet (GKZ) Data

If your exploration project relies on combining your new minimum drilling data with vast amounts of historical Soviet-era archives (which is very common in Kazakhstan), the process is highly complex and time-consuming. Soviet GKZ (State Reserves Committee) parameters were built on geometric, deterministic calculations designed for state planning, not market economies. Many older maps and assay sheets are still stored in paper format or obsolete digital media. Major mining entities in Kazakhstan note that digitizing, verifying, and structurally shifting decades of legacy GKZ data can take months to years of database reconstruction.

4. Impact of Using KAZ GOST Standards

Using KAZ GOST (national/interstate technical standards) instead of ISO standards shifts the complexity of converting data to KAZRC into moderately to highly complex territory, depending entirely on how the QA/QC protocol was managed. While GOST specifies rigorous operational and technical execution, it was built for the legacy Soviet-style GKZ framework, not market-oriented CRIRSCO standards.

- ****The Laboratory Accreditation Gap:** **Your samples were likely sent to a local Kazakh laboratory accredited under domestic GOST standards. A KAZRC Competent Person (CP) must verify that the laboratory's internal tracking, equipment calibrations, and assaying techniques meet current international transparency rules. If the local lab lacked certified reference materials (CRMs) tracked on an international matrix, the CP may struggle to verify accuracy.
- ****Lack of Systematic Blind QA/QC:** **Traditional GOST systems rely heavily on strict internal and external "check assays" (duplicate samples sent to a secondary state-approved lab) to prove repeatability. However, KAZRC requires a fully integrated, proactive Quality Assurance / Quality Control (QA/QC) system injected directly at the drill rig (blind blanks, blind duplicates, and CRMs). If you only did post-facto GOST check assays without blind standards, the data density will be viewed as lower confidence.
- ****Sampling and Logging Formats:** **Core logging and sampling intervals under GOST tend to follow strict structural and lithological rules often recorded in rigid 2D log sheets, whereas KAZRC expects digital, 3D-mappable structural data.

5. Leveraging Mobile Core Analysis Technologies

Because you kept the physical core splits, you are in an excellent position to utilize modern field tech to bridge the gap between your existing GOST/minimum-requirement data and the KAZRC standard. However, you cannot use mobile devices to completely replace laboratory assays for your final KAZRC resource database. KAZRC treats portable analysis as a powerful tool for geological mapping, quality control, and data validation, but not as a stand-alone substitute for certified chemical assays.

- ****Portable XRF (pXRF) Guns:** **Handheld X-ray Fluorescence (pXRF) devices allow you to shoot the core and instantly get elemental data. You cannot use raw pXRF numbers as the

primary grades in your 3D resource block model due to core surface irregularities or moisture. However, your Competent Person can use pXRF data to verify that the legacy GOST assay peaks match the physical core, dramatically reducing the number of expensive "twin holes" you might otherwise have to drill.

- ****Mobile Automated Core Scanners:** **Trailer-mounted, mobile automated core scanners combine high-resolution photography, laser profiling (LiDAR), and hyperspectral sensors. This scans whole boxes of core automatically, providing AI-assisted lithological logging and automated Rock Quality Designation (RQD/geotechnical data). This eliminates human subjectivity from the original core logging and generates a flawless, audited digital database.
- ****Containerized Mobile Labs:** **If your deposit is remote, you can lease a containerized mobile sample preparation or fire assay lab. If the mobile lab is independently operated and running certified international reference materials (CRMs) and strict duplicate protocols, this data can be accepted for your final resource estimation database.

6. Recommended Hybrid Workflow

1. Scan Archived Cores with pXRF/Hyperspectral tools to rapidly digitize your geology and build an objective, electronic profile.
2. Statistically Correlate the pXRF readings with your original GOST laboratory results. If the correlation is strong, it mathematically proves the legacy data is highly reliable.
3. Target Re-assaying by using the mobile data to select the most critical mineralized intervals. Cut or crush those specific archived splits and send them to an accredited ISO-certified laboratory to serve as your KAZRC-compliant validation database.