



August 2015

ICMI CERTIFICATION SUMMARY REPORT Gorubso Kardzhali

Submitted to:

International Cyanide Management Institute
(ICMI)
1400 I Street, NW - Suite 550
Washington, DC 20005
UNITED STATES OF AMERICA

Gorubso Kardzhali AD
83 Rупубликанска Str.,
Kardzhali
Bulgaria

REPORT

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1.0 SUMMARY AUDIT REPORT FOR GOLD MINING OPERATIONS

Name of Mine: Gorubso Kardzhali AD
Name of Mine Owner: Gorubso Kardzhali AD
Name of Mine Operator: Gorubso Kardzhali AD
Name of Responsible Manager: Eng Jivka Kovacheva,
Address: Gorubso Kardzhali AD
83 Rupubilanska Str.,
Kardzhali
6600
Bulgaria
State/Province: Kardzhali
Country: Bulgaria
Telephone: + 359 361 67200
Fax: + 359 361 61274
E-Mail: office@gorubso.bg

2.0 LOCATION DETAIL AND DESCRIPTION OF OPERATION

2.1 Mine Location

Gorubso Kardzhali is located in the town of Kardzhali. Kardzhali is located in the low eastern part of Rhodope Mountains, on both banks of the River Arda between the Kardzhali Reservoir to the west and the Studen Kladenet Reservoir to the east. The town is 260 km southeast of Sofia and approximately 100 km from Plovdiv.

The Site is located on the northern bank of the River Arda in the south part of the town.

2.2 Background

Mined ore is hauled by trucks from Chula mine, to a stockpile at the subject site within the territory of the industrial site of Gorubso-Kardzhali AD.

The stockpile provides for the deposition of 3000 t of ore. It is covered by a metal structure in order to prevent contamination by dust.

The ore is conveyed to the Crushing Plant from the stockpile, via the feeding hopper with feeder and rubber conveyor belt (RCB). The Crushing Plant features two stages of crushing; one jaw and one cone crusher with intermediate sieving, achieving a maximum size of the crushed materials of 25 mm.

The crushed ore is conveyed by means of an RCB to the Milling Plant and into an intermediate hopper with a capacity of 250 t, from which a feeder conveyor and an adjustable RCB (average productivity of 10 t/h) feeds it into the mill for fine milling. The mill is a ball type equipped with a sieve with openings diameter of 6 mm. The 'retained by the sieve' material is returned by means of an RCB back into the mill for re-milling.

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Material that has passed through the sieve from the mill is conveyed by means of a vertical chamber pump to a vibration sieve with holes of 2.5 mm diameter. The sieve is equipped with polyurethane sieve plates, providing efficient sieving and long-term operational lifetime.

The material retained by the vibration sieve is returned via a belt conveyor for re-milling, while the material that has passed through the sieve in the form of pulp is conveyed into a chamber pump from which, via a pneumatic gate and a distribution box, it is conveyed for gravity enrichment to the Knelson concentrator.

The Knelson concentrator operates in a periodical mode of unloading of the achieved gravity gold-bearing concentrate. The work process period for unloading amounts to two hours, with a discontinuation of the process for 5 to 10 minutes. During the unloading, the supplied pulp is transferred back to the milling cycle by means of the automatic gate and the distribution box. The management and control of all the concentration processes are fully automated and visualized on a display on the control panel. For this purpose, the Knelson concentrator is equipped with an automatic compressor, providing compressed air for the operational control of the gates.

The gravity waste, as a flow of pulp from the discharge of the hydro-cyclone in the cycle of gravity, is initially sieved by a linear sieve (1)¹ for removal of wooden fibre and other residues, which hinder the process of gold extraction according to the CIL-process (Carbon in Leach). The linear sieve is located in the vicinity of the existing mill next to the operational installation for gravity enrichment. The sieved pulp is pumped into the main CIL-circuit, which is located outside the existing building of the former enrichment factory.

The input into the installation pulp with solid matter contents (an average of 13% solid matter) is subjected to partial dewatering (thickening) in consideration of the requirements of the consequent operations. For this purpose, the pulp is input into a thickener (2), where, upon addition of lime and flocculant, the same is thickened to a controlled density within the range of 30 - 35% solid matter.

The thickener is of the lamellae type with high separation efficiency. The same has been designed with a reserve capacity for the compacted product, in order to be capable to accommodate pulp for more than 12 hours of operation of the CIL-installation in case of eventual discontinuation of the operations along the milling cycle.

The cleared water from the compactor (the so-called "top discharge"), with an average discharge rate of 45 m³/h, overflows into a collection tank (3) with a capacity of 60 m³ and is returned for recycling into the milling process and the gravity enrichment.

¹ Figures in text correspond to those in Figure 1.

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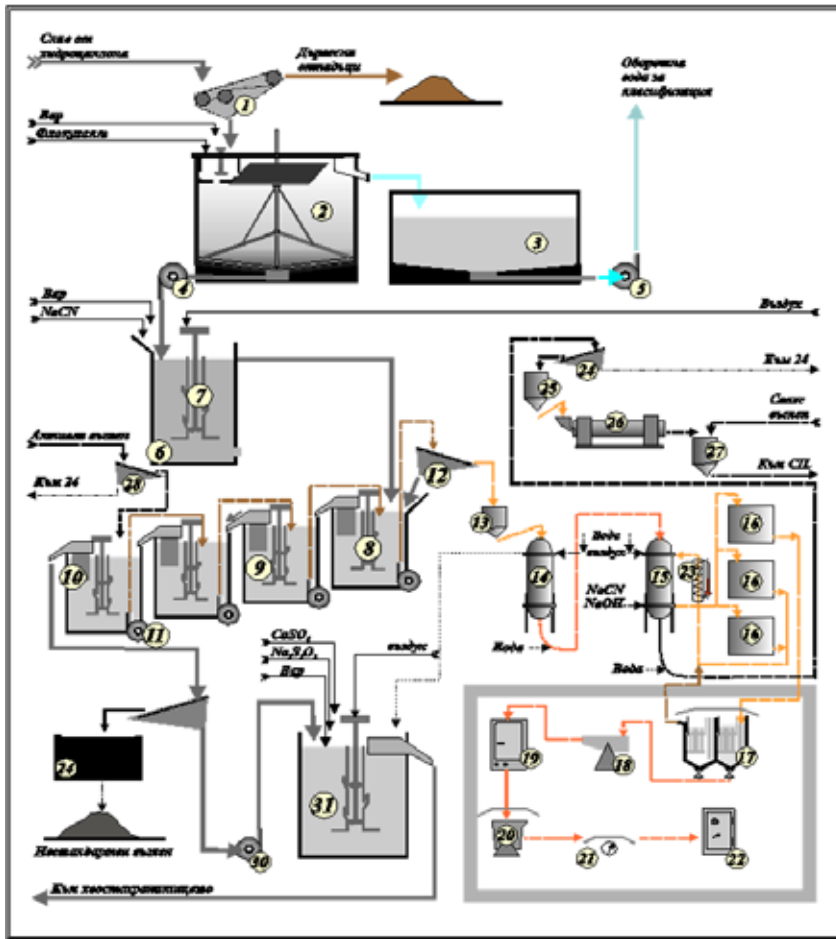


Figure 1: GK Process simplified flowsheet

The installation consists of several basic technological units (modules), as described below.

1. Module: Reagent Facility

The reagent facility comprises machinery and equipment for preliminary preparation and dosing of the reagent solutions.

The processes in the reagent facility are automatic and the supply of the solutions can be controlled both locally and remotely.

Installation for preparation of a solution of sodium cyanide

The facilities for the preparation and supply of sodium cyanide consist of:

- Feeding hopper, cone-shaped type – serves for input of solid matter of the respective reagent.
- Water control – consists of sensors for measuring the bottom and top level and valves for opening and closing the water supply.
- Preparation (mixing) tank – the tank is equipped with low revolutions per minute (rpm) mixer with screw electric motor. The tank is also equipped with a cover and serves for preparation of the solutions.

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- Dosing tank – serves for supply of the reagent.
- Pumps – serve for conveying and supply of the reagent.
- Gas analyzer – serves for measuring the concentration of cyanides (as HCN).
- pH meter – serves for measuring the value of pH in the tank for preparation of the solutions.

2. Module: Extraction

The Extraction Module includes the processes of leaching, carbon absorption, and destruction of the cyanide.

The processes of leaching and carbon absorption are performed in one leaching (6) and five absorption (9) open reactors, each with a volume of 240 m³, installed in sequence. Each is equipped with a two-plain mechanical agitator (7, 8) to provide optimum mixing and good contact between the ore particles and the NaCN solution and, respectively, between the carbon and the cyanide-gold solution. The adsorption reactors are equipped with a system of pumps (11) and sieves (10), which provide for the conveyance of the carbon from the last to the first reactor, against the direction of the pulp flow. In order to accelerate the process, the pulp is aerated in the leaching reactor by supplying pressurized air.

The dissolved gold in the form of cyanide compounds is adsorbed from the solution on the active carbon granules, input into the cycle at the outlet of the adsorption reactors system. The carbon granules are pumped against the flow of the leached pulp to the inlet of the cycle from the adsorption reactors by means of a pumping system and retention sieves. The pumps convey the carbon against the flow of the pulp, and the sieves between the reactors serve to retain the carbon in the reactor, allowing the pulp to flow to the next reactor. The “loaded by gold” active carbon is separated on the sieve surface (12) from the pulp of the first reactor of the series of reactors for carbon adsorption and is conveyed for further processing (to the desorption or elution of the gold).


For the purpose of rendering the residual cyanide contents harmless after the cyanide extraction the so-called INCO-process is used. Destruction is achieved by the product that has passed through the sieve being conveyed to the reactor for decomposition of the cyanides (31), where under intensive mixing and aeration a solution of sodium bisulfite (NaHSO₃) is added (which provides the required quantity of SO₂ for the INCO-process) and, whenever necessary, copper sulfate (which acts as a catalyst). This leads to the destruction of the free and dissolved in low acid cyanide compounds and their transformation into harmless cyanates and thiocyanates. On the basis of the conducted extended technological tests by “Resource Development Inc. - USA, the concentrations of cyanide in the final waste pulp at the inlet of the tailings pond do not exceed 0,5 mg/l, which is less than the requirements as per Directive 2006/21/EC.

3. Module: Elution

The carbon granules with the adsorbed gold (the “loaded active carbon”) are conveyed into a column for flushing (14). The operational volume of the column amounts to approximately 3 m³ (4 m height and 0,9 m diameter). It operates in a periodical mode with a duration of approximately 2 hours and 0,5 more hours for flushing and another 0,5 hours for emptying the column. The ratio of height/diameter of the column has been selected in such a manner, as to allow the conveyance by gravity of the carbon from the sieve and the maintenance of a circulation flow inside the column.

The process of elution (desorption or separation of the gold from the active carbon) is achieved in the column (15) with a capacity of approximately 1 ton of carbon. The process is cyclic by adding in sequence the various solutions – first a heated in advance in a heat-exchanger solution of sodium cyanide (0,1% by weight) and sodium hydroxide (2% by weight) at a temperature of approximately 90°C, followed by flushing with hot fresh pressurized water (at a temperature of 145°C and a pressure of 380 kPa). Upon its discharge

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from the top part of the column, the containing the gold elute passes through a screen filter and a heat-exchanger (23), and is then conveyed into the elute tank (16).

The elute, containing the dissolved gold, is then conveyed to the electrolysis department for electric extraction in an electrolysis bath (17). The process is cyclic with a total duration of approximately 8 hours at adjustable parameters. Upon completion of the electrolytic separation of the gold, the cathodes are washed and the gold cake is collected at the bottom of the tank, installed under the electrolytic bath. Any accumulation of gold sediment in the collection tank (gold sludge) is conveyed in the form of a suspension to a small filter-press (18) for dewatering. The collected batch of gold cake is unloaded after filling of the filter press and is dried in an electric drier (19). According to its capacity, the drier comprises equipment of the laboratory type, which operates in periodical mode – one or, in exceptional cases, two operations per month. The duration of each operation varies within the range of 3 - 7 hours, while the output of dried gold cake amounts up to 20 kg.

The dried batch of gold cake is subjected to blending by fluxes (borax, soda, quartz sand) and melting in an induction furnace (20) with a maximum capacity of 20 dm³. The blending is performed on a “blending table” under ventilation. The induction furnace for the melting is of the laboratory type. The smelt of the so-called “dore alloy” is cast into ingots of approximately 500 ounces each (approximately 16,5 - 17,0 kg).

The table for the blending and the induction furnace is equipped with an aspiration system, with the vented gases passing via a gas-conduit through a sleeve filter of the cassette type and is exhausted via a chimney of 15 m height. Dust retained by the filter is returned to the blending stage in the gold sludge and the fluxes before the smelting.

After the elution of the gold the active carbon is regenerated by thermal processing in an electric resistance rotary furnace (26). The washed active carbon is removed from the elution column hydraulically and is dewatered by means of a sieve (24) before being fed into the feeding hopper (25) of the regeneration furnace. The regeneration (i.e. reactivation) of the carbon granules is achieved after their stay for approximately 15 minutes in the hot area of the furnace at a temperature of 750°C. The reactivated carbon is discharged from the furnace with a maximum temperature of 300°C and is then conveyed into the water environment of the cooling tank (27), from which it is conveyed by means of a pump onto a sieve for size sorting (28), before being fed again into the main process. Certain quantities of “fresh active carbon” are also fed via the cooling tank (27) to cover losses. In this way, the carbon is moisturized before being sieved and fed into the stage for leaching and adsorption.

After the detox the tailings is being discharged to a day pond, located approximately 200 m from the detox plant, from where it is pumped to the Kardzhali tailings storage facility. The day pond is a concrete facility with aeration capability.

Kardzhali Tailings Storage Facility

The deposition of the wastes from the ore processing is executed at the Kardzhali tailings pond which is located on the company’s land in the Kodzha Dere area.

The site was commissioned in 1977 and operations have been continuous since then.

Upon the execution of a characterization of the mining wastes and the facilities for their deposition, the tailings pond has been awarded category B - non-inert, non-hazardous.

The tailings conduits are designed to convey the wastes from the factory to the tailings pond and comprise pressure pipelines, made of steel pipe and installed in two branches - one operational, the other as a standby.

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The filling of the tailings pond is executed in a diffused manner, along the front according to the so-called “zenith method” by means of the pressure pipeline.

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SUMMARY AUDIT REPORT

Auditors Findings

in full compliance with

Gorubso Kardzhali AD is:

in substantial compliance* (see below) with

The International
Cyanide Management
Code

not in compliance with

Audit Company: Golder Associates (UK) Ltd

Audit Team Leader: Sophie Wheeler

Email: swheeler@golder.com

Name of Other Auditors

Name, Position	Signature
Romain Girard, ICMI Pre-certified Mining Specialist	

Dates of Audit

The Certification Audit was undertaken over four days between 23 March and 27 March 2015.

I attest that I meet the criteria for knowledge, experience and conflict of interest for Code Verification Audit Team Leader, established by the International Cyanide Management Institute and that all members of the audit team meet the applicable criteria established by the International Cyanide Management Institute for Code Verification Auditors.

I attest that this Summary Audit Report accurately describes the findings of the verification audit. I further attest that the verification audit was conducted in a professional manner in accordance with the International Cyanide Management Code Verification Protocol for Cyanide Gold Mine Operations and using standard and accepted practices for health, safety and environmental audits.

Gorubso Kardzhali AD

25 June 2015

Name of Facility

Signature of Lead Auditor

Date

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PRINCIPLE 1 – PRODUCTION

Encourage Responsible Cyanide Manufacturing by Purchasing from Manufacturers that Operate in a Safe and Environmentally Protective Manner

Production Practice 1.1: Purchase cyanide from manufacturers employing appropriate practices and procedures to limit exposure of their workforce to cyanide, and to prevent releases of cyanide to the environment

in full compliance with

The operation is

in substantial compliance with

Production Practice 1.1

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 1.1; purchase cyanide from manufacturers employing appropriate practices and procedures to limit exposure of their workforce to cyanide, and to prevent releases of cyanide to the environment.

GK only purchase cyanide from Lučební závody Draslovka a.s. Kolin (Draslovka) based in the Czech Republic. Draslovka were first certified under the Code in March 2011 and were re-certified in August 2014.

GK holds copies of the summary certification and re-certification reports for Draslovka.

Cyanide is not purchased from any other suppliers. Boxes present in the warehouse were viewed and the packaging details confirmed they were purchased from Draslovka.

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PRINCIPLE 2 – TRANSPORTATION

Protect Communities and the Environment during Cyanide Transport

Transport Practice 2.1: Establish clear lines of responsibility for safety, security, release prevention, training and emergency response in written agreements with producers, distributors and transporters.

[X] in full compliance with

The operation is

[] in substantial compliance with

Transport Practice 2.1

[] not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 2.1; establish clear lines of responsibility for safety, security release prevention, training and emergency response in written agreements with producers, distributors and transporters.

The written Sales Agreements specify that designated responsibilities extend to any subcontractors used by the producer, distributor, transporter or the operation for transportation related activities. The agreements specify that delivery shall be with an ICMI certified forwarding company.

Draslovka subcontract the cyanide transportation to the transportation company CB SPED who also based in Czech Republic. CB SPED are a signatory to the Code and were certified on 19 September 2012.

The Sales Agreement between GK and Draslovka was reviewed and it states in Section 5 that delivery will only be by an ICMI certified company to Delivery at Place (DAP) at GK. The contract does not mention the specific language listed in a) to l) however based on a review of the CB SPED Summary audit report and the Sales Agreements the auditors confirmed that CB SPED acknowledge responsibility for all items covered under this Standard of Practice.

CB SPED do use sub-contractors as confirmed in their summary audit report 'CB SPED uses subcontract trucking companies for the transport of cyanide. Procedures and contractual agreements are in place to ensure that subcontract trucking operations fulfil all ICMC requirements. CB. SPED maintains a formal list of approved cyanide transporters who have been evaluated by C.B. SPED for their ability to transport cyanide in a manner that fulfils all ICMC requirements'.

The Bills of Lading/Consignment Notes detail that the sub-contractor JS Euroline deliver cyanide to GK. Correspondence was reviewed from CB SPED confirming they sub contract to JS Euroline.

Transport Practice 2.2: Require that cyanide transporters implement appropriate emergency response plans and capabilities and employ adequate measures for cyanide management

[X] in full compliance with

The operation is

[] in substantial compliance with

Transport Practice 2.2

[] not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

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The operation is in full compliance with Standard of Practice 2.2; require that cyanide transporters implement appropriate emergency response plans and capabilities and employ adequate measures for cyanide management.

Draslovka subcontract to the cyanide transportation company CB SPED as the only transporter of cyanide to the facility. CB SPED are a signatory to the Code and was certified on 19 September 2012.

The Bills of Lading/Consignment Notes detail that subcontractor JS Euroline deliver cyanide to GK. Correspondence was reviewed from CB SPED confirming that JS Euroline was a subcontractor of theirs.

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PRINCIPLE 3 – HANDLING AND STORAGE

Protect Workers and the Environment during Cyanide Handling and Storage

Handling and Storage

Practice 3.1: Design and construct unloading, storage and mixing facilities consistent with sound, accepted engineering practices, quality control/quality assurance procedures, spill prevention and spill containment measures.

in full compliance with

The operation is in substantial compliance with Handling and Storage Practice 3.1

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 3.1: design and construct unloading, storage and mixing facilities consistent with sound accepted engineering practices, quality control/quality assurance procedures, spill prevention and spill containment measures.

Facilities for storing and mixing cyanide have been designed and constructed in accordance with cyanide producers' guidelines, applicable jurisdictional rules and sound and accepted engineering practices for these facilities.

The process plant design was undertaken by engineering firm Metso minerals and Ekotex.

Unloading and storage areas for liquid and solid cyanide are located as far away as reasonably practicable from people and surface waters. The storage of the cyanide at the GK plant is in a warehouse and the mixing tanks are located inside the plant building. The two buildings are about 300 m apart. Crates of cyanide are transported one at a time, by forklift truck, from the warehouse to the mixing tanks.

No liquid cyanide is delivered to GK. GK only receives solid sodium cyanide briquettes in 1 tonne wooden crates from Draslovska.

Cyanide storage tanks are fitted with level indicators and high-level alarms to prevent the overfilling.

Cyanide mixing and storage tanks are located on a surface that can prevent seepage to the subsurface. All floors are concrete, there are no cracks. There is a sump that is designed to pump a spill back to the detox tank within the mill.

Secondary containments for cyanide storage and mixing tanks are constructed of materials that provide a competent barrier to leakage.

Cyanide is stored in the warehouse with adequate ventilation to prevent the build-up of HCN gas. The warehouse has a roof and walls as well as concrete flooring. It is in a secure area where public access is prohibited. There are no other materials or chemicals stored in the CN warehouse building.

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Handling and Storage

Practice 3.2:

Operate unloading storage and mixing facilities using inspections, preventative maintenance and contingency plans to prevent or contain releases and control and respond to worker exposures.

in full compliance with

The operation is

in substantial compliance with

Handling and Storage Practice 3.2

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 3.2; operate unloading storage and mixing facilities using inspections, preventative maintenance and contingency plans to prevent or contain releases and control and respond to worker exposures.

The empty cyanide containers are prevented from being used for any purpose other than holding cyanide.

Empty cyanide crates are checked for traces of cyanide and dismantled in the mixing room before being taken by forklift to the dedicated warehouse. Empty plastic bags, are rinsed with ferrous sulphate solution, and liners are placed in one cyanide box which is decontaminated but not dismantled for this specific purpose. A hazardous waste specialist picks up empty boxes from the warehouse about once a year and disposes of all the contents according to all current, relevant legislation.

GK has developed several procedures that address activities to prevent exposures and releases during cyanide unloading and mixing activities.

The Procedure states that cyanide crates are handled by forklift trained mill or maintenance operators. The cyanide crates are stacked to a maximum of two high. The mixing foreman is tasked with supervising the mixing operator and to keep constant communication with the control room during the mixing operation.

The Cyanide Mixing Procedure addresses the operation of valves and couplings during mixing, which is all undertaken via the control room.

Timely clean-up of any spills of cyanide during mixing is addressed in the SOP for mixing cyanide, and specifically in the instruction for mixing cyanide. This stipulates that the area should be washed after mixing. A full set of personal protective equipment (PPE), including full masks, gloves, boots and disposable clothing is detailed in the instruction to operator and instruction to foreman.

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PRINCIPLE 4 – OPERATIONS

Manage Cyanide Process Solutions and Waste Streams to Protect Human Health and the Environment

Operations Practice 4.1: Implement management and operating systems designed to protect human health and the environment including contingency planning and inspection and preventative maintenance procedures.

in full compliance with

The operation is

in substantial compliance with

Operations Practice 4.1

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 4.1; implement management and operating systems designed to protect human health and the environment including contingency planning and inspection and preventative maintenance procedures.

GK has developed written management plans for the following active cyanide facilities: Cyanide warehouse, mixing area, Carbon-in-Leach (CIL) area, Stripping/Elution area, Cyanide destruction area and Appurtenances.

The following facilities are not cyanide facilities because GK designed the plant so that they use or contain solutions with less than 0.5 ppm WAD cyanide when exiting the INCO process destruction plant: Pipeline from cyanide destruction area to day pond; Day pond; The tailings storage facility (TSF); and Pipelines to and from the TSF (slurry and reclaim).

The SOP demonstrates an understanding of cyanide management in a manner that prevents or controls releases to the environment and exposures to the workers and the community. The instructions are detailed and generally comprise the following sections: purpose, object, definition, roles responsibilities, methodology, health and safety, and revision, and the checklist and inspection forms are specific rather than general, and asking for potential deviations and remarks.

GK has developed plans and procedures describing the standard of practice necessary for the safe and environmentally sound operation of the cyanide facilities, and these are noted in the SOP for the mixing, leaching and adsorption, elution and desorption circuit), as well as for the tailings dam.

GK has plans and procedures that describe the standard practices necessary for the safe and environmentally sound operation of the facility. The cyanide facilities (warehouse, mixing, CIL circuit and gold recovery circuit) are inspected at every shift. GK has a calendar-based preventive maintenance programme, whereby maintenance is planned on an annual basis.

GK has a procedure for the identification of changes in the processes or operating practices and the approval and implementation for any changes must be approved and signed by the General manager and the Health and Safety Manager.

GK has a cyanide management contingency procedure for situations when inspections and monitoring identify a deviation from design or standard operating procedures, and/or when a temporary closure or cessation of the operation may be necessary. There are contingency procedures for the mill such as shut down of the CIL circuit, shut down of the detox circuit, and failure of the power grid that address all the necessary steps to take to prevent any health and safety hazards related to such systems upsets.

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The operation inspects cyanide facilities on an established frequency sufficient to assure and document that they are functioning within design parameters. The mill inspection for cyanide facilities is done at each shift. The tailings dam and lines inspection is also undertaken at every shift.

Mill inspections are carried out during each shift by the shift bosses, and by maintenance workers on a regular basis depending on the maintenance planning. Checklists are used and details of any work orders raised are noted.

The maintenance department carry out regular maintenance that is generated as part of the planned maintenance programme.

Inspections are documented and the records maintained include the date of inspection, the inspector's name, any deficiencies observed, and any corrective actions. When corrective actions are identified, and maintenance is required, they are entered into the logbooks, where the nature and date of the corrective action is entered then directed onto maintenance. The shift bosses record the results of their inspections in specific reports in addition to any deficiencies reported during their particular shift. The maintenance department tracks its activities with the use of logbooks, where date, name, nature of work undertaken, time taken to do the job, spare parts used etc are documented.

GK has developed and implemented inspection and preventive maintenance (PM) programs for the main mechanical and electrical equipment of the cyanide facilities.

The preventive maintenance programme is a yearly programme that is derived from the recommendations originating from the maintenance manual issued by Metso. This has been adapted and transformed into an overall yearly schedule, which has itself been broken down into a detailed maintenance schedule which is specific for each piece of equipment.

GK has an electric yard that is supplied by two different power lines (from independent power sources). Only one line is in use at any one time, with the second being kept for use in an emergency. There is always an operator at the electrical yard, and the switch from one line to another takes about 3 to 7 minutes.

The process plant is designed in such way that the system freezes in case of power outage. However, some key safety instruments and devices have independent batteries that are automatically switched on in case of power outage.

Operations Practice 4.2: Introduce management and operating systems to minimise cyanide use, thereby limiting concentrations of cyanide in mill tailings.

in full compliance with

The operation is in substantial compliance with

Operations Practice 4.2

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 4.2; introduce management and operating systems to minimise cyanide use, thereby limiting concentrations of cyanide in mill tailings.

The operation conducts a program to determine appropriate cyanide addition rates in the mill and evaluates and adjusts addition rates as necessary when ore types or processing practice require it. Sampling of the incoming ore is undertaken during every shift at the mill, and CN titration is undertaken every 3 hours in the CIL tanks and every hour in the leach tank to evaluate and adjust, the cyanide addition rate. The rates have been determined through metallurgical testing. The initial cyanide addition was determined by a series of

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leach tests undertaken for different concentration to determine the optimum addition rates, with an anticipated residual concentration of 240 ppm in the leach residue. The current addition is now approximately at a 300 ppm target and residual value in the last CIL tanks at around 180 ppm.

The operation has evaluated various control strategies for cyanide additions.

The operation has implemented a strategy to control cyanide addition. Cyanide addition is controlled with titration tests that are undertaken at regular intervals.

Operations Practice 4.3: Implement a comprehensive water management programme to protect against unintentional releases.

in full compliance with

The operation is in substantial compliance with not in compliance with

Operations Practice 4.3

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 4.3; implement a comprehensive water management programme to protect against unintentional releases.

GK provided data showing that the concentration of WAD cyanide in the TSF is less than 0.5 ppm and therefore, the TSF is not considered a cyanide facility and the water balance takes on less importance because a release or exposure is not be considered a cyanide-related incident.

The only water balance available to answer the scope of the audit is the plant water balance, which was reviewed and considered adequate for its purpose, although not probabilistic. However, since it is since not dealing with any "external" factor such as rainfall, evaporation, storm water, freezing, or thawing, this is not consider critical to prevent any unintentional releases into the environment. The plant water balance addresses as appropriate the elements necessary such as pumps capacity, transfer capacity, effluents rates, etc.

The inspections of the plant area are carried out during every shift and inspections at the tailings dam are also undertaken on every shift and there is personnel present at the tailings dam site on a continuous basis. Minimum freeboard is stated in the operating manual and is being monitored.

Operations Practice 4.4: Implement measures to protect birds, other wildlife and livestock from adverse effects of cyanide process solutions.

in full compliance with

The operation is in substantial compliance with not in compliance with

Operations Practice 4.4

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 4.4; implement measures to protect birds, other wildlife and livestock from adverse effects of cyanide process solutions.

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GK has implemented cyanide neutralization as a primary means to maintain WAD cyanide concentrations below 50 mg/L in open water (e.g., impoundments and ponds). The analytical data that no open water is present where WAD cyanide exceeds 50 mg/L.

GK does not operate any heap leaching facilities. No wildlife mortality has occurred; however, procedures are in place to ensure records are kept if it becomes necessary to do so.

Operations Practice 4.5: Implement measures to protect fish and wildlife from direct or indirect discharges of cyanide process solutions to surface water.

in full compliance with

The operation is

in substantial compliance with

Operations Practice 4.5

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 4.5; implement a comprehensive water management programme to protect against unintentional releases.

GK's direct discharge to surface water is no greater than 0.5 mg/L WAD cyanide.

The data from the compliance point were reviewed and the WAD cyanide concentration was found to be less than 0.5 mg/L.

GK does not have an indirect discharge to surface water. The data from the discharge point were reviewed and the free cyanide concentration was found to be less than 0,022 mg/L.

Operations Practice 4.6: Implement measures designed to manage seepage from cyanide facilities to protect the beneficial uses of groundwater.

in full compliance with

The operation is

in substantial compliance with

Operations Practice 4.6

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 4.6; implement measures designed to manage seepage from cyanide facilities to protect the beneficial uses of groundwater.

There are 3 groundwater monitoring wells that are used to assess if cyanide levels would appear in groundwater, cyanide is below permit limits for now.

The IPPC permit details a groundwater limit of 50ug/l WAD cyanide. There are no compliance points below or down-gradient of the facility. The auditors reviewed the analytical data for the last round of measurement undertaken on 4 July 2013 for the groundwater wells that included measurement of free cyanide and found these record all WAD CN values as below the detection limit of 5 ug/L.

There are no compliance points below or down-gradient of the facility.

There are no identified beneficial uses of groundwater in the area of the facility.

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Operations Practice 4.7: Provide spill prevention or containment measures for process tanks and pipelines.

in full compliance with

The operation is

in substantial compliance with

Operations Practice 4.7

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in substantial compliance with Standard of Practice 4.7; Provide spill prevention or containment measures for process tanks and pipelines.

Spill prevention and containment measures are provided for all cyanide unloading, storage, mixing and process solution tanks. Secondary containments are present for the cyanide mixing and storage tank, the CILs and detox tank, the elution area, the electrowinning area.

Secondary containments for cyanide, storage, mixing and process tanks are sized to hold a volume greater than that of the largest tank and any piping draining back to the tank.

All secondary containments are equipped with sumps that would collect any cyanide solution or cyanide contaminated water and send it to the detox tank, and are therefore compliant with the Code.

All cyanide process solution pipelines are contained within the mill building, and would report to the respective sumps of the area they are related to.

There are no cyanide pipelines that present a risk to surface water and therefore no evaluation for special protection need is necessary.

Operations Practice 4.8: Implement quality control/quality assurance procedures to confirm that cyanide facilities are constructed according to accepted engineering standards and specifications.

in full compliance with

The operation is

in substantial compliance with

Operations Practice 4.8

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 4.8; implement quality control/quality assurance procedures to confirm that cyanide facilities are constructed according to accepted engineering standards and specifications.

Quality control and quality assurance programs were implemented during the construction of new cyanide facilities and when modifications have been made to existing cyanide facilities.

There is evidence of QA/QC control during construction of the following facilities: Mill building, including all tanks and pipes, and for mixing and reagent storing, CIL and leaching, detox as well as elution area.

The quality control and quality assurance programs addressed the suitability of materials and adequacy of soil compaction for earthworks such as tank foundations and liners, and for construction of cyanide storage and process tanks.

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Where no actual proof of QA/QC was available, GK provided the auditors with declaration of conformity by independent engineers indicating that for these facilities their continued operation within established parameters will protect cyanide exposures and releases - this was provided for the day pond, the cyanide warehouse, and earthworks/civil works undertaken during plant refurbishment.

Appropriately qualified personnel reviewed the cyanide facility construction and provided documentation that the facility was built as proposed and approved, where appropriate.

Operations Practice 4.9: Implement monitoring programs to evaluate the effects of cyanide use on wildlife, surface and groundwater quality.

in full compliance with

The operation is

in substantial compliance with

Operations Practice 4.9

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 4.9, implement monitoring programs to evaluate the effects of cyanide use on wildlife, surface and groundwater quality.

GK has developed written standard procedures for monitoring activities. These include a yearly plan for the monitoring of surface and groundwater which details all monitoring activities to be undertaken (both by GK and by external laboratories), specifying species to be analysed, frequencies of analysis and location of sampling points. A standard operating procedure for the monitoring activities includes equipment to be used and activities to be carried out.

All GK sampling activities are recorded in field logbooks, and formally accepted by the on site laboratory with a protocol of acceptance of samples.

Sampling and analytical protocols have been developed by appropriately qualified personnel with either an engineering degree in the field of environmental engineering, health and safety or applied sciences.

Sampling activities undertaken by the accredited external laboratory Eurotest Control are undertaken under the relevant local Bulgarian and international standard: ETC V311/7.1.4.3/2012, ISO6703-1:2002 and ISO 11885:2009 by the laboratory's own personnel and their standard procedures.

Conditions under which samples are taken are documented in writing. The sampling form used requires information regarding the weather, sampling locations, depth of sampling, temperature, wind speed, and has a box for any remarks where notes such as wildlife activity or mortality can be noted.

The operation inspects for and records wildlife mortalities related to contact with, and ingestion of, cyanide solutions.

Monitoring is conducted at frequencies adequate to characterise the medium being monitored and to identify changes in a timely manner. Internal sampling at the discharge point is undertaken on a daily basis. For other surface water points, internal sampling is done also on a daily basis or event three times a day for the day pond. External sampling is done monthly at detox discharge, day pond exit and final discharge.

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PRINCIPLE 5 – DECOMMISSIONING

Protect Communities and the Environment from Cyanide through Development and Implementation of Decommissioning Plans for Cyanide Facilities.

Decommissioning

Practice 5.1: Plan and implement procedures for effective decommissioning of cyanide facilities to protect human health, wildlife and livestock.

[X] in full compliance with

The operation is [] in substantial compliance with Decommissioning Practice 5.1 [] not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 5.1; plan and implement procedures for effective decommissioning of cyanide facilities to protect human health, wildlife and livestock.

GK has developed written procedures to decommission cyanide facilities when operations cease.

The general process plant plan details general closure such as plant and tailings area (including closure covers, reprofiling, etc).

GK has a specific cyanide related decommissioning procedure that provides the steps necessary to achieve the decommissioning.

The detailed planning includes a preliminary schedule of activities based on the decommissioning activities to be undertaken.

The decommissioning procedure includes an Excel spreadsheet covering closure costs and schedule for activities.

The process plant has only been in operation since 2012 and there have not been any major modifications to the process that would warrant a revision.

Decommissioning

Practice 5.2: Establish an assurance mechanism capable of fully funding cyanide related decommissioning activities.

[X] in full compliance with

The operation is [] in substantial compliance with Decommissioning Practice 5.2 [] not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 5.2; establish an assurance mechanism capable of fully funding cyanide related decommissioning activities.

GK has developed an estimate of the cost to fully fund third party implementation of the cyanide-related decommissioning measures as identified in the site closure and de-commissioning plan.

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The price list and rates for any closure or remediation activities is determined by the local governmental body for construction activities, and has been applied to all rates given in the closure activities bill of quantities.

The applicable jurisdiction does require financial guarantees.

The exploitation and closure concession for the mine is an additional agreement to the contract issued by the Ministry of Economics and Energy and includes the obligation for GK to open a bank account to cover for rehabilitation costs. It states that the account should be provisioned yearly and that the amount to be placed in the account is proportionate the amount of ore extracted and processed during a particular year. The money is paid at the end of each financial year in April and represents 5% of the concession fee of the previous year, the concession fess being themselves linked to production and treatment figures.

It states in the concession document that the bank would only release the money after the Ministry approval.

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PRINCIPLE 6 – WORKER SAFETY

Protect Workers’ Health and Safety from Exposure to Cyanide

Worker Safety

Practice 6.1: Identify potential cyanide exposure scenarios and take measures as necessary to eliminated, reduce and control them.

in full compliance with

The operation is

in substantial compliance with

Worker Safety Practice 6.1

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 6.1; identify potential cyanide exposure scenarios and take measure as necessary to eliminate, reduce and control them.

GK have developed procedures describing how cyanide-related tasks such as unloading, mixing, plant operations, and equipment decontamination prior to maintenance should be conducted to minimise worker exposure. The SOPs have detailed sections on cyanide first aid procedures and PPE requirements.

The plans and procedures have been developed for cyanide unloading, process tasks, confined spaces, and equipment decontamination. The procedures have been updated on a regular basis and will continue to be updated as needed when changes in the process are made.

The procedures and plans detail the risks involved with each task and adequately describe safe work practices. Each procedure details task specific personal protective equipment (PPE) requirements, personnel responsibilities for the task, and the detailed procedures to appropriately conduct the task. Verification included review of the written procedures and plans.

GK has a change management procedure. The procedure details the types of actions that require the procedure to be implemented. It details that a review of the changes to be made should be carried out and any changes that must be implemented following the completion of the work. A Management of Change Approval form details the change owner, the description of the change and the benefits of the change. Appendix D of the Procedure for Management of Change includes the Management of Change Process schematic drawing. It details that an assessment of the impact of the change on the facility must be undertaken in the form of a risk assessment. The approval and implementation of any changes must be signed by the General Manager and the Health and Safety Manager. The auditors reviewed completed management of change documentation.

GK solicits and actively considers worker input in developing and evaluating health and safety procedures. Health and safety meetings take place on a daily basis and a longer health and safety meeting takes place every three months. During these meetings workers views are sought. The auditors review meeting records.

Worker Safety

Practice 6.2: Operate and monitor cyanide facilities to protect worker health and safety and periodically evaluate the effectiveness of health and safety measures.

in full compliance with

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ICMI CERTIFICATION SUMMARY REPORT

The operation is in substantial compliance with **Worker Safety Practice 6.2**
 not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 6.2; operate and monitor cyanide facilities to protect worker health and safety and periodically evaluate the effectiveness of health and safety measures.

GK has determined the appropriate pH for limiting the evolution of HCN gas during mixing and production activities.

The SOP 'The preparation of sodium cyanide solution' states that the pH of the solutions before mixing must be at pH 12.

The SOP 'Instructions for managing the production process in the leach cycle' details a pH level of between 10.5 - 11.5 for the solution in the leaching process.

GK uses fixed or personal monitoring devices to confirm that controls are adequate to limit worker exposure to HCN gas and sodium, calcium or potassium cyanide dust to 10 parts per million on an instantaneous basis and 4.7 parts per million continuously over an 8-hour period, as cyanide.

GK has identified that there are no areas and activities where workers may be exposed to cyanide in excess of 10 ppm on an instantaneous basis and 4.7 ppm continuously over an 8-hour period and require the use of personal protective equipment in these areas or when performing these activities.

HCN monitoring equipment is maintained, tested and calibrated as directed by the manufacturer (Dräger) and records are retained for at least one year. Calibration of the four fixed monitors and the two portable monitors is undertaken every six months by Dräger Safety Bulgaria. The calibration certificates for 14 August 2014 and 27 February 2015 were reviewed and found to be compliant.

Warning signs have been placed where cyanide is used advising workers that cyanide is present, and that smoking, open flames and eating and drinking are not allowed. The signage is in appropriate places and placed so it is clearly identified.

Showers, low pressure eye wash stations and dry powder or non-acidic sodium bicarbonate fire extinguishers are located at strategic locations throughout the operation. All fire extinguishers in the process facility contain dry powder ABC. These are checked annually by the company Hristo Banev. Records from the last inspection by Hristo Banev were reviewed.

The local fire brigade visit GK regularly and have advised regarding the location and number of fire extinguishers.

The contents of unloading, storage, mixing and process tanks and piping containing cyanide are identified to alert workers to their content, and the direction of cyanide flow in pipes is designated.

The pipes from the mixing and storage tanks were followed along their length to confirm that they are adequately labelled and the direction of flow was marked with arrows. The mixing and storage tank and pipes are colour coded and all high strength cyanide containing pipes and tanks are coloured red. Workers and visitors are taught that this colour indicates that the pipe contains cyanide in induction training.

MSDS, first aid procedures and other informational materials on cyanide safety is presented in Bulgarian, the language of the workforce, and are present in areas where cyanide is managed. All workers speak Bulgarian.

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GK has procedures in place that are being implemented to investigate and evaluate cyanide exposure incidents to determine if their programs and procedures to protect worker health and safety, and to respond to cyanide exposures, are adequate. GK has a written accident and incident procedure. The procedure states that following an incident, accident or malfunction a specialist work group is to be formed to investigate the reasons for the incident.

Worker Safety

Practice 6.3: Develop and implement emergency response plans and procedures to respond to worker exposure to cyanide.

in full compliance with

The operation is in substantial compliance with

Worker Safety Practice 6.3

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 6.3; develop and implement emergency response plans and procedures to respond to worker exposure to cyanide.

GK has oxygen and resuscitators (manufactured by MediSelect) and two Self Contained Breathing Apparatus (SCBAs) manufactured by SCOTT.

GK has radios, cell and landline telephone communication systems that are used in the event of an emergency. Verification was from visual observation of the radios and telephones.

GK has medical oxygen available for the treatment of cyanide exposure victims. The oxygen is kept in the emergency response cupboard in the mill. It is inspected once a month by the Safety Department and a checklist is filled in, these records were reviewed. At the same time a separate inspection is undertaken of the two SCBA units. Other general first aid kits are checked every month by the Safety department.

GK has developed an Emergency Response Plan titled 'Internal Emergency Plan for Actions in Case Of Disasters and Emergencies in Gorubso-Kardzhali AD (PLC), Kardzhali' (Emergency Response Plan or Plan) to address potential accidental releases of cyanide.

In the event of cyanide exposure incident the patient would be removed from the area, their clothes would be removed, they would be washed with water, treated with oxygen, and transported to the hospital. The emergency response team are trained in the use of the oxygen and there are always two people from the emergency response team on any one shift.

GK has a letter, dated 16 April 2015, from the Atanas Dafovski hospital in Kardzhali stating they are aware of the use of cyanide at GK and they are able to treat cyanide exposure victims at the hospital. GK employ a doctor to undertake occupational hygiene monitoring of worker and this doctor also works at the Atanas Dafovski hospital in Kardzhali.

GK conducts cyanide exposure and release mock drills on a regular basis to test the relevant emergency procedures. Seven mock drills have been undertaken in 2015 at GK.

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PRINCIPLE 7 – EMERGENCY RESPONSE

Protect Communities and the Environment through the Development of Emergency Response Strategies and Capabilities

Emergency Response

Practice 7.1: Prepare detailed emergency response plans for potential cyanide releases.

in full compliance with

The operation is in substantial compliance with **Emergency Response Practice 7.1**

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in full with Standard of Practice 7.1; prepare detailed emergency response plans for potential cyanide releases.

GK has developed an Emergency Response Plan titled 'Internal Emergency Plan For Actions In Case Of Disasters and Emergencies In Gorubso- Kardzhali AD (PLC), Kardzhali' (Emergency Response Plan or Plan) to address potential accidental releases of cyanide. The plan includes:

- Plan for actions in case of earthquakes;
- Rescue and emergency actions in case of radiation;
- Rescue and emergency actions in case of ionizing radiation;
- Plan for actions in case of fire;
- Plan for actions in case of flood;
- Plan for actions in case of severe flood (associated with local dam failure);
- Plan for actions in case of leakage with dangerous chemicals (not including cyanide);
- Plan of action in case of a cyanide spill incident related to transportation, storage, handling and use of cyanide;
- Plan of action in case of inappropriate pH levels;
- Plan of action in case of electrical and water supply issues;
- Plan of action in case of an epidemic; and
- Plan of action in case of terrorist attack.

The procedures address specific response actions for clearing site personnel from the area of exposure; first aid measures for cyanide exposure; decontamination procedures; control of releases at their source and containment; as well as the assessment, mitigation and future prevention of releases. Verification was by review of these documents and interview with safety and process personnel.

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Emergency Response

Practice 7.2:

Involve site personnel and stakeholders in the planning process.

in full compliance with

The operation is

in substantial compliance with

Emergency Response Practice 7.2

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 7.2; involve site personnel and stakeholders in the planning process.

GK has involved its workforce and stakeholders, including potentially affected communities, in the cyanide emergency response planning.

GK has involved the workforce in emergency response planning during regular safety meetings, where workers have the opportunity to raise concerns or make comments on the emergency response planning.

Neighbouring facilities have been sent a copy of the ERP and were involved in two of the mock drills. GK would telephone the neighbouring facilities in the event of an emergency and also calls them every time the site wide emergency sirens are tested.

GK has involved local response agencies such as outside responders and medical facilities in the cyanide emergency planning and response process.

The local fire department visit GK once a year. The fire department have familiarised themselves with the site and the ERP and have been given a copy. The Fire Department have advised the site regarding the number of fire extinguishers, fire hydrants that are required.

GK has a letter, dated 16 April 2015, from the Atanas Dafovski hospital in Kardzhali stating they are aware of the use of cyanide at GK and that they are able to treat cyanide exposure victims at the hospital.

GK engages in consultation or communication with stakeholders to keep the ERP current. GK has a Community Liaison Officer who liaises with the local fire department, neighbouring facilities and non-government organisations.

Emergency Response

Practice 7.3:

Designate appropriate personnel and commit necessary equipment and resources for emergency response.

in full compliance with

The operation is

in substantial compliance with

Emergency Response Practice 7.3

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 7.3; designate appropriate personnel and commit necessary equipment and resources for emergency response.

GK has committed in their emergency response plans and procedures the necessary emergency response equipment and first aid equipment to treat and to coordinate transportation to the local hospital. The GK

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Emergency Response Procedure describes the roles and responsibilities for the emergency response coordinators (including the primary and alternate coordinators).

GK has identified its ERT and emergency coordinators, and has an updated list of them including their name and contact information in Emergency Response Plan.

GK confirmed that outside entities included in the ERP are aware of their involvement and are included as a necessary in mock drills or implementation exercises.

The local fire department visit GK once a year. The fire department have familiarised themselves with the site and have undertaken familiarisation exercises. They have been given a copy of the ERP.

GK has a letter from the local hospital in Kardzhali stating they are aware of the use of cyanide at GK and they are able to treat cyanide exposure victims at the hospital.

The Municipal authority has been sent ERP, to help warn the town if there are issues arising from the use of cyanide.

Emergency Response

Practice 7.4: Develop procedures for internal and external emergency notification and reporting.

in full compliance with

The operation is in substantial compliance with **Emergency Response Practice 7.4**

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 7.4; develop procedures for internal and external emergency notification and reporting.

The ERP includes procedures and contact information for notifying GK management, Regional Government, the Municipal Fire Department, the civil protection department, the emergency services, and local police.

The ERP includes procedures and contact information for notifying potentially affected communities of the cyanide-related incident and any necessary response measures and for communications with the media. Control room operators would use a site wide loud speaker system and sirens to alert workers and the nearby community and other facilities. Neighbouring facilities would also be contacted directly by telephone. In case of wider impact the civil protection department of the local authority would be involved in response measures and communication with the media.

Emergency Response

Practice 7.5: Incorporate in response plans and remediation measures monitoring elements that account for the additional hazards of using cyanide treatment chemicals.

in full compliance with

The operation is in substantial compliance with **Emergency Response Practice 7.5**

not in compliance with

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Summarise the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 7.5; incorporate in response plans and remediation measures monitoring elements that account for the additional hazards of using cyanide treatment chemicals.

The ERP describes specific remediation measures as appropriate for likely cyanide release scenarios, such as: recovery or neutralisation of solutions or solids; decontamination of soils or other contaminated media; management and/or disposal of spill clean-up debris.

Procedures require securing the area, excluding access without PPE, use absorbent dependent on spillage; disposal and decontamination of equipment.

The ERP prohibits the use of chemicals such as sodium hypochlorite, ferrous sulphate and hydrogen peroxide to treat cyanide that has been released into surface water.

The documents titled 'Measures, clean up spills/discharges of dangerous substances on the production site (including contained areas) and treatment of waste' and sampling procedures in case of an accident with dangerous substances' address the potential need for environmental monitoring to identify the extent and effects of a cyanide release, and include sampling methodologies, parameters and, where practical, possible sampling locations.

Emergency Response

Practice 7.6:

Periodically evaluate response procedures and capabilities and revise them as needed.

in full compliance with

The operation is

in substantial compliance with

Emergency Response Practice 7.6

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 7.6; periodically evaluate response procedures and capabilities and revise them as needed.

Under Bulgarian legislation the ERP is required to be updated annually. The current version of the Emergency Response plan is dated February 2015. The SOP Assessment and Review of the Emergency Plan states that the plan will be reviewed annually.

Mock cyanide drills are conducted periodically as part of the ERP evaluation process. Seven mock drills have been undertaken in 2015 by the time of this audit at GK and have included a variety of drill scenarios involving both spills and cyanide exposure. One drill involved the cyanide transporter, CB SPED and two included representatives from the neighbouring companies.

The assessment and review of the Emergency Response Plan document states in Section 2.2 that in the event of an incident or failure a working group will investigate the incident and update the emergency plan as required. No cyanide related incidents or accidents have occurred and therefore no such review has been conducted.

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PRINCIPLE 8 – TRAINING

Train Workers and Emergency Response Personnel to Manage Cyanide in a Safe and Environmentally Protective Manner

Training Practice 8.1: Train workers to understand the hazards associated with cyanide use.

[X] in full compliance with

The operation is

[] in substantial compliance with

Training Practice 8.1

[] not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 8.1; train workers to understand the hazards associated with cyanide use.

GK provides initial training and refresher training to all employees and contractors, with the potential to be exposed to cyanide, on cyanide hazard recognition, cyanide first aid treatment, and spill response.

Task specific refresher training is provided by supervisors every three months. This includes going over safety instructions, and any specific safety measures in certain areas. This is required under Bulgarian safety laws – Health and Safety Conditions of Work. Workers are required to sign to show they have received this training.

Cyanide training records are retained detailing who was present at the training, the date it was given and the topic.

Training Practice 8.2: Train appropriate personnel to operate the facility according to systems and procedures that protect human health, the community and the environment.

[X] in full compliance with

The operation is

[] in substantial compliance with

Training Practice 8.2

[] not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 8.2; Train appropriate personnel to operate the facility according to systems and procedures that protect human health, the community and the environment.

GK trains workers to perform their normal production tasks, including unloading, mixing, production and maintenance, with minimum risk to worker health and safety in a manner that prevents unplanned cyanide releases. New employees receive induction training, training regarding working with hazardous chemicals and specific training which include training on SOPs. Workers are trained prior to working with cyanide.

As part of the task specific training the trainer details the dangerous chemicals used in the technical process in the whole plant not just the area the worker is being trained to work in. Task training related to cyanide management activities is provided by appropriately qualified personnel.

Training elements necessary for each job involving cyanide are identified in training materials. Training is undertaken on specific SOPs.

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Refresher training is provided annually. The presentations 'General Safety Instruction' presentation and 'Training for Safe Operation when working with hazardous chemicals' are presented to workers annually.

GK requires workers to complete verbal tests to evaluate the effectiveness of cyanide training and a mark is given to each employee which is recorded and retained. No written tests are undertaken.

Training records documenting the training received are retained throughout an individual's employment. Training records include the names of the employee and the trainer, the date of training, and the topics covered. Records were reviewed and the following people were cross checked to see that they had received the appropriate training.

Training Practice 8.3: Train appropriate workers and personnel to respond to worker exposures and environmental releases of cyanide.

in full compliance with

The operation is

in substantial compliance with

Training Practice 8.3

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 8.3; train appropriate workers and personnel to respond to worker exposures and environmental releases of cyanide.

All cyanide unloading, mixing, production and maintenance personnel are trained in the procedures to be followed if cyanide is released.

The document titled 'Programme for the undertaking of training for safe use of working with dangerous goods' has two specific topic that trainers have to cover with employees in task specific training relating to cyanide being released.

Site cyanide response personnel, including unloading, mixing, production and maintenance workers are trained in decontamination and first aid procedures.

Refresher training for response to cyanide exposures and releases is conducted annually.

Simulated cyanide emergency drills are periodically conducted for training purposes. Seven mock drills have been undertaken so far in 2015 and have included a variety of drill scenarios. In addition one drill involved the cyanide transporter, CB SPED and two included representatives from the neighbouring companies.

Cyanide emergency drills are evaluated from a training perspective to determine if personnel have the knowledge and skills required for effective response. Training procedures are revised if deficiencies are identified. After each mock drill an assessment is made as to whether any additional training is required following the findings of the drill.

Records are retained documenting cyanide training, including the names of the employee and the trainer, the date of training, the topics covered, and how the employee demonstrated an understanding of the training materials.

GK requires workers to complete verbal tests to evaluate the effectiveness of cyanide training and a mark is given to each employee which is recorded. These marks are recorded in the workers training record. No written tests are undertaken.

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PRINCIPLE 9 – DIALOGUE

Engage in Public Consultation and Disclosure

Dialogue Practice 9.1: Provide stakeholders the opportunity to communicate issues of concern.

[X] in full compliance with

The operation is

[] in substantial compliance with

Dialogue Practice 9.1

[] not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 9.1; provide stakeholders with the opportunity to communicate issues of concern.

GK provides the opportunity for stakeholders to communicate issues of concern regarding the management of cyanide.

Stakeholders may visit GK or telephone a member of the management team to voice any concerns. GK have a complaints book where any complaints are logged. The GK website has a contacts page where stakeholders may also contact the Site. Stakeholders can also contact the Regional Ministry of Environment and Water (Haskovo) or Kardzhali Municipality and the District Government who will contact GK on their behalf.

Meetings with the following NGOs: the Association for Sustainable Development; Civil Participation; Public Council of Kardzhali, Civil Association 'Zaedno' and the Green Alliance 'Zelen Alenn' occur twice a year for each of the permits held (IPPC, SEVESO) and annually for the air emissions.

GK have regular contact with their neighbouring facilities, Monek Yug and Pnevmatika-Serta, and have provided them with GK's Emergency Response Plan. These companies took place in two of the mock drills.

Dialogue Practice 9.2: Initiate dialogue describing cyanide management procedures and responsively address identified concerns.

[X] in full compliance with

The operation is

[] in substantial compliance with

Dialogue Practice 9.2

[] not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 9.2; initiate dialogue describing cyanide management procedures and responsively address identified concerns.

GK initiates face-to face interactions with stakeholders and responds to concerns.

GK's website has information on health and safety, the environment and details on the International Cyanide Management Code. Minutes of meetings with NGOs are available on the website.

The Regional Ministry of Environment and Water visit GK annually and they produce a spot check report which is publically available on the ministry website and also GK website.

Gorubso Kardzhali AD
Name of Facility

Signature of Lead Auditor

13 August 2015
Date





Over sixteen meetings have taken place with stakeholders, NGOs (Civil Association, Tourist Association, Local Council and for some meetings with Green Alliance 'Zelen Alenns') from April 2013 to date. These meetings have included discussion on cyanide use and controls at GK.

GK have regular meetings with their neighbouring facilities, Monek Yug and Pnevmatika-Serta and have provided them with information regarding the use of cyanide.

Dialogue Practice 9.3: Make appropriate operational and environmental information regarding cyanide available to stakeholders.

in full compliance with

The operation is

in substantial compliance with

Dialogue Practice 9.3

not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

The operation is in full compliance with Standard of Practice 9.3; make appropriate operational and environmental information regarding cyanide available to stakeholders.

The population is generally literate. GK provides information on cyanide in written format as described above as well as in oral form during meetings with stakeholders as described in 9.2. GK has also visited local gypsies that live (illegally) close to the tailings facility. GK have also spoken with the local Municipality regarding the gypsy presence in this area. GK know that the gypsies have a separate water supply and do not use the tailings facility as such.

GK makes information publicly available cyanide release or exposure incidents on their website.

In addition, GK produce an Annual Environmental Report that is available on the 'Executive Environmental Agency' website <http://eea.government.bg/en> and the GK website. This report sets out the emissions and monitoring data that is undertaken as part of their Integrated Pollution Prevention Control Permit (IPPC) it states whether any incidents have occurred at the facility.

No such incidents have occurred at the facility since operations began.

Gorubso Kardzhali AD
Name of Facility

Signature of Lead Auditor

13 August 2015
Date



Report Signature Page

GOLDER ASSOCIATES (UK) LTD

A handwritten signature in blue ink that reads "S. Wheeler".

Sophie Wheeler
Project Manager

A handwritten signature in blue ink that reads "R. Girard".

Roman Girard
Reviewer

Date: 13 August 2015

SW/RG/pr

Company Registered in England No.1125149

At Attenborough House, Browns Lane Business Park, Stanton-on-the-Wolds, Nottinghamshire NG12 5BL

VAT No. 209 0084 92

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Africa	+ 27 11 254 4800
Asia	+ 852 2562 3658
Australasia	+ 61 3 8862 3500
Europe	+ 356 21 42 30 20
North America	+ 1 800 275 3281
South America	+ 55 21 3095 9500

solutions@golder.com
www.golder.com

Golder Associates (UK) Ltd
Cavendish House
Bourne End Business Park
Cores End Road
Bourne End
Buckinghamshire
SL8 5AS
UK
T: [+44] (0) 1628 851851

