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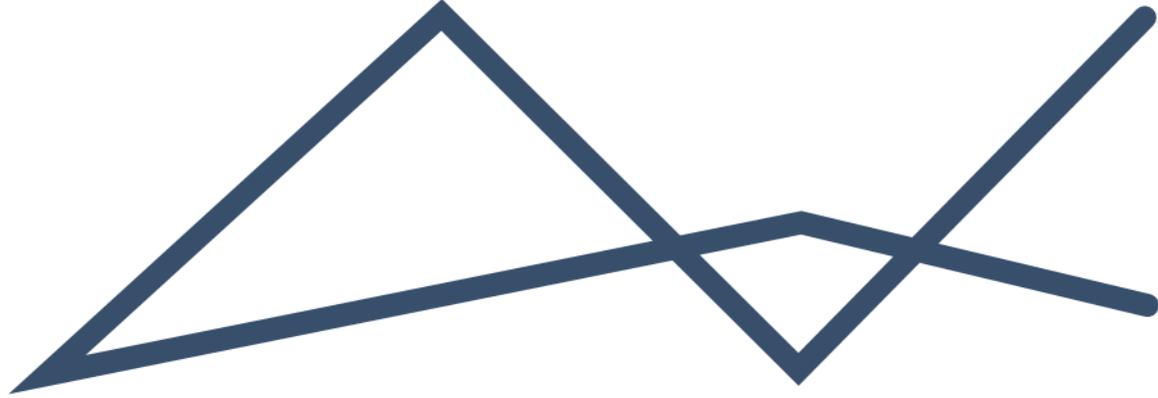
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FINAL ENVIRONMENTAL MANAGEMENT PROGRAMME PERFORMANCE ASSESSMENT – 2018

HARMONY ST HELENA 10 SHAFT

REFERENCE NUMBER: FS/30/5/1/2/2/86 MR





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EXECUTIVE SUMMARY

Environmental Impact Management Services (Pty) Ltd (EIMS) was appointed by Harmony Gold Mining Company Limited (Harmony) to undertake the Final Environmental Management Programme (EMPR) Performance Assessment (PAR) as part of a closure application of the Harmony St Helena 10 Shaft. In terms of the Mineral and Petroleum Resources Development Act, (Act 28 of 2002) (MPRDA) Regulation 55 (8 & 9), the holder of the right must complete a Final Performance Assessment (PA) which will accompany the application for a closure certificate.

According to Regulation 55 (8), when the holder of a prospecting right, mining right or mining permit intends closing an operation, a final PA must be conducted, and a report submitted to the Minister to ensure the following:

- The requirements of the relevant legislation have been complied with;
- The closure objectives as described in the environmental management programme or environmental management plan have been, met; and
- All residual environmental impacts resulting from the holder's operations have been identified and the risks of latent impacts which may occur have been identified, quantified and arrangements for the management thereof have been assessed.

According to Regulation 55 (3), a PAR contemplated in subregulation (1)(c), shall be in the format provided in guidelines that will from time to time be published by the Department and shall as a minimum contain the following:

- Information regarding the period applicable to the PA;
- The scope of the assessment;
- The procedure used for the assessment;
- The interpreted information gained from monitoring the approved environmental management programme or environmental management plan;
- The evaluation criteria used during the assessment;
- The results of the assessment; and
- Recommendations on how and when non-compliance and deficiencies will be rectified.

Harmony has embarked on a rehabilitation programme since 2011 and to date, 38 shafts have been rehabilitated and this includes the St Helena 10 shaft which falls under the FS/30/5/1/2/2/86 Mining Right (MR). The St Helena 10 Shaft project area is located in the magisterial district of Matjhabeng within the Lejweleputswa District Council, Free State. The project area is approximately 10km south of Welkom and is surrounded by wetland, grazing, agricultural crops, and built-up land use areas. A slimes dam is located directly to the east of the project area. Demolition work at St Helena 10 Shaft was started in 2014 and was completed in early 2017. Most of the concrete bases have been removed from site and the waste rock dump was being used to fill the shaft.

The scope of the PA is to assess compliance with the conditions of the approved EMPR, dated February 2009 and to confirm if the closure objectives of the EMPR have been met. Furthermore, this report provides recommendations for improvement based on general findings and site observations. The current assessment is the Final EMPR PA and covers a period of one year (August 2017 to September 2018). Following the initial checklist preparation and documentation review, a site visit was undertaken on 19 July 2018. The results of the PA have been described in Table 4 and is based on the evaluation criteria described in Section 5 of this report. The level of compliance for each commitment was calculated according to the methodology described in section 5 (see section 7.2). **Utilising this scoring system, a total compliance score of 56.9% was obtained for this PA.** A total of 114 commitments were assessed and summary of the key findings are presented in Table 1. The detail of the findings is described in Table 5 of this report.



Table 1: Summary of findings of the EMPR PA.

Finding Ref. #	Finding
Waste Management	
1	Some abandoned waste was noted that was not removed during the initial decommissioning of St Helena 10 Shaft. These include waste cables adjacent to the access road and historic bank area as well as dismantled fence material.
Additional Access Roads	
2	Evidence of additional access roads that were created for the use of the vehicles removing the waste rock from the St Helena 10 Shaft site was noted.
Infrastructure Removal	
3	<p>The reclamation and rehabilitation process were ongoing at the time of the audit and not yet completed. Most of the infrastructure was removed or buried at the St Helena 10 Shaft site. Instances were however noted where infrastructure was not removed. These include:</p> <ol style="list-style-type: none"> 1. A number of concrete slabs/foundations. 2. Brick storm water drain structures. 3. A concrete built oil-water separator facility. 4. An unused gravel access road that surrounded the sub-station. 5. An unused concrete culvert structure.
Reinstatement and Rehabilitation	
4	<p>A number of areas were still present that required rehabilitation. Certain areas were not yet covered with sufficient soil cover to maintain vegetation and land has not yet been restored to natural vegetation in all areas, where possible. Self sustaining vegetation has not yet been established in all the disturbed mining areas.</p> <p>The natural drainage patterns were not fully re-instituted. Evidence of the drainage lines that were created for the operations were still visible.</p> <p>Not all unwanted roads have been removed and ripped at the time of the audit.</p>
Dirty Stormwater Management and Containment	
5	The surface water infrastructure and containment facilities were not adequate to ensure that the mine water is contained at the time of the audit. It was however noted that the waste rock dump material was being removed and disposed into the shaft. Once the waste rock material is removed, the potential pollution from the waste rock dump would be minimised.
Dust Monitoring	
6	No dust concerns were noted at the time of the audit. It could however not be confirmed if the dust levels exceeded the normal level as no dust monitoring data was available during the audit.
Post-closure liability	



7	No clear evidence was provided that the post-closure care was included in the title deed of the property.
Shaft Seal Plug Design	
8	No clear evidence could be provided that the St Helena 10 Shaft plug was designed by a Professional Engineer or that the design was approved by the Regional Director of DMR in accordance with the DMR shaft sealing guidelines.
Progress Reporting	
9	No proof of regular progress reports to the government departments that includes monitoring of ground water and vegetation cover was available during the audit.
Rehabilitation Monitoring	
10	No bi-annual monitoring, by the Engineering Department, of the rehabilitated area was prepared at the time of the audit.
Environmental Aspect Monitoring	
11	Noise and dust monitoring were not undertaken during the shaft backfilling and decommissioning activities.

The current EMPR, together with the closure plan include sufficient mechanisms required for closure. It is important to note that a thorough review of the current EMPR is beyond the scope of this assessment, and as such additional aspects where the current EMPR is no longer appropriate or adequate may exist. Overall, the closure objectives of the EMPR have not yet been met and additional actions should be implemented to address these gaps (Refer to Table 4).

Ongoing compliance monitoring against the conditions of the approved EMPR is a legal requirement in accordance with the MPRDA (Regulation 55(1)(a)). As such regular internal site inspections to ensure the environmental requirements are being adequately implemented are recommended to ensure suitable environmental performance on an ongoing basis at the mine.

The compliance monitoring reports must feed into an Environmental Management System (EMS) to ensure effective risk identification, monitoring and management.



1 INTRODUCTION

Environmental Impact Management Services (Pty) Ltd (EIMS) was appointed by Harmony Gold Mining Company Limited (Harmony) to undertake the Final Environmental Management Programme (EMPR) Performance Assessment (PAR) as part of a closure application of the Harmony St Helena 10 Shaft.

An application for closure must be accompanied, inter alia, by the following documentation as described in Regulation 57 of the Mineral and Petroleum Resources Development Act, (Act 28 of 2002) (MPRDA):

- Completion of the prescribed closure application forms;
- A closure plan as contemplated in Regulation 62;
- An environmental risk report as contemplated in Regulation 60; and
- In terms of Regulation 55 (8 & 9), the holder of the right must also complete a Final Performance Assessment (PA) which will accompany the application for a closure certificate.

According to Regulation 55 (8), when the holder of a prospecting right, mining right or mining permit intends closing an operation, a final PA must be conducted, and a report submitted to the Minister to ensure the following:

- The requirements of the relevant legislation have been complied with;
- The closure objectives as described in the environmental management programme or environmental management plan have been, met; and
- All residual environmental impacts resulting from the holder's operations have been identified and the risks of latent impacts which may occur have been identified, quantified and arrangements for the management thereof have been assessed.

According to Regulation 55 (3), a PAR contemplated in subregulation (1)(c), shall be in the format provided in guidelines that will from time to time be published by the Department and shall as a minimum contain the following:

- Information regarding the period applicable to the PA;
- The scope of the assessment;
- The procedure used for the assessment;
- The interpreted information gained from monitoring the approved environmental management programme or environmental management plan;
- The evaluation criteria used during the assessment;
- The results of the assessment; and
- Recommendations on how and when non-compliance and deficiencies will be rectified.



1.1 DETAILS OF THE APPLICANT

Details of the Applicant are summarised in Table 2 below.

Table 2: Details of the applicant

Company	Harmony Gold Mining Company Limited
Postal address	P.O. Box 2
	Randfontein
	176
	South Africa
Physical/ residential address	Randfontein Office Park
	Corner of Man Reef Road and Ward Avenue,
	Randfontein,
	South Africa
Telephone number	011 411 2000
Fax Number	011 692 3879

1.2 BRIEF PROJECT DESCRIPTION

Harmony has embarked on a rehabilitation programme since 2011, and to date, 38 shafts have been rehabilitated, including St Helena 10 shaft which falls under the FS/30/5/1/2/2/86 Mining Right (MR). The project area is limited to the St Helena 10 Shaft and does not cover the full extent of the EMPR (Refer to Figure 1). The project area is located in the magisterial district of Matjhabeng within the Lejweleputswa District Council, Free State. The project area is approximately 10km south of Welkom and is surrounded by wetland, grazing, agricultural crops, and built-up land use areas. A slimes dam is located directly to the east of the project area. Demolition work at St Helena 10 Shaft was started in 2014 and was completed in early 2017. Most of the concrete bases have been removed from site and the waste rock dump was being used to fill the shaft.



2 PERIOD APPLICABLE TO THE PERFORMANCE ASSESSMENT (REG 55 (3)(A))

The previous PA undertaken by Shangoni Management Services was dated April 2013 and covered the period July 2009 to November 2012. The current assessment is the final EMPR PA and covers a period of one year (August 2017 to September 2018).

3 SCOPE OF THE PERFORMANCE ASSESSMENT (REG 55 (3)(B))

The scope of the PA is to assess compliance with the conditions of the approved EMPR (FS/30/5/1/2/2/86 MR), dated February 2009 and to confirm if the closure objectives of the EMPR have been met. Furthermore, this report provides recommendations for improvement based on general findings and site observations.

3.1 RELEVANT DOCUMENTATION

The EMPR PA is primarily a compliance audit against the conditions of the approved EMPR. Findings of the previous PAR have been reviewed to assess how previously identified issues have been addressed. It is important to note that the audit was conducted on the commitments of the approved EMPR only. The additional information was only utilised to provide an overview of the mining operations and as background for the site inspection.

Various documentation and records were required and requested during the audit to confirm compliance with the EMPR conditions. Where possible, documentation and records were made available electronically for review prior to the site visit. The rest of the information presented for verification of compliance was provided on site during the audit. No physical testing or chemical analysis was performed during the assessment and information provided by employees was verified by inspection only.

3.2 SOUTH AFRICAN LEGISLATION

There is wide variety of South African legislation and Harmony is required to comply with all relevant legislation. For the purposes of this report, some of the main environmental legislation applicable to mining, and considered during the audit, has been listed in Table 3 below.

Table 3: General Environmental Legislation

Title of legislation, policy or guideline:	Administering authority:
National Water Act (Act No. 36 of 1998)	Department of Water Affairs
Minerals and Petroleum Resources Development Act (Act No. 28 of 2002)	Department of Mineral Resources
National Environmental Management Act (Act No. 107 of 1998) - and associated Regulations	Department of Environmental Affairs
National Environmental Management: Air Quality Act (Act No. 39 of 2004)	Department of Environmental Affairs
National Environmental Management: Waste Act (Act No. 59 of 2008) - and associated Regulations	Department of Environmental Affairs
National Heritage Resources Act, 1999 (Act No. 25 of 1999)	South African Heritage Resources Agency

Whilst consideration was given to the legislation listed in the table above, a legal compliance audit is beyond the scope of this audit. Where reference is made to legislation or other statutory provisions in this report the original



legislation or other statutory provisions will always take precedence and the reader is directed to revert to the original legislation or statutes.

4 PROCEDURE USED FOR THE ASSESSMENT (REG 55 (3)(C))

Francois Barnard from EIMS undertook an audit of the Harmony St Helena 10 Shaft project area. Francois has extensive auditing and environmental management experience, specifically in the mining environment. Full Curriculum Vitae are available on request. Initial documentation was obtained and reviewed in preparation for the audit. A checklist was prepared based on the requirements of the EMPR for the closure phase. Following the initial checklist preparation and documentation review, a site visit was undertaken on 19 July 2018. The purpose of the site visit was to assess the status of the site, and to conduct an audit to determine the level of compliance with the EMPR. The findings of this assessment are based on visual inspection of the relevant operations and rehabilitation areas, interviews, as well as documentation reviewed. No physical testing or chemical analysis was performed during the assessment and information provided by employees was verified by inspection and review only.

5 EVALUATION CRITERIA USED DURING THE ASSESSMENT (REG 55 (3)(E))

The evaluation criteria for compliance scoring was based on a pre-determined scoring system. Each condition in the EMPR was weighted equally in order to determine a compliance score. The scoring criteria used during the audit are as follows:

- Full-Compliance (✓): Indicating that the condition was fully complied with and provided with a compliance score of 4.
- Partial-Compliance (!): Indicating that the condition has not been fully complied with and that additional measures are required to obtain full compliance. Partial compliances were provided with a compliance score of 2.
- Non-Compliance (X): Indicating that the condition has not been complied with and provided with a compliance score of 0.
- Not Applicable (N/A): Indicating that the condition is not currently applicable. Not applicable conditions were removed from the total number of conditions from which the compliance score was calculated.

6 INTERPRETED INFORMATION GAINED FROM ENVIRONMENTAL MONITORING (REG 55 (3)(D))

As part of the general terms and conditions of a Mining Right, the applicant is required to ensure compliance with the approved EMPR and to conduct PAs of the EMPR according to the timeframes specified therein. Included in the requirements for a PAR is the requirement to assess “the interpreted information gained from monitoring the approved EMPR” (MPRDA Reg 55(3)(d)). This requirement to assess monitoring information is understood to be a prerequisite for establishing the continued appropriateness and adequacy of the EMPR and to include two aspects, namely:

- Environmental compliance monitoring (site inspections, audits);
- Monitoring of environmental aspects (noise monitoring, water quality monitoring etc.).

For ease of reference and to avoid confusion, these two separate aspects are dealt with separately in this report.

6.1 CONCLUSIONS FROM COMPLIANCE MONITORING

The St Helena 10 Shaft was subjected to regular PA's. The previous PA was undertaken completed in April 2013 by Shangoni Management Services. The key findings of the audit may be summarized as follows:



- The area did not have an effective drainage system and the stormwater channels are not all the way around the shaft site to contain stormwater from the dirty water areas.
- Numerous hydrocarbon spillages were observed, and no spill procedure was in place at the time of the audit.
- Hazardous substance storage was not up to standard. Hazardous substances were stored outside of bunded areas and some bunded areas were compromised. MSDS's were not available for the substances stored on site.
- Waste management was not up to standard. No waste recycling was taking place and waste was noted dumped all over the site. No waste inventory was available at the site. Hazardous waste was not kept in an area demarcated with strict access control.

Due to the site not being operational, and the only activity taking place at the site was the removal and placement of the waste rock dump material into the shaft, most of these findings were not applicable during this audit. The only finding that was applicable, and not corrected, at the time of the audit was the drainage system that was not effective to capture and contain dirty storm water.

6.2 CONCLUSIONS FROM ENVIRONMENTAL ASPECT MONITORING

It is important to note that it is beyond the scope of this audit to review the monitoring results in detail. The general requirements of a good monitoring system, against which the monitoring programmes would be assessed, includes aspects such as:

- The use of suitably qualified and experienced specialists (preferably independent);
- Appropriate monitoring locations;
- Measurement of appropriate parameters;
- Use of appropriate standards and guidelines;
- Reporting of monitoring data to the mine and relevant authorities where required;
- Analysis of data to identify trends and potential concerns;
- Feedback from the monitoring reports into the environmental management system in response to exceedances or concerns identified;
- A mechanism in place for reviewing the monitoring programme and its effectiveness and making recommendations for updates and improvements where required.

Monitoring was recently undertaken during specialist assessments (May 2018) as part of the Basic Assessment Process for the application of a closure certificate for the Harmony St Helena 10 Shaft and the findings of these assessments are discussed in this section of the report. These assessments included:

- Hydrology Assessment;
- Groundwater Assessment;
- Soil Assessment; and
- Contaminated Land Assessment.

No surface water monitoring could be undertaken as part of the hydrology assessment due to the surface water features being dry at the time of the assessment, however a monitoring programme was proposed for the closure phase going forward. This monitoring programme should be implemented to ensure that adequate controls are in place to identify potential pollution downstream of the facility.



The groundwater assessment undertaken aimed to establish baseline groundwater conditions at the site, identify potential groundwater impacts due to decommissioning activities and to recommend actions to mitigate significant groundwater impacts. Based on the two samples analysed during the groundwater assessment, groundwater in the St Helena 10 Shaft area is neutral and saline. Nitrate in STHH11 exceeds health-based drinking water guideline for nitrate, presumably contaminated by seepage from the adjacent cattle kraal. Both samples exceed health-based guidelines for selenium (Se). Selenium is associated with fine-grained sediments, such as the Ecca Group rocks which form the shallow Karoo aquifer. It is also associated with pyrite, a common mineral in gold tailings such as the FSS8 West slimes dam immediately upgradient of the 10 Shaft site¹. The concentration of sulphate (SO₄) in the sample from borehole STHH 13 are higher than the background concentration of <200 mg/L. This may indicate background contamination of groundwater at St Helena 10 Shaft by mining activities to the east, particularly the FSS8 West slimes dam on the east boundary of the assessment area. Sulphate is a robust indicator of the dissolved load that enters groundwater from anthropogenic contaminant sources, especially where pyrite oxidation is significant. This is because sulphate is generally present in easily detectable concentrations in groundwater and is not significantly affected by geochemical processes under common aquifer conditions. Sulphate is likely to be one of the least retarded contaminants in groundwater. Therefore, sulphate concentration downstream of a contaminant source is expected to be mainly a function of dilution and it is suitable as an early indicator of groundwater contamination. Other contaminants will have lower concentrations and are expected to travel more slowly in the aquifer. Model results indicate that the groundwater quality impact from the FSS8 West slimes dam obscures the relatively smaller impact from the 10 Shaft Waste Rock Dump. This suggests that the impact of the Waste Rock Dump alone on groundwater outside the 10 Shaft assessment area is likely to be indistinguishable from background groundwater sulphate concentration. The monitoring programme proposed in the groundwater assessment should be implemented to ensure that adequate controls are in place to identify potential pollution from the area.

During the soil assessment, five dominant soil forms were identified, namely Avalon, Westleigh, Clovelly, Witbank, and Arcadia soil forms. The Avalon soil form covers grazing land use areas, the Arcadia soil form covers a small portion of the grazing land use area, whereas the Clovelly soil form covers the agricultural crops and grazing land use area. The Witbank soil form is characterised by disturbed soil, which is part of the disturbed area of St Helena 10 Shaft. The Westleigh soil form covers grazing and wetland land use areas. Soil samples were analysed for standard fertility and textural tests. Results obtained from the lab analysis indicate possible deficiencies in the fertility of the soils in the area. These results would then be regarded as the reference conditions for soil in the vicinity. The textural classes determined during these analyses were that of sandy loam, which indicates high infiltration and a low water/nutrient holding capacity given that all crust and compaction issues are rectified. It was recommended that the rehabilitation of the St Helena 10 Shaft area aimed at establishing grazing land, especially at the previously disturbed areas.

During the contaminated land assessment, it was noted that Copper (Cu) minimally exceeds the Soil Screening Values 1 (SSV1) (land uses protective of the water resources) and protection of ecosystem health values at sites SN2, SN9 and SN10. With regards to the minimal exceedance of Cu at these sites only and the localised distribution of the contaminant at these sites, no noticeable contamination impacts on the environment are expected. It is also uncertain whether the contaminant naturally occurs at these sites or if it were due to mining activities. No other contaminants were present. When considering the above together with the negligible significance of potential soil contamination impacts no soil contamination mitigation was suggested. Thus, no rehabilitation recommendations were made with regards to contaminated land.

No additional ongoing monitoring data was provided during the audit.

7 RESULTS OF THE ASSESSMENT (REG 55 (3)(F))

The results of the PA have been described in Table 4 and is based on the evaluation criteria described in section 5 of this report.

¹ The slimes dam is not part of the 10 Shaft mining right.



7.1 COMPLIANCE SUMMARY

A total of 114 commitments were identified in the EMPR that were applicable to the St Helena 10 Shaft. 86 Of these conditions were not applicable to the current phase of mining and 29 were deemed applicable. Of the applicable conditions a total of 8 commitments were noted to be fully compliant, 17 partially compliant and 4 were non-compliant. The level of compliance for each commitment was calculated according to the methodology described in section 5 (see section 7.2). Utilising this scoring system, **a total compliance score of 56.9% was obtained for this PA.** A summary of compliance is presented in Figure 2 below.

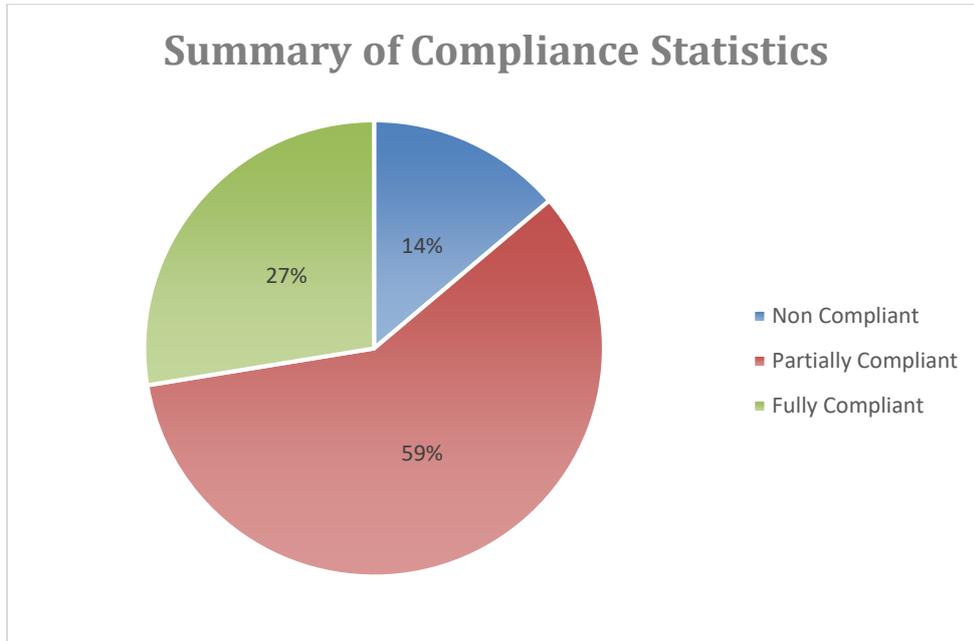


Figure 2: Level of compliance

The full compliance evaluation for the applicable conditions is presented in Table 4 of section 7.2.

7.2 COMPLIANCE EVALUATION

A total of 114 commitments were assessed according to the assessment methodology as described in section 5 and the findings of the audit are presented in Table 4 below.



Table 4: Compliance evaluation of EMPR commitments.

EMPR Ref #	Condition	Compliance Rating	Comments/ Verification
4.7.2	St Helena Shafts		
4.2.7.1	Main Shaft		
	<p>Soil and water pollution and ultimately damage to vegetation can occur from spillages from the main shaft. The most significant volume that can be spilled due to such a spill will not be more than 20 litres.</p> <p>1. Spillages will be minimized by conducting regular maintenance on equipment /machinery / transformers</p> <p>It is inevitable that spillages will occur.</p> <p>1. In such a case the procedure on cleaning and handling of spillages will be applied.</p> <p>2. In short, the material will be prevented from transgressing into clean water systems or on to the soil.</p> <p>3. In the event that a hydraulic spill will occur the following procedure will be followed:</p> <ul style="list-style-type: none"> i. Immediately contain the spillage to prevent spreading to adjacent areas. ii. Once the spill has been contained use absorbent material obtainable from the workshop to absorb the spilled material. iii. Dispose of absorbent into hazardous waste bin provided at the site. iv. Remove contaminated soil and dispose of in slimes dam. 	<p>✓</p>	<p>No evidence of spillages was noted in the areas inspected during the audit site inspection.</p>



EMPR Ref #	Condition	Compliance Rating	Comments/ Verification
	<ol style="list-style-type: none"> All hazardous waste generated at the main shaft must be put into closed drums and removed to the hazardous waste site. It must be ensured that no spillage takes place to the hazardous waste site. Please see salvage yard for measures taken for the hazardous waste site. 	✓	No waste was noted stored at the St Helena 10 Shaft area and no spillages were noted.
	<ol style="list-style-type: none"> All non-hazardous waste must be removed to the salvage yard. Please see salvage yard for measures taken for the salvage yard. 	!	There is currently no salvage yard at St Helena 10 Shaft. It was reported that the limited waste is disposed as per the Harmony Waste Management Procedure. Some abandoned waste was however noted that was not removed during the initial decommissioning of St Helena 10 Shaft.
	<ol style="list-style-type: none"> Hazardous waste and non-hazardous waste may not be stored together or transported together to the hazardous waste and salvage yard. 	✓	No concerns were noted with regards to the storage and transport of waste in the areas inspected at the time of the audit.
	<ol style="list-style-type: none"> Part of the waste management plan is to recycle as much waste as possible. Please see salvage yard for measures taken for the salvage yard and hazardous waste site for recycling. 	N/A	Noted.
4.7.2.4	Conveyor Belt		
	<ol style="list-style-type: none"> Regular inspections and maintenance on the belts. Remove spillage to metallurgical plant 	N/A	Conveyor belts were removed and not present at the time of the audit.
	<p>Conveyor belts are prone to dust generation.</p> <ol style="list-style-type: none"> Dust suppression must take place, using dust sprayers. 	N/A	Conveyor belts were removed and not present at the time of the audit.



EMPR Ref #	Condition	Compliance Rating	Comments/ Verification
	<p>2. Determine the adequacy of the current dust fall-out locations (such should also be reviewed as part of the respiratory risk assessment as planned).</p> <p>3. Develop a dust fall-out monitoring procedure, detailing the frequency of monitoring, responsibilities for monitoring, and maintenance requirements on fall-out equipment, acceptable levels and actions to be taken in event of exceedance.</p>		
	<p>1. Fire retarding and suppression measures must be in place and maintained.</p>	N/A	
	<p>1. All non-hazardous waste must be removed to the salvage yard.</p> <p>2. Please see salvage yard for measures taken for the salvage yard.</p>	N/A	
	<p>1. All dirty water must be retained within the process water system.</p> <p>2. Implement a drain maintenance programme, identifying all critical water conveyance, treatment (e.g. separators) and storage facilities, and ensure regular inspections, maintenance and clean-out of these systems are done.</p>	N/A	



EMPR Ref #	Condition	Compliance Rating	Comments/ Verification
	<p>Soil and water pollution can occur from spillages from the motors and gearboxes.</p> <p>1. Spillages will be minimized by conducting regular maintenance on equipment.</p> <p>It is inevitable that spillages will occur.</p> <p>1. In such a case the procedure on cleaning and handling of spillages will be applied.</p> <p>2. In short, the material will be prevented from transgressing into clean water systems or on to the soil.</p> <p>3. In the event that a hydraulic spill will occur the following procedure will be followed:</p> <p>i. Immediately contain the spillage to prevent spreading to adjacent areas.</p> <p>ii. Once the spill has been contained use absorbent material obtainable from the workshop to absorb the spilled material.</p> <p>iii. Dispose of absorbent into hazardous waste bin provided at the site.</p> <p>iv. Remove contaminated soil and dispose of in slimes dam.</p>	N/A	
	<p>1. All hazardous waste generated at the hoist room must be put into closed drums and removed to the hazardous waste site.</p> <p>2. It must be ensured that no spillage takes place to the hazardous waste site.</p> <p>3. Please see salvage yard for measures taken for the hazardous waste site.</p>	N/A	



EMPR Ref #	Condition	Compliance Rating	Comments/ Verification
	<ol style="list-style-type: none"> 1. All non-hazardous waste must be removed to the salvage yard. 2. Please see salvage yard for measures taken for the salvage yard. 	N/A	
	<ol style="list-style-type: none"> 1. Hazardous waste and non-hazardous waste may not be stored together or transported together to the hazardous waste and salvage yard. 	N/A	
	<ol style="list-style-type: none"> 1. Part of the waste management plan is to recycle as much waste as possible. 2. Please see salvage yard for measures taken for the salvage yard and hazardous waste site for recycling. 	N/A	
	<p>In the event that a leakage will occur the following procedure will be followed:</p> <ol style="list-style-type: none"> 1. Immediately contain the spillage to prevent spreading to adjacent areas. 2. Once the spill has been contained use absorbent material obtainable from the workshop to absorb the spilled material. 3. Dispose of absorbent into hazardous waste bin provided at the ventilation shaft. 4. Remove contaminated soil and dispose of in slimes dam. 	N/A	
4.7.2.6	Compressors		



EMPR Ref #	Condition	Compliance Rating	Comments/ Verification
	<p>Soil and water pollution can occur from spillages from the bearings, cooling towers, transformers or generators.</p> <p>1. Spillages will be minimized by conducting regular maintenance on equipment.</p> <p>It is inevitable that spillages will occur.</p> <p>1. In such a case the procedure on cleaning and handling of spillages will be applied.</p> <p>2. In short, the material will be prevented from transgressing into clean water systems or on to the soil.</p> <p>3. In the event that a hydraulic spill will occur the following procedure will be followed:</p> <p>i. Immediately contain the spillage to prevent spreading to adjacent areas.</p> <p>ii. Once the spill has been contained use absorbent material obtainable from the workshop to absorb the spilled material.</p> <p>iii. Dispose of absorbent into hazardous waste bin provided at the site.</p> <p>iv. Remove contaminated soil and dispose of in slimes dam.</p>	<p>N/A</p>	
	<p>1. All hazardous substances must be stored in a container which is:</p> <p>i. Bunded; and</p> <p>ii. Clearly labelled of its contents.</p> <p>2. The mine must be in possession of a material safety data sheet as provided by the manufacturer.</p>	<p>N/A</p>	<p>No evidence of any storage of hazardous substances were noted in the areas inspected at the time of the audit.</p>



EMPR Ref #	Condition	Compliance Rating	Comments/ Verification
	<ol style="list-style-type: none"> 1. All hazardous waste generated at the hoist room must be put into closed drums and removed to the hazardous waste site. 2. It must be ensured that no spillage takes place to the hazardous waste site. 3. Please see salvage yard for measures taken for the hazardous waste site. 	N/A	
	<ol style="list-style-type: none"> 1. All non-hazardous waste must be removed to the salvage yard. 2. Please see salvage yard for measures taken for the salvage yard. 	N/A	
	<ol style="list-style-type: none"> 1. Hazardous waste and non-hazardous waste may not be stored together or transported together to the hazardous waste and salvage yard. 	N/A	
	<ol style="list-style-type: none"> 1. All dirty water must be retained within the process water system. 2. Implement a drain maintenance programme, identifying all critical water conveyance, treatment (e.g. separators) and storage facilities, and ensure regular inspections, maintenance and clean-out of these systems are done. 	N/A	
4.7.2.7	Bank Area		



EMPR Ref #	Condition	Compliance Rating	Comments/ Verification
	<p>Soil and water pollution can occur from spillages from the bank.</p> <p>1. Spillages will be minimized by conducting regular maintenance on equipment.</p> <p>It is inevitable that spillages will occur.</p> <p>1. In such a case the procedure on cleaning and handling of spillages will be applied.</p> <p>2. In short, the material will be prevented from transgressing into clean water systems or on to the soil.</p> <p>3. In the event that a hydraulic spill will occur the following procedure will be followed:</p> <p>i. Immediately contain the spillage to prevent spreading to adjacent areas.</p> <p>ii. Once the spill has been contained use absorbent material obtainable from the workshop to absorb the spilled material</p> <p>iii. Dispose of absorbent into hazardous waste bin provided at the site.</p> <p>iv. Remove contaminated soil and dispose of in slimes dam.</p>	<p>N/A</p>	
	<p>1. Ensure that a COP is in place as according to Section 9 of the Mine Health and Safety Act, 1996. This must be in accordance to Section 42 of the Mineral and Petroleum Resource Development Act, 2002 as well as Regulation 69 and 73 of the regulations as per GN R527 of 23 April 2004 – Mineral and Petroleum Resource Development Regulations.</p>	<p>N/A</p>	



EMPR Ref #	Condition	Compliance Rating	Comments/ Verification
	<p>Radio-active contaminated waste:</p> <p>The procedure, COR 58A 0192 – Integrated waste management procedure, approved by the NNR applies to the whole of Harmony. Requirements for the release of potentially contaminated scrap and waste authorized dealers.</p> <ol style="list-style-type: none"> 1. Develop an appropriate environmental monitoring programme to ensure that the storage, disposal or effluent discharge of radio-active waste complies with the conditions of the nuclear license – COR – 58. 2. Develop waste acceptance criteria as per Regulation 4 of GN 388 of 25 April 2006 – Safety standards and regulatory practices. 3. Ensure the “decontamination facility” referred to in COR58A0192 is used as is prescribed, clause 8. 4. Ensure all waste having a risk of radio-active contamination is handled in accordance with the prescribed procedures. 5. Ensure all information is reflected in the quarterly NNR Report. <p>Radio-active waste (falling outside definition under nuclear energy act, 1999):</p> <ol style="list-style-type: none"> 1. Update procedure DH001 – Procedure for safe use of industrial gauges containing radioactive sources, to include the disposal and transportation requirements. 2. Ensure that for future disposals, all written authorisations from the Department of Health are in place prior to disposal. 	<p>N/A</p>	<p>The only activity taking place at St Helena 10 Shaft was the backfilling of the shaft with the waste rock material. Under normal circumstances, waste is disposed as per the Harmony Central Generic Waste Management Procedure that included the requirements of this condition. A quarterly report is prepared on waste disposal and effluent discharge and submitted to the NNR. According to the latest quarterly report for the period ending June 2018, no waste has been disposed off or effluent discharged at the Harmony operations.</p>
	<ol style="list-style-type: none"> 1. Prevent any burning of conveyor belts and cables. 2. Communicate the prohibition above to all contractors operating on site. 	<p>!</p>	<p>Cables were mostly removed from site; however, waste cable was noted adjacent to the historic bank area and access road at St Helena 10 Shaft.</p>



EMPR Ref #	Condition	Compliance Rating	Comments/ Verification
	3. All conveyor belts and cables that are waste must be removed to the salvage yard or the cable yard.		
	1. All dirty water must be retained within the process water system. Implement a drain maintenance programme, identifying all critical water conveyance, treatment (e.g. separators) and storage facilities, and ensure regular inspections, maintenance and clean-out of these systems are done.	N/A	
	1. As per DWAF requirements, Harmony – Free State is in the process of applying for a Water Use License.	N/A	The requirement and progress regarding the application for a Water Use Licence has not been assessed during this audit. It is understood that Harmony continues to engage with Department of Water and Sanitation (DWS) regarding the application for Water Use Licence for their Free State operations. This condition has been considered N/A for this audit.
4.7.2.8	Workshops		
	<p>Soil and water pollution can occur from spillages from the workshops.</p> <p>1. Spillages will be minimized by conducting regular maintenance on equipment.</p> <p>2. Drip trays must be placed under drums.</p> <p>3. Oil from drip trays must be put in containers and removed to the hazardous waste site.</p> <p>It is inevitable that spillages will occur.</p>	N/A	Workshops were demolished and not present at the time of the audit site inspection.



EMPR Ref #	Condition	Compliance Rating	Comments/ Verification
	<ol style="list-style-type: none">1. In such a case the procedure on cleaning and handling of spillages will be applied.2. In short, the material will be prevented from transgressing into clean water systems.3. In the event that a spill will occur the following procedure will be followed:<ol style="list-style-type: none">i. Immediately contain the spillage to prevent spreading to adjacent areas.ii. Once the spill has been contained use absorbent material obtainable from the workshop to absorb the spilled material.iii. Dispose of absorbent into hazardous waste bin provided at the ventilation shaft.iv. Remove contaminated soil and dispose of in slimes dam.		
	<ol style="list-style-type: none">1. All material containing hazardous waste generated at the storage areas must be removed to the hazardous waste site.2. It must be ensured that no spillage takes place to the hazardous waste site.3. Please see salvage yard for measures taken for the hazardous waste site.	N/A	
	<ol style="list-style-type: none">1. Waste materials should always be stored separately from other process chemicals or products.2. If non-compatible wastes are to be stored, care should be taken to adequately separate them, to prevent possible interactions in the event of fire or spillage.3. Flammable or combustible wastes must in any event be stored separately from other waste materials.	N/A	



EMPR Ref #	Condition	Compliance Rating	Comments/ Verification
	<p>Soil and water pollution can occur from spillages from the storage of hazardous waste.</p> <p>1. Spillages will be minimized by conducting regular maintenance on equipment.</p> <p>It is inevitable that spillages will occur.</p> <p>1. In such a case the procedure on cleaning and handling of spillages will be applied.</p> <p>2. In short, the material will be prevented from transgressing into clean water systems.</p> <p>3. In the event that a spill will occur the following procedure will be followed:</p> <p>i. Immediately contain the spillage to prevent spreading to adjacent areas.</p> <p>ii. Once the spill has been contained use absorbent material obtainable from the workshop to absorb the spilled material.</p> <p>iii. Dispose of absorbent into hazardous waste bin provided at the ventilation shaft.</p> <p>iv. Remove contaminated soil and dispose of in slimes dam.</p>	N/A	
	<p>1. All dirty water must be retained within the process water system.</p>	N/A	
	<p>1. Fire extinguishers must be in place on site.</p>	N/A	



EMPR Ref #	Condition	Compliance Rating	Comments/ Verification
	<ol style="list-style-type: none">1. Only trained persons may use welding equipment.2. Approved welding goggles must be used by welder as well as any person assisting.3. No welding, cutting or grinding may take place in an unventilated area.	N/A	
	<ol style="list-style-type: none">1. Part of the waste management plan is to recycle as much waste as possible.2. Please see salvage yard for measures taken for the salvage yard and hazardous waste site for recycling.	N/A	
	<ol style="list-style-type: none">1. All hazardous substances must be stored in a container which is:<ol style="list-style-type: none">i. Bundled; andii. Clearly labelled of its contents.2. The mine must be in possession of a material safety data sheet as provided by the manufacturer.	N/A	
	<ol style="list-style-type: none">1. All hazardous waste generated at the workshop areas must be put into closed drums and removed to the hazardous waste site.2. It must be ensured that no spillage takes place to the hazardous waste site.3. Please see salvage yard for measures taken for the hazardous waste site.	N/A	
	<ol style="list-style-type: none">1. All non-hazardous waste must be removed to the salvage yard.2. Please see salvage yard for measures taken for the salvage yard.	N/A	



EMPR Ref #	Condition	Compliance Rating	Comments/ Verification
	1. Part of the waste management plan is to recycle as much waste as possible. 2. Please see salvage yard for measures taken for the salvage yard and hazardous waste site for recycling.	N/A	
	1. Hazardous waste and non-hazardous waste may not be stored together or transported together to the hazardous waste and salvage yard.	N/A	
	1. No waste may be burned at any time.	N/A	
	1. All non-hazardous waste must be removed to the salvage yard. 2. Please see salvage yard for measures taken for the salvage yard.	N/A	
	1. No waste may be burned at any time.	N/A	
	1. All non-hazardous waste must be removed to the salvage yard. 2. Please see salvage yard for measures taken for the salvage yard.	N/A	
	1. Part of the waste management plan is to recycle as much waste as possible. 2. Please see salvage yard for measures taken for the salvage yard and hazardous waste site for recycling.	N/A	
4.7.2.9	Storage Areas		



EMPR Ref #	Condition	Compliance Rating	Comments/ Verification
	<ol style="list-style-type: none">1. No hazardous material, including oil, paint, fuel and material containing hazardous substances may be stored outside of demarcated areas.2. Hazardous liquid such as oil, paint and fuel must be stored in a secured area.	N/A	All storage areas have been removed at the time of the audit site inspection.
	<ol style="list-style-type: none">1. Waste materials should always be stored separately from other process chemicals or products.2. If non-compatible wastes are to be stored, care should be taken to adequately separate them, to prevent possible interactions in the event of fire or spillage.3. Flammable or combustible wastes must in any event be stored separately from other waste materials.	N/A	
	<ol style="list-style-type: none">1. All packaging must be removed to the salvage yard.	N/A	
	<ol style="list-style-type: none">1. Fire equipment must be present and marked on site.2. Fire equipment must be maintained.	N/A	



EMPR Ref #	Condition	Compliance Rating	Comments/ Verification
	<ol style="list-style-type: none"> 1. Only properly trained personnel may work with the machinery. 2. In such a case that spillages do occur the procedure on cleaning and handling of spillages will be applied. 3. In short, the material will be prevented from transgressing into clean water systems. 4. In the event that a hydraulic spill will occur the following procedure will be followed: <ol style="list-style-type: none"> i. Immediately contain the spillage to prevent spreading to adjacent areas. ii. Once the spill has been contained use absorbent material obtainable from the workshop to absorb the spilled material iii. Dispose of absorbent into hazardous waste bin provided at the ventilation shaft. iv. Remove contaminated soil and dispose of in slimes dam. 	N/A	
	<ol style="list-style-type: none"> 1. Only trained person may use machinery. 	N/A	
	<ol style="list-style-type: none"> 1. Cement must be stored in an area bunded to prevent any storm water from entering. 	N/A	
	<ol style="list-style-type: none"> 1. Cement must be store in an area isolated from the wind to prevent cement dust generation. 	N/A	



EMPR Ref #	Condition	Compliance Rating	Comments/ Verification
	<p>Soil and water pollution can occur from spillages from the storage areas.</p> <p>1. Spillages will be minimized by conducting regular maintenance to ensure material containing hazardous substances is not damaged / leaking / spilling.</p> <p>It is inevitable that spillages will occur.</p> <p>1. In such a case the procedure on cleaning and handling of spillages will be applied.</p> <p>2. In short, the material will be prevented from transgressing into clean water systems or on to the soil.</p> <p>3. In the event that a spill will occur the following procedure will be followed:</p> <p>i. Immediately contain the spillage to prevent spreading to adjacent areas.</p> <p>ii. Once the spill has been contained use absorbent material obtainable from the workshop to absorb the spilled material.</p> <p>iii. Dispose of absorbent into hazardous waste bin provided at the site.</p> <p>iv. Remove contaminated soil and dispose of in slimes dam.</p>	N/A	
	<p>1. All material containing hazardous waste generated at the storage areas must be removed to the hazardous waste site.</p> <p>2. It must be ensured that no spillage takes place to the hazardous waste site.</p> <p>3. Please see salvage yard for measures taken for the hazardous waste site.</p>	N/A	



EMPR Ref #	Condition	Compliance Rating	Comments/ Verification
	<ol style="list-style-type: none"> 1. All non-hazardous waste must be kept in a demarcated area. 2. This area must be in an area where no storm water can enter. 3. The area must be in a cemented area. 	N/A	
	<ol style="list-style-type: none"> 1. All recyclable material to be used again must be kept in a demarcated area. 2. This area must be in an area where no storm water can enter. 3. The area must be in a cemented area. 4. All recyclable material not to be used again at the storage area must be removed to the salvage yard for recycling. 	N/A	
	<ol style="list-style-type: none"> 1. Sandblasting must take place in a bunded area where no stormwater or rainwater can enter. 2. Sandblasting may not take place on bare soil. 	N/A	
	<ol style="list-style-type: none"> 1. Only trained person may do sandblasting. 2. Protective gear must be used when sandblasting takes place. 	N/A	
4.7.2.10	Salvage Yard		
	<ol style="list-style-type: none"> 1. Develop a waste inventory, reflecting all waste streams, general and hazardous, area of generation, temporary storage requirements, classification if hazardous, contractor for removal, and disposal methodology. 2. All hazardous waste will be kept in an area demarcated for such waste, with strict access control and regulations. This area must comply with DWAF standards. 	N/A	



EMPR Ref #	Condition	Compliance Rating	Comments/ Verification
	<p>3. Please see DWAF Minimum Requirements for the Identification, Handling and Disposal of Hazardous Waste for the amount of hazardous waste that may be stored at a time on site.</p> <p>4. Scrap metal and used oil must be stored according to DWAF Minimum Requirements for the Identification, Handling and Disposal of Hazardous Waste.</p>		
	<p>1. For contaminated water, barriers will be built in the road to contain any dirty water that could occur on site.</p> <p>2. Implement a drain maintenance programme, identifying all critical water conveyance, treatment (e.g. separators) and storage facilities, and ensure regular inspections, maintenance and clean-out of these systems are done.</p>	N/A	
	<p>1. Please refer to the waste handling, storage and transportation of hazardous waste in the DWAF Minimum Requirements for the Identification, Handling and Disposal of Hazardous Waste.</p> <p>2. Hazardous must be classified according to DWAF. This classification must be reflected in the safe disposal certificate.</p> <p>3. A waste removal company must be contracted to remove all waste on site. This contractor must be:</p> <ul style="list-style-type: none"> i. Licensed to dispose waste; ii. Provide safe disposal certificates to the mine; iii. Separate different waste and dispose off separately; and iv. Recycle waste where possible. 	N/A	No waste was being removed from site at the time of the audit.
	<p>1. Classify all hazardous waste as per DWAF Minimum Requirements for the Identification, Handling and Disposal of Hazardous Waste.</p>	N/A	



EMPR Ref #	Condition	Compliance Rating	Comments/ Verification
	<p>2. The migration of leachate or spillage into the ground and groundwater regime around all temporary storage areas must be prevented. A temporary storage site therefore requires a firm waterproof base that is protected from the ingress of storm water from surrounding areas.</p> <p>3. It must also have an effective drainage system to a waterproof spillage collection area, where any spillage can be recovered and suitably treated.</p> <p>4. This area must be clearly demarcated and should not be accessible to unauthorised persons.</p>		
	<p>1. All non-hazardous waste must be separated into wood, domestic, plastic, glass, etc.</p> <p>2. Waste must be stored in bins and disposed off in these bins.</p> <p>3. Bins must be clearly labelled.</p>	N/A	
	<p>1. Waste materials should always be stored separately from other process chemicals or products.</p> <p>2. If non-compatible wastes are to be stored, care should be taken to adequately separate them, to prevent possible interactions in the event of fire or spillage.</p> <p>3. Flammable or combustible wastes must in any event be stored separately from other waste materials.</p>	N/A	
	<p>1. All hazardous and non-hazardous waste that can be re-used must be recycled.</p> <p>2. The waste removal company contracted must provide evidence that recycling takes place.</p>	N/A	



EMPR Ref #	Condition	Compliance Rating	Comments/ Verification
	1. No waste may be burned at any time.	N/A	
4.7.2.12	Lamp Room		
	1. All batteries and Self Rescue Packs, containing hazardous material, generated at the lamp room must be returned to the OEM or removed to the hazardous waste site. 2. It must be ensured that no spillage takes place to the hazardous waste site. 3. Please see salvage yard for measures taken for the hazardous waste site.	N/A	
	1. All hazardous and non-hazardous waste that can be re-used must be recycled. 2. The waste removal company contracted must provide evidence that recycling takes place.	N/A	
4.7.2.13	Storage of Diesel and Oil		



EMPR Ref #	Condition	Compliance Rating	Comments/ Verification
	<p>Soil and water pollution can occur from spillages during loading and off-loading.</p> <ol style="list-style-type: none"> 1. Spillages will be minimized by conducting regular maintenance on vehicles. 1. In such a case that spillages do occur the procedure on cleaning and handling of spillages will be applied. 2. In short, the material will be prevented from transgressing into clean water systems or on to the soil. 3. In the event that a spill will occur the following procedure will be followed: <ol style="list-style-type: none"> i. Immediately contain the spillage to prevent spreading to adjacent areas. ii. Once the spill has been contained use absorbent material obtainable from the workshop to absorb the spilled material. iii. Dispose of absorbent into hazardous waste bin provided at the ventilation shaft. iv. Remove contaminated soil and dispose of in slimes dam. 	<p>✓</p>	<p>No hydrocarbon spillages were noted at the time of the audit at the areas inspected.</p>
	<ol style="list-style-type: none"> 1. Vehicles may only drive on designated roads. 	<p>X</p>	<p>Evidence of additional access roads that were created for the use of the vehicles removing the waste rock from site was noted.</p>
	<ol style="list-style-type: none"> 1. All vehicles should be kept in good working order to avoid spillages leading to soil pollution. 2. The tanks must be bunded to avoid any spillages of diesel causing soil pollution. 3. The site will be cemented to avoid soil pollution. 	<p>N/A</p>	



EMPR Ref #	Condition	Compliance Rating	Comments/ Verification
	<p>1. Vegetation found on and around the site is not classified as rare or endangered. Very little vegetation is occurring on the site.</p> <p>2. Damage to vegetation will be insignificant, however, any vegetation retained after construction should be avoided by vehicles.</p> <p>3. The areas that are disturbed by the building phase will be rehabilitated with the natural grass species that are found on the property.</p>	<p>N/A</p>	
	<p>1. Only trained person may do sandblasting.</p>	<p>N/A</p>	
	<p>Soil and surface water pollution can occur from spillages.</p> <p>1. Spillages will be minimized by conducting regular maintenance on equipment.</p> <p>1. In such a case that spillages do occur the procedure on cleaning and handling of spillages will be applied.</p> <p>2. In short, the material will be prevented from transgressing into clean water systems or on to the soil.</p> <p>3. Material will be used to clean the contaminated soil and, in the event, that waste is generated this will be dumped in the hazardous waste bin provided for this purpose.</p> <p>4. In the event that a spill will occur the following procedure will be followed:</p> <p>i. Immediately contain the spillage to prevent spreading to adjacent areas.</p> <p>ii. Once spill has been contained use absorbent material obtainable from the workshop area to absorb the spilled material.</p> <p>iii. Dispose of absorbent into hazardous waste bin provided at the workshop area.</p>	<p>N/A</p>	



EMPR Ref #	Condition	Compliance Rating	Comments/ Verification
	iv. Remove contaminated soil and dispose of in slimes dam. v. Dispose hazardous waste at designated hazardous waste disposal site		
	1. The tanks will be banded. 2. The tank can be easily monitored for leakages/spillages. 3. Ground water can be tested on a quarterly basis. 4. Inspections on the tanks as well as reporting of any leakages//spilling will be done on a weekly basis.	N/A	
	1. Fire extinguishers must be in place on site.	N/A	
	1. Soil and water pollution can occur from spillages or leakages. 2. Spillages will be minimized by conducting regular maintenance on cable trenches	N/A	



EMPR Ref #	Condition	Compliance Rating	Comments/ Verification
	<p>Soil and surface water pollution can occur from spillages.</p> <p>1. Spillages will be minimized by conducting regular maintenance on machinery.</p> <p>1. In such a case that spillages do occur the procedure on cleaning and handling of spillages will be applied.</p> <p>2. In short, the material will be prevented from transgressing into clean water systems or on to the soil.</p> <p>3. Material will be used to clean the contaminated soil and, in the event, that waste is generated this will be dumped in the hazardous waste bin provided for this purpose.</p> <p>4. In the event that a spill will occur the following procedure will be followed:</p> <ul style="list-style-type: none"> i. Immediately contain the spillage to prevent spreading to adjacent areas ii. Once spill has been contained use absorbent material obtainable from the workshop area to absorb the spilled material iii. Dispose of absorbent into hazardous waste bin provided at the workshop area iv. Remove contaminated soil and dispose of in slimes dam v. Dispose hazardous waste at designated hazardous waste disposal site 	N/A	
4.9.3	Closure Objectives		
4.9.2.2	Topography		



EMPR Ref #	Condition	Compliance Rating	Comments/ Verification
	<ol style="list-style-type: none"> To reduce the visual impact of the altered topography by a process of reclamation and rehabilitation. To dispose of all saleable assets. 	!	The reclamation and rehabilitation process were ongoing at the time of the audit and not yet completed. Some concrete structures were still in place. These include concrete bases, foundations, culverts and sumps.
4.9.2.3	Soils		
	<ol style="list-style-type: none"> To cover mining areas with sufficient soil in order to maintain vegetation. 	!	Certain areas were not yet covered with sufficient soil cover to maintain vegetation.
4.9.2.4	Land Capability		
	<ol style="list-style-type: none"> To identify alternative use of as much of the infrastructure as possible. To remove infrastructure not required in situ, and to restore the land where possible to natural vegetation. To financially investigate the possibility of re-mining the slimes dams. 	!	<p>Not all infrastructure was removed at the time of the audit. Some concrete structures were still in place. These include concrete bases, foundations, culverts and sumps.</p> <p>Land has not yet been restored to natural vegetation in all areas. A number of areas were still present that required rehabilitation.</p> <p>No slimes dams were present at St Helena 10 Shaft.</p>
4.9.2.5	Land Use		
	<ol style="list-style-type: none"> Investigate what infrastructure can have alternate uses. Remove all un-saleable infrastructures. Reinstate mining land to natural vegetation. To financially investigate the possibility of re-mining the slimes dams. 	!	<p>Not all infrastructure was removed at the time of the audit. Some concrete structures were still in place. These include concrete bases, foundations, culverts and sumps.</p> <p>Land has not yet been restored to natural vegetation where possible. A number of areas were still present that required rehabilitation.</p> <p>No slimes dams were present at St Helena 10 Shaft.</p>
4.9.2.6	Vegetation		



EMPR Ref #	Condition	Compliance Rating	Comments/ Verification
	1. To achieve self sustaining vegetation on the mining area excluding the slimes dams.	!	Self sustaining vegetation has not yet been established in all the disturbed mining areas.
4.9.2.8	Surface Water		
	1. To ensure that water pollution is contained on the mine property, and that natural watercourses are not affected. 2. To eliminate the contamination of surface water thus obviating the need to treat excessive quantities of polluted water.	!	The surface water infrastructure and containment facilities were not adequate to ensure that the mine water is maintained at the time of the audit. It was however noted that the waste rock dump material was being removed and disposed into the shaft. Once the waste rock material is removed, the potential pollution from the waste rock dump would be minimised.
4.9.2.9	Groundwater		
	1. Ensure that individual facilities do not have long term adverse effects in terms of quality on the ground water users.	✓	According to the Groundwater Assessment undertaken as part of the closure application, the facilities at St Helena 10 Shaft would have negligible effect on the surrounding groundwater users compared to the existing slimes dam directly adjacent to St Helena 10 Shaft.
4.9.2.10	Air Quality		
	1. Dust emanating from rehabilitated land should not exceed normal levels associated with agricultural and residential areas.	!	No dust concerns were noted at the time of the audit. It could however not be confirmed if the dust levels exceeded the normal level as no dust monitoring data was available during the audit.
4.9.3	Post Closure Objectives		
4.9.3.1	Infrastructure Areas		



EMPR Ref #	Condition	Compliance Rating	Comments/ Verification
	If any cracks on ground surface, sink holes or storm-water management occurs on the Gemsbokfontein dolomitic compartment, equipment will be used to create berm walls around sink holes, manage storm-water and fill cracks in the ground.	N/A	The Gemsbokfontein Dolomitic Compartment is located 15km due south of Randfontein and not near St Helena 10 Shaft, Welkom.
	Excavations are to be filled with uncontaminated rubble (such as old foundations, bricks and builder's excavation material) or with uncontaminated washed rock from a waste dump.	✓	It was noted that excavations were being filled with rubble.
	All infrastructures will be removed and rehabilitated, should no alternative be found for the use of the structures. An alternative use for the brick structures will first be sought i.e. they can either be sold or donated to the post-mining landowner on sale of the land. If an alternative use cannot be found, the building material will be demolished. The rubble will either be removed or buried on site at depth not less than (1) metre below surface.	!	<p>Most of the infrastructure had been removed from the St Helena 10 Shaft site at the time of the audit site inspection. Instances were however noted where infrastructure was not removed. These include:</p> <ul style="list-style-type: none"> • A number of concrete slabs/foundations. • Brick storm water drain structures. • A concrete built oil-water separator facility. • An unused gravel access road that surrounded the sub-station. • Unused concrete culvert structure.
	All fences erected around the mine will be dismantled and either disposed of at a permitted disposal site or sold as scrap (provided that these structures will no longer be required by the post-mining landowner). Fences erected to cordon-off dangerous excavations will remain in place and will be maintained as and when required.	!	Most of the old fences that is not in use have been removed. It was however noted that some old fence material was left lying around on site.
	All unwanted over-land and sub-surface pipelines and associated concrete works will be demolished.	!	Not all unwanted sub-surface pipelines and associated concrete works were demolished.



EMPR Ref #	Condition	Compliance Rating	Comments/ Verification
	Maintenance of the land surrounding the rehabilitated outcrop contouring and shaft filling subsidence or compacting will be monitored and corrected if and when observed. Pollution of rehabilitated land during life of mine will be addressed and eliminated. Natural drainage patterns will be re-instituted where possible and will not be interfered with.	!	The natural drainage patterns were not fully re-instituted. Evidence of the drainage lines that were created for the operations were still visible. Shaft filling were still ongoing at the time of the audit.
	Rip unwanted roads, remove unwanted railways and dispose of base material. Voids will be filled with soil.	!	Not all unwanted roads have been removed and ripped at the time of the audit.
	Where it is practicable the roofs of subterranean tunnels and ducts will be demolished and rehabilitated.	N/A	No evidence of subterranean tunnels or ducts were observed at the time of the audit.
4.9.3.2	Mine Residue Deposits		
4.9.3.2.1	Disposal Facilities (Pipes, Solutions Trenches, Return Water Dams etc.)		
	Rehabilitation work done on slimes dams No 1, 2 and 3 during the operational phase will be monitored and if required remedial action taken. After the closure of the metallurgical plant, all pipelines currently used to pump slime to the slimes dams will be reclaimed. The return water pump and pipeline will also be reclaimed.	N/A	
	All pipelines to the slimes dams will be removed after completion of the vegetation programme. The trenches and return water dams will be left as is to contain any contaminated storm water run off from the slimes dam area.	N/A	
	The need for post-closure care will thus be written into the title deed of the property, if the mine bought it, and the mine's contribution to the specified care and maintenance will be quantified.	X	Harmony owns the property. No clear evidence was provided that the post-closure care was included in the title deed of the property.



EMPR Ref #	Condition	Compliance Rating	Comments/ Verification
4.9.3.2.2	Ongoing seepage, control of rain water		
	All rainfall on the slimes dams will be contained and controlled within the area.	N/A	
	Seepage control measures around slimes dams, consisting of trenches and return water dam, will ensure no spill from these areas.	N/A	
	As the majority of the surface area is free of sources of mine pollution, (this excludes the slimes dams and waste rock dumps) the only management action plans will be those that will be applied to reshape the surface area where demolition activities took place in order to ensure effective run off of surface water.	N/A	Statement.
4.9.3.2.3	Long term stability		
	The only structures that will remain are the slimes dams, waste rock dump, solid waste disposal site and shaft structures, which will not pose a long-term stability problem.	N/A	Statement.
	The slimes dams are designed to have long term stability. The sides are slanted inwards to render it stable in the long term. The dams are constructed, sufficient in area, to not allow the phreatic water table to come into contact or close to any side of the dams.	N/A	Statement.
	The side slopes are based on the principle that it should not be too steep in order to avoid unnecessary erosion but steep enough not to allow a too extensive area exposed to rainwater erosion.	N/A	Statement.
	Proper management plans for post-closure care will further ensure the stability of the slimes dams in the future.	N/A	Statement.



EMPR Ref #	Condition	Compliance Rating	Comments/ Verification
4.9.3.2.4	Final Rehabilitation with Respect to Erosion and Dust Control		
	<p>The dust management measures undertaken during the operation of the mine should be adhered to where appropriate. The following mitigation measures are recommended throughout the closure phase of the proposed mine:</p> <ol style="list-style-type: none"> 1. Exposure of un-vegetated areas as a result of demolished infrastructure should be kept to a minimum and rehabilitated as timeously as possible. 2. Monitoring of sensitive receptor areas to be continued. 3. Dust control measures should be adopted in critical locations on the slimes dams in the rehabilitation process. 	!	Vegetation has mostly established in the rehabilitated areas. Some areas where additional seeding might be required were noted in some areas. No sensitive receptors were noted in close proximity of St Helena 10 Shaft. No slimes dams are present at St Helena 10 Shaft.
4.9.3.3	Sealing of underground workings and rehabilitation of dangerous excavations		
	<p>All underground workings will be sealed as soon as it becomes certain that no further mining is to be done. All vertical and incline shafts will either be sealed off by means of constructing a plug in the shaft 3.0 metres below surface or filled up with rubble and covered with topsoil. These plugs will be designed by professional engineers and approved by the Regional Director of Mineral and Energy Affairs in accordance to the DME Shaft sealing guidelines.</p>	!	The shaft was being backfilled with waste rock at the time of the audit. No clear evidence could be provided that the St Helena 10 Shaft plug was designed by a Professional Engineer or that the design was approved by the Regional Director of the Department of Mineral Resources (DMR) in accordance with the DR shaft sealing guidelines.
	<p>All dangerous excavations will be filled and rehabilitated as soon as mining in the area is complete. Caving ground or outcrop crown pillar caving to be filled up compacted where possible, to a level of one half of a metre above ground level. The filling will be contoured so that drainage will be away from the excavations.</p>	✓	No dangerous excavations, except for the shaft were noted during the audit site inspection. The shaft was being filled at the time of the audit.



EMPR Ref #	Condition	Compliance Rating	Comments/ Verification
4.9.6	Maintenance		
	All rehabilitated land, slimes dams and infrastructure will be maintained as described in the previous sections for a period of three years after operations in that particular area have ceased.	✓	The rehabilitated land is still being maintained by Harmony. No slimes dams and infrastructure requiring maintenance were present at St Helena 10 Shaft at the time of the audit.
	For each facility the maintenance on vegetation rehabilitation will be maintained for 18 months after germination. Once rehabilitation has been completed, a three-year period will be allowed to ensure that this vegetation is self-sustaining. If so, a partial closure certificate will be applied for.	N/A	It was reported that demolition work at St Helena 10 Shaft started in 2014 and it was completed in early 2017. The backfilling of the shaft was completed in September 2018 during the compilation of this audit report. The rehabilitation maintenance and monitoring period is still ongoing and has not yet lapsed.
4.12	Monitoring and Measurement		
4.12.1	Submission of information		
	Information supplied during the operational phase which is still applicable will be forwarded to the required department. At this stage the only activities at the mine will be the monitoring of ground water and vegetation cover. Progress reports will be forwarded to the required government departments on a regular basis.	X	No proof of regular progress reports to the government departments that includes ground water and vegetation cover was provided during the audit.
4.12.2	Maintenance		



EMPR Ref #	Condition	Compliance Rating	Comments/ Verification
	<p>Area rehabilitated will be monitored, and if remedial action is required, this will continue to with the vegetation programme. Maintenance of all storm water control measures, seepage control and rehabilitated land will continue until the mine closure or no longer required. This will be done by the Engineering Department bi-annually. It is the intention that a monitoring period not exceeding two years will be used to demonstrate that the closure measure adopted by the mine have attained the specific closure objectives.</p>	<p>X</p>	<p>No bi-annual monitoring by the Engineering Department of the area rehabilitated was prepared at the time of the audit.</p>
4.12.4	Monitoring		



EMPR Ref #	Condition	Compliance Rating	Comments/ Verification
	<p>Monitoring ongoing at present includes:</p> <ul style="list-style-type: none"> • Surface Water Monitoring (Environmental Surface Water Monitoring); • Groundwater Borehole Monitoring (New boreholes were drilled); • Additional Surface Water and Ground Water Monitoring for radiation (Public exposures); • Storm Water Canals Monitoring – Monthly;* • Freeboard Maintenance of slimes dams and water dams (1:50 year flood-line) – Weekly;* • Water Usage Monitoring; • Dust monitoring (Four directional buckets and individual monitoring); • Water Biological Testing (Bacteria counting and Cholera); • Noise Monitoring; • Soil analysis including erosion control; • Methane Gas Monitoring; • Illumination Monitoring; and • Paddock Maintenance. <p>* Included in these monitoring is monitoring of Water Malfunctions, Operating Errors, Mechanical Failures and Environmental Factors.</p> <p>Any additional monitoring will be determined on closure in accordance with all the relevant regulatory acts.</p>	!	<p>The following monitoring/assessments were done as part of the closure application in 2018:</p> <ul style="list-style-type: none"> -Groundwater monitoring as part of 2018 Groundwater Assessment. -Soil analysis as part of the 2018 Soil Assessment. -Soil analyses as part of the Contaminated Land Assessment. <p>A Radiation assessment was undertaken at St Helena 10 Shaft during October, November and December 2017 for use during rehabilitation.</p> <p>Ongoing Methane Gas monitoring was undertaken during the backfilling of the shaft.</p> <p>Noise and dust monitoring were not undertaken during the shaft backfilling and decommissioning activities.</p> <p>The installation of additional monitoring boreholes and subsequent quarterly water level and quality monitoring was recommended during the 2018 groundwater assessment.</p>



7.3 FINDINGS OF THE AUDIT

The key findings of the audit are provided in Table 5 below.

Table 5: Table of findings of the audit.

Finding Ref. #	EA Ref #	Condition	Finding and Recommendation
Waste Management			
1	4.2.7.1	1. All non-hazardous waste must be removed to the salvage yard.	Some abandoned waste was noted that was not removed during the initial decommissioning of St Helena 10 Shaft. These include waste cables adjacent to the access road and historic bank area as well as dismantled fence material. These material should be removed as soon as possible during the rehabilitation process.
	4.7.2.7	3. All conveyor belts and cables that are waste must be removed to the salvage yard or the cable yard.	
	4.9.3.1	All fences erected around the mine will be dismantled and either disposed of at a permitted disposal site or sold as scrap (provided that these structures will no longer be required by the post-mining landowner). Fences erected to cordon-off dangerous excavations will remain in place and will be maintained as and when required.	
Photographic Record:			



Finding Ref. #	EA Ref #	Condition	Finding and Recommendation
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Figure 3: Dismantled fence material and waste cables.

Additional Access Roads

2	4.7.2.13	1. Vehicles may only drive on designated roads.	Evidence of additional access roads that were created for the use of the vehicles removing the waste rock from the St Helena 10 Shaft site was noted. These roads should be removed as soon as possible during the rehabilitation process and no additional roads should be created.
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Photographic Record:



Figure 4: Additional access roads created for use during removal of waste rock material.



Finding Ref. #	EA Ref #	Condition	Finding and Recommendation
Removal of infrastructure			
3	4.9.2.2	1. To reduce the visual impact of the altered topography by a process of reclamation and rehabilitation. 2. To dispose of all saleable assets.	<p>The reclamation and rehabilitation process were ongoing at the time of the audit and not yet completed.</p> <p>Most of the infrastructure was removed or buried at the St Helena 10 Shaft site. Instances were however noted where infrastructure was not removed. These include:</p> <ul style="list-style-type: none"> • A number of concrete slabs/foundations. • Brick storm water drain structures. • A concrete built oil-water separator facility. • An unused gravel access road that surrounded the sub-station. • An unused concrete culvert structure. <p>These structures should be removed as soon as possible during the rehabilitation process.</p>
	4.9.2.4	1. To identify alternative use of as much of the infrastructure as possible. 2. To remove infrastructure not required in situ, and to restore the land where possible to natural vegetation.	
	4.9.3.1	All unwanted over-land and sub-surface pipelines and associated concrete works will be demolished.	
Photographic Record:			





Finding Ref. # EA Ref # Condition

Finding and Recommendation

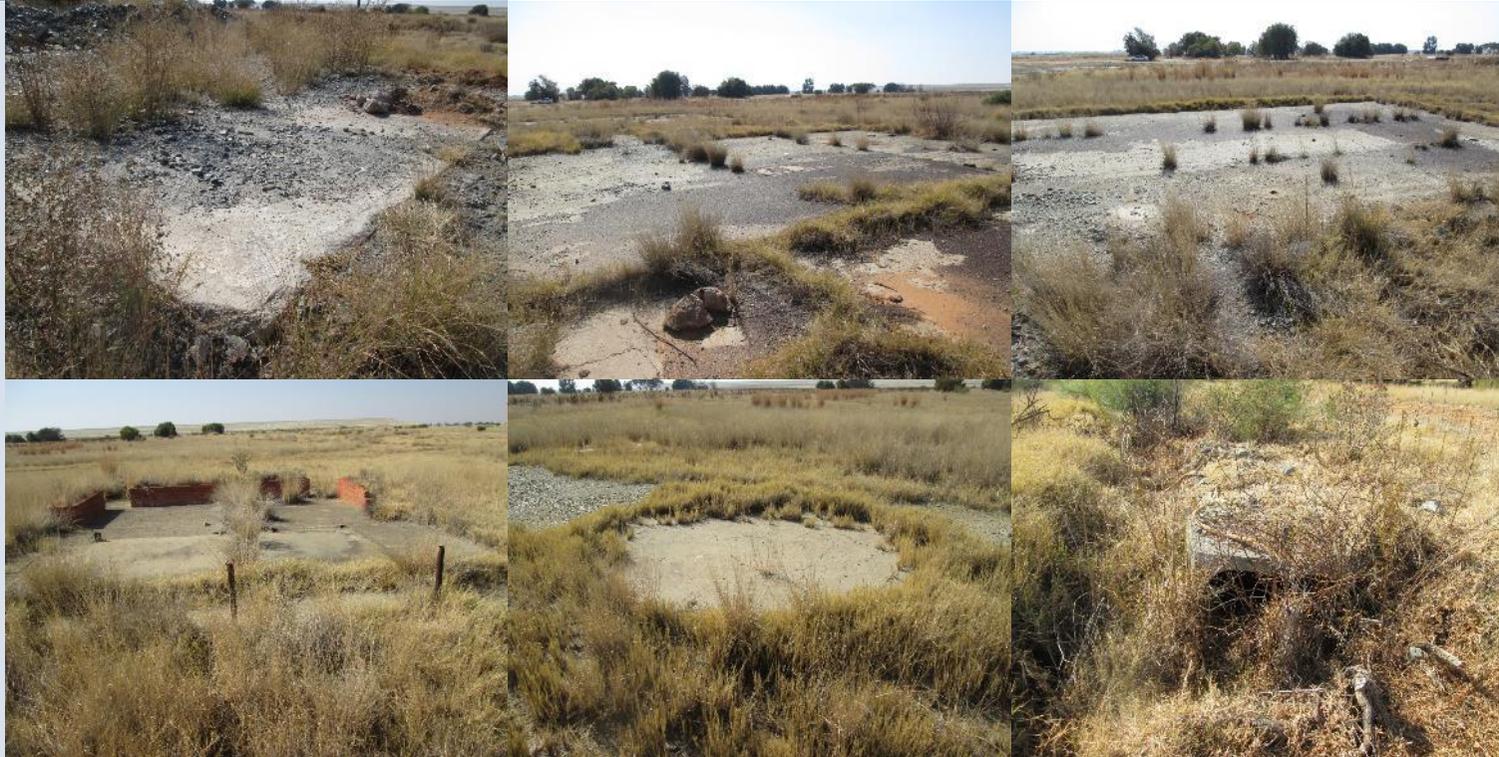


Figure 5: Indication of infrastructure not yet removed during rehabilitation.

Reinstatement and Rehabilitation

4	4.9.2.3	1. To cover mining areas with sufficient soil in order to maintain vegetation.	A number of areas were still present that required rehabilitation. Certain areas were not yet covered with sufficient soil cover to maintain vegetation.
	4.9.2.5	3. Reinstatement mining land to natural vegetation.	Land has not yet been restored to natural vegetation where possible. A number of areas were still present that required rehabilitation.
	4.9.2.6	1. To achieve self sustaining vegetation on the mining area excluding the slimes dams.	Self sustaining vegetation has not yet been established in all the disturbed mining areas.



Finding Ref. #	EA Ref #	Condition	Finding and Recommendation
	4.9.3.1	Maintenance of the land surrounding the rehabilitated outcrop contouring and shaft filling subsidence or compacting will be monitored and corrected if and when observed. Pollution of rehabilitated land during life of mine will be addressed and eliminated. Natural drainage patterns will be re-instituted where possible and will not be interfered with.	The natural drainage patterns were not fully re-instituted. Evidence of the drainage lines that were created for the operations were still visible. Not all unwanted roads have been removed and ripped at the time of the audit. The recommendations as per the conditions of the EMPR should be implemented as soon as possible.
	4.9.3.1	Rip unwanted roads, remove unwanted railways and dispose of base material. Voids will be filled with soil.	
Photographic Record:			



Finding Ref. #	EA Ref #	Condition	Finding and Recommendation
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Figure 6: Indication of the areas where additional rehabilitation measures should be implemented.

Storm water management and containment			
5	4.9.2.8	1. To ensure that water pollution is contained on the mine property, and that natural watercourses are not affected. 2. To eliminate the contamination of surface water thus obviating the need to treat excessive quantities of polluted water.	The surface water infrastructure and containment facilities were not adequate to ensure that the mine water is contained at the time of the audit. It was however noted that the waste rock dump material was being removed and disposed into the shaft. Once the waste rock material is removed, the potential pollution from the waste rock dump would be minimised. Once the waste rock dump is removed, no mitigation should be required.
Dust monitoring			



Finding Ref. #	EA Ref #	Condition	Finding and Recommendation
6	4.9.2.10	1. Dust emanating from rehabilitated land should not exceed normal levels associated with agricultural and residential areas.	No dust concerns were noted at the time of the audit. It could however not be confirmed if the dust levels exceeded the normal level as no dust monitoring data was available during the audit. Dust monitoring as per the EMPR is required to confirm that the dust levels exceed the normal levels associated with agricultural and residential areas.
Post-closure care liability			
7	4.9.3.2.1	The need for post-closure care will thus be written into the title deed of the property, if the mine bought it, and the mine's contribution to the specified care and maintenance will be quantified.	Harmony owns the property. No clear evidence was provided that the post-closure care was included in the title deed of the property. The requirement as per the EMPR condition should be addressed timeously.
Shaft seal plug design			
8	4.9.3.3	All underground workings will be sealed as soon as it becomes certain that no further mining is to be done. All vertical and incline shafts will either be sealed off by means of constructing a plug in the shaft 3.0 metres below surface or filled up with rubble and covered with topsoil. These plugs will be designed by professional engineers and approved by the Regional Director of Mineral and Energy Affairs in accordance to the DME Shaft sealing guidelines.	The shaft was being backfilled with waste rock at the time of the audit. No clear evidence could be provided that the St Helena 10 Shaft plug was designed by a Professional Engineer or that the design was approved by the Regional Director of DMR in accordance with the DMR shaft sealing guidelines. The shaft plug should be designed by a professional engineer and approved by the DMR as soon as possible.
Progress Reporting			
9	4.12.1	Information supplied during the operational phase which is still applicable will be forwarded to the required department. At this stage the only activities at the mine will be the monitoring of ground water and vegetation cover. Progress reports will be forwarded to the required government departments on a regular basis.	No proof of regular progress reports to the government departments that includes ground water and vegetation cover was available during the audit. Progress reports should be forwarded to the required government departments on a regular basis.
Rehabilitation Monitoring			
10	4.12.2	Area rehabilitated will be monitored, and if remedial action is required, this will continue to with the vegetation programme. Maintenance of all storm water control measures, seepage control and rehabilitated land will continue until the mine closure or no longer required. This will be done by the	No bi-annual monitoring by the Engineering Department of the area rehabilitated was prepared at the time of the audit. These monitoring protocols should be initiated as soon as possible.



Finding Ref. #	EA Ref #	Condition	Finding and Recommendation
		<p>Engineering Department bi-annually. It is the intention that a monitoring period not exceeding two years will be used to demonstrate that the closure measure adopted by the mine have attained the specific closure objectives.</p>	
Environmental Aspect Monitoring			
11	4.12.4	<p>Monitoring ongoing at present includes:</p> <ul style="list-style-type: none"> • Surface Water Monitoring (Environmental Surface Water Monitoring); • Groundwater Borehole Monitoring (New boreholes were drilled); • Additional Surface Water and Ground Water Monitoring for radiation (Public exposures); • Storm Water Canals Monitoring – Monthly;* • Freeboard Maintenance of slimes dams and water dams (1:50 year flood-line) – Weekly;* • Water Usage Monitoring; • Dust monitoring (Four directional buckets and individual monitoring); • Water Biological Testing (Bacteria counting and Cholera); • Noise Monitoring; • Soil analysis including erosion control; • Methane Gas Monitoring; • Illumination Monitoring; and • Paddock Maintenance. <p>* Included in these monitoring is monitoring of Water Malfunctions, Operating Errors, Mechanical Failures and Environmental Factors.</p> <p>Any additional monitoring will be determined on closure in accordance with all the relevant regulatory acts.</p>	<p>The following monitoring/assessments were done as part of the closure application in 2018:</p> <ul style="list-style-type: none"> -Groundwater monitoring as part of 2018 Groundwater Assessment. -Soil analysis as part of the 2018 Soil Assessment. -Soil analyses as part of the Contaminated Land Assessment. <p>A Radiation assessment was undertaken at St Helena 10 Shaft during October, November and December 2017 for use during rehabilitation.</p> <p>Ongoing Methane Gas monitoring was undertaken during the backfilling of the shaft.</p> <p>Noise and dust monitoring were not undertaken during the shaft backfilling and decommissioning activities.</p> <p>The installation of additional monitoring boreholes and subsequent quarterly water level and quality monitoring was recommended during the 2018 groundwater assessment. Monitoring should be done in line with the EMPR and specialist recommendations as soon as possible.</p>



7.4 CONTINUED ADEQUACY OF THE EMPR

The current EMPR is a generic document for all of Harmony's Free State operations. The EMP identifies closure and post closure objectives. The closure plan prepared as part of the pending closure applications will elaborate on these objectives. The overall finding of the adequacy of the EMPR is that the current EMPR does include sufficient mechanisms required for closure. It is important to note that a thorough review of the current EMPR is beyond the scope of this assessment, and as such additional aspects where the current EMPR is no longer appropriate or adequate may exist. It should be noted that the adequacy of the entire EMPR was not evaluated and only the aspects that relate to closure at the St Helena 10 Shaft were considered.

8 RECOMMENDATIONS ON HOW AND WHEN NON-COMPLIANCE AND DEFICIENCIES WILL BE RECTIFIED (REG 55 (3) (G))

Areas of non-compliance as well as other deficiencies have been identified during the audit and site inspection, and are discussed in detail in sections 7.2 and 7.3 of this report. Recommendations are provided for how and when non-compliance and deficiencies should be addressed. The responsibility to address the findings of this report lies with the Applicant.

Ongoing compliance monitoring against the conditions of the approved EMPR is a legal requirement in accordance with the MPRDA (Regulation 55(1)(a)). As such regular internal site inspections to ensure the environmental requirements are being adequately implemented are recommended to ensure suitable environmental performance on an ongoing basis at the mine.

The compliance monitoring reports should feed into an Environmental Management System (EMS) to ensure effective risk identification, monitoring and management.

9 PHOTOGRAPHIC RECORD

The photographic records that indicates general progress and areas of good compliance noted during the audit site inspection.



Figure 7: Dust suppression on access roads.



Figure 8: Available ablution facilities.



Figure 9: Removal of waste rock dump.

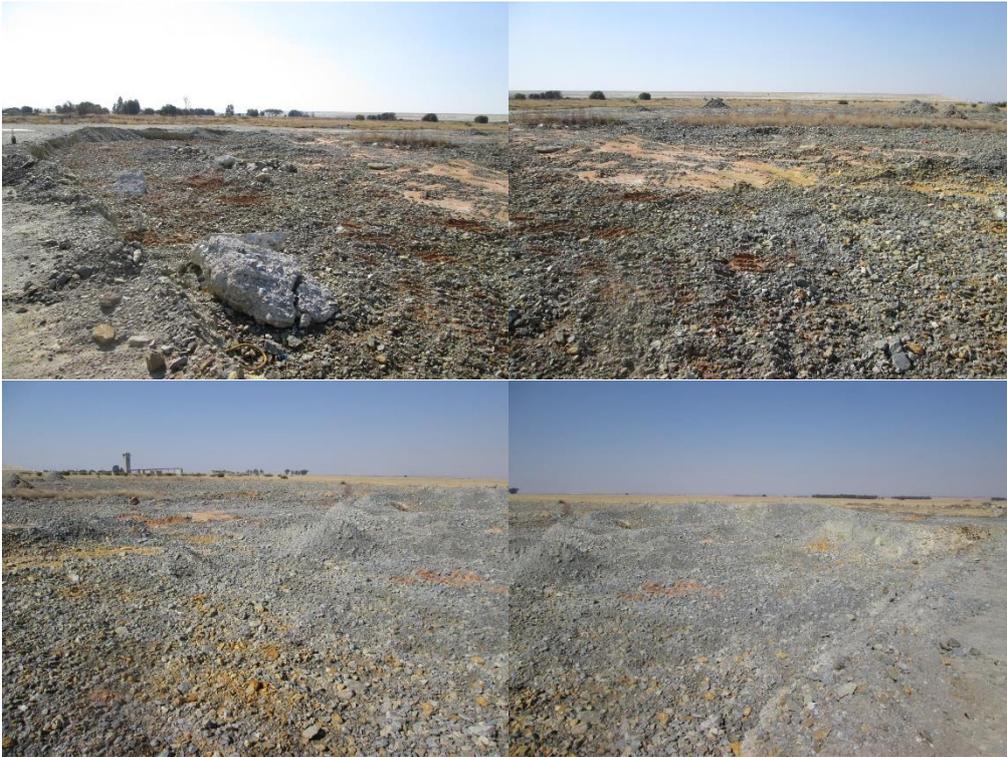


Figure 10: Area where waste rock dump has been removed.



Figure 11: Remaining waste rock dump.



Figure 12: Disposal of waste rock into the shaft.

10 CONCLUSION

EIMS was appointed by Harmony to undertake the Final EMPR PA as part of a closure application of the Harmony St Helena 10 Shaft. The scope of the PA is to assess compliance with the conditions of the approved EMPR (FS/30/5/1/2/2/86 MR), dated February 2009 and to confirm if the closure objectives of the EMPR have been met. Furthermore, this report provides recommendations for improvement based on general findings and site observations.

Following the initial checklist preparation and documentation review, a site visit was undertaken on 19 July 2018. The results of the PA have been described in Table 4 and is based on the evaluation criteria described in Section 5 of this report. Utilising this scoring system, a total compliance score of **56.9%** was obtained for this PA. Overall, the closed objectives of the EMPR have not yet been met and additional actions should be implemented to address these gaps.



11 ASSUMPTIONS AND LIMITATIONS

The following assumptions and limitations apply to this report:

- The information contained in this report was sourced from information and data supplied by third parties that is assumed to be complete, valid and true.
- This report is based on information available at the time of the assessment. The information, data, observations and evidence on what this report is based is beyond the control of EIMS and may change without notice. EIMS will not be liable for any loss or damage which may arise directly or indirectly because of such changes.
- No representation or warranty, express or implied, is or will be made in relation to, and no responsibility or liability is or will be accepted by EIMS in relation to the accuracy of this report.
- Where reference is made to legislation or other statutory provisions in this report the original legislation or other statutory provisions will always take precedence and the reader is directed to revert to the original legislation or statutes.
- This EMPR PAR does not cover the entire EMPR and only the aspects that relate to closure at the St Helena 10 Shaft project area.