INTERNATIONAL CYANIDE MANAGEMENT INSTITUTE

Cyanide Code Certification Audit Gold Mining Operations

Summary Audit Report

Evander Gold Mining Limited (Pty) Ltd

Elikhulu Tailings Retreatment Plant, Evander, South Africa

15th – 19th March 2021

For the International Cyanide Management Institute

Name of Operation:	Evander Gold Mines: Elikhulu Tailing Re-treatment Plant
Name of Operation Owner:	Pan African Resources PLC
Name of Operation Operator:	Evander Gold Mines Ltd
Name of Responsible Manager:	Mr S. S. (Fanie) De Wet, Plant Manager
Address:	Rotterdam Road, Evander – Private Bag X1012, Evander, 2280
State/Province	Mpumalanga
Country:	South Africa
Telephone:	+27 (0)17 620 1704
Fax:	n/a
E-Mail:	Fanie.deWet@Emines.co.za

Location detail and description of operation:

1. ELIKHULU PROCESS INTRODUCTION

The Elikhulu Tailings Retreatment Plant (ETRP) is next to the existing Evander Kinross Gold Plant. An annual throughput of 12.0 Mtpa (million tons per annum) of reclaimed material, recovered from the existing Kinross, Winkelhaak and Leslie tailings dams, will be treated in the processing plant.

2. HYDRAULIC MINING

The hydraulic mining operations are carried out by effectively “washing” the previously treated processing plant tailings into suspension by means of high-pressure water monitor guns. The liberated material from the tailings dam is collected in a satellite pumping station situated in the vicinity of the re-mining operations, and pumped over a trash screen before being pumped to the processing plant by means of a running/ standby pumping configuration.

3. SLURRY RECEIVING & TRASH SCREENING (KZADBP000125-PFD-0200)

Slurred material pumped from the hydraulically mined pump station is screened (screen aperture 0.5mm x 8.8mm) on two vibrating screens in parallel. The dewatered screen oversize collects in a trash basket for manual removal, whilst the screen U/F (ultra-fine)

collects in a 380m^3 agitated surge tank. The pH is adjusted automatically by adding lime to the tank.

Material from the pre conditioning/ pre-oxidation tank is then transferred via gravity to the first of nine CIL (Carbon in Leach) tanks.

An online cyanide analyser is used to control the cyanide addition into the first CIL tank. A safety shower and Hydrogen Cyanide and Ammonia gas detection system are installed, together with cyanide and pH control equipment. Two spillage pumps, pumping the spillage back to the feed tank, is provided.

4. CARBON IN LEACH CIRCUIT (KZADBP000125-PFD-0300)

The material pumped from the pre-conditioning tank collects in the first of nine 3250m^3 CIL tanks. Each tank is fitted with an agitator and 3 oxygen spargers, allowing oxygen, consumed in the leach reaction, to enter the tank at high pressures, enhancing the leach kinetics. Flexibility to add cyanide to the first and second CIL tank has been allowed for. Allowance for Lime addition to tanks 1, 2 and 3 has also been made and can be used for pH corrections if necessary.

Harvesting of carbon can be done via tanks 1 and 2 (if tank 1 is offline during maintenance periods) by pumping the tank contents over the carbon harvesting screen. The screen O/S (over size) (carbon) collects in the acid wash column, whilst the screen U/S (under size) is gravity fed back to the CIL tank 1or 2.

Safety showers and Hydrogen Cyanide and Ammonia gas detection are installed, together with pH control equipment. Three spillage pumps installed in the CIL bund, with a fourth installed in the washing bay, pump the material back to the CIL tanks. A windsock to indicate prevailing wind is installed on the CIL tanks.

5. ACID WASH, ELUTION AND CARBON REGENERATION (KZADBP000125-PFD-0710 & 720)

Loaded carbon transferred from the carbon harvesting screen is collected in a single 15t Acid Column. Concentrated HCl (Hydrochloric Acid) solution, drawn from the concentrated HCl tank, is mixed with water in the acid wash water tank yielding a 3% HCL solution.

Upon completion of the acid wash cycle, the solution is gravity fed to a neutralization tank, where lime is added before being transferred to the tailings tank and pumped to the TSF (Tailings Storage Facility).

Acid washed carbon is then educted into a single 15t elution column. 1 bed volume (BV) of elution solution containing 3% Sodium Hydroxide (NaOH) is pumped from the strip solution make-up tank into the column. This solution is pre-heated to 125°C by recirculating the solution through the elution column primary- and secondary heat exchangers, heated by an electric heater. After the set temperature and pressure is

achieved, the solution is transferred to the CIL pregnant solution tank, and an additional 5 BVs drawn from the intermediate tank is passed through the elution column. The eluted carbon is thermally regenerated and recirculated to the CIL circuit.

Safety showers, Hydrogen Cyanide and Ammonia gas detection and two spillage pumps are installed.

6. ELECTROWINNING AND SMELTING (KZADBP000125-PFD-0760)

The pregnant solution tank receives pregnant solution from the elution circuit. A running/ standby pumping configuration is used to circulate the solution through the electrowinning circuit consisting of two cells in parallel (per circuit). The electrowinning circulation continues until gold in solution value drops below a preset value.
Caustic solution is dosed into the pregnant solution tank aimed at creating elevated conductivity levels necessary for electrowinning and to protect the anodes against corrosion.

Cathodes removed from the electrowinning cell is transferred to the calcining ovens, whilst the sludge reports to the sludge settling tank.

Product from the calcining oven is moved by hand to a diesel-fired smelting furnace. Borax, Silica. Potassium Nitrate and Sodium Carbonate is added to the furnace as flux chemicals to collect impurities in the melt and form a slag that will float on top of the molten gold.

Hydrogen Cyanide and Ammonia gas detection is installed, together with various extraction systems.

7. TAILINGS DISPOSAL (HZADBP00070-PFD-0800)

CIL tails are fed to two carbon recovery vibrating screens (screen aperture 0.63mm x 8.8mm). The screen O/S (Over Size) is collected in a telecon, ensuring that any carbon passing through the CIL circuit is recovered. The screen U/S (Under Size) is collected in the final tailings tank before being pumped to the TSF by means of two running (one standby) pump trains, each consisting of 3 pumps in series.
HP GSW (High Pressure Gland Service Water) will be drawn from a dedicated HP GSW tank, and fed to each pump via a dedicated HP GSW supply pump, with a common standby. The first pump in each train will be fed from the LP GSW (Low Pressure Gland Service Water) header.
A single spillage pump installed in the Tailings bund, pumps the spillage to the final tailings tank. Provision for Hydrogen Cyanide and Ammonia gas, a WAD (Weak Acid Dissociable) cyanide monitoring system, as well as a safety shower has been made.

8. REAGENTS

Sodium Cyanide (KZADBP000125-PFD-0900)

Liquid sodium cyanide will be delivered in bulk by tankers, and transferred to two bulk storage tanks. Concentrated Sodium cyanide will be supplied to all main plant dosage points via a running/ standby pumping configuration.

The Sodium Cyanide storage facility is enclosed in the secondary fenced area and transported to the in-plant storage facility as required.

Lime, Cyanide, Caustic, HCl and Oxygen will be delivered in bulk, and transferred directly from the road tankers to the respective mixing facilities. The road tankers will not enter the secondary fenced off area but will remain outside the plant perimeters at all times.

Liquid sodium cyanide will be delivered in bulk by tankers and transferred to two bulk storage tanks. Concentrated Sodium cyanide will be supplied to all main plant dosage points via a running/ standby pumping configuration.

Hydrogen Cyanide and Ammonia gas detection and a spillage pump pumping back to the dosing tanks or CIL circuit has been made

Auditor's Finding

This operation is

☐ in full compliance

X in substantial compliance *(see below) in 4.4 and 8.1

☐ not in compliance

with the International Cyanide Management Code (ICMC).

* The Corrective Action Plan to bring an operation in substantial compliance into full compliance must be enclosed with this Summary Audit Report. The plan must be fully implemented within one year of the date of this audit.

Audit Company: Eagle Environmental

Audit Team Leader: Arend Hoogervorst

E-mail: arend@eagleenv.co.za

Names and Signatures of Other Auditors:

Name: Dawid M. L Viljoen Signature _____ Date: 18/11/2021

Dates of Audit: 15th – 19th March 2021

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

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

Evander Gold Mines: Elikhulu Tailings Retreatment Plant Facility	Signature of Lead Auditor	23/11/2021 Date

Auditor's Findings

1. PRODUCTION: Encourage responsible cyanide manufacturing by purchasing from manufacturers who operate in a safe and environmentally protective manner.

Standard of Practice1.1: Purchase cyanide from manufacturers employing appropriate practices and procedures to limit exposure of their workforce to cyanide, and to prevent releases of cyanide to the environment.

X in full compliance with

The operation is □ in substantial compliance with **Standard of Practice 1.1**

□ not in compliance with

Basis for this Finding/Deficiencies Identified:
Sodium cyanide is supplied to the Evander Gold Mining (EGM) Company in liquid form by ICMI (International Cyanide Management Institute)-certified producer, Sasol South Africa (Pty) Ltd., (Sasol), and delivered by ICMI-certified transporter, Tanker Services Food and Chemicals Division (Tanker Services). Evander Gold Mining Ltd consists of the Evander Gold Mine (including the Evander Kinross Gold Plant) and the Elikhulu Tailings and Re-treatment Plant. There is no supply contract between the operation and Sasol, but as Sasol and its bulk transporter are both ICMI certified, the operation is deemed fully compliant. Sasol was certified on the ICMI website as compliant on 23rd January 2019. Sasol supplies the Elikhulu Tailings and Re-treatment Plant directly, and there are no independent distributors involved in the supply of sodium cyanide.

2. TRANSPORTATION: Protect communities and the environment during cyanide transport.

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

X in full compliance with

The operation is □ in substantial compliance with **Standard of Practice 2.1**

□ not in compliance with

Basis for this Finding/Deficiencies Identified:
There is a Memorandum of Agreement for the Off-loading of Liquid Cyanide in terms of SANS (South African National Standard) 10231:2006 Specifications and Codes of Practices incorporated into Legislation and the National Road Traffic Act 93/1996 and Regulations between Imperial Logistics Advance Trading as Tanker Services Food and Chemicals Division and Evander Gold Mining Proprietary Limited (including Elikhulu) which confirms that Tanker Services, the bulk sodium cyanide transporter, "…is accredited with the International Cyanide Management Institute and shall adhere to all requirements and procedures required regarding, but not limited to, the evaluation and selection of routes, overnight parking and security, interim loading, and un-loading, Transport to the operation, unloading at the operation, safety and maintenance of the means of transportation, task and safety training for transporters and handlers throughout transport, security throughout transport, and emergency response throughout transport…". There are no subcontractors used by the producer, distributor or the operation for liquid sodium cyanide transport-related activities.
The Memorandum of Agreement (MOA) for the offloading of liquid cyanide in terms of SANS 10231 and the National Road Traffic Act 93/1996 and Regulations", signed by Evander Gold Mining Company and Tanker Services, meets South African legal requirements for the transport and labelling of liquid sodium cyanide.
Site procedures do not refer to the addition of dye to the storage tanks. Sasol is a certified liquid cyanide producer that delivers liquid cyanide to ICMI signatories that is dyed red, using Carmoisine colouring.
The Sasol Safety Data Sheet (SDS). Sodium Cyanide Solution, Version 1.02 Revision Date 14.05.2019, issued to Elikhulu includes in Section 9, Physical and chemical properties, Colour - Light to dark red.

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

X in full compliance with

The operation is □ in substantial compliance with **Standard of Practice 2.2**

□ not in compliance with

Basis for this Finding/Deficiencies Identified:
There is a Memorandum of Agreement for the Off-loading of Liquid Cyanide in terms of SANS (South African National Standard) 10231:2006 Specifications and Codes of

Practices incorporated into Legislation and the National Road Traffic Act 93/1996 and Regulations between Imperial Logistics Advance Trading as Tanker Services Food and Chemicals Division and Evander Gold Mining Proprietary Limited (including Elikhulu) which confirms that Tanker Services, the bulk sodium cyanide transporter, "…is accredited with the International Cyanide Management Institute and shall adhere to all requirements and procedures required regarding, but not limited to, the Evaluation and selection of routes, overnight parking and security, Interim loading, and un-loading, Transport to the operation, Unloading at the operation, Safety and maintenance of the means of transportation, Task and safety training for transporters and handlers throughout transport, security throughout transport, and Emergency response throughout transport…".
Tanker Services was recertified as fully compliant under the ICMI transport code on 21 Nov 2018. Chain of custody document packages were sampled for cyanide delivered to the Elikhulu Tailings Re-treatment Plant on 2 February 2021. The document package included the Elikhulu purchase order, the Sasol delivery note and tax invoice, and the Tanker Services Delivery Note.

3. HANDLING AND STORAGE: Protect workers and the environment during cyanide 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.

X in full compliance with

The operation is
- □ in substantial compliance with **Standard of Practice 3.1**
- □ not in compliance with

Basis for this Finding/Deficiencies Identified:
The Elikhulu Tailings Retreatment Plant was designed by DRA Mineral Projects (Pty) Ltd, a professional process design Company. The Elikhulu Gold Project Engineering Design Criteria document includes mechanical design criteria, Piping and valves specifications, structural design criteria, plate work and lining, civil design criteria, instrument and control criteria. Section 7.5 Sumps and tanks, includes: - Tank concrete bases have a 50mm of bitumen pre-mix screed on top of the concrete if installed directly on the base; all reagent tanks are fully drainable, and the Cyanide tanks have been designed and built to comply with the Cyanide Code. The DRA Process design criteria document includes cyanide criteria used in the design of the cyanide offloading and storage facility. The P&IDs (Process and Instrumentation Drawings), where valves and

pipes, and control systems are specified, was reviewed. The Cyanide make-up and distribution details of cyanide receiving tank no 1 were sampled and reviewed. The Sasol bulk storage facility technical report, dated 14 Aug 2018, undertaken at commissioning and highlighted some areas to receive attention was sighted and reviewed. It was subsequently reported that outstanding items were all fixed and closed out.
Cyanide unloading takes place on a concrete offloading bay which drains into the cyanide bund area, minimizing seepage to subsurface. The cyanide tanks are placed on solid concrete foundations, inside a concrete bund area, which is shared with compatible NaOH (Sodium Hydroxide) caustic storage tanks. The unloading and storage areas are located away from people and surface waters. The installation of vents on top of the cyanide tanks was confirmed, and no solid sodium cyanide is stored on the site. The two cyanide storage tanks are equipped with level detectors with a high-level alarm that will sound at 95% of loading level. The level alarm is interlocked with the air valve on the offloading air hose (95%), cutting off air at that level.
The cyanide storage area is located inside an access controlled, manned security area and inside a fenced off area, locked with a key control register.

Standard of Practice 3.2: Operate unloading, storage and mixing facilities using inspections, preventive maintenance and contingency plans to prevent or contain releases and control and respond to worker exposures.

X in full compliance with

The operation is □ in substantial compliance with **Standard of Practice 3.2**

□ not in compliance with

Basis for this Finding/Deficiencies Identified:
Elikhulu Plant only receives liquid cyanide from Sasol, an ICMI certified producer, delivered in dedicated, bulk tankers. No cyanide mixing is undertaken on site. The Plant liquid offloading procedure requires the cleaning of spills, equipment and the outside of the tanker. The offloading procedure also lists the sequencing of tasks for coupling and uncoupling the pipes and flanges during offloading. Both the offloading procedure and the Buddy procedure describe the requirement for the use of the buddy and that appropriate personal protective equipment (PPE) is required. Sasol delivers liquid sodium cyanide to ICMI-certified mines and adds red dye to its bulk storage tanks, before delivery of cyanide by bulk tanker to the mines.

4. OPERATIONS: Manage cyanide process solutions and waste streams to protect human health and the environment.

Standard of Practice 4.1: Implement management and operating systems designed to protect human health and the environment utilizing contingency planning and inspection and preventive maintenance procedures.

X in full compliance with

The operation is
- ☐ in substantial compliance with **Standard of Practice 4.1**
- ☐ not in compliance with

Basis for this Finding/Deficiencies Identified:
The Elikhulu Plant has 89 cyanide-related Process and Engineering Procedures. There is also an Elikhulu new TSF Operating, Maintenance and Surveillance Manual for The Elikhulu Tailings Storage Facility in place.
From the last recertification audit in November 2016 to November 2019, Evander Gold Mine (EGM) Kinross Plant was responsible for the Tailings Storage Facility (TSF), and Fraser Alexander Tailings were the TSF (Tailings Storage Facility) operating contractors. From January 2019 (change over to Elikhulu residue station and changeover of TSF contractor to Paragon) to the certification audit, Elikhulu Remining Gold Plant took over responsibility for EGM tailings deposition from their tailings tank, when this tailings audit requirement became not applicable for EGM Kinross Plant.
The Elikhulu TSF annual report for Winkelhaak Tailings Storage Facility Complex Annual Operations and Dam Development Report For 2019, April 2020 was reviewed, along with the Quarterly Minutes of meeting dated 3 March 2020. The quarterly meetings were replaced by monthly meetings where operating issues and parameters are reviewed. The monthly meeting for 2 March 2021, was attended by Elikhulu Fraser Alexander Tailings (FAT) staff were reviewed, along with the annual report, 2019/2020 Annual Operations and Dam Development Report (Period from January 2019 to September 2020) October 2020, Fraser Alexander Report No: FA-Elikhulu TSF-001-2019 Slimes Annual Report–Rev 000.
Paragon took over from FAT as the TSF contractor. Paragon Procedures. Paragon uses 21 Site Work Procedures (SWPs), including penstock sleeping. SWP are reviewed annually. The procedures list on site was sighted, and the Penstock Sleeving procedure was sampled.
The 14 FAT Procedures: were reviewed electronically. The following procedures were sampled: - Penstock Option, including the risk assessment, Depositing onto a TSF, and Cyclone Operations.
The Mandatory Code of Practice - Mine Residue Deposits COP 15, Elikhulu Tailings Treatment Facility, rev 08 dated 23 March 2020, Depositing onto a TSF, is in operation.
The Plant has a procedure that manages WAD cyanide concentration to prevent more than 50 ppm WAD Cyanide in the plant residue, slimes dam tip points, catchment dams

or penstock pools. Freeboard targets are set in the - DMS Planned maintenance system. Sighted February 2021:
-Winkelhaak dam 2: Target minimum 1.77m, actual 2.12m,
-Compartment 3 minimum 2.21m actual is 3.84,
-Compartment 4: minimum 1.45 actual 5.23m
In the Toras (Technical Operational Risk Assessment System) System, it was reported that freeboard on the Elikhulu dam in the Upper compartment upper required a minimum of 2m, and the Actual was reported as 3.66m, In the Lower compartment, the minimum was 1.3m (dormant for 5 months), and the actual was 1.54m.
The Elikhulu Tailings Storage, Facility Phase 1, Detailed, Design Report, Evander Gold Mine, prepared for: DRA Projects SA (Pty) Ltd, page 3 Table 2-2: Extreme Rainfall Depths: covering 1:2, 1:50 and 1:100 year storm events and 1, 7, 30 days and annual data.
There is no discharge of cyanide solution to surface water, and this was confirmed during the TSF site inspections and the plant site inspections
In an extensive interview, the Engineering Manager reported that the Plant's PMS (Planned Maintenance System) system consisted of three parts, an on-line job request system, spare (redundant) equipment and a store of strategic spares.
Job Request System
The job request system is run by a Planner who manages both breakdown and planned maintenance activities and inspections through a work request system. Job cards can be loaded on the system by a number of individuals, including the Planner, the Control Room Operator, and the Process Foreman. After receipt, Work Requests are submitted to the various Engineering Heads of Department, who allocate the work to the various artisans (fitter, boilermaker, Instrument Technician, Electrician, etc.) On completion of the work, the completed Work Requests are returned to the Planner, who loads the details on the on-line system, which stores the records. The Engineer can pull reports from the system for analysis and further assessment.
Redundant (Spare) Equipment
In the design of the Plant, redundancy was built into the system to allow for flexibility. All pumps have stand-by sets and are rotated on a spreadsheet schedule (sighted) to ensure even use and wear and to allow planned maintenance to be carried out on the spare equipment. A spare tank was built into the design of the leach system to enable one tank per month to be taken off-line for planned maintenance inspection, cleaning and repair. Pump and tank maintenance and rotation are managed on spreadsheets (sighted) which are managed directly by the Engineer.
Strategic Spare Parts
The third component of the PMS is a strategic stock of spares. During the design of the plant, strategic spare parts were identified and purchased as a part of the capital provisions of the plant. These parts are kept in the engineering store on site and are replaced when used. Usage and stocks are tracked on a spreadsheet sighted) managed by the Engineer.

Monthly Planned Shutdown

The fourth part for the PMS is the regular, monthly planned shutdown of the Plant for maintenance. The planning of the shutdown is done by the Engineer to whom all requests for maintenance work are submitted. An example of the Microsoft Project Planning schedule was sighted.

Engineering planned inspections are done daily (cyanide storage facilities) and monthly for pumps and tanks, as per schedule using inspection books. Monthly summaries of daily inspections in the Inspections books from January 2021 to date were sighted. Operational inspections are done shiftly and documented in the inspection books. Monthly summaries of daily inspections in the Inspections books from January 2021 to date were sighted. The cyanide storage facility bund is included in the checklist inspection books. Secondary containments are inspected by the Outside Services Section using Checklist inspection books. The frequencies are deemed adequate to assure and document that cyanide facilities are functioning within design parameters.

The dams are inspected visually, and this is documented by exception through Work Requests if repairs or action is required. All in-plant dams are equipped with level indicators showing and alarming on the SCADA in the control room. The Outside Section uses Inspection books to inspect the spillages ponds. The ponds are kept empty and are desilted as much as weekly, when necessary. Pipelines and valves are checked every second day for deterioration and leaks. Sampled inspection forms sighted. Drones are used to check all TSF's, return water dams and in-plant dams on a daily basis.

Every year, in the month of September, before the rainy season, the Environmental Department checks and maintains the stormwater management structures and educates employees on the importance of stormwater management through environmental topics in toolbox talks.

Completed work requests, maintenance status summary, tank inspection records and operational inspection and checklists meeting ICMI requirements, were sighted. Inspection books include date of inspection, any deviation, and signature of inspector. If a problem is identified, a Work Request will be raised through the Control Room Operator, Planner or Process Foreman.

TSF Daily inspections sampled:

Paragon: The TSF operations logbook dated 01/02/2021, 2020 were sampled The log book includes freeboard poles, piezometers, slurry pipe, instability cracks, pipes/valves, animal's mortality observed. No wildlife mortalities were reported for 2020 and 20201

FAT: The Fraser Alexander logbook dated 11/3/21, 18/5/2020, 25/5/2020, 9/4/2020, 1/5/2019, and 13/5/2019 were sampled. The log book includes freeboard poles, piezometers, slurry pipe, instability cracks, pipes/valves, animal's mortality observed. No wildlife mortalities were reported for 2020 and 2021

TSF Monthly Inspections

Paragon: The July 2020 detailed monthly report was sampled and the Winkelhaak monthly meeting dated 23 /2/ 2021, including health and safety, environmental issues, action plans for the various compartments, catwalk and penstock and freeboard survey

mentioned, was reviewed. Also sighted was the Winkelhaak TSF Deposition Management System, Monthly Report February 2021, compiled by Albertus Seegers, covering freeboard, drain flow, rainfall, piezometers, tonnages, densities, red flag areas and general

FAT: The Monthly TSF meetings were reviewed for 2 March 2021, attended by Elikhulu Fraser Alexander staff. The monthly meetings cover health and safety, Environmental, water management, deposition, cyclone operations, drains, outer slopes, penstock and catwalk, seepage, densities, freeboard, Piezometers, Projects, planning,

TSF Weekly inspections

Paragon: Conducts daily inspections as per log book and with no weekly meetings or inspections. Monthly meetings are held reviewing the daily inspection logbooks.

FAT: held bi-weekly meetings. The electronic files were sighted and sampled - 17 March 2020, including priority items, action by, and due date, Health and safety, structural performance indicators, water management. It should be noted that the bi-weekly meetings were replaced by the monthly meetings covering inspections.

TSF Quarterly inspections and meetings

FAT: quarterly meetings were replaced by monthly meetings.

TSF Bi-Weekly inspections

Paragon: meeting dated July 2020 included the Geotechnical Engineer. The meetings focus on the action plans and progress. The bi-weekly meetings were replaced by monthly meetings.

The Elikhulu Management of Change Directive book was sighted. The Signature page includes the requirement under section 7, Acknowledgement signatures, is the requirement of the Environmental and Safety officials' signatures. The newly revised MOC (Management of Change) directive (Code compliant) has not yet been used for any MOC exercises.

The plant is stopped for planned maintenance shutdowns, breakdown maintenance as appropriate, or emergencies as per the stop/start procedures and emergency procedures. The plant is stopped when the re-mining operations are subject to abnormal rainfall affecting the solution management of the remining operation. Planned plant shutdowns are arranged by the Engineer every month, and a schedule is drafted and distributed, detailing the shutdown. Plant Management would use existing procedures, templates for Plant Shutdowns and risk assessments to address longer-term temporary closure or cessation of operations.

Following a review of design documentation, it was concluded that there was no need for emergency power.

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

X in full compliance with

The operation is □ in substantial compliance **with Standard of Practice 4.2**

□ not in compliance with

□ not subject to

Basis for this Finding/Deficiencies Identified:
In a bottle roll test covering the extended leach at Elikhulu Carbon in Leaching (CIL) plant, dated 21 May 2019, by Joseph Mohlakoana from the Metallurgical Team covering the extended leach at Elikhulu Carbon in Leaching (CIL) plant, conclusions included ". No dissolution has taken place after 4, 6 and 8 hours' respectively. Cyanide concentration did not drop significantly throughout the entire 12 hours period, which could indicate that there was no gold amenable to cyanidation in the material after 10.4 hours of normal leaching before the extended test work." In a subsequent, similar Bottle Roll Test dated 15 May 2019, testing the extended leach methodology, the conclusions stated, "…The results indicate that the extended leaching of 6 hours did not make an impact…"
The Plant Scale Leach condition evaluation spreadsheets covering: - Change in Cyanide setpoint; number of Elutions per day; effect of Retention Time (Number of tanks online); and throughput (Low or High Tonnages), the tests indicated that cyanide concentration is not correlated significantly with recovery.
A Metallurgical Team note to Oriel Shikwambana dated 31 May 2019 was sighted regarding Throughput vs. Recovery and also covering the influence of other parameters like cyanide consumption. The cyanicides consumption appeared not to be correlated to recovery. A further Metallurgical Team note to Oriel Shikwambana dated 14 May 2019 stated that inductions were that cyanide consumption was correlated to recovery. A recovery component check in June 2020 indicated a low r 2 statistical correlation of 0.14 between cyanide and recovery.
Separate AARL (Anglo American Research Laboratories) elution cyanide feed pumps are being installed to stabilise the CIL dosing system feed. The Plant decided, after plant trials involving variation in cyanide concentration, to lower the CIL 1 sodium cyanide concentration and evaluate the impact of lower cyanide levels on final WAD (Weak Acid Dissociable) cyanide in tails and recovery. The plant results to date suggest that lowering the cyanide concentration does not affect recoveries. Lowering the cyanide concentration resulted in lowering the WAD cyanide to less than 50 mg/l in CIL tank 9, from where the slurry is routed to the residue tank and pumped to the TSF's. The trial will continue running and be evaluated daily.
The feed tonnage to the Pre-ox tank is measured by a mass flow system. Cyanide addition is controlled by a variable speed drive on Bredel hose / peristaltic pumps in ratio with the federate. An on-line TAC 1000 free cyanide analyser measures the cyanide every 20 minutes, and the ratio is adjusted, based on the results. The pH is controlled at 10.5 by on line pH meters and are linked to a valve feeding slaked lime to the feed. Manual titrations are done on free cyanide every 2 hours, and pH is also measured. An automated cyanide

Titrator is used for comparison between the TAC 1000, the manual titration and the auto-Titrator. If a discrepancy is noted, the system is checked and the fault corrected.

Standard of Practice 4.3: Implement a comprehensive water management program to protect against unintentional releases.

X in full compliance with

The operation is in substantial compliance with **Standard of Practice 4.3**

 not in compliance with

Basis for this Finding/Deficiencies Identified:
The Elikhulu Plant spreadsheet-based Probabilistic Water Balance (PWB) reviewed and signed off by Joseph Mohlakoana, Senior Metallurgist, dated 10 June 2021, was sighted and reviewed. The Probabilistic Water Balance accounts for the natural variability and uncertainty of precipitation and evaporation and the average precipitation and evaporation rates. Also sighted was the SLR Consulting Probabilistic Water Balance developed as a part of the TSF design package. The input used for the design GoldSim Probabilistic water balance includes:
- Monthly average rainfall for wet and dry years
- Monthly average evaporation data
- The run-off factor of 0.55
- The design rainfall 24 hour event for 1:50 year is 147mm and 1:100 year 24 hour event 166.7mm.
- freezing and thawing are not significant factors in the area.

The seepage from the Waterval TSF was not included in the spreadsheet water balance, and the Elikhulu TSF is lined, and seepage is zero. There is no discharge to surface water as the Plant is water negative and requires make-up water. The measurement of piezometer readings and rainfall are considered in determining free board parameters of the TSF's. This was confirmed in the annual reports sighted.
TSF: The TSF freeboard is designed and operated as per legal requirements in South Africa, which is more than 157 mm, the considered 24 hour 1 in 100 year storm event.
The storage capacity of the Return Water Dam (RWD) is sized for a particular peak storm water pump rate by modelling the RWD with an unlimited capacity. The inflows to the RWD are modelled using the daily storm water runoff model over the simulated period. This results in a set of annual maximum RWD storage capacities from which annual exceedance probabilities can be estimated. The required RWD storage capacity is, therefore, that which results in less than a 1 in 50 chance of a spill occurring in any given year. The SLR Consulting design documents contains more detail for the new remining Elikhulu project.
Annual TSF audits and reports include consideration of the rainfall data and will recommend changes in operating parameters as is appropriate. The Plant PWB

(Probabilistic Water Balance) 1:50 and 1:100 year storm events are compared to the annual 24 hour rainfall events during the reviews. It was reported by the Metallurgist that the design storm event used was not exceeded during the past two years.
The Elikhulu plant water dams and spillage containment ponds are equipped with level indicators recorded on the SCADA system. TSF data to assist with implementation of the PWB is supplied through the FAT TORAS (Technical and Operational Risk Assessment System) and via the TSF quarterly and annual reports.

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

□ in full compliance with

The operation is **X in substantial compliance with Standard of Practice 4.4**

□ not in compliance with

Basis for this Finding/Deficiencies Identified:
The past few months have shown high WAD cyanide levels in open waters at the tailings storage facility, but the results of some recent changes have begun to see falling WAD cyanide levels. The site intends to put intensive effort, over the next month, to reduce WAD cyanide levels to below 50mg/l WAD cyanide consistently. Any spikes or exceedances that occur will be investigated and, where possible, corrective action taken to prevent re-occurrence. A first certification audit does not need to review history as it is assumed that the site was not necessarily Code compliant before the audit. The site will feed regular progress reports to the Technical Auditor. Evidence in 4.2 cyanide optimisation, above, is supporting evidence for significant improvement. A Corrective Action Plan has been put into place to deal with the substantial compliance. The TSF is fenced to restrict access by cattle, but birds will have access to the open waters and TSF beach. However, no mortalities were recorded on the TSF for 2020 and 2021 to date.

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

X in full compliance with

The operation is □ in substantial compliance with **Standard of Practice 4.5**

□ not in compliance with

Basis for this Finding/Deficiencies Identified:
No direct discharge to surface water takes place. There is no mixing zone as no discharge to surface water from any cyanide facility occurs. Inspections do not show any seepage from the TSF that could reach the surface water and streams. The new TSF's and return water dams are lined to prevent seepage. The facilities are also not close to any surface water streams.
The Mine samples the Winkelhaak Spruit stream downstream of the Mine and analyses for Cyanide sample results for sample points WH 5 and BM 11 were sighted. Values are all less than 0.05 mg/l Free Cyanide (limits of detection). The Mine also samples the Groot Spruit up and downstream of the Mine and analyses for Cyanide. Sample results for point BM11 from January 2019 to February 2021 all showed less than 0.05 mg/l Free Cyanide (limits of detection). No indication of indirect seepage is thus noted. No direct discharge to surface water takes place, and the operation is not engaged in remedial activity to prevent further degradation and restore beneficial use.

Standard of Practice 4.6: Implement measures designed to manage seepage from cyanide facilities to protect the beneficial uses of ground water.

X in full compliance with

The operation is in substantial compliance with **Standard of Practice 4.6**

 not in compliance with

Basis for this Finding/Deficiencies Identified
The new Elikhulu TSF and the return water dams are lined with HDPE (High Density Poly Ethylene) lining. Gabion baskets are installed to prevent seepage. The return water dams are equipped with silt traps, and the Kariba dam is lined with HDPE liners.
The plant is equipped with extensive secondary containment and paved roads to prevent seepage. It was observed during the site visit that the plant is very clean and free of spillage.
No beneficial uses of groundwater were identified by the jurisdiction. The Mine groundwater is not used for any purpose such as drinking water for human consumption, livestock drinking water, or irrigation. Water is supplied by Rand Water or the local municipalities. There are no backfill facilities on the mine. No remedial activity has been required to be done to prevent further degradation or restore beneficial uses.

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

X in full compliance with

The operation is □ in substantial compliance with **Standard of Practice 4.7**

□ not in compliance with

Basis for this Finding/Deficiencies Identified:
Civil drawings show cyanide tank bases are placed on an impervious civil foundation. The Pre-ox and CIL area foundation drawings confirm the tank is placed on an impermeable concrete layer. Ring beam detail covers the other cyanide containing tanks confirming them to be equipped with impermeable concrete foundation layers.
It was confirmed during the site visit that the secondary containments are all equipped with a sump and sump pump system returning the spillage to the process. Thus, there is no need for a procedure. It was confirmed in a managerial instruction to all line managers from the plant manager that it was required that the event ponds are kept clean at all times and to always have the capacity to cater for any overflows from the CIL due to emergencies. The instruction also includes a procedure for cleaning the events ponds.
Drawings covering the cyanide mixing and dosing surface bed concrete sections and details confirm that the tank is placed on an impermeable concrete layer.
With regard to the TSF pipeline inspections, 24 hour pipeline patrols by SSG security are carried out, looking for leaks and damage and reporting directly to the control room. SSG will also fill in an incident report the following day. Examples of these reports were sighted. A pipeline report dated 13 March 2018 07h00, showed the mine residue pipe from Elikhulu met plant to Winkelhaak TSF failed and spilled in the surrounding veld because of the pipe failure being an attempted pipe theft.
Metallurgical Foreman inspections are done daily and shifty. The inspections are not logged, but a vehicle dashboard camera is used to check the inspections. Any leak is reported to the plant control room, who will act appropriately, e.g. stop plant and make out works order and get maintenance to repair the leak
A Plastician has been appointed to inspect the HDPE pipes on dayshift. He is also involved in repairs to the HDPE pipelines. Leaks are reported to the plant control room, and breakdowns are reported in the job card system by Engineering. Daily verbal communication with Maintenance Foreman is in place to identify any issues. The cyanide dosing pipelines are routed across secondary containments and installed inside a pipe in pipe system. This was confirmed during the site inspection.
The area where the tailings line crosses the Winkelhaak Spruit presents a significant risk to spillage into surface water. The Region/Operation - Evander Gold Mines, Environmental Incident Progress Report dated 9 June 2020 included the following preventative measures:
- Section 8. Measures (proposed/taken) to prevent a recurrence of such incidents.
- Flow and pressure interlocks with slurry pumps were installed
- Pressure transmitters at delivery and discharge points were installed
- Improvement of communication between the Mine and the new contractor Paragon (managing Winkelhaak TSF)

- The security company walking or patrolling the pipeline to Winkelhaak has been deployed at least every single hour of the day and night.

The Winkelhaak Spruit is not a continuous flowing stream. It only flows in the rainy season after a rain storm and ceases flowing within one to two days after the rainstorm.

The cyanide facilities are constructed of cyanide compatible materials as per the DRA Projects material specifications, specific to cyanide equipment. The Pipe and Instrumentation Diagram (P&ID) Elikhulu Gold Project Cyanide Dosing was sampled as a confirmation. It was also confirmed that the cyanide tanks are made of mild steel and the pipelines of HDPE (High Density Poly Ethylene) during the site inspection. The TSF pipelines are constructed of lined steel pipes and mainly are HDPE, which is compatible with high pH cyanide solutions.

Secondary containments for cyanide unloading, storage, mixing, 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.

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.

X in full compliance with

The operation is □ in substantial compliance with **Standard of Practice 4.8**

□ not in compliance with

Basis for this Finding/Deficiencies Identified:

The Elikhulu Tailings Treatment project was designed and managed by DRA Projects South Africa. During an interview with the Engineering Manager EGM, Mr R A Kunnemann, it was confirmed that the project was subject to a comprehensive Quality Assurance / Quality Control (QA/QC) process. Workbooks for the different areas are available, which includes QA/QC test reports and records. Civil and Mechanical workbooks were sampled, and the use of QA/QC programs was confirmed.

The Evander Elikhulu Tailings Storage Facility Phase 1 Construction Works, Construction Completion Report, Evander Gold Mine, prepared for DRA Projects (South Africa), April 2020, was reviewed.

1. 1.2 Scope of Works:

"This construction completion report provides a summary and analysis of available CQA and CQC records for the Phase 1 construction works of the Elikhulu TSF. As-built drawings and other pertinent construction information have also been prepared for record purposes." The report was compiled by SLR staff, who were involved in the original design: Project Manager: Francois van Heerden, Pr. Eng., Authors: Li-Bonné Swart, Anyisa Bam, Reviewer: Steve Dorman, Pr. Eng. most QA/QC records are included,

including soil compaction tests, plastic liner certificates, liner weld test results.
The Elikhulu Tailings Storage Facility Quarterly Report, November 2019, Evander Gold Mine, prepared for Evander Gold Mining (Pty) Ltd by SLR: November 2019 was reviewed, and the following is excerpted: -
"…10. Conclusions and Recommendations
The TSF is generally being operated per its design intent and the requirements of the OMS Manual in most areas. However, this has not been the case in Area 4, where commissioning has resulted in drains being blinded.
Having said this, a mitigation plan is in place to remediate Area 4. Area 5 has also experienced commissioning issues which FAT is currently still attempting to correct. It is noted that commissioning of the facility has been challenging…"

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

X in full compliance with

The operation is □ in substantial compliance with **Standard of Practice 4.9**

□ not in compliance with

Basis for this Finding/Deficiencies Identified:
Procedure for Ground Water Monitoring EPR No. 025, and Procedure for Surface water Monitoring EPR No. 026 reviewed during previous audits, were developed by Nicole Houghton. Nicole Houghton, environmental officer, BSc Environmental Management, and Sibongile Nhlapo Senior Metallurgist BTech Metallurgy, reviewed and developed the latest procedures. The Cyanide Sampling Procedure includes detail on sample preservation and responsibilities for sampling when cyanide and WAD cyanide samples are taken. The field sampling sheet, including sampling conditions (e.g., weather, livestock, /wildlife activity, anthropogenic influences, etc.), is an appendix of the Cyanide Sampling procedure. The revised procedure for cyanide sampling includes a sample map indicating where samples are taken and showing up and downstream sample positions for ground and surface water.
Paragon and FAT daily inspections include wildlife mortality observations. No mortalities have been recorded since the startup of the Elikhulu plant. Surface water is sampled on a monthly basis. Groundwater is sampled on a 6 monthly basis, WAD cyanide in the plant tailings is sampled using an online analyser, and shiftly averages are reported. The sampling frequencies are deemed adequate to characterize the medium being monitored and to identify changes in a timely manner.

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 and livestock.

X in full compliance with

The operation is in substantial compliance with **Standard of Practice 5.1**

 not in compliance with

Basis for this Finding/Deficiencies Identified:
A Decommissioning Procedure is in place, which includes an implementation schedule and a Sequence of Decommissioning Activities. It was confirmed in the procedure that it is reviewed every 4 years in terms of the document control procedure, or earlier, if circumstances require an earlier review or revision.

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

X in full compliance with

The operation is in substantial compliance with **Standard of Practice 5.2**

 not in compliance with

Basis for this Finding/Deficiencies Identified:
The document, Evander Gold Mines (Pty) Ltd Review, Assessment and Adjustment Of Financial Provision For 2019 (Closure) memorandum, XEXM, dated 20 June 2020, was sighted and reviewed. The total reassessed Closure cost for EGM at June 2020 is calculated at ZAR (South African Rands) 238.4 million.
Also sighted was a cost estimate by JJM Filtration (a third party specialised cyanide decontamination contractor) to decommission the cyanide facilitates, totaling ZAR549, 975.50. The scope for this includes: - test for explosives Gas & HP Clean tanks and equipment, flame cut all lines and equipment into 1m lengths for safe disposal, and JJM Filtration will remove all Cyanide pipes and drip trays from Cyanide tanks to Pachucas.
The decommissioning plan procedure requires a four-yearly review or a review following significant operational changes. There is also a review by external consultants every year.
Previous audit information indicated that Evander Gold Mine had established a rehabilitation trust fund with Pan African Resources Group Rehabilitation Trust. The

letter from the Trust, dated 20 January 2016, states that the current fund is adequate to cover the current closing rehabilitation liability for Evander Gold Mining (Pty) Ltd. Previously, Evander Gold Mine (EGM) had in place a Trust as the financial instrument to cover its estimated costs for the cyanide-related decommissioning activities (as a part of the wider closure costs) identified in its decommissioning and closure strategy. During the course of a review of financial instruments, an email/memo from Renier Ellis (Senior Environmental Advisor) and Divan van der Merwe (Director of XEMX (Company name) titled "Review, Assessment and Adjustment of Financial provision for 2019 dated 10 July 2020) were sighted. Also sighted was a Financial Guarantee from Centriq Insurance to the Regional Director: Mpumalanga Province, Dept of Mineral Resources, dated 1 August 2018, covering Closure costs including cyanide decommissioning for the guarantee amount totaling ZAR302,197,352.57. The amount is in excess of the calculated liabilities and includes the money held in the previous Trust Fund, which was transferred from the Trust Fund to Centriq Insurance.
After due consideration of the closure documentation, it is deemed that there is sufficient provision in closure costing to cover cyanide-related decommissioning measures.

6. WORKER SAFETY: Protect workers' health and safety from exposure to cyanide.

Standard of Practice 6.1: Identify potential cyanide exposure scenarios and take measures as necessary to eliminate, reduce or control them.

X in full compliance with

The operation is

□ in substantial compliance with **Standard of Practice 6.1**

□ not in compliance with

Basis for this Finding/Deficiencies Identified:
The Elikhulu Plant has 89 cyanide-related Process and Engineering Procedures. A listing of these procedures can be found in Appendix 3. There is also an Elikhulu new TSF Operating, Maintenance and Surveillance Manual for The Elikhulu Tailings Storage Facility in place. A number of these procedures were sampled to verify how cyanide-related tasks were performed. These included: - Mandatory Code of Practice for the management of working in confined spaces in the Mine; Confined space entry procedure; Obtaining and Compiling a Clearance Certificate; Entering a confined space: Sumps or Tunnels; Liquid Cyanide Offloading; and Cyanide Vessel Decontamination. Procedures are reviewed as part of the document control system every 2 years or if any changes or incident requires a review. It was confirmed that PPE (Personal Protective Equipment) and pre-work inspections are included in the procedures. Training programs include wearing of appropriate PPE, and there is a specific procedure on Cyanide PPE Control, Care usage and Examination.

The Elikhulu Management of Change (MOC) Directive book was sighted. The Signature page includes the requirement under section 7, Acknowledgement signatures, is the requirement of the Environmental and Safety officials' signatures. The newly revised MOC directive (Code compliant) has not yet been used for any MOC exercises.
The operation solicits and considers worker input in developing and evaluating health and safety procedures through daily toolbox talks, Weekly safety meetings, Monthly Contractors safety and compliance meetings. CCTV screens are used at Mine Main Entrance Gate, Plant Clocking point entrance gate, Plant exit gate and eating rooms for plant and engineering where toolbox communications are displayed. The TSF contractors use similar methods to gather and disseminate information.

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.

X in full compliance with

The operation is
- □ in substantial compliance with **Standard of Practice 6.2**
- □ not in compliance with

Basis for this Finding/Deficiencies Identified:
The pH setpoint in the leach was confirmed to be at 10.5 in the pre-ox tank. The pH meter readings were also sighted in the control room SCADA (**S**upervisory **C**ontrol **A**nd **D**ata **A**cquisition).
Potential HCN (Hydrogen Cyanide) gas hot spots were identified during the design HAZOP phase, and fixed HCN gas monitors were installed. They are in the CIL area (3 fixed monitors), cyanide offloading (1 fixed monitor,) and Residue pumping tanks top (1 fixed monitor). There are also 10 Personal portable PAC 8000 HCN gas monitors available to operational and maintenance personnel in the plant and 3 available to TSF and remining personnel. No hot spots were identified on the plant during the hot spot survey. Monitor manufacturer, Drager, calibrates the personal monitors at the recommended frequencies. Ten monitors were bought new on 25 June 2020, and calibrations undertaken on 25 February 2021 were sighted. Dräger was booked to come out on 22 December 2020, but they could not visit because of the Covid Pandemic. The service and calibration were only conducted on 25 February 2021, and the resulting calibration certificates were sighted. All staff working at the areas where the fixed monitors are installed, wear personal monitors.
The HCN monitors 1st alarm is set at 4.7 ppm, and the second alarm is set at 7.5 ppm. The area is evacuated at 4.7 ppm, investigated, and operators return to work if values are less than 4.7 ppm. 7.5 ppm is also an evacuation action
Plant signage at the cyanide offloading is in good condition and complies with the ICMI requirements. Induction training includes making the staff aware that cyanide may be

present in all slurries and solutions. Signage was sighted at the TSFs during site visits and found to be compliant with Cyanide Code requirements. Sasol supplies all its Cyanide Code signatories (including Elikhulu) with sodium cyanide containing a red dye. Sasol SDS (Safety Data Sheets) are available throughout the plant.
The installation of safety showers with integrated eye wash systems with deluges at appropriate locations was confirmed during the site inspection. Safety shower inspections section in logbook from January 2021 to date of certification audit were sighted. The installation of powder fire extinguishers at the cyanide offloading and storage area and other strategic points on the plant were observed during the site inspection. Up to date, fire extinguisher inspection labels on the units were observed. Inspections are done by contractor, Flametech. The labels include monthly inspections and annual pressure test inspection dates, as well as the date of the next pressure test. The Inspection log book from January to March 2021 was sampled.
It was confirmed during site inspection that the cyanide storage tanks are labelled and that the reagent strength cyanide pipes are colour coded with a purple band, including flow direction. Not all low cyanide strength process solution pipelines are identified to alert workers of their contents and flow direction. The operation is a tailings retreatment operation. During the induction and cyanide hazard training and refresher courses, all employees are trained that solutions and slurries on the plant may contain cyanide. The TSF tailings lines are labelled, indicating the flow direction, which was confirmed during the site inspection.
The Recording investigations and reporting of incidents and accidents procedure was sighted, and an associated accident/incident report involving a Fitter who was exposed to cyanide effluent while loosening the bolts of the cyanide spillage pipe to unchoke the pipe was reviewed. The report includes the brief details of the accident, personal details of the affected employee, training details of the employee, investigation team members, photos at the accident scene, sequence of events, findings of the investigation, basic causes, and recommendations to prevent similar accidents.

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

X in full compliance with

The operation is □ in substantial compliance with **Standard of Practice 6.3**

□ not in compliance with

Basis for this Finding/Deficiencies Identified:
The Plant is equipped with an emergency room containing medical oxygen, face masks, SCBA (Self Contained Breathing Apparatus) sets, stretcher, telephone, radio, PPE, TriPac cyanide antidote stored in a fridge, and an Ambubag resuscitator. An emergency alarm was sighted at cyanide storage, and Radios and cell phones are used for

communication. Running water is available in the wash basin in the emergency room and at the offloading area. The TSF use radio and cell phones to communicate emergencies to the plant control room, which is responsible for TSF cyanide emergencies.

It was confirmed during site inspection that the cyanide antidote is stored in a fridge as per manufacturers directives. The cyanide antidote is replaced as per the expiry date, which is checked during inspections. Delivery time is around 1 month, and orders are placed timeously. The Cyanide Antidote Inspection checklist section in the log book was reviewed from Jan 2021 to the audit date.

The Mandatory Code of Practice on Emergency Preparedness and Response COP02, the Mandatory Code of Practice for Cyanide Management COP11, the Emergency Response Plan, and the Recording investigation and reporting of incidents and accidents procedure were sighted and reviewed.

An onsite emergency room is available next to the cyanide offloading and storage facilitates. The room is equipped with a cyanide antidote kit, medical oxygen, SCBA sets, PPE telephone, two-way radios, Ambubag Resuscitator and running water. Inspection log books with daily inspections covering medical oxygen, first aid kits, antidote kits, HCN gas monitor, cyanide PPE, SCBA sets and other first aid equipment from January 2021 to the audit date sighted and sampled. All plant staff are trained as first responders, and an Occupational Hygienist and Medical Practitioner have been appointed for Elikhulu.

Ambulance entry in the event of an emergency is covered by a procedure. Contracts with hospitals, as well as the ER24 Ambulance service, are in place and were sighted. Cyanide emergency cases (plant and TSF) are transported by ER24 ambulances to Highveld Mediclinic in Trichardt.

Full cycle drills are held from the plant to Highveld Mediclinic. Training records of the casualty staff at Highveld Mediclinic, ER 24 and the health hub staff indicate cyanide training took place on13 July 2016. Pictures and attendance lists are available but were not sighted. An e-mail from Highveld Mediclinic to Chief Safety Officer EGM has indicated that a contract to receive cyanide patients is not necessary as they are required by law to treat all patients. Highveld Mediclinic also confirmed they do not need any more training. Arrangements and contracts are applicable to both EGM and Elikhulu plants as they fall under the same Parent Company.

The following drills were reviewed: -

- Sasol cyanide drill was undertaken on cyanide spillage outside the gate; 2018 pictures of the drill were sighted.
- On 25 February 2021, a Cyanide Evacuation was held. The earning points include evacuation was calm, chemical handler and cyanide delivery driver did not evacuate.
- A video of a cyanide drill at EGM on 20 March 2020 was sighted where the hospital could not accommodate the patient as it was a drill and the hospital was full and experienced an emergency. This is a very realistic scenario under the current Covid-19 pandemic circumstances.

- A video of a full chain drill from the EGM plant to Highveld Mediclinic at Trichardt was viewed. Sighted post drill briefing video dated 17 February 2021including the emergency staff security and medical Doctor.

Both EGM and Elikhulu plants use the same medical facilities for managing cyanide exposures. Drill information has been shared and may be jointly organised in future to prevent overstressing medical facilitates that may be required for other reasons, e.g., Covid-19 emergencies

The auditors were part of an evacuation event due to the cyanide storage tank level indicator reaching the 85% level, setting off the evacuation alarm. It was observed that staff reacted calmly, an attendance register was completed at the assembly area, the incident was investigated, and the staff in the area updated regularly on the status of the emergency.

7. EMERGENCY RESPONSE Protect communities and the environment through the development of emergency response strategies and capabilities.

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

X in full compliance with

The operation is

- ☐ in substantial compliance with **Standard of Practice 7.1**
- ☐ not in compliance with

Basis for this Finding/Deficiencies Identified:

The Mandatory Code of Practice on Emergency Preparedness and Response COP02, the Mandatory Code of Practice for Cyanide Management COP11, and the Recording investigation and reporting of incidents and accidents procedure were sighted and reviewed. Responses to scenarios (Catastrophic release of hydrogen cyanide from storage or process facilities, Transportation accidents, Releases during unloading and mixing, Pipe, valve and tank ruptures, overtopping of ponds and impoundments, Power outages and pump failures, and Failure of tailings impoundments, and other cyanide facilities) are found in the listed Standard Operating Procedures. Tanker Services are responsible for transportation-related emergencies and are fully code compliant transporters. The evacuation procedure was confirmed and covered by several Standard Operating Procedures (SOP) and in the Mandatory Code of Practice. The Mine evacuation and escape procedure are used for any cyanide related evacuation requirements. Cyanide exposure and poisoning are included in the Cyanide Code of Practice. The Community is not involved in cyanide emergency response but is kept informed through the dialogue practices described in the Dialogue Standard of Practice 9 below.

Standard of Practice 7.2: Involve site personnel and stakeholders in the planning process.

X in full compliance with

The operation is in substantial compliance with **Standard of Practice 7.2**

 not in compliance with

Basis for this Finding/Deficiencies Identified:
The Workforce is involved with the emergency response planning via the emergency drills and safety meetings and given feedback on drills. Daily toolbox talks are used to communicate topics to the workforce, including items related to the emergency response.
The ER24 ambulance service and the Highveld Mediclinic hospital in Trichardt are involved in mock drills and training. All ER24, hospital staff and health hub are trained in cyanide emergencies.
Elikhulu is represented on the Govan Mbeki Municipality LDMAF (Local Disaster Management Advisory Forum)
The Community are not involved in the Cyanide Emergency Response Plan. However, they are kept informed through the dialogue practices described in the Dialogue Standard of Practice 9 below.

Standard of Practice 7.3: Designate appropriate personnel and commit necessary equipment and resources for emergency response.

X in full compliance with

The operation is in substantial compliance with **Standard of Practice 7.3**

 not in compliance with

Basis for this Finding/Deficiencies Identified:
The Mandatory Code of Practice on Emergency Preparedness and Response COP02, the Mandatory Code of Practice for Cyanide Management COP11, and the Recording investigation and reporting of incidents and accidents procedure were sighted and reviewed. Each emergency scenario includes a specific listing of responsible persons, their duties and their tasks. Any allocation of resources can be sanctioned by either senior management or duty managers. All staff are trained to handle cyanide emergencies. First, second, Third and fourth responder tasks, duties and responsibilities are listed in the plant procedure ETR 10 conducting cyanide drills. The training matrix, ETR 74, defines required training for emergency responders. There is an emergency contact and callout

procedure, and the After hours, the standby contact list must be used. There is also a procedure, Ambulance entry in the event of an emergency, ETR02.
A cyanide emergency equipment list was sighted, and inspection is covered in the appropriate procedure. Ambulance service is provided via contractual arrangement. Hospital services and ambulance services and kept updated through involvement in full-cycle drills.

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

X in full compliance with

The operation is in substantial compliance with **Standard of Practice 7.4**

 not in compliance with

Basis for this Finding/Deficiencies Identified:
Procedures and contact information for notifying management, regulatory agencies, outside response providers and medical facilities of the cyanide emergency and procedures and contact information for notifying potentially affected communities of the incident and/or response measures and for communication with the media are included in Mandatory Code of Practice on Emergency Preparedness and Response COP02

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

X in full compliance with

The operation is in substantial compliance with **Standard of Practice 7.5**

 not in compliance with

Basis for this Finding/Deficiencies Identified:
The Mandatory Code of Practice on Emergency Preparedness and Response, COP02, procedure ETR46 (Liquid cyanide spillage) and the Emergency Response Plan EPRP-01 cover all details of spill clean-up, including recovery and neutralisation of soils, treatment chemical usage (Neutralise unrecoverable cyanide spillage with sodium hypochlorite at a 7.2:1 ratio), solution disposal of cyanide clean-up and contaminated wastes on the TSF, and Cyanide Sampling Procedure (ETR20).
The Chief Safety Officer reports all soil and other media contaminated with cyanide will be taken to the tailing facility, which is HDPE-lined. The nearby communities obtain their drinking water from the municipality supply, which is sourced from outside the

area. Therefore, the potable water supply will not be affected, and no alternate drinking water supply is required. Potable drinking water is not supplied from boreholes or other surface sources.

Standard of Practice 7.6: Periodically evaluate response procedures and capabilities and revise them as needed.

X in full compliance with

The operation is □ in substantial compliance with **Standard of Practice 7.6**

□ not in compliance with

Basis for this Finding/Deficiencies Identified:
Review will be done as per the procedure, Procedure Review of Cyanide Procedures. The Mandatory Code of Practice on Emergency Preparedness and Response COP02, includes evaluation, review and revision provisions. The Plant is relatively new, and review is premature, based upon current activities.
Drills have been undertaken to check emergency response. The following drills were reviewed: -

- Sasol cyanide drill was undertaken on cyanide spillage outside the gate; 2018 pictures of the drill were sighted.
- On 25 February 2021, a Cyanide Evacuation was held. The earning points include evacuation was calm, chemical handler and cyanide delivery driver did not evacuate.
- A video of a cyanide drill at EGM on 20 March 2020 was sighted where the hospital could not accommodate the patient as it was a drill and the hospital was full and experienced an emergency. This is a very realistic scenario under the current Covid-19 pandemic. circumstances
- A video of a full chain drill from EGM plant to Highveld Mediclinic at Trichardt was viewed. Sighted post drill briefing video dated 17 February 2021, including the emergency staff security and medical Doctor.

8. TRAINING: Train workers and emergency response personnel to manage cyanide in a safe and environmentally protective manner.

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

□ in full compliance with

The operation is **X in substantial compliance with Standard of Practice 8.1**

□ not in compliance with

Basis for this Finding/Deficiencies Identified:
All plant personnel inside the plant fence are trained in induction on basic cyanide awareness and Cyanide first aid. This was verified in the Elikhulu training matrix. Assessments are carried out, and the pass mark is 80%. The completed induction training matrix was sighted, including Elikhulu plant employees, SSG Security, contractors as well as Fraser and Paragon employees, and Simunye contractors.
Refresher training is done annually on return from leave. A Firefly system is in place, flagging the remaining validity time for induction/refresher validity and medical examinations. The system will block the employee's access card if 0 days are remaining. A routing form is used to ensure new employees receive training, and returning from leave employees are blocked by a card control system from entering the Plant when they have not completed the training and induction refreshers. Records are retained for the life of the plant, after which the records are sent to the central archive.
There appears to be a disjoint between the records and the systems of the late Ismail Shabangu (Who passed away suddenly from Covid-19), the Plant Trainer, and his replacement. This needs to be resolved as soon as possible to ensure that due training is undertaken in time and the records are updated timeously. This has been included as a requirement in the Corrective Action Plan. The noted weakness appears to be with contractor records with cyanide training. The auditors need to see evidence that all contractors were up to date on their cyanide awareness training by the certification audit date. This forms a part of the Corrective Action Plan.

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.

X in full compliance with

The operation is □ in substantial compliance with **Standard of Practice 8.2**

□ not in compliance with

Basis for this Finding/Deficiencies Identified:
The Elikhulu Metallurgy training and development matrix includes both operational and maintenance tasks and procedures and specifies what the individuals' job training requirements are. The Elikhulu Cyanide Training Matrix (ETR 74) details the Standard Task Procedures (STPs) required to be trained for various activities on the plant. The Elikhulu Plant Training benchmark matrix (benchmark page), indicating training

requirements for all staff, populated with names was sighted and reviewed. The training skills matrix contains the names of the staff as well as indicating completed training.
With regard to TSF training, Paragon training is done based on the Standard Work procedures (SWPs). The signatures on the SWP of the staff trained. in the sampled standard of installing walkways, including the signatures of 21 staff members dated 7/8/2020 was sighted. Fraser Alexander Tailings (FAT) training is done using their Standard Operating Procedures (SOPs). The FAT training matrix, including all employees, was sighted and included: - deposit training matrix summary, the names of all employees and the expiry dates of their training. Training elements for both Plant and TSF training are drawn from the various matrices and from the SWPs, SOPs, and STPs.
Training is done by the EGM training officer on site. The Training Officer is a qualified, Trained Assessor, has undertaken "Train the trainer" training, and has a Diploma in Safety Management. FAT TSF training is provided, in-house, by a trained and qualified Assessor and Moderator and Assessment designer, who also has an Outcomes-based assessment certificate. The Paragon TSF trainer is reported to have experience in TSF construction.
All employees are trained before being allowed to work in a cyanide section. A clock card system is used to control access to the Plant. Contractors are trained and inducted before being allowed on the Plant. A clock card system is also used to control access to the Plant. Assessments are used to test knowledge and competency.
On the Plant, a Safe Behaviour Observations (SBO) system is in place. Poor performers will be counselled, and as necessary, refresher training provided. Refresher training can be given if risks are identified, and employees need to be retrained in specific tasks. Five SBO's are done weekly by the Trainer. Discussions with relevant Foremen take place, and SBO's are filed, including the staff observed file. Five SBOs were sampled. Both Paragon and FAT undertake annual refresher training, and PTOs (Planned Task Observations) are conducted on employees weekly. In the Plant, written tests are conducted, and PTOs are used for on-the-job competency evaluation. A PTO target of two to three PTO's a week for each foreman is used.
Records include reference to the elements of the training. Records are retained for the life the of the Plant, after which the records are sent to the central archive. Interviewees' training records as a sample of employees training records were verified.

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

X in full compliance with

The operation is

□ in substantial compliance with Standard of Practice 8.3

□ not in compliance with

Basis for this Finding/Deficiencies Identified:
All staff are trained as cyanide emergency responders, and in basic cyanide awareness and cyanide first aid. Refresher training is completed annually on return from leave. This was confirmed in the training matrix. The Plant uses the 1st, 2nd, 3rd and 4th responder system, as indicated in the procedure, Conducting Cyanide Drills. Training is provided in the use of Dräger gas monitors, Life Oxygen packs, and SCBA (Self Contained Breathing Apparatus) sets.
Cyanide Producer, Sasol, is providing additional annual training on cyanide first aid. The schedule is behind due to Covid-19 restrictions. However, four employees were trained remotely using MS Teams. Both Paragon and FAT staff were trained in First Aid, and records were sighted and sampled.
Full cycle cyanide drills are conducted from the Plant to the Highveld Mediclinic Hospital. The Plant training officer is present at all drills, and training requirements are noted
Records are retained for the life of the Plant, after which the records are sent to the central archive. Interviewees' training records as a sample of employees training records were verified.

9. DIALOGUE: Engage in public consultation and disclosure.

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

X in full compliance with

The operation is
- □ in substantial compliance with **Standard of Practice 9.1**
- □ not in compliance with

Basis for this Finding/Deficiencies Identified:
Dialogue meetings are two-way dialogue sessions involving both dissemination of information and the answering of questions on cyanide.
A quarterly environmental awareness on cyanide meeting was held on 7 March 2021 at the Sakhisizwe Community. Approximately 20 people attended, but the attendance register was confiscated by Community Members. Pictures taken at the meeting were sighted. Questions raised at the presentation included: - requests for electricity and roads, different types of fences, requests for training opportunities for community members, and a complaint of contamination of the nearby river by mining and dust storm break out. The presentation at the meeting was interpreted in Zulu.
Another quarterly environmental awareness on cyanide meeting was held at the Sakhisizwe Community on 31 October 2020. The presentation at the meeting explained

cyanide symptoms, mine preventative action for cyanide poisoning, mine audits and compliance and complaints. The attendance at the meeting was 50, in the Govan Mbeki local municipality. An identical meeting was held on 16 August 2020. A further meeting at the Sakhisizwe Community Centre, was held, with 50 people in attendance.
The non-governmental organisation (NGO) MS Environmental Projects, located at Embalenhle, submitted an information request by e-mail on 26 October 2020. The information request was based upon the waste management licence issued to Elikhulu by the Environmental Department. The site responded to the information request in an e-mail dated 29 October 2020. The information request and site response letters were sighted, along with the agenda and minutes of a meeting between the EGM Environmental Dept and the dust complainants (MS Environmental Projects). Following a request from the District Municipality of Gert Sibrande, a meeting was held for a PowerPoint presentation on 30 October 2020 on dust.

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

X in full compliance with

The operation is in substantial compliance with **Standard of Practice 9.2**

 not in compliance with

Basis for this Finding/Deficiencies Identified:
Dialogue meetings are two-way dialogue sessions involving both dissemination of information and the answering of questions on cyanide.
A quarterly environmental awareness on cyanide meeting was held on 7 March 2021 at the Sakhisizwe Community. Approximately 20 people attended, but the attendance register was confiscated by Community Members. Pictures taken at the meeting were sighted. Questions raised at the presentation included: - requests for electricity and roads, different types of fences, requests for training opportunities for community members, and a complaint of contamination of the nearby river by mining and dust storm break out. The presentation at the meeting was interpreted in Zulu.
Another quarterly environmental awareness on cyanide meeting was held at the Sakhisizwe Community on 31 October 2020. The presentation at the meeting explained cyanide symptoms, mine preventative action for cyanide poisoning, mine audits and compliance and complaints. The attendance at the meeting was 50, in the Govan Mbeki local municipality. An identical meeting was held on 16 August 2020. A further meeting at the Sakhisizwe Community Centre, was held, with 50 people in attendance.
The non-governmental organisation (NGO) MS Environmental Projects, located at Embalenhle, submitted an information request by e-mail on 26 October 2020. The information request was based upon the waste management licence issued to Elikhulu by the Environmental Department. The site responded to the information request in an e-

mail dated 29 October 2020. The information request and site response letters were sighted, along with the agenda and minutes of a meeting between the EGM Environmental Dept and the dust complainants (MS Environmental Projects). Following a request from the District Municipality of Gert Sibrande, a meeting was held for a PowerPoint presentation on 30 October 2020 on dust.

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

X in full compliance with

The operation is □ in substantial compliance with **Standard of Practice 9.3**

□ not in compliance with

Basis for this Finding/Deficiencies Identified:
During the quarterly community meetings, posters with writing and pictures are shown to the community. The writing and pictures are interpreted to the community members in English and the local language Zulu, along with occasional requests for translation to Sotho, Xhosa. These presentations are available to stakeholders, on request.
Presentations were sighted, which included Cyanide Poisoning, Symptoms of cyanide exposure and cyanide first aid. The presentations are available in Zulu, Tswana and English, and most community members are literate.
Annual reporting on fatalities and significant environmental incidents are done via the Pan African Resources Integrated Annual Report. The following Integrated Annual Reports were reviewed: -

- The Integrated Annual Report for the year ended 30 June 2018, Natural capital ENVIRONMENT REVIEW p 94: Five reported environmental incidents occurred at Evander Mines as a result of water overflows and pipeline failures, 2019 Sustainable development report https://www.panafricanresources.com/our-approach-to-sustainability/natural-capital/ : Evander Mines recorded five (2018: five) environmental incidents for the year under review, as reported to the group's SHEQC (Safety, Health, Environment & Quality Control) committee:
- Three incidents related to pipeline spills on two different lines to the Winkelhaak Tailings dam as a result of attempted pipeline theft
- •Two environmental incidents related to water overflows from return-water dams into the Groot Spruit River.
- The areas in respect of the above incidents have subsequently been cleaned and rehabilitated. An Environment and Social Management Plan has been developed for Elikhulu in terms of the applicable regulations promulgated under the National Environmental Management Act. Evander Mines is actively working on reducing the number of reportable environmental incidents by 10% for the next financial year.

- The incidents and accidents included below (should they occur) would be treated similarly:
  - 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; and
- - Releases that are or that cause applicable limits for cyanide to be exceeded.

Tanker Services, the certified transporter, is responsible for incidents and reporting of incidents off the mine property.