



CYANIDE MANAGEMENT

Approach

Sodium cyanide is an essential chemical in the processing of gold ore because the cyanidation process is the most effective, economical and safest metallurgical technique to recover gold currently available. Because cyanide can pose serious health risks to humans, animals and plant life, the right to health has been identified as a salient human rights issue associated with our business activities.

We state our commitment to manage those risks posed by our use of cyanide in gold processing in our [Sustainability and Stakeholder Engagement Policy](#), and our Hazardous Materials Management Standard details the minimum requirements all sites must meet.

In 2005, Newmont became one of the 14 initial signatories to the [International Cyanide Management Code](#) (ICMC or "the Code"), a voluntary industry program. The Code focuses on the responsible management of cyanide and cyanide solutions during every stage of the mining process to protect human health and the environment.

All our gold processing facilities that use cyanide must be certified to the Code and comply with the Code requirements to conduct independent third-party audits and recertification every three years. We also require new operations that use cyanide to carry out an initial certification audit within 12 months of commercial production. This requirement is more stringent than that of the Code, which allows new sites and facilities to achieve certification within three years. In between formal audits, sites engage internal and external auditing teams to review Code compliance.

Audit documents and details for each of our mines that use cyanide for processing can be found on the [Code website](#).

We actively participate in and engage with industry organizations such as the International Council on Mining and Metals (ICMM), the National Mining Association, Euromines, the Cyanide Council – an organization of cyanide manufacturers – and the International Cyanide Management Institute's Industry Advisory Group (IAG) to ensure we maintain high standards and effectively manage the social, political and regulatory risks related to cyanide's use in gold mining.

2016 Performance

In 2016, Newmont operations used 57.8 tonnes of sodium cyanide. Quantities vary each year due to mineral variations in our ore bodies as well as processing variables. The quantity increase realized in 2016 is reflective of including the Cripple Creek & Victor (CC&V) operation in the scope of this report.

At year end, of our 13 operations that use cyanide, 11 were compliant with the International Cyanide Management Code (ICMC or "the Code") and two sites – Merian in Suriname and Long Canyon in Nevada – are scheduled to begin the initial certification process in 2017.

Two operations went through the recertification process during the year and are now certified: Lone Tree in Nevada and Tanami in Australia.

Updated information on certifications is available on the [ICMI website](#).

We rate cyanide-related incidents on a severity scale of one to five, and consider Levels 1 and 2 events to be relatively minor and Levels 3 to 5 events to be more significant.

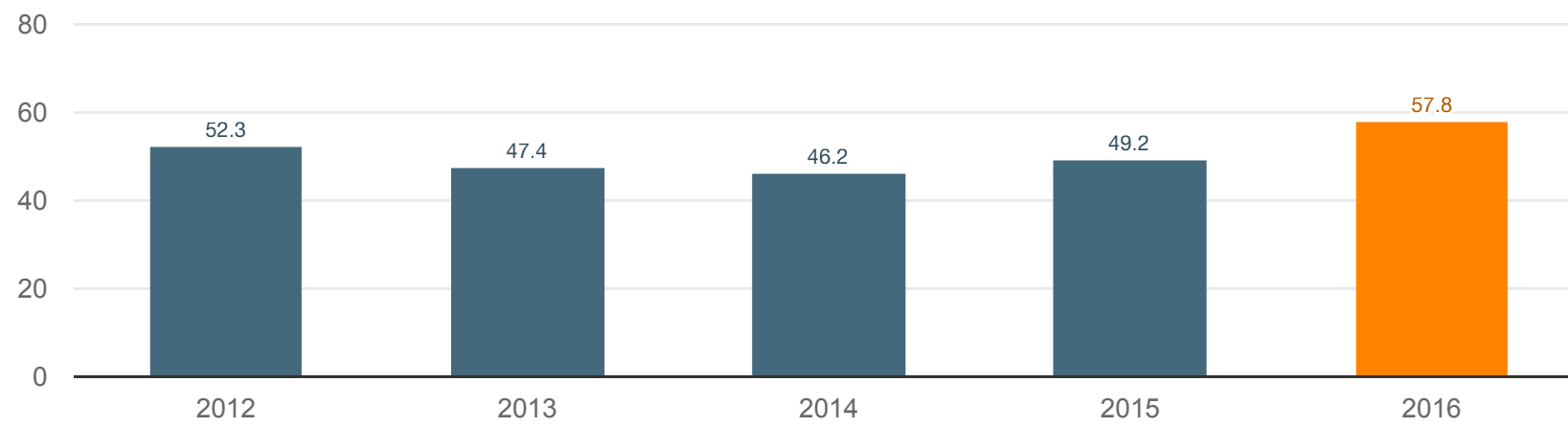
In 2016, we experienced one Level 3 event and no Level 4 or 5 cyanide-related events. The Level 3 event occurred at the Twin Creeks operation in Nevada when a corroded steel pipe fitting failed upon pressurization and approximately 4,000 gallons of low concentration cyanide solution were discharged outside of containment.

During the event, the solution did not leave the property, and there was no threat to human health, communities or wildlife. The event was reported to the appropriate regulatory authorities and the spill was cleaned up and remediated. Operational and maintenance procedures were reviewed and updated to avoid similar events in the future.

Activities in 2016 to improve the effectiveness of our cyanide management approach included the following:

- We conducted a [global assessment of our cyanide management approach](#), which included identifying major and catastrophic risks, developing action plans and sharing lessons learned with the International Cyanide Management Institute (ICMI). The review also led to each operation updating its respective cyanide management plans and controls.
- To address deficiencies in cyanide testing, Newmont led efforts – as part of an International Standards Organization (ISO) working group – to develop a [gas-diffusion testing method](#) that allows for real-time measurement of cyanide and has been found to improve the accuracy of the tests. At the 2016 ISO meeting, the results of a global inter-laboratory study on the gas-diffusion method were reviewed and unanimously accepted. The method was advanced for acceptance as an ISO standard. To perform the gas-diffusion testing method at our sites, we developed an online analytical tool that has been deployed at five operations with further installations planned. We are also benchmarking the range of testing methods we use across our sites to ensure best practices are being used.
- Our KCGM operation in Australia received approval from the ICMI to use a hypersaline tailings disposal method as an alternate protective mechanism.
- The Yanacocha operation in Peru installed bird balls at the La Quinoa heap leach facility pond. The bird balls are high-density polyethylene balls designed to make the pond unattractive to migratory birds.
- We updated our event reporting tools in our Integrated Management System (IMS), which improves our ability to track cyanide-related health, environment and community events, supports our ICMC reporting requirements, and helps identify any trends that may require additional focus or action.

Quantity of cyanide consumed (in thousand tonnes)



[Click here](#) for Cyanide Code reporting for previous years.

Future Focus

In 2017, we will conduct recertification audits at Twin Creeks in Nevada and Cripple Creek & Victor in Colorado. At the two operations that entered commercial production in late 2016 – Merian in Suriname and Long Canyon in Nevada – we will conduct initial certification audits.

We will hold a global cross-functional workshop in early 2017 and complete bow tie risk analysis for each major risk, identifying threat-and-consequence scenarios, barriers to prevent these unwanted scenarios, and escalation factors that make barriers less effective. Based on outcomes, we will either update our current standards or implement a new standard to address findings and lessons learned.

Our Integrated Management System (IMS), which will be fully implemented in 2018, will support compliance with the International Cyanide Management Code certification program.



Cyanide Management – Case Study

Global Review of Cyanide Risks Leads to Code Improvement Recommendations

In 2015, the gold mining industry experienced three significant events involving cyanide, which we use to recover gold from its host ore. One of these events was at our Yanacocha operation in Peru where a worker was hospitalized after being exposed to cyanide when an outflow pipe from the cyanide storage tank was being unclogged. While the worker fully recovered and returned to work, events such as these have the potential to be fatal.

To understand why these events occurred and to prevent a recurrence, we launched a global review in 2016 to identify vulnerabilities in our cyanide management approach. Led by two regional senior vice presidents and the head of our global health, safety and security function, a cross-functional team conducted risk assessments at every Newmont operation. These assessments involved inspections, interviews and team reviews covering every aspect of cyanide use including production, transportation, storage, monitoring and decommissioning.

The review verified that our cyanide management approach is aligned with industry best practice, but it also identified opportunities to improve our management practices and engagement with employees and contractors. For example, buried pipelines are more difficult to inspect and access, some systems have exceeded original design life and medical response protocols are inconsistently applied.

Based on the findings, we developed action plans to address all the major and catastrophic risks identified. We also presented assessment findings and potential areas of improvements to the secretariat of the International Cyanide Management Code (ICMC), and discussed potential improvements to the Code at the International Cyanide Management Institute's Industry Advisory Group meeting.