



# Beatrix Gold Plant International Cyanide Management Code Certification Audit

# **Summary Audit Report**

## Sibanye Stillwater Limited

Beatrix One Plant, Gold Operations 1 Main Offices, Beatrix, Carletonville.

#### Prepared by:

**SLR Consulting (South Africa) Proprietary Limited** 

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SLR Project No.: 722.000017.00001

12 July 2024

Revision: 03 Report No.: 02

Title	Beatrix Gold Plant International Cyanide Management Code Certification Audit – Summary Audit Report
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Keywords	ICMI; Gold; Mine; Audit; Cyanide
Status	Draft
Report No.	02
SLR Company	SLR Consulting (South Africa) Proprietary Limited
SLR Project No.	722.000017.00001

## **Revision Record**

Revision	Date	Prepared By	Checked By	Authorized By
01	3 April 2024	Ed Perry	Natasha Smyth	Ed Perry
02	2 July 2024	Ed Perry	ICMI	Ed Perry
03	12 July 2024	Ed Perry	ICMI	Ed Perry



12 July 2024 SLR Project No.: 722.000017.00001

## **Basis of Report**

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Acronym / abbreviation	Description
Beatrix	Beatrix Gold Plant
CIP	Carbon-in-Pulp
СОР	Mandatory Code of Practice for Emergency Preparedness and Response
DMRE	Department of Mineral Resources and Energy
DWS	Department of Water and Sanitation
ERP	MET2.3C-SPG50 Emergency Response Plan - Sodium Cyanide – dated Beatrix No.1 Plant, dated January 2021.
EPRP	TSF-2.3A SPG3 Beatrix 2 Plant Tailings Dam Failure – Emergency Preparedness and Response Plan, July 2023.
ERT	Emergency Response Team
HCN	Hydrogen Cyanide
HDPE	High Density Polyethylene
ICMC	International Cyanide Management Code
ICMI	International Cyanide Management Institute
PMS	Planned Maintenance System
PPE	Personal Protective Equipment
ppm	Parts Per Million
PTO	Planned Task Observation
RWD	Return Water Dam
Sasol	Sasol South Africa (Pty) Ltd.
SCADA	Supervisory Control and Data Acquisition
SDS	Safety Data Sheets
SGS	SGS South Africa
SLR	SLR Consulting (South Africa) (Pty) Ltd
SPG	Standard Procedure Guidelines
The Code	The International Cyanide Management Code for the Manufacture, Transport, And Use of Cyanide in the Production of Gold and Silver
The Plant	Beatrix Gold Plant
The Protocol	The Mining Operations Verification Protocol
TSF	Tailings Storage Facility
WAD	Weak Acid Dissociable



# 1.0 Summary Audit Report for Gold Mining Operations

Name of Cyanide User Facility: Beatrix Gold Plant

Name of Cyanide User Facility Owner: Sibanye Stillwater Limited

Name of Cyanide User Facility Operator: Sibanye Stillwater Limited

Name of Responsible Manager: Doris Phiri, Plant Superintendent

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## 2.0 Location and description of operation

Globally, Sibanye-Stillwater is the third largest producer of platinum and palladium, and features among the world's top gold producing companies. Domiciled in South Africa, Sibanye-Stillwater owns and operates a portfolio of high-quality operations and projects, which are located and managed in two regions: the Southern African (SA) region and the United States (US) region. Since its establishment in 2013, the company has transformed itself geographically and by metal produced. From being a South African gold mining company, Sibanye-Stillwater is now an internationally competitive, diversified precious metals miner producing gold and platinum group metals. With the formal acquisition of Stillwater in May 2017, Sibanye Gold was rebranded as Sibanye-Stillwater. The company has its primary listing on the Johannesburg Stock Exchange, South Africa and is also listed on the New York Stock Exchange.

Beatrix No. 1 Plant is part of the Beatrix mine. It is situated in the Theunissen district of the Free State Province, forty kilometres by road south of Welkom, and twenty kilometres from Theunissen in South Africa, halfway between 1 Shaft and 2 Shaft to the west of the connecting road between the two shafts. Ore storage silos have capacity of 14,000 tonnes of dry ore and facilities allow for ore to be stockpiled and reclaimed outside the Plant fence.

#### Ore delivery

Beatrix No.1 Plant is a reef/waste plant which receives its ore from three underground shafts and waste from the Surface Rock Dump (SRD). Ore from No. 1, 2 and 3 shafts is

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transported by means of conveyor belts namely R1 and R2 from No. 1 shaft, S1 and S2 from No. 3 shaft adding onto R3 from No. 2 shaft and is combined at the Change- of- Direction silo (COD). The SRD material is also transported by means of conveyor belt R5 from the dump onto R3 from No.2 shaft. The ore is transported to the four silos in the metallurgical plant through R4 conveyor belt and distributed by means of a Tripper car. The underground sludge is pumped from all three respective shafts into the rotoscoop, which is then transferred to the mill discharge sump. Underground sludge tonnage is measured by means of a mass flow system.

#### Mill Feed

The Plant uses 4 semi-autogenous (SAG) mills with installed power of 3 Mega Watts (MW) per mill. Ore from the individual silos is fed via a conveyor belt to the mill. There is a belt weightometer on each belt which determines the mass of ore on the conveyor belt fed into the mill. Daily tonnage from each mill is based on conveyor best scale reading and a 3% moisture factor is applied. Cyclone overflow reports to three 60-meter diameter conventional thickeners rated at 150 tonnes per hour. Lime is added to the cyclone overflow and used as a coagulant in the thickeners. A portion of the cyclone underflow reports to 30-inch Falcon concentrators (one Falcon concentrator per milling unit). Concentrate from the Falcon circuit is upgraded in the smelt house by means of Gemini tables for direct smelting.

#### Leach Feed

The downstream process is matched to the milling capacity of 240,000 tonnes per month and comprises three 60 m diameter thickeners and twelve mechanically agitated Leach tanks with a combined volume of 18,000 cubic meters.

The pulp stream from the thickeners reports to distribution box and gravity fed through a Multotec cross stream cut sampler and reports to two linear screens. The sample obtained from the Multotec cross stream sampler is taken and prepared for head gold assaying. This is an eight-hourly composite sample.

The pulp gravitates into the leach feed sump where cyanide is added and transferred to A and B CIL streams. A and B stream is mass flow measured for tonnage determination.

The Gold Plant uses liquid cyanide that is purchased cyanide from Sasol South Africa (Pty) Ltd (Sasol) that is manufactured at Sasolburg in South Africa. This is a facility that is certified as being in compliance with the Code. Beatrix has only used liquid cyanide from Sasol since it started operations. The liquid cyanide is offloaded into storage tanks from the tanker from where it is sent to the dosing points.

The cyanide control system comprises of a feed forward ratio control using the feed dry mass from the thickener underflow mass flow system and feedback control from the TAC 1000 on-line free cyanide analyser controlling cyanide dosing rates to the feed sumps to each of the two streams separately.

The pulp from the Leach tanks is subsequently fed to the carbon-in-pulp (CIP) tanks from where the carbon is sent to the elution circuit and the pulp is sent to the tailings storage facility (TSF).

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The Plant has two pressure Zadra elution circuits rated at 20 tonnes of carbon per day and utilizes steam from the mine boilers as heating energy. Regeneration of carbon is carried out in two rotary kilns of 500 and 350 kg/hr.

A gravity gold recovery circuit was retrofitted in 2003 to the Beatrix plant and each mill now has a 30-inch Knelson concentrator that recovers gold concentrate from the mill cyclone underflow stream. This concentrate is currently being tabled on the Gemini table. Gold is recovered from solution by electrowinning. Cathode sludge is recovered by high-pressure washing and filtration before calcining and smelting to produce doré. Concentrates from the table are directly smelted to produce bullions.

## **Tailings Storage Facility**

Beatrix Tailings Storage Facility No. 2 is situated in the Free State Region of South Africa, 30 km south of Welkom, receiving tailing material from the Beatrix Plant, part of the Sibanye Stillwater Gold Operations. TSF2 has been operational since 2001 and is currently operated by Stefanutti Stocks Inland (SSI). TSF2 has been developed north of the existing TSF1 towards the Beatrix Plant and includes a lined return water and stormwater dam. A series of evaporation ponds are still in operation to the east of TSF2.

Tailings Storage Facility (TSF) 2 is built using upstream daywall paddock methodology with a capacity up to 240 000 tonnes per month. The water is managed through a penstock decant and underdrains which are collected in a solution trench leading into the return water dam (RWD). The water can be recycled in the Plant via the RWDs. RWD1 overflows into RWD2, which is kept empty to accommodate a storm event. Any excess can be pumped from the TSF or RWDs to the Evaporation Ponds on the eastern side of the TSF. The Evaporation Ponds cover 247 hectares. The concentration of weak acid dissociable (WAD) cyanide in the RWDs are less than 0.5 mg/l and therefore are not classed as a cyanide facility.

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#### **SUMMARY AUDIT REPORT**

### **Auditors Findings**

	oxtimes in full compliance with	
		The International
Beatrix Gold Plant is:	in substantial compliance with	Cyanide Management
		Code
	not in compliance with	
Audit Company:	SLR Consulting (Africa) (Pty) L	td
Audit Team Leader:	Ed Perry, Lead Auditor	
Email:	eperry@slrconsulting.com	
Mine Technical Auditor	Dawie Viljoen, Afritech (ICMI pr Specialist).	re-certified Mine Technical
Beatrix Gold Plant		<u>12 July 2024</u>
Name of Facility	Signature of Mine Technical Auditor	Date

#### **DATES OF AUDIT**

The Re-certification Audit was undertaken from 18 December 2023 to 21 December 2023.

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 (ICMI) and that all members of the audit team meet the applicable criteria established by the International Cyanide Management 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 Mining Operations Verification Protocol and using standard and accepted practices for health, safety and environmental audits.

The "International Cyanide Management Code for The Manufacture, Transport, And Use of Cyanide In The Production Of Gold and Silver" (the Code) was developed by a multistakeholder Steering Committee under the guidance of the United Nations Environmental Program (UNEP) and the then, International Council on Metals and the Environment.

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The Code is a voluntary industry programme for gold and silver mining companies, and companies involved with the production and transport of cyanide to gold and silver mining companies; it focuses exclusively on the safe management of cyanide. Companies that adopt the Code must have their operations, which manufacture cyanide, transport cyanide or 'use cyanide to recover gold and silver, audited by an independent third party to determine the status of the Code's implementation. Those operations that meet the Code's requirements can be certified and are able to use a unique trademark symbol, which identifies the company as a certified operation. Audit results are made public to inform stakeholders of the status of cyanide management practices at the certified operation.

The objective of the Code is to improve the management of cyanide used in gold and silver mining and assist in the protection of human health and the reduction of environmental impacts (refer to www.cyanidecode.org). The Code is managed by the International Cyanide Management Institute (ICMI).

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# Principle 1 - Production and Purchase

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

Standard of practice 1.1:	Purchase cyanide from certified 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	Standard of Practice 1.1
	not in compliance with	

## Summarise the basis for the findings/deficiencies identified.

The operation is in full compliance with Standard of Practice 1.1; to 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.

Beatrix purchases liquid cyanide from Sasol South Africa (Pty) Ltd (Sasol) that is manufactured at Sasolburg in South Africa. This is a facility that is certified as being in compliance with the International Cyanide Management Code (ICMC). Beatrix has only used liquid cyanide from Sasol since it started operations. Sasol is the only supplier of liquid cyanide in Africa and Beatrix does not have the ability to use solid cyanide.

Sasol Operation is currently certified as fully compliant with ICMC. Sasol was first certified on 8 March 2007 and most recently recertified on 7 March 2022.

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## Principle 2 - Transportation

Protect Communities and the Environment During Cyanide Transport.

Standard of practice 2.1:	Require that cyanide is safely managed through the entire transportation and delivery process from the production facility to the mine by use of certified transport with clear lines of responsibility for safety, security, release prevention, training and emergency response.	
	⊠ in full compliance with	
The operation is	in substantial compliance with	Standard of Practice 2.1
	☐ not in compliance with	

## Summarise the basis for the findings/deficiencies identified.

The operation is in full compliance with Standard of Practice 2.1 requiring that cyanide is safely managed through the entire transportation ad delivery process from the production facility to the mine by use of certified transport with clear lines of responsibility for safety, security, release prevention, training and emergency response.

The operation has chain of custody records or other documentation identifying all transporters and supply chains responsible for transporting cyanide from the producer to the operation.

Beatrix Gold Plant orders and receives liquid Sodium Cyanide from the Sasol Cyanide Production Facilities in Sasolburg, South Africa. The liquid cyanide is transported by tanker operated by Tanker Services to Beatrix on the same day. An order is placed with Sasol for the whole month and deliveries takes place as required.

All identified transporters are individually certified in compliance under the Code or included in certified supply chain.

Tanker Services Food and Chemicals / Imperial Logistics (Tanker Services) is the only transporter carrying liquid cyanide by tanker from the Sasol production facility to the gold mines in South Africa.

Tanker services was initially certified as fully compliant with the ICMC as a cyanide transporter on 13 December 2011 and was most recently recertified on 1 April 2022.

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# Principle 3 - Handling and Storage

Protect Workers and the Environment During Handling and Storage.

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.	
	☑ in full compliance with	
The operation is	in substantial compliance with	Standard of Practice 3.1
	not in compliance with	

#### Summarise the basis for the findings/deficiencies identified.

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

The facilities for unloading, and storing liquid cyanide been designed and constructed in accordance with Sasol, the cyanide producers' guidelines, applicable jurisdictional rules and/or other sound and accepted engineering practices for these facilities.

A Sasol technical inspection of the unloading and storage facilities is conducted annually. The latest report was observed by the auditors. All items were identified as being compliant, with an audit score of 100%.

The site inspection confirmed that the facilities are located away from people and surface waters.

It was verified during the site inspection that the offloading and storage areas for the liquid sodium cyanide are closed off with restricted access, bund walls have been installed, and there are no public areas close by. There are no surface waters or drainage to surface waters from the cyanide storage area or the Plant as a whole. The operation only uses liquid sodium cyanide delivered by bulk tanker and therefore, no mixing of solid cyanide takes place on site. A sump and associated pump are installed to pump any spilled cyanide during off-loading into the leach feed.

The liquid cyanide is offloaded on a concrete surface that can minimise seepage to the subsurface and is the unloading area designed and constructed to contain, recover or allow remediation of any leakage from the liquid cyanide tanker.

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It was verified during the site inspection that unloading takes place on a concrete pad, sloped, and draining into bund area via a valve. The concrete pad was observed to be in a good condition.

The sump pump for the cyanide solution tanks' bund pumps to the leach tanks only, the sump is equipped with a level detector connected to the Supervisory Control and Data Acquisition (SCADA) system, but needs to be started manually. There are systems in place to prevent the overfilling of cyanide storage tanks, and are the systems tested and maintained on a routine basis.

The two cyanide storage tanks are equipped with high level measurement sensors and the screens were demonstrated on the SCADA system in control room:

The SCADA high level alarm is activated when the tank is 90% full. It is interlocked with the Plant offloading air, shutting off the air valve solenoid when activated. The offloading air valve solenoid cannot be activated if the cyanide storage tank level is above 80%. The system is fail to safe in case of any power disruption. A manual emergency air stop is also available.

It was verified by the auditors during the site inspection that the cyanide storage tanks are conically designed tanks installed on steel uprights such that any leaks can be visibly observed. The tanks are located inside a concrete bund to prevent seepage to the subsurface.

The secondary containment for the cyanide storage tanks is constructed of concrete. This was observed to be in good condition by the auditors.

The auditors observe the results of Cyanide Bund Flood Tests on 8 October 2023.

The following was verified by the auditors during the site inspection.

- a) No solid cyanide is stored or used at the Plant.
- b) The liquid Cyanide Storage Tanks are located outside and include ventilation pipes on top of the tanks and overflow pipes are equipped with hydrogen cyanide (HCN) gas traps.
- c) The liquid Cyanide Storage Tanks are situated inside the Plant which has restricted access control. The tank farm area is also fenced and locked.
- d) The Cyanide Storage Tanks are located inside a concrete bund. Nothing else is stored in or adjacent to the bund. All cyanide delivered to site is in the form of liquid cyanide and stored in tanks in the secure open air compound.

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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.	
	⊠ in full compliance with	
The operation is	in substantial compliance with	Standard of Practice 3.2
	not in compliance with	

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

The Plant only uses liquid sodium cyanide delivered in bulk tankers from the Sasol production facility in South Africa. No solid cyanide is used.

- The liquid cyanide is delivered by road tanker and therefore a procedure is not required to prevent empty containers from being used for any other purpose.
- Procedure MET.2.3C-SPG2 Offload Sodium Cyanide into Bulk Storage Facility, includes
  the steps to be undertaken for rinsing the offloading hoses with the water, which then
  enters the Cyanide Storage Tank bund and is subsequently pumped back to the leach
  feed.
- The liquid cyanide is delivered by road tanker and therefore a procedure for disposing of empty containers is not required.
- Procedure MET.2.3C-SPG2 Offload Sodium Cyanide into Bulk Storage Facility, this includes the steps to be undertaken for rinsing the offloading hoses with the water before the tanker returns to Tanker Services Depot.

The operation has developed and implemented plans or procedures to prevent exposures and releases during cyanide unloading activities including the following.

a) Procedure *MET.2.3C-SPG6 Offload Sodium Cyanide into Bulk Storage Facility*, dated October 2023 includes operation of valves and couplings in Section 4 Steps / Sequence of events including connection and disconnection of cyanide offloading hoses. In addition, the Cyanide Offloading Checklist is used for each offloading event to ensure that the operation is undertaken in the correct manner, including the operation of all hoses, valves and couplings.

Procedure *MET.2.3C-SPG39 Inspection Plant Areas*, dated 5 November 2019. All pipes and valves are inspected and recorded in the Shiftily Log Sheet. The checklist covers the Cyanide Storage Facility including the maintenance of; cyanide delivery hoses, valves and couplings. The maintenance of the liquid cyanide tanker including associated hoses, valves and couplings connect to the tanker are the responsibility of the cyanide transporter. This

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included details of the Plant inspection and written details of a change in the leach pump due to a hole in the suction valve.

- b). The liquid cyanide is delivered by road tanker and therefore a procedure is not required to prevent rupturing or puncturing.
- c). The liquid cyanide is delivered by road tanker and therefore a procedure is not required to limit the height of stacking of cyanide containers.
- d) Timely cleanup of any spills of cyanide during the transfer of liquid cyanide from tanker trucks is detailed in *MET.2.3C-SPG25 Clean Up Spillage Reagent Strength Sodium Cyanide*, *December 2020*.
- e) Procedure *MET.2.3C-SPG6 Offload Sodium Cyanide into Bulk Storage Facility*, includes Section 4.3 Inspect and dress up in appropriate compulsory personal protective equipment (PPE).

Procedure *MET.2.3D-SPG2 Perform buddy duties and responsibilities*; dated October 2019, describes the role and responsibilities of the second individual observing from a safe distance (i.e. Buddy).

f) It was confirmed during the site inspection that the Sasol Safety Data Sheets (SDS) are displayed at the liquid cyanide storage area included: colour: light to dark red due to the incorporation of a dye.

The auditors observed during the site inspection that the colour of the liquid cyanide at the dosing point is red due to the incorporation of the dye.

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## Principle 4 - Operations

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

Standard of practice 4.1:	<ol> <li>Implement management and operating systems designed protect human health and the environment including contingency planning and inspection and preventative maintenance procedures.</li> </ol>	
	⊠ in full compliance with	
The operation is	☐ in substantial compliance with	Standard of Practice 4.1
	not in compliance with	

## Summarise the basis for the findings/deficiencies identified.

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

The operation has developed written management and operating plans or procedures for cyanide facilities including unloading, storage facilities, process plants, and tailings impoundments.

The Beatrix Plant has 36 procedures for the management and operation of cyanide related processes including offloading and inspections.

Stefanutti Stocks Mining Services (SSMS) has a list of 23 procedures for the operation of the TSF.

In addition to the SSMS procedures there is; the Sibanye Stillwater: Beatrix Division Mandatory Code of Practice for Mine Residue Deposits, dated 22 December 2022, by Knight Piesold.

The operation's plans and procedures identify and account for the assumptions and parameters on which the facility's design was based and any applicable regulatory requirements as necessary to prevent or control cyanide releases and exposures consistent with applicable requirements.

Procedure *MET2.3C- SPG8 Response to High WAD Samples* dated September 2023 specifies Weak Acid Dissociable (WAD) Cyanide operating levels in Section 3.1 specifying action when WAD cyanide levels exceed 50 ppm in the tailings.

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point line B was 180 ppm free cyanide.

The Plant Metallurgist enters any changes in setpoint of the free cyanide concentrations in a logbook, which was observed by the auditors. At the time of the audit the settings at doing

The pH is measured by the TAC1000 with a set point of 10.5, as observed by the auditors on the SCADA system during the site visit.

The cyanide dosing pumps and thickener underflow pumps are interlocked with the pH measurement and are stopped at a pH of 10.3.

Sibanye Gold Operations Beatrix TSF2, Quarterly Monitoring Report, Q1, Q2, and Q3 2023, by Knight Piesold section 4.6.2 states that the freeboard for the TSF is 800 mm above the combined elevation of the operating water level plus a 1:50 year storm pond level. This gives a freeboard requirement of approximately 1.8 m.

Freeboard of the TSF is measured using surveyed poles and entered on the Excel spreadsheet on a monthly basis. The monthly spreadsheet reports were observed for 2023 and included piezometer readings, and drain flow.

The RWD 1 overflows to RWD 2 which is kept empty. In the event of excessive rainfall on the TSF the water can be diverted to drain into the Evaporation Ponds rather than the RWDs. The Evaporation Ponds are comprised of an extremely large wetland area that is of sufficient size to accommodate any storm event.

Any incidents are investigated in accordance with SER.2.4A SPG Reporting, Investigation and Administration of Accidents and Injured, dated May 2023.

The operation has plans or procedures that describe the standard practices necessary for the safe and environmentally sound operation of the facility including the specific measures needed for compliance with the Code, such as water management, inspections and preventive maintenance activities.

#### **Plant**

Procedure *MET.2.3C-SPG39 Inspect Plant Areas* details the inspections that need to be undertaken of the Plant on a shiftly basis. All faults identified are recorded through raising a job card as part of the PRAGMA planned maintenance system (PMS), which is submitted to Engineering for repairs. s.

Cyanide Offloading checklist inspects the offloading area including the first aid room that is adjacent to the offloading area, prior to any offloading event.

SER.EE.2.4 SPG-32 Fire Extinguisher Standard Procedural Guideline, dated August 2023 details the checklist for monthly inspections, and requires a monthly inspection sticker as well as annual inspection sticker placed on the unit.

Emergency Safety Showers are tested as part of the Inspection of Plant Areas. At the end of the shift any deficiencies are recorded in the Shift Supervisors Inspection Book. The Emergency Safety Showers are also inspected on a monthly basis as part of the PMS.

The PRAGMA PMS includes all the critical elements of the Plant with inspections on a weekly, monthly, 6 monthly or annual basis. This includes tank thickness testing and

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inspections of the cyanide solution storage tanks and all tanks containing process solution for structural integrity and for signs of corrosion or leakage.

#### Tailings Deposition Facility.

The Sibanye Gold Operations Beatrix TSF2, Quarterly Monitoring Report, Q1, Q2, and Q3 2023, by Knight Piesold include tailings deposition, rate of rise, freeboard, pool management and penstock phreatical trends, underdrain flows, return water dams seepage, environmental, incidents, site visit findings, action list, conclusions and recommendations. These reports included the following.

- Freeboard: Legal requirement 1.8 m, and the observed freeboard was 2.8 m.
- Rainfall: includes graphs of maximum 24 hr storm per month as well as monthly rainfall trend.
- Conclusions: No significant issues were reported.

SSMS conducts daily TSF inspections including wildlife mortality, slurry pipeline and valves, and personal gas monitor readings. Freeboard is measured on a monthly basis.

The operation implements procedures to review proposed changes to production processes, operating practices, or cyanide facilities to determine if they may increase the potential for cyanide releases and worker exposures, and incorporate any measures necessary to protect worker health and safety and the environment.

Safety 2.4A SPG Change Management, dated September 2019. This includes; process overview, identifying need for change, planning for change, and change implementation. Annexure A includes the forms for the documentation of the change management process. Section 2.8 states that the changes request must be reviewed by the relevant Head of Department and subject matter expert i.e. if the change gives rise to any environmental or health and safety issues the Head of that Department is required to review the form and sign as evidence of this.

The operation has cyanide management contingency procedures for non-standard operating situations that may present a potential for cyanide exposures and releases, such as those detailed below.

- The Sibanye Gold Operations Beatrix TSF2, Quarterly Monitoring Reports, Q1, Q2, and Q3 for 2023, by Knight Piesold state that the legally required freeboard is 1.8 m total.
- The TSF has the ability to alter the location of the water draining from the TSF to the Evaporation Ponds
- Any problems identified by facility monitoring or inspections will instigate a work order being raised to rectify the problem as part of the maintenance process.
- Standard stopping and starting procedures for the various sections of the plant are used during planned shutdowns. A National Strike/ Stay Away Contingency Plan, dated March 2023 was observed that details the processes for a shutdown longer than that undertaken as part of the normal maintenance programme. This was implemented in response to a national strike in March 2023.
- The procedures include MET.2.3D BP1-SPG003 Start-up Metallurgical Processes, dated October 2018, which details the process for starting up the Plant following a partial or total planned or unplanned shutdown.

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tanks, vessels, pipelines, ponds and impoundments.

The operation's contingency procedures as detailed above account for how cyanide would be safely managed during short-term and long-term shutdowns or cessations in operation. This includes the management of any cyanide on site, including liquid reagent strength cyanide (which would remain in the dedicated storage area), and cyanide solution within

The operation uses liquid cyanide delivered by road tanker and therefore does not have a mixing facility as the liquid is offloaded directly into the cyanide storage tanks. The operation inspects the following at unloading, storage, and process areas.

- The PMS includes the inspection of cyanide solution storage tanks. Thickness testing is conducted annually on the cyanide solution storage tanks e.g. Lotham Projects for January 2023, showing the tanks were within acceptable limits.
- Thickness testing of the leach tanks is undertaken every two years e.g. Quest Technical Services dated 20 January 2022, showing the tanks were within acceptable limits.
- Thickness testing for the carbon-in-pulp (CIP) tanks is undertaken depending on their condition as observed when they are taken offline for maintenance.
- All of the tanks are inspected for signs of corrosion and leakage when the thickness testing is undertaken.
- Procedure MET.2.3C-SPG39 Inspect Plant Areas details the inspections that need to be undertaken of the Plant on a shiftly basis, which includes secondary containments provided for tanks and pipelines for physical integrity, the presence of fluids and available capacity. At the end of the shift any deficiencies are recorded in the Shift Supervisors Inspection Book. There are no drains that are required to be locked to prevent accidental releases to the environment.
- The Tailings pipeline is inspected daily, and the condition recorded as part of the Tailings Dam Daily Log Sheet.
- There are no leak detection systems at any of the ponds, and there is no heap leach facility on site.
- In addition to pipelines, pumps and valves being inspected as part of the shiftly Plant inspection, they are also included on the PMS.
- Ponds and impoundments are inspected for the parameters identified in their design documents as critical to their containment of cyanide and solutions and maintenance of the water balance, such as available freeboard and integrity of surface water diversions.
   TSF freeboard is measured using surveyed poles and entered on the Excel spreadsheet on a monthly basis.
- The RWD 1 overflows to RWD 2 which is kept empty. In the event of excessive rainfall on the TSF the water can be diverted to drain into the Evaporation Ponds rather than the RWDs.

The operation inspects the cyanide facilities on an established frequency sufficient to ensure and document that they are functioning within design parameters.

Procedure MET.2.3C-SPG39 Inspect Plant Areas details the inspections that need to be undertaken of the Plant on a shiftly basis. Cyanide Offloading checklist inspects the offloading area including the first aid room that is adjacent to the offloading area, prior to any offloading event. SER.EE.2.4 SPG-32 Fire Extinguisher Standard Procedural Guideline, dated details the checklist for monthly inspections and an annual service. The PRAGMA

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PMS includes all critical elements of the Plant with inspections on a weekly, monthly, 6 monthly or annual basis. The TSF is inspected on a quarterly basis by Knight Piesold. Wildlife mortalities are inspected on a daily basis by the TSF staff.

The inspections are documented identifying specific items to be observed and include the date of the inspection, the name of the inspector, any observed deficiencies, and the nature and date of the corrective actions. The inspections are documented either through various checklists or reports as or through the PMS. The corrective actions are detailed on the work order raised through the PMS as part of the planned inspections or on an *ad hoc* basis as issues are identified.

Preventive maintenance programs are implemented and activities documented to ensure that equipment and devices function as necessary for safe cyanide management. The PRAGMA PMS has been in place since 2008, the system covers critical cyanide equipment as part of an asset register.

The Asset Register includes; thickener pumps, spillage pumps, cyanide pumps, tank instrumentation, elution, treatment pump, elution spillage pump, barren pumps, cyanide storage area, slurry transfer pumps, leach tanks, fixed HCN gas monitors, cyanide pumps, cyanide tanks, cyanide instrumentation, cyanide man down alarms, and safety showers.

The operation has the necessary processes to prevent unintentional releases and exposures in the event that its primary source of power is interrupted.

The Plant has been designed with bunds and sumps to contain all slurries and solutions before it is pumped back into the process, therefore no spillage will occur during power failures. Should any sumps or bunds overtop this will flow to the Catchment Dam, via concrete lined channels. The Catchment Dam is designed to contain any spillage from the Plant.

The pumping systems are designed with interlocks and safe to failure systems to prevent spillages during power failures. In the event that there is a rainfall event that cannot be accommodated by the RWDs a manual valve can be operated to divert the water from the TSF to the Evaporation Ponds, that are sized to be able to contain any excess water.

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Standard of 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	Standard of Practice 4.2
	not in compliance with	

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

Bottle roll tests are done on different ore sources monthly including underground material.

The plant feed changed from a mix of Surface Rock Dumps (SRD) and underground reef to 100% underground reef in June 2023. The bottle roll test for SRD results dated 25 May 2023, include recovery and reagent consumption including cyanide consumption.

A monthly diagnostic leach is undertaken on a monthly composite of the residue samples to identify residue gold. The current free cyanide level setpoint in Leach Tank 1 is 200 ppm as sodium cyanide.

The cyanide control system comprises of a feed forward ratio control using the feed dry mass from the thickener underflow mass flow system and feedback control from the TAC 1000 on-line free cyanide analyser controlling cyanide dosing rates to the feed sumps to each of the two streams separately. The control system principles were confirmed by the visit to the control room and demonstrated on the SCADA.

Cyanide level parameters are determined from the results of the bottle roll tests and is authorised and instructed by the Metallurgist using a change control request form.

Manual samples and titrations are used as back up and check the TAC1000 readings. A WAD1000 on line WAD cyanide analyser is installed on the CIP tails line and is monitored as per the procedure.

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Standard of practice 4.3:	protect against unintentional rele	
	⊠ in full compliance with	
The operation is	in substantial compliance with	Standard of Practice 4.3
	not in compliance with	

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

The operation has developed a comprehensive, probabilistic water balance using commercially available software. The software shows the dam levels in the event of a 1 in 50 year 24 hr storm event, a 1 in 100 year 24 hr storm event.

The daily precipitation records together with 50 years of historic rainfall records are employed by the water balance to model the uncertainty and variability in the prediction of precipitation patterns, including the ability to consider the frequency and distribution of precipitation events along with extremes and seasonal variations.

The water balance considers the following in a reasonable manner and as appropriate for the facilities and the environment. The auditors observed the input data sheets for the model, which included the following.

- a) The rates at which tailings are deposited into the tailings storage facility is included in the model. There is no heap leach on site.
- b) A design storm duration and storm return interval that provides a sufficient degree of probability that overtopping of the pond or impoundment can be prevented during the operational life of the facility. The water balance to assess the effect on the TSF of a 1 in 50 year 24 hour storm event (109 mm) and a 1 in 100 year 24 hour storm event (115 mm). The TSF has the ability to alter the direction of the drainage to either the RWDs or the Evaporation Ponds. The available Evaporation Ponds cover 247 hectares, which is sufficient to cope with any storm event.
- c) The quality of existing precipitation and evaporation data in representing actual site conditions. The precipitation data is measured daily on site and updated in the model on an annual basis. The storm events are based on 50 years of data from the closest weather station. The evaporation data is calculated for the site based on data from the Engineer of Record.
- d) There are stormwater diversion trenches for the Plant, TSF and RWDs. Therefore, the amount of surface run-on is not applicable. These trenches are monitored as part of the daily inspections for the Plant and TSF.
- e) Effects of potential freezing and thawing conditions on the accumulation of precipitation within the facility and the up gradient watershed is not applicable to the site.

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- f) Solution losses in addition to evaporation, such as the capacity of decant, drainage and allowable seepage to the subsurface, is included based on the data from the Engineer of Record. There are no discharges to surface water.
- g) The effects of potential power outages or pump and other equipment failures on the emergency removal of water from a facility is not applicable as water can drain by gravity from the TSF to the RWDs or from the TSF to the Evaporation Ponds. Power is not required for the emergency removal of water from the facility.
- h) The capacity and on-line availability of necessary cyanide treatment, destruction or regeneration systems is not appliable as there is no treatment system on site and no discharge to surface water.
- i) The assumed phreatic surface in the tailings storage facility is included in the model at an assumed level of 50%.

The ponds and impoundments are designed and operated with adequate freeboard above the maximum design storage capacity determined to be necessary from the water balance calculations. The water balance shows the capacity level below which a pond or impoundment needs to be maintained in order to accommodate a 1 in 50 or 1 in 100 year 24 hour storm event.

The RWDs need to be below 45% to accommodate a 1 in 100 year event. RWD 2 is maintained empty in order to accommodate a storm event. The Evaporation Ponds A-G need to be below 60% to accommodate a 1 in 100 year event. It is noted that not all of the Evaporation Ponds were included in the water balance due to the large area available (247 hectares). This provides a large amount of additional capacity such that there has never been an over topping.

The operation's operating procedures incorporate inspection and monitoring activities as necessary to implement the water balance and prevent overtopping of ponds and impoundments and unplanned discharge of cyanide solutions to the environment. RWD levels are visually inspected on a daily basis as part of the TSF inspections with RWD 2 being kept empty.

Freeboard of the TSF is measured using surveyed poles and entered on the Excel spreadsheet on a monthly basis. The monthly spreadsheet reports were observed for 2023 and included piezometer readings, and drain flow. The operation measures precipitation, compares the results to design assumptions, and revises operating practices as necessary.

Any incidents are investigated in accordance with SER.2.4A SPG Reporting, Investigation and Administration of Accidents and Injured, dated May 2023.

The precipitation is measured on site daily and input into the water balance on an annual basis.

The auditors observed the Sibanye Gold Operations Beatrix TSF2, Quarterly Monitoring Report, Q1, Q2, and Q3 2023, by Knight Piesold. These reports include:

- Freeboard: Legal requirement 1.8 m with the TSF being compliant. Current Freeboard is 2.8 m.

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- Rainfall: includes graphs of a maximum 24 hr storm per month as well as monthly rainfall trend.

This data is used to manage the TSF and recommend any changes in operating practices.

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Standard of practice 4.4: Implement measures to protect birds, livestock from adverse effects of cyal		•
	oxtimes in full compliance with	
The operation is	in substantial compliance with	Standard of Practice 4.4
	not in compliance with	

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.

It has not been necessary for the operation to implement measures (e.g., fencing, filling in collection ditches with gravel, and covering or netting solution in ponds and impoundments) to restrict access by wildlife and livestock to all open waters where WAD cyanide exceeds 50 mg/l as there are no open waters on site where WAD cyanide exceeds 50 mg/l.

The operation can demonstrate that the cyanide concentration in open water in the TSF and solution ponds does not exceed 50 mg/l WAD cyanide.

The procedure for the *MET-2.3C-SPG8 Respond to High WAD Cyanide Samples* dated September 2023 states that the SCADA system raises an alarm when the WAD cyanide goes above 50 mg/l.

The sampling point is the on-line WAD analyser in the Plant. The online WAD1000 analyser takes samples every 15 minutes and the values are recorded in the SCADA system. The Plant calculates the daily average WAD cyanide and records this data in a spreadsheet. The data for 2023 was observed by the auditors. Two exceedances were observed i.e. above 50 ppm WAD cyanide.

Any exceedance of the 50 mg/l WAD cyanide limit is investigated and documented.

On both occasions the values were 56 mg/l WAD Cyanide on 17 July 2023, 16 October 2023. The first exceedance was due to the blockage of the air lances in the tanks. The Plant now has a service level agreement with the supplier to undertake regular maintenance of the air lances. The second exceedance was due to the blockage of the sampling tube for the TAC 1000. The exceedances are communicated to the management through a Short Message Service (SMS).

The results for the concentration of WAD cyanide in RWDs for 2023 are below 0.5 mg/l.

Maintaining a WAD cyanide concentration of 50 mg/l or less in open water is effective in preventing significant wildlife mortalities. Therefore the RWDs and the associated pipeline to the Plant are not classed as cyanide facilities.

The TSF and Plant are inspected for wildlife mortalities on a daily basis. No wildlife mortalities were recorded in 2023. There is no heap leach on site. .

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andard of practice 4.5: Implement measures to protect and indirect discharges of cya surface water.			
	⊠ in full compliance with		
The operation is	☐ in substantial compliance with	Standard of Practice 4.5	
	☐ not in compliance with		

The operation is in full compliance with Standard 4.5 to implement measure to protect fish and wildlife from direct and indirect discharges of cyanide process solutions to surface water.

The operation does not have a direct discharge to surface water.

The operation does not have a direct discharge to surface water. The only discharge to surface water is from the Waste Water Treatment Works for the mine.

The monthly water monitoring results for the RWDs for 2023 are below 0.5 mg/l. RWD 2 is kept empty to accommodate a storm event. RWD 2 is provided with a spillway in the event of an overtopping, however this has not happen in the last 3 years due to the ability to divert water to the Evaporation Ponds.

In the event of there being excess water on the TSF it is possible for the water from the TSF to be diverted to the Evaporation Ponds, which have a large area, approximately 247 hectares, and no there is no direct discharge to the environment from the Evaporation Ponds.

The surface water is monitored upstream and downstream of the Plant and TSF on a monthly basis. There is a map of the monitoring locations. The auditors observed the results of the monitoring from October 2023 to December 2023 and all of the results for free and WAD cyanide were below the detection limit of 0.020 mg/l.

There is the possibility of an indirect discharge from the Evaporation Ponds to the local stream. Due to this a cut-off trench has been installed to prevent an indirect discharge.

No indirect discharge from the operation has caused cyanide concentrations in surface water to rise above levels protective of beneficial use. The beneficial use of surface water is likely to be limited to the watering of cattle.

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Standard of 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	Standard of Practice 4.6
	not in compliance with	

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

The operation implements specific water management and other measures to manage seepage to protect the beneficial use of groundwater beneath and / or immediately down gradient of the operation.

The groundwater limit for total cyanide in South Africa is 0.5 mg/l. The results observed since the previous recertification audit for the monitoring of boreholes downgradient of the Plant and the TSF all show that the results are below 0.02 mg/l total cyanide. The monitoring is undertaken on a quarterly basis.

The beneficial uses downgradient of the site are limited to use by surrounding mines.

The TSF is equipped with underdrains, and catchment paddocks which contain any runoff from sides of dam as well as reducing seepage. The water from the underdrains flows into the perimeter trench and subsequently to the RWD 1.

Mill tailings are not used as underground backfill.

There is no evidence that seepage from the operation has caused cyanide concentrations of groundwater to rise above levels protective of beneficial use.

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Standard of practice 4.7: Provide spill prevention or containment in process tanks and pipelines.		ainment measures for
	⊠ in full compliance with	
The operation is	in substantial compliance with	Standard of Practice 4.7
	not in compliance with	

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

Spill prevention or containment measures are provided for all unloading, storage, and process solution tanks.

The following was verified by the auditors during the site inspection.

It was verified by the auditors during the site inspection that the cyanide storage tanks are conically designed tanks installed on steel uprights such that any leaks can be visibly observed. The tanks are located inside a concrete bund to prevent seepage to the subsurface

The Leach and CIP tanks are flat bottomed tanks on solid concrete plinths. The tanks are located inside a concrete bund to prevent seepage to the subsurface.

The electrowinning tanks are placed on steel beams such that any leaks can be visibly observed. The tanks are located inside a concrete bund to prevent seepage to the subsurface.

Secondary containments for cyanide unloading, storage, and process tanks are sized to hold a volume greater than that of the largest tank within the containment and any piping draining back to the tank, and with additional capacity for the design storm event as detailed below.

- Cyanide Reagent Tank volume is 122 m<sup>3</sup>, bund volume is 183 m<sup>3</sup>;
- CIL largest tank is 1495 m³, bund volume is 2046 m³;
- Tailings largest tank is 464 m<sup>3</sup>, bund volume is 521 m<sup>3</sup>; and
- Elution largest tank is 16 m<sup>3</sup>, bund volume is 124 m<sup>3</sup>.

Procedures are in place and being implemented to prevent discharge to the environment of any cyanide solution or cyanide contaminated water that is collected in a secondary containment area.

All of the bunds are equipped with automatic sump pumps (except for the cyanide storage area) returning spillages and water back to the leach tanks.

The sump pump for the cyanide solution tanks' bund pumps to the leach tanks only, the sump is equipped with a level detector connected to the SCADA system, but needs to be started manually.

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Procedure *MET.2.3C-SPG39 Inspect Plant Areas*, dated 05 November 2019 include the monitoring of all bund levels which are recorded in the Shiftly Extraction Log Sheet, with entries for October 2023 observed by the auditors.

There are no cyanide process tanks without secondary containment.

Spill prevention or containment measures are provided for all process solution pipelines to collect leaks and prevent releases to the environment.

All reagent strength pipelines and lower strength process solution pipelines in the Plant run across concrete areas connected to bunds acting as secondary containment with flange covers fitted to all flanges.

Reagent strength cyanide lines are included in the PRAGMA PMS.

Procedure *MET.2.3C-SPG39 Inspect Plant Areas*, dated 05 November 2019 includes a shiftly inspection for all pipeline leakages, crystallisation and observation of the general condition.

The TSF line from the Plant to the TSF are high density poly-ethylene (HDPE) pipes welded together, placed inside earth containment berms. The ring main pipelines at the TSF are steel pipes placed adjacent to the slimes dam solution trenches catchment area.

All pipes, valves and pumps are part of the PRAGMA PMS.

TSF Pipe inspections are conducted daily. Pipe thickness tests are conducted annually of the steel pipes.

There are no areas where cyanide pipelines present a risk to surface water.

Cyanide tanks and pipelines are constructed of materials that are compatible with cyanide and high pH conditions.

The site inspection verified that all cyanide tanks are constructed of mild steel. The cyanide reagent strength pipelines lower strength process solution pipelines within the Plant are made of mild steel as per the Sibanye standard for cyanide reagent strength pipelines.

The tailings pipelines from the Plant to the TSF are made of HDPE. The ring main for the TSF is made of steel.

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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.
	☑ in full compliance with
The operation is	in substantial compliance with <b>Standard of Practice 4.8</b>
	☐ not in compliance with

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

Quality assurance and quality control programs were implemented during the construction and substantial modification of all cyanide facilities, however due to the age of the Plant and the transfer of ownership the records are not available.

The Plant Boiler Makers are trained in the Structural Inspection Maintenance Management System (SIMMS) for Plant Structures. The auditors observed the training material. The training is provided at the Sibanye Academy. Following the successful completion of the training the individuals are certified to undertake structural inspections. The auditors observed the certificate for CJ v Nieuwenhuizen dated 3 November 2022, and T Mdlolt dated 3 March 2023.

The certified Boiler Makers undertake an annual inspection of the Plant's structures. The completed SIMMS inspection for the Sodium Cyanide Tanks dated 24 November 2023 Job Card Nr S5181062 was observed. If any significant deficiency is observed this is communicated to the Sibanye Structural Engineer for further inspection.

The annual structural inspection is included as part of the PRAGMA PMS and recorded electronically on the system.

A quarterly assessment of the and report on the status of the TSF are undertaken by the Engineer of Record, Knight Piesold. The following were observed.

The auditors observed the Sibanye Gold Operations Beatrix TSF2, Quarterly Monitoring Report, Q1, Q2, and Q3 2023, by Knight Piesold. The reports included the following; physical integrity, stability, tailings deposition, rate of rise, freeboard, pool management and penstock, phreatic level trends, underdrain flows, return water dams and seepage, rainfall, environmental, incidents, site visit findings, and action list. - no significant issues were reported.

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Standard of Practice 4.9:	Implement monitoring programs to evaluate the effects of cyanide use on wildlife, and surface and groundwater quality.	
	☑ in full compliance with	
The operation is	in substantial compliance with <b>Standard of Practice 4.9</b>	
	not in compliance with	

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

The operation developed written standard procedures for monitoring activities.

The auditors observed the *Environmental Water Resource Monitoring Procedure* dated December 2017. This is a Group procedure applicable to all Sibanye Plants and includes water quality monitoring. The monitoring of wildlife mortality is undertaken on a daily basis.

The sampling and analytical protocols have been developed by an appropriately qualified person.

The sampling protocol has been developed using MINTEK procedures by HPJ Pretorius a scientist with an MSc in Environmental Management specialising in water quality. The auditors observed the professional registration card 400447/04.

The Environmental Monitoring Plan includes procedures specifying how and where samples should be taken, sample preservation techniques, chain of custody procedures, shipping instructions, cyanide species to be analysed and quality assurance and quality control requirements for cyanide analyse.

Sampling conditions (e.g. weather, livestock/wildlife activity, anthropogenic influences, etc.) and procedures are documented in writing.

The auditors observed the sampling record dated 12 October 2023, 07 November 2023, and 05 December 2023 including a column covering weather, field observations, etc. and a relevant entry was confirmed.

Monitoring is conducted at frequencies adequate to characterise the medium being monitored and to identify changes in a timely manner.

The surface water monitoring is undertaken on a monthly basis. The groundwater samples are undertaken on a quarterly basis.

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# Principle 5 - Decommissioning

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

Standard of practice 5.1:	Plan and implement procedures for effective decommissioning of cyanide facilities to protect human health, wildlife, livestock, and the environment.	
	⊠ in full compliance with	
The operation is	in substantial compliance with	Standard of Practice 5.1
	☐ not in compliance with	

#### Summarise the basis for the findings/deficiencies identified.

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

The operation has developed written procedures to effectively decommission cyanide facilities at the cessation of operations.

The auditors observed *CN-ENV-04 Standard Procedure for Demolition of Cyanide Facilities*, dated Oct 2023. This plan adequately addresses decommissioning, which is the aspect of closure that addresses the cyanide remaining on site upon cessation of production activities and prepares the site for its closure and post closure period including the management of reagent strength cyanide and process solutions remaining in storage and production facilities.

The Plan includes an implementation schedule detailing the activities to be undertaken for the decommissioning and how long each activity will take starting from Day 1 of the decommissioning process.

The operation reviews its decommissioning procedures for cyanide facilities and revise them as needed every two years.

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Standard of practice	2: Establish a financial assurance mechanism capable of fully funding cyanide related decommissioning activities.	
	⊠ in full compliance with	
The operation is	in substantial compliance with	Standard of Practice 5.2
	not in compliance with	

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

The operation has developed an estimate of the cost to fully fund third party implementation of the cyanide related decommissioning measures identified in the site decommissioning plan.

The auditors observed the 2022 closure cost detailed estimate, dated January 2023, which includes a line item for cyanide decommissioning undertaken by WSP.

The cost estimates are reviewed annually.

The operation has established a financial mechanism approved by the applicable jurisdiction to cover the estimated costs for cyanide related decommissioning activities as identified in the decommissioning plan.

It is a legal requirement that financial estimate for decommissioning must be fully funded by the mine.

It was confirmed that the Beatrix Trust Fund, which is part of the Sibanye Trust Fund has sufficient funds to cover the cyanide related decommissioning.

The Trust Fund documentation is signed off by external accountants, Ernst and Young, as observed by the auditors.

The auditors observed the submission letter to the Department of Mineral Resources and Energy (DMRE), dated 28 February 2023 detailing the financial provision provided in accordance with the legal requirements.

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## Principle 6 - Worker Safety

Protect Workers' Health and Safety from Exposure to Cyanide.

Standard of practice 6.1: Identify potential cyanide exposumeasures as necessary to elimin them.			
	oxtimes in full compliance with		
The operation is	in substantial compliance with	Standard of Practice 6.1	
	not in compliance with		

#### Summarise the basis for the findings/deficiencies identified.

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

The operation has developed procedures describing how cyanide-related tasks such as unloading, operations, entry into confined spaces, and equipment decontamination prior to maintenance should be conducted to minimise worker exposure, as detailed below.

MET.2.3C-SPG2 Offload Sodium Cyanide from Tanker into Bulk Storage Facility, dated October 2023, includes PPE Section 4.3 Inspect and dress up in appropriate compulsory PPE.

MET.2.3D-SPG2 Perform Buddy Responsibilities (Plant Areas) dated October 2019. The procedure describes the role and responsibilities of the Buddy.

MET-2.3D SPG22 Decontaminate Equipment and Components For Reagent And Process Strength Cyanide And Slime, dated August 2020.

MET-2.3C SPG19 Maintenance on Sodium Cyanide Pipelines, dated September 2020.

MET2.3D SPG8 Enter and Work In Confined Spaces, dated November 2019. Use is made of permit books including confined space work permit, special work permit, and hot work permit.

MET.2.3D SPG7 Standard Procedure Obtain Permit to Work, dated January 2020.

A mini pre-task risk assessment system is used before any work is undertaken.

The procedures require, where necessary, the use of personal protective equipment and address pre-work inspections as observed by the auditors.

The auditors confirmed the relevant PPE and pre-task inspections are included in each individual procedure. In addition; a mini pre-task risk assessment system is used before any work is undertaken.

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The operation solicits and actively considers worker input in developing and evaluating health and safety procedures including the following:

Daily safety toolbox meetings are undertaken for each shift. These included cyanide awareness, which is when any new procedures will be discussed.

Weekly Wednesday Safety and Communication Meetings are undertaken with the auditors observing attendance records. The Life Saving Commitment booklets are issued to all employees. This includes critical health and safety behaviours and forms part of the meeting agenda, taking a different topic each week. The auditors observed the attendance registers for 2023.

Health and Safety Representative meetings are held monthly. The minutes and attendance registers for the meetings on 30 November 2023 were observed by the auditors.

New or revised procedures are discussed and agreed to at all of these meetings.

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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.	
	☑ in full compliance with	
The operation is	in substantial compliance with	Standard of Practice 6.2
	not in compliance with	

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

The operation has determined the appropriate pH for limiting the evolution of HCN gas during production activities.

The pH is measured at the thickener with a set point of 10.4. This is connected to the SCADA with low level alarms at 10.3, and high level alarms at 10.45.

There is a separate lime feed to Leach Tank 1 with a set point at 10.8, This is connected to the SCADA with low level alarms at 10.65, and high level alarms at 10.85, which activates an automatic stop. The alarms send automated SMSs.

It was confirmed during an interview with the Instrumentation Technician that there are Interlocks with cyanide pumps in place stopping the cyanide dosing pumps at pH 10.4.

The operation has identified areas and activities where workers may be exposed to hydrogen cyanide gas or cyanide dust in excess of 10 parts per million (ppm) (11 mg/m3) on an instantaneous basis and 4.7 parts per million (ppm) 5 mg/m3) continuously over an 8-hour period, as cyanide and require use of appropriate personal protective equipment in these areas or when performing these activities.

The areas identified are at the Cyanide Storage Tanks, top of the Leach Tanks, and at the Residue Tank. There are fixed cyanide monitors at each of these locations. In addition, a personal monitor is used by the TSF supervisor.

The auditors observed a hotspot survey prepared by the Occupational Hygiene Department dated 10 February 2022.

The facility uses monitoring devices in process areas and for activities involving the management of cyanide to confirm that workers are not exposed to hydrogen cyanide gas or cyanide dust exceeding 10 parts per million (ppm) on an instantaneous basis and 4.7 parts per million (ppm) continuously over an 8-hour period, as cyanide.

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Beatrix is equipped with eleven fixed monitors including at the Cyanide Storage Tanks (1), CIL dosing points (2), top of the Leach Tanks (7), and the Residue Tank (1). Daily gas readings are also taken at these locations.

The fixed monitor first alarm settings at the SCADA is 4.7 ppm with the second alarm at 10.0 ppm. Four Drager personal monitors are used with the first alarm set at 4.7 ppm and the second alarm at 10 ppm. At the first alarm the supervisor is informed so that they can investigate the reasons for the HCN gas emissions, the second alarm informs the operatives to vacate the area.

Hydrogen cyanide monitoring equipment is maintained, tested and calibrated as directed by the manufacturer, and the records retained for at least three years.

The 11 fixed cyanide monitors are calibrated by Ex-Solution Engineering with the calibration certificates for October 2022 and July 2023 observed by the auditors. The fixed monitors are required to be calibrated annually.

The Draeger personal monitors, two for HCN gas and two for multigases are calibrated by Draeger. Calibration is undertaken every 6 months however the monitors are new so only one set of calibration certificates were observed, dated 05 June 2023 for the HCN gas monitors and 19 September 2023 for the multigas monitors.

Warning signs have been placed where cyanide is used advising workers that cyanide is present, of any necessary personal protective equipment that must be worn, and that smoking, open flames and eating and drinking are not allowed. The auditors verified during the site inspection that the relevant signs are placed at the CIL, the Elution Area, the Residue Area, the Cyanide Storage Area, and the TSF.

It was confirmed during the site inspection that the Sasol SDS displayed at the liquid cyanide storage area included: "colour: light to dark red due to the incorporation of a dye". The auditors observed during the site inspection that the colour of the liquid cyanide at the dosing 1 point is red due to the incorporation of the dye.

It was verified by the auditors during the site visit that emergency showers with eye wash fountains and dry powder fire extinguishers are installed at strategic locations on the Plant. Eye wash sprays are designed to diffuse water streams. They are maintained, inspected and tested on a regular basis.

SER.EE.2.4 SPG-32 Fire Extinguisher Standard Procedural Guideline dated August 2023 was observed detailing checklist, and requiring a monthly inspection sticker as well as annual service sticker placed on the unit. The auditors observed the checklists for 2023. The annual service was undertaken by Fire-Quip in August 2023.

Emergency safety showers are tested and inspected as part of the shiftly plant inspection. Unloading, storage, and process tanks and piping containing cyanide are identified to alert workers of their contents, and the direction of cyanide flow in pipes is shown.

It was verified by the auditors during the site visit that reagent strength cyanide pipes and lower strength process solution pipes within the Plant are labelled indicating their contents and direction of flow. Cyanide dosing points are labelled. Cyanide storage tanks are clearly marked and colour coded. The Plant uses a colour coding standard for tanks and pipelines

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and employees are trained in the standard. The tailings pipeline is labelled with contents and direction of flow.

Safety Data Sheets, first aid procedures and other informational materials on cyanide safety is in the language of the workforce and available in areas where cyanide is managed. The official language for the mine is English with all notices and procedures being in English.

The Sasol SDS boards and cyanide first aid procedure are displayed at the cyanide unloading area, the top of the CIL, and in the first aid room. The first aid procedure is also included in the emergency response plans.

A procedure is in place and being implemented to investigate and evaluate cyanide exposure incidents to determine if the operation's programs and procedures to protect worker health and safety, and to respond to cyanide exposures, are adequate or need of revising as detailed below.

SER.2.4A SPG Reporting, Investigation and Administration of Accidents and Injured, dated May 2023. An accident investigation was observed by the auditors. The report included the following; introduction, details of the accident, details of the injury, training details, investigation team, locality plan, sequence of events, findings, and recommendations.

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Standard of 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	Standard of Practice 6.3
	not in compliance with	

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.

The operation has water, oxygen, a resuscitator, antidote kits and a radio, telephone, alarm system or other means of communications or emergency notification readily available for use at cyanide unloading, and storage locations and elsewhere in the Plant.

The following was verified by the auditors during the site visit. A medical station, adjacent to the cyanide offloading and storage area, is available on site and a section dedicated to cyanide emergency and first aid is in place. The medical station has the following available:

- 3 cyanide antidotes (TriPac) stored in a fridge, all within their use by date.
- 2 personal Gas Monitors (X-a 5000)
- Cyanide PPE including rubber gumboots, chemical suits, gloves, full facemasks, cyanide canisters, life oxygen packs, responder kits, and spill kits.

The room was in a good clean condition, the PPE are stored in sizes making doffing and donning in the correct sizes easy and quick. A telephone is available in the emergency room for communication. Radios are used for emergency notification and cyanide emergency man down alarms are placed at strategic places on the Plant. The medical station is the central facility for cyanide emergencies at the Plant. A first aid station is available at the top of the leach including PPE and medical oxygen. There are emergency showers and eye wash at the cyanide storage/ offloading area, top of the CIL, and at the Residue Tank.

The operation inspects its first aid equipment regularly to ensure that it is available when needed, and materials such as cyanide antidotes are stored and/or tested as directed by their manufacturer and replaced on a schedule to ensure that they will be effective when needed.

Chemicals 2.3C SPG2 - Offload Sodium Cyanide from Tanker into a Bulk Storage Facility dated October 2023 includes the Sodium Cyanide Offloading Checklist, which is undertaken prior to an offloading event. The checklist includes the emergency room checks for first aid equipment as well as the antidote for expiry.

First aid equipment elsewhere in the Plant e.g. oxygen is included in the shiftly inspection undertaken in accordance with Procedure *MET.2.3C-SPG39 Inspect Plant Areas*, dated 5

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November 2019. The auditors confirmed that the cyanide antidotes (TriPac) are stored in the fridge and are due to expire in June 2024. The antidote kits are ordered by the Plant. The kits are inspected daily for expiry and ordered a month before expiry to ensure the delivery in time before expiry.

The operation has developed a specific written emergency response plan to respond to cyanide exposures through ingestion, inhalation, and absorption through the skin and eyes, which is *MET2.3C-SPG50 Emergency Response Plan - Sodium Cyanide -* dated January 2021.

The operation has its own on-site capability to provide first aid or medical assistance to workers exposed to cyanide. A fully equipped medical station is situated adjacent to the cyanide offloading area. This is used to stabilise patients until an ambulance arrives at which time the paramedic can administer the cyanide antidote, as required. The members of the ERT are not authorised to administer the antidote.

A dedicated trained Emergency Response Team (ERT) is in place on every shift made up of 5 members and the Supervisor. Shift teams are trained in first aid cyanide treatment.

Netcare 911 is contracted by Sibanye for the provision of paramedic and ambulance services. Primary response is from the Plant ERT with Netcare providing paramedical service and transport to the RH Matihabeng Hospital.

The operation has developed procedures to transport workers exposed to cyanide to locally available qualified off-site medical facilities. Exposed workers will be transported from the site by Netcare 911 ambulance to the RH Matjhabeng Hospital.

MET2.3C-SPG50 Emergency Response Plan - Sodium Cyanide, Beatrix No.1 Plant dated January 2021 states under Section 6.6. Duties of the Protection services states that the Plant security access gate is opened for the direct vehicle entry of the ambulance. Netcare 911 will transport all cyanide patients to the nearest equipped facility based on a clinical assessment of the patient. RH Matjhabeng Hospital is 40 km away from the mine.

The operation has informed local medical facilities of the potential need to treat patients for cyanide exposure, and the operation has assured itself that the medical facility has adequate, qualified staff, equipment and expertise to respond to cyanide exposures. Sibanye has a Service Level Agreement (SLA) with RH Matjhabeng Hospital, which is fully equipped to handle cyanide patients. This was confirmed during the full chain mock drill to the hospital on 5 October 2023. The hospital is equipped with; a specified cyanide shower for decontamination, a specified cyanide emergency entrance, and cyanide antidotes (TriPac), in addition to the usual facilities at a fully equipped hospital that can treat accident and emergency patients.

It was confirmed that the hospital has its own standard procedures for treating cyanide patients, conducts their own cyanide training and is also equipped with their own cyanide related PPE, as required by the SLA.

The auditors observed a note to Sibanye gold operations employees stating that Netcare 911 has been appointed as a new service provider for emergency medical services (EMS). The auditors observed the contract between Sibanye and Netcare 911 for the provision of emergency medical services dated 14 October 2022.

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# Principle 7 - Emergency Response

Protect Communities and the Environment Through the Development of Emergency Response Strategies and Capabilities.

Standard of practice 7.1:	cyanide releases.	ponse plans for potential
	⊠ in full compliance with	
The operation is	in substantial compliance with	Standard of Practice 7.1
	not in compliance with	

### Summarise the basis for the findings/deficiencies identified.

The operation is in full compliance with Standard of Practice 7.1; prepare detailed emergency response plans for potential cyanide releases. The operation developed Emergency Response Plans to address potential accidental releases of cyanide and cyanide exposure incidents. These include the following.

The operation has developed an Emergency Response Plans to address potential accidental releases of cyanide and cyanide exposure incidents,

The auditors observed the following.

- MET2.3C-SPG50 Emergency Response Plan Sodium Cyanide dated Beatrix No.1 Plant, dated January 2021.
- Mandatory Code of Practice for Emergency Preparedness and Response, dated November 2021.
- TSF-2.3A SPG3 Beatrix 2 Plant Tailings Dam Failure Emergency Preparedness and Response Plan (EPRP), July 2023.

*MET2.3C-SPG50 Emergency Response Plan - Sodium Cyanide – dated Beatrix No.1 Plant*, dated January 2021 is in place, Section 10. details the Emergency Scenarios and references the relevant procedures, as detailed below.

- a) Catastrophic release of hydrogen cyanide from storage or process or regeneration facilities.
  - Met 2.3 C SPG56 Respond to Catastrophic Release of HCN gas.
- b) Transportation accidents occurring on site or in close proximity to the operation;
  - Met 2.3 C SPG57 Respond to Cyanide Tanker Incidents.
- c) Cyanide releases during unloading and mixing;
  - Met 2.3 C SPG25 Cleanup Spillages Reagent Strength Sodium Cyanide

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- d) Cyanide releases during fires and explosions;
  - Met 2.3 C SPG58 Respond to release of cyanide during fire and/or explosion
- e) Pipe, valve and tank ruptures;
  - Met 2.3 C SPG25 Cleanup Spillages Reagent Strength Sodium Cyanide
  - Met 2.3 C SPG26 Cleanup Spillages Slimes and Carbon Containing Process Strength Sodium Cyanide
- f) Overtopping of ponds and impoundments;
  - EP-ENV-02 Emergency Preparedness And Response Procedure For Environmental Incidents And Accidents
  - MET2 3CSP59 Cyanide Water Sampling And Analyses
- g) Power outages and pump failures;
  - Met 2.3 D3 SPG60 Respond to Power Outages and Pump Failures
- h) Uncontrolled seepage;
  - EP-ENV-02 Emergency Preparedness And Response Procedure For Environmental Incidents And Accidents
  - MET2 3CSP59 Cyanide Water Sampling And Analyses
- i) Failure of cyanide treatment, destruction or recovery systems;

There are no cyanide treatment or destruction systems in place.

- j) Failure of tailings impoundments, heap leach facilities and other cyanide facilities.
  - EP-ENV-02 Emergency Preparedness And Response Procedure For Environmental Incidents And Accidents
  - 2.3A Mandatory Code of Practice for Residue Deposits (COP).

The planning for response to transportation related emergencies considers the transportation route, physical and chemical form of the cyanide, method of transport (e.g. rail, truck), the condition of the road or railway, and the design of the transport vehicle (e.g., single or double walled, top or bottom unloading.

The following procedures are in place:

- Met/EJ/0012 Respond to Cyanide Tanker Incidents, September 2023
- Met 2.3 D SPG53 Emergency Communication dated January 2021;
- Sasol Emergency Call Centre Process for Transport and Off-Site Incidents; and
- Sasol Polymers Chlor Vinyls Business Emergency Response Protocol.

The liquid cyanide transport has been undertaken by Tanker Services since July 2011 and they are responsible for transportation related cyanide emergencies in accordance with their certification to the Code.

The Emergency Response Plans describe the following actions and reference the relevant procedures as detailed below.

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the anticipated emergency situations

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- Specific response actions, as appropriate for the anticipated emergency situations, such as clearing site personnel and potentially affected communities from the area of exposure.
- Clearing of site personnel is described in Met/EJ/0011 Emergency Evacuation in Plant dated September 2023.
- Evacuation of in the community areas will be coordinated by the District Disaster Management Team as described in TSF-2.3A SPG3 Beatrix 2 Plant Tailings Dam Failure – Emergency Preparedness and Response Plan (EPRP), July 2023, Section 13.4.5 Evacuation.
- Use of cyanide antidotes and first aid measures for cyanide exposure is described in the Met-2.3C SPG14 Cyanide Protocols dated September 2023.
- Control of releases at their source, containment, assessment, mitigation and future prevention of releases are described in Met 2.3 C – SPG 25 Cleanup Spillages -Reagent Strength Sodium Cyanide dated October 2023
- Containment, assessment, mitigation and future prevention of releases are described in Met 2.3 C - SPG26 Cleanup Spillages - Slimes and Carbon Containing Process Strength Sodium Cyanide, dated October 2023.

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Standard of practice 7.2:	Involve site personnel and stake process.	eholders in the planning
	⊠ in full compliance with	
The operation is	in substantial compliance with	Standard of Practice 7.2
	not in compliance with	

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

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

Daily safety toolbox meetings are undertaken for each shift. These include Cyanide awareness when any new procedures will be discussed.

Weekly Wednesday Safety and Communication Meetings are undertaken. The Life Saving Commitment booklets are issued to all employees, which includes critical health and safety behaviours and forms part of the meeting agenda, taking a different topic each week. Health and Safety Representative meetings are held monthly. The emergency response planning process is discussed at all of these meetings as required.

Sibanye has a Service Level Agreement (SLA) with RH Matjhabeng Hospital, which is fully equipped to handle cyanide patients. This was confirmed during the full chain mock drill to the hospital on 5 October 2023. The hospital is equipped with; a specified cyanide shower for decontamination, a specified cyanide emergency entrance, and cyanide antidotes (TriPac) in addition to the usual facilities at a fully equipped hospital that can treat accident and emergency patients.

It was confirmed that the hospital has its own standard procedures for treating cyanide patients, conducts their own cyanide training and is also equipped with their own cyanide related PPE, as required by the SLA.

The auditors observed a note to Sibanye gold operations employees stating that Netcare 911 has been appointed as a new service provider for emergency medical services (EMS).. Netcare 911 is involved in the mock drills.

The operation has made potentially affected communities aware of the nature of their risks associated with accidental cyanide releases, and consulted with them directly or through community representatives regarding appropriate communications and response actions.

The parties in the zone of influence have been determined to be nearby farmers, the Letlhogonolo District Municipality as representatives of local residents, and the Stilfontein Primary School. The following stakeholder engagement meetings were undertaken in 2023.

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presentation included the emergency response plan.

Meeting on 14 March 2023 at the mine with a tour of the TSF. The invitees included the local farmers, the local councillor, and representatives from the municipality. The

A separate meeting was undertaken on the same day at the Primary School, which included teachers, parents, learners and school managers. A one page flyer on the operation of the Plant and cyanide management was handed out at the meeting. A copy of the presentation was also provided in English and Sesotho.

There was a meeting on 29 May 2023 with the attendees including local farmers and representatives from the District Municipal Disaster Management Committee who would coordinate an emergency that went beyond the borders of the mine. This would include the police and fire department.

The mine representatives traveller to the farmers houses giving flyers to farmers for farm workers who could not attend the meeting. In addition, emergency assembly points outside the mine were visited with the Disaster Management Committee for non-mine workers in the event of an emergency.

The operation has identified external entities having emergency response roles, and involved those entities in the cyanide emergency response planning process.

MET2.3C-SPG50 Emergency Response Plan - Sodium Cyanide Beatrix No.1 Plant - dated January 2021 (ERP) identifies medical facilities, police, and fire departments as external entities having emergency response roles. The ERP states that "The stakeholders identified must be informed and their feedback obtained about any changes made to the ERP where it directly involves them.

The Police and Fire Department would be involved in any emergency that occurs outside the mine. They have not been involved with any mock drills to date. A disaster management committee is in place which includes the mine, the police, and the fire department, amongst others. It is the role of the municipality to co-ordinate the response to any disaster through the disaster management committee.

The operation engages in consultation or communication with stakeholders to keep the Emergency Response Plan current via the meetings detailed above.

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Standard of practice 7.3: Designate appropriate personnel and commit necessary equipment and resources for emergency response.							
		⊠ in full comp	liance with				
Th	e operation is	☐ in substantia	compliance	with <b>Sta</b>	ndard of Prac	tice 7.	3
		not in compli	ance with				
Su	mmarise the basis fo	or the findings/de	ficiencies id	entified.			
	e operation is in full co sonnel and commit ne						Э
	e cyanide-related elemer ated January 2021 includ		SPG50 Emerg	ency Respo	nse Plan - Sodiu	ım Cya	nide
a)	Designate primary and commit the resources	•	•	-ordinators \	vho have explici	t authoi	rity to
alte	e ERP identifies the primernate emergency respor clicit authority to commit	nse coordinator is id	entified as the	Plant Manag	ger. Both positio		
b)	Identify Emergency Re	esponse Teams.					
The	e Plant ERT are identified	d on notice boards v	vithin the Plant	as observe	d by the auditors	3.	
c)	Require appropriate tra	aining for emergenc	y responders.				
Tra	ining for ERT members i	s detailed on the Pl	ant Training M	atrix as obse	erved by the Aud	litors.	
d)	Include call-out co-ordinators and resp	procedures and onse team member		contact	information	for	the
	e ERP details the call out ergency contact informat		Section 6.4 Pla	ant ERT Men	nbers Duties and	d	
e)	Specify the duties and	responsibilities of th	ne co-ordinator	s and team	members.		
	e ERP details the duties a ergency Team.	and responsibilities	of the coordina	ators and ER	T Members in S	Section	6.0
f)	List emergency respor	nse equipment, inclu	ding personal	protection g	ear, available or	n-site.	
	e Plan in Section 6.12 Er illable.	nergency Cyanide E	Equipment lists	the emerge	ncy response ed	quipmer	nt
a)	Include procedures to	inspect emergency	response equi	oment to ens	sure its availabili	itv.	

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Each Station that contains emergency response equipment is inspected daily using the appropriate checklist as stated in the ERP Section 6.13.2 Inspection Procedure. The Cyanide Offloading checklist inspects the offloading area including the first aid room that is adjacent to the offloading area, prior to any offloading event. The auditors observed completed checklists for October 2023.

The auditors observed the Netcare 911 Ambulance Operational Readiness Check Vehicle BA12, dated 11 October 2023 including external and internal checklists which includes medical equipment. Inspections are conducted shiftly.

h) Describe the role of external responders, medical facilities and communities in the emergency response procedures.

The ERP in Section 6.14 details the Role of Outside Responders.

responsibilities identified in the Emergency Response Plan are aware of their involvement and are included as necessary in mock drills or implementation exercises.

MET2.3C-SPG50 Emergency Response Plan - Sodium Cyanide, Beatrix No.1- dated January 2021 identifies medical facilities, police, and fire departments as external entities having emergency response roles.

Sibanye has a Service Level Agreement (SLA) with RH Matjhabeng Hospital, which is fully equipped to handle cyanide patients. This was confirmed during the full chain mock drill to the Hospital on 5 October 2023.

The auditors observed a note to Sibanye gold operations employees stating that Netcare 911 has been appointed as a new service provider for emergency medical services (EMS). The auditors observed the contract between Sibanye and Netcare 911 for the provision of emergency medical services dated 14 October 2022. Netcare 911 is involved in the mock drills.

Netcare 911 and the RH Matjhabeng Hospital, are involved in full chain drills. The auditors observed an emergency cyanide drill report from the Plant to the RH Matjhabeng Hospital on 5 October 2023.

The hospital has its own standard procedures for treating cyanide patients, conducts their own cyanide training and is also equipped with their own cyanide related PPE, as required by the SLA.

The Police and Fire Department would be involved in any emergencies that occur outside the mine. They have not been involved with any mock drills to date. A disaster management committee is in place which includes the mine, the police and fire department, amongst others. It is the role of the municipality to co-ordinate the response to any disaster the rough the disaster management committee.

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Standard of practice 7.4:	Develop procedure for internal and external emergency notification and reporting.	
	⊠ in full compliance with	
The operation is	in substantial compliance with	Standard of Practice 7.4
	not in compliance with	

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

The ERP includes procedures and contact information for notifying management, regulatory agencies, external response providers and medical facilities of the cyanide emergency.

The ERP details the call out procedures under Section 6.0 Emergency Team for notifying management, regulatory agencies, external response providers and medical facilities of the cyanide emergency. Emergency contact information is in Annexure B.

The ERP includes procedures and contact information for notifying potentially affected communities of the cyanide related incident and any necessary response measures and for communication with the media.

The ERP Section 6.9 Media Liaison states that the Media Liaison Officer is the only authorised spokesperson authorised to deal with the Media. Communications with communities will be by the Community Engagement Department unless there is a threat to a beneficial water source and then the Sustainable Development Manager will immediately inform the relevant parties as described in Section 6.9 Media Liaison.

The operation has a procedure for notifying the ICMI of any significant cyanide incidents, as defined in the ICMI's Definitions and Acronyms document.

The ERP Annexure A: Notification of Significant Cyanide Incident to the International Cyanide Management Institute describes the procedure.

There have been no significant cyanide incidents to date.

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Standard of practice	7.5: Incorporate remediation measur into response plans and accour of using cyanide treatment cher	account for the additional hazards	
	⊠ in full compliance with		
The operation is	in substantial compliance with	Standard of Practice 7.5	
	not in compliance with		

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

The Plan describes specific remediation measures as appropriate for the likely cyanide release scenarios as detailed below.

- a) Recovery or neutralisation of solutions or solids?
- b) Decontamination of soils or other contaminated media?
- c) Management and/or disposal of spill clean-up debris?

The necessary measures are described in the following procedures.

Met 2.3 C – SPG25 Clean up Spillages - Reagent Strength Sodium Cyanide, dated October 2023.

Met 2.3 C – SPG26 Clean up Spillages - Slimes and Carbon Containing Process Strength Sodium Cyanide, dated October 2023.

These procedures include the clean-up of cyanide spills outside the Plant perimeter to the TSF. All spillages are to be cleaned up physically without the use of chemicals. The total cyanide must be less than 0.5 mg/l total cyanide in the cleaned-up area for the removal of contaminated material to be complete. The contaminated material will be assessed to determine where it can be put back into the process. The procedures also detail how soil samples will be taken and what analysis will be performed.

d) Provision of an alternate drinking water supply?

The ERP Section 6.9 Media Liaison states that if there is a threat to a beneficial water source the Sustainable Development Manager will immediately inform the relevant parties who will arrange to supply potable drinking water.

*MET2.3C-SPG50*, Section 9.2 Surface Water Protection states that chemicals are not to be used to neutralise cyanide spilled into surface water. Sodium hypochlorite, ferrous sulphate, and hydrogen peroxide are not kept on site and therefore are not available to treat any spills.

MET2.3C-SPG50 Emergency Response Plan - Sodium Cyanide - dated January 2021, Section 9.3 Environmental Monitoring states that the potential need for monitoring is

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identified in 2.3C SPG55 Cyanide Water Sampling and Analysis Procedure, which includes sampling methodologies and parameters. The auditors observed the map showing the various sampling locations.

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Standard of Practice	7.6: Periodically evaluate response prant and revise them as needed.	ocedures and capabilities
	⊠ in full compliance with	
The operation is	in substantial compliance with	Standard of Practice 7.6
	not in compliance with	

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

The operation reviews and evaluates the cyanide related elements of its Emergency Response Plan for adequacy on a regular basis.

MET2.3C-SPG50 Emergency Response Plan - Sodium Cyanide - dated January 2021, Section 4.0 Evaluation of Emergency Response Plan for Cyanide states that the Plan will be reviewed; on an annual basis, if any changes occur, after each cyanide related emergency, or after each emergency drill where deficiencies in the Plan were identified.

Mock cyanide emergency drills are conducted periodically.

MET2.3C-SPG50 Emergency Response Plan - Sodium Cyanide - dated January 2021, Section 7.0 Emergency Exercises details a schedule for mock drills must be created.

The following were observed by the auditors:

The mock drill schedule for 2023, with one drill per guarter for the Plant.

Emergency Cyanide Drill report from the Plant to the RH Matjhabeng Hospital on 5 October 2023: The was a mandown drill due to the presence of HCN gas. The drill report includes the following:

- Photographs of the drill;
- A timeline table including events and time. This showed that medical oxygen was administered within 3 minutes:
- Learning points include shortfalls; and
- Attendance register.

Emergency Cyanide Drill report for the TSF will a spillage of tailings from the pipeline delivering tailings to the TSF, dated 26 October 2023. This confirmed that chemicals are not used when remediating a spillage. The report was in the same format as that for the Plant.

The auditors observed the schedule for mock drills by SSMS at the TSF with a drill occurring once a month. A drill evaluation report was observed dated 24 July 2023, with the drill being a mock evacuation due to the presence of high WAD cyanide.

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Provisions are in place to evaluate and revise the Emergency Response Plan, as necessary, following mock drills and following an actual cyanide-related emergency requiring its implementation.

MET2.3C-SPG50 Emergency Response Plan - Sodium Cyanide - dated January 2021, Section 4.0 Evaluation of Emergency Response Plan for Cyanide states that the Plan will be reviewed; on an annual basis, if any changes occur, after each cyanide related emergency, or after each emergency drill where deficiencies in the ERP were identified.

The Emergency Response Plan has been revised as necessary however, this has not been due to mock drills or the implementation of the ERP as there have not been any cyanide emergencies.

Similarly the *TSF-2.3A SPG3 Beatrix 2 Plant Tailings Dam Failure – Emergency Preparedness and Response Plan* will be reviewed; on an annual basis, if any changes occur, after each cyanide related emergency, or after each emergency drill where deficiencies in the ERP were identified.

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## Principle 8 - Training

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

Standard of Practice 8	3.1: Train workers to understand the h cyanide use.	azards associated with
The operation is	in substantial compliance with	Standard of Practice 8.1
	☐ not in compliance with	

### Summarise the basis for the findings/deficiencies identified.

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

The operation trains all personnel who may encounter cyanide in cyanide hazard recognition.

All Plant and TSF staff receive induction training including cyanide awareness training. A 100% pass mark is required. This training adequately addresses cyanide hazards, such as the cyanide materials present at the operation, the health effects of cyanide, the symptoms of cyanide exposure and the procedures to following the event of exposure.

Asset protection (security) receive the induction including cyanide awareness.

Permanent Contractor staff receive induction including cyanide awareness. The records are kept of the tests and attendance registers, included in separate training matrix.

All TSF staff are trained in cyanide awareness and cyanide first aid by the Plant.

The auditors observed the Training Matrix and confirmed that the Plant and TSF personnel received induction and cyanide awareness training.

Cyanide induction refresher training is conducted when returning from annual leave. Staff overdue can be blocked from entry at the gate after 18 months. The auditors observed the Training Matrix and confirmed that the refresher training was being undertaken.

The auditors sampled the hardcopies of Plant training records and Sibanye Stillwater Academy Simplexity system that tracks the training undertaken at the Academy.

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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.		
	⊠ in full compliance with		
The operation is	in substantial compliance with	Standard of Practice 8.2	
	not in compliance with		

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.

The operation trains workers to perform their normal production tasks, including unloading, production and maintenance, with minimum risk to worker health and safety in a manner that prevents unplanned cyanide releases.

Practical training starts when the person is put on shift and receives on the job training under the supervision of the Team Supervisor. Standard Procedure Guidelines (SPG) are used for the task training.

The Supervisor conducts a Planned Task Observations (PTO) and a Task Risk Assessment (TRA) is used to determine if the operator is competent. If gaps are found additional training is provided.

Once found competent using the PTO by the Supervisor the operator will be allowed to work un-supervised.

The auditors observed the Training matrix, which includes level 2 training at the Academy e.g. leach, elution, CIP, milling. Engineering training is undertaken externally at No. 7 Shaft and is included in the matrix.

The Simplexity software program at the Academy is linked to the training matrices and records of all training done at the Academy. The program includes external emergency response training (Terisa Cierenberg) including cyanide emergency response.

Training at the TSF is based on a practical session by the SSMS trainer using the TSF procedures as guidelines. Determining competence is through PTOs. The auditors observed the file of PTOs for SSMS staff.

The training elements necessary for each job involving cyanide management are identified in the SPGs used as training material.

All Plant operating personnel are trained on all SPGs required to perform jobs involving cyanide management.

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Training at the TSF is based on a practical session by the SSMS using the TSF procedures as guidelines.

The auditors observed the SPGs attached to the training records demonstrating the training elements that were used.

Task training related to cyanide management activities is provided by an appropriately qualified person.

Task training is performed by the Plant Trainer Lucky Mtimkulu and on the job training is undertaken by experienced Plant Supervisors.

Lucky has completed the following:

- Conduct outcomes based Assessment 22 Apr 2008;
- Occupationally Directed Education Training and Development Practices 22 May 2013;
- Perform one to one training on the job 20 Nov 2010;
- Quality customer service 16-17 Aug 2011; and
- Mental Health First Aid Training 19-20 Nov 2009.

Together with over 14 years experience on gold mines.

Emergency Response training is undertaken by Teresa Cierenberg registered with the Health Professions Council of South Africa (HPCSA), with 16 years' experience in cyanide emergency training and procedures. She is also a qualified Intermediate Life Support Paramedic.

Training for the TSF is undertaken by Aubrey Fourie of SSMS, with 20 years' experience on TSFs.

All workers are trained prior to working with cyanide.

All Plant and TSF staff receive induction training including cyanide awareness training. A 100 % pass mark is required.

Asset protection (security) receive the induction including cyanide awareness.

Permanent Contractor staff receive induction including cyanide awareness. The records are kept of the tests and attendance registers, included in separate training matrix.

All TSF staff are trained in cyanide awareness and cyanide first aid by the Plant.

The auditors observed the Training Matrix and confirmed that the Plant and TSF staff received induction and cyanide awareness training. In addition, all employees receive training specific to cyanide related work tasks prior to working with cyanide.

Refresher training on cyanide management is provided to ensure that employees continue to perform their jobs in a safe and environmentally protective manner.

Cyanide induction refresher training is conducted when returning from annual leave. Staff overdue can be blocked from entry at the gate after 18 Months.

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The auditors observed the Training Matrix and confirmed that the refresher training was being undertaken. Refresher training is also provided for cyanide related work tasks if deficiencies are observed during the PTO.

The operation evaluates the effectiveness of cyanide training by testing, observation or other means.

PTO's are conducted to determine competency and as a refresher to ensure continued competency.

PTO's are conducted as per a formal program (the target is two PTOs a week).

Records are retained throughout an individual's employment documenting the training they have received and 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.

The auditors sampled the hardcopies of Plant training records and Sibanye Stillwater Academy Simplexity system that tracks the training undertaken at the Academy.

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Standard of practice 8.3:	Train appropriate workers and personnel to respond to worker exposure and environmental releases of cyanide.	
	⊠ in full compliance with	
The operation is	in substantial compliance with	Standard of Practice 8.3
	not in compliance with	

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, production, maintenance, TSF personnel and contractors are trained in the procedures to be followed if cyanide is released, including decontamination and first aid procedures.

All Plant and TSF employees and contractors receive cyanide awareness, emergency response and preparedness training including cyanide first aid and decontamination procedures, as observed in the training matrix by the auditors.

Emergency Response Coordinators and members of the ERT are trained in the procedures included in the Emergency Response Plan regarding cyanide, including the use of necessary response equipment.

A dedicated trained ERT is in place on every shift, which is made up of 6 members from the shift.

All Plant employees receive cyanide awareness, emergency response and preparedness training as part of the ERP including cyanide first aid, decontamination procedures, as observed in the training matrix by the auditors, and the use of necessary response equipment.

The operation has made external responders, such as local fire brigades and emergency medical services familiar with those elements of the Emergency Response Plan related to cyanide.

Netcare 911 and the RH Matjhabeng Hospital are involved in full chain drills. The auditors observed an emergency cyanide drill report from the Plant to the RH Matjhabeng Hospital on 5 October 2023.

The Police and Fire Department would only be involved in any emergencies that occur outside the mine. They have not been involved with any mock drills to date. A disaster management committee is in place which includes the mine, the police and fire department, amongst others. It is the role of the municipality to co-ordinate the response to any disaster.

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

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Cyanide induction refresher training is conducted when returning from annual leave. Staff overdue can be blocked from entry at the gate after 18 Months.

The auditors observed the Training Matrix and confirmed that the refresher training was being undertaken. This includes refresher training for ERT members on cyanide release and exposure incidents.

Records are retained documenting the cyanide emergency response 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.

The auditors sampled the hardcopies of Plant training records and Sibanye Stillwater Academy Simplexity system that tracks the training undertaken at the Academy.

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# Principle 9 - Dialogue and Disclosure

**Engage in Public Consultation and Disclosure.** 

Standard of practice 9.1:	Promote dialogue with stakeholders regarding cyanide management and responsibility address identified concerns.	
	☑ in full compliance with	
The operation is	in substantial compliance with	Standard of Practice 9.1
	not in compliance with	

#### Summarise the basis for the findings/deficiencies identified.

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

The operation provides stakeholders with information on its cyanide management practices and engage with them regarding their concerns.

The parties in the zone of influence have been determined to be nearby farmers, the Letlhogonolo District Municipality as representatives of local residents, and the Stilfontein Primary School. The following stakeholder engagement meetings were undertaken in 2023.

Meeting on 14 March 2023 at the mine with a tour of the TSF. The invitees included the local farmers, the local councillor, and representatives from the municipality. The presentation included the emergency response plan.

A separate meeting was undertaken on the same day at the Primary School, which included teachers, parents, learners and school managers.

A one page plant flyer on the operation of the Plant and cyanide management was handed out at the meeting. A copy of the presentation was also provided in English and Sesotho.

Meeting on 29 May 2023 the attendees included local farmers and representatives from the District Municipal Disaster Management Committee who would co-ordinate an emergency that goes beyond the borders of the mine. The municipality will co-ordinate the police and fire brigade in the event of such a disaster.

The mine representatives traveller to the farmers houses giving flyers to farmers for farm workers who could not attend the meeting. In addition, emergency assembly points outside the mine were visited with the Disaster Management Committee for non-mine workers in the event of an emergency.

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Standard of practice 9.2:	Make appropriate operational and environmental information regarding cyanide available to stakeholders.	
1	☑ in full compliance with	
The operation is	in substantial compliance with	Standard of Practice 9.2
	not in compliance with	

The operation is in full compliance with Standard of Practice 9.2 to make appropriate operational and environmental information regarding cyanide available to stakeholders.

The operation has developed written descriptions of how their activities are conducted and how cyanide is managed and these descriptions are available to communities and other stakeholders.

The operation has created a poster produced by the Plant that is handed out to communities. The poster includes; a process flow diagram, information on what is cyanide, uses of cyanide, how cyanide is used on the Plant, risks of using cyanide, and ICMI information. An emergency contact number is also included.

The operation has disseminated information on cyanide in verbal form where a significant percentage of the local population is illiterate.

Presentations are provided to schools and communities verbally in the local language.

The operation makes information publicly available on confirmed cyanide release or exposure incidents including the following.

- Cyanide exposure resulting in hospitalisation or fatality.
- Cyanide releases off the mine site requiring response or remediation.
- Cyanide releases on or off the mine site resulting in significant adverse effects to health or the environment.
- Cyanide releases on or off the mine site requiring reporting under applicable regulations.
- Releases that are or that cause applicable limits for cyanide to be exceeded.

No cyanide incidents have occurred at the Plant.

Any cyanide releases or exposure incidents are reported to the DMRE and the Department of Water and Sanitation (DWS) as required by the operation's authorisations. The DMRE and DWS report selectively on repeated or critical incidents.

Any incidents are reported in the Annual Integrated Report that is available on the Sibanye Stillwater website The auditors observed the following in the 2022 Report.

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- Environmental incidents that occurred in 2022, which included an incident from the Beatrix Mine (overflow of an evaporation pond receiving underground mine water, not associated with the Plant or TSF) and the Stillwater Mine (spillage of tailings).

Safety statistics and reporting on incidents including fatalities that occurred in 2022. Cyanide exposure incidents would be included in the report including details of the facility at which they occurred.

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