



NTC Group

**ENVIRONMENTAL MANAGEMENT PROGRAMME COMPLIANCE ASSESSMENT REPORT FOR  
SOUTH32 HOTAZEL MANGANESE MINES (PTY) LTD, NORTHERN CAPE PROVINCE**

**November 2016**

**PREPARED BY:**

NTC GROUP (PTY) LTD  
AMP BUILDING,  
WELLNESS CENTRE  
17 EATON AVENUE  
BRYANSTON  
2192  
TEL: +27 11 462 2022  
EMAIL: [janna@ntcgroup.co.za](mailto:janna@ntcgroup.co.za)

**PREPARED FOR:**

HOTAZEL MANGANESE MINES (PTY) LTD  
SOUTH 32 SA HOLDINGS (PTY) LTD  
39 MELROSE BOULEVARD, MELROSE ARCH  
JOHANNESBURG, 2196  
CONTACT: GOODNESS BOPAPE  
Tel: +27 (0)11 376 2974  
EMAIL: [Goodness.Bopape@south32.net](mailto:Goodness.Bopape@south32.net)

## Document Control

### Version Control

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0.1	25 November 2016	Create report	Janna Bedford-Owen
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## 1. Introduction

### 1.1 Background

South32 is a metals and mining company with operations mining and producing bauxite, alumina, aluminium, energy and metallurgical coal, manganese, nickel, silver, lead and zinc in Australia, Southern Africa and South America. South32 has operations in South Africa and Mozambique including South Africa Manganese, South Africa Aluminium, South Africa Energy Coal and Mozal Aluminium.

Hotazel Manganese Mines (Pty) Ltd (HMM) a subsidiary of South32, is situated in the Northern Cape Province, approximately 50km (as the crow flies) north of Khatu and north west of Kuruman respectively.

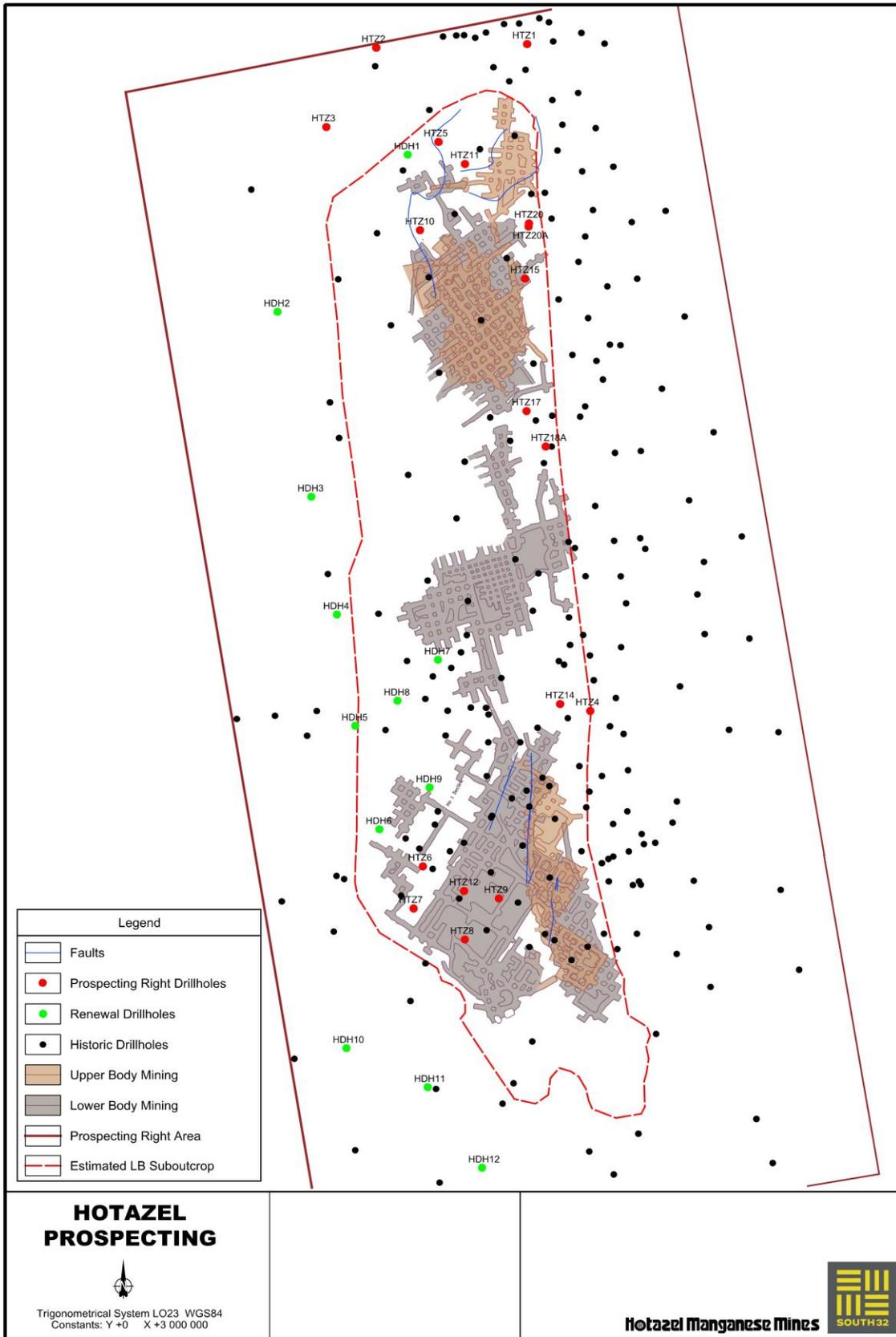
Previously, the HMM was an operational underground and open cast mine, operating under an old mining right. Following the promulgation of the Mineral and Petroleum Resources Development Act (No. 28 of 2002) (MPRDA), this mining right needed to undergo a conversion to a new mining right, however that was not completed. Instead an application for a prospecting right was submitted and approved, and HMM holds a prospecting right for Hotazel/York with the Department of Mineral Resources (DMR) reference number NC/30/5/1/1/2/10323PR. It is further noted that that original prospecting right was valid for a period of five years only, and nearing the lapsing of the five year period, HMM applied for a prospecting right renewal. The DMR granted the prospecting right renewal on the 17<sup>th</sup> July 2014 to commence on the 19<sup>th</sup> of December 2014. This renewed prospecting right is valid for a three year period (expiring on 19 December 2017). A second prospecting right renewal application has been submitted to the DMR (for a further two years) and is pending approval/rejection.

The proposed prospecting works programme indicated the following:

- Year One:
  - Borehole sampling and Data capture;
  - Floor pit mapping and geological interpretation;
  - Environmental Impact Assessment (EIA);
  - Resource and mining feasibility reporting.
- Year Two:
  - Update geological model with borehole sampling and floor pit mapping data;
  - Present revised resource estimate;
  - Update EIA and Feasibility Report.
- Year Three:
  - Conclude geological interpretation, EIA and Feasibility Reporting.

Following from the above, year one and two comprised the establishment and drilling of various test boreholes around the open cast area, and taking the resultant core samples to a laboratory off site for analysis. In July 2016 the drilling activities were completed and the drilling sites were decommissioned by August 2016. A total of 6 boreholes were drilled and rehabilitated for this reporting period. At present, no

prospecting activities in the area is occurring onsite and only the filled boreholes remain. NTC understands that the prospecting area is located on a previously mined area with much of the old infrastructure, overburden and soil stockpiles, open cast pit, as well as product stockpiles still in existence.



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Figure 0-1: HMM Prospecting Right Area with boreholes locality (November 2016)

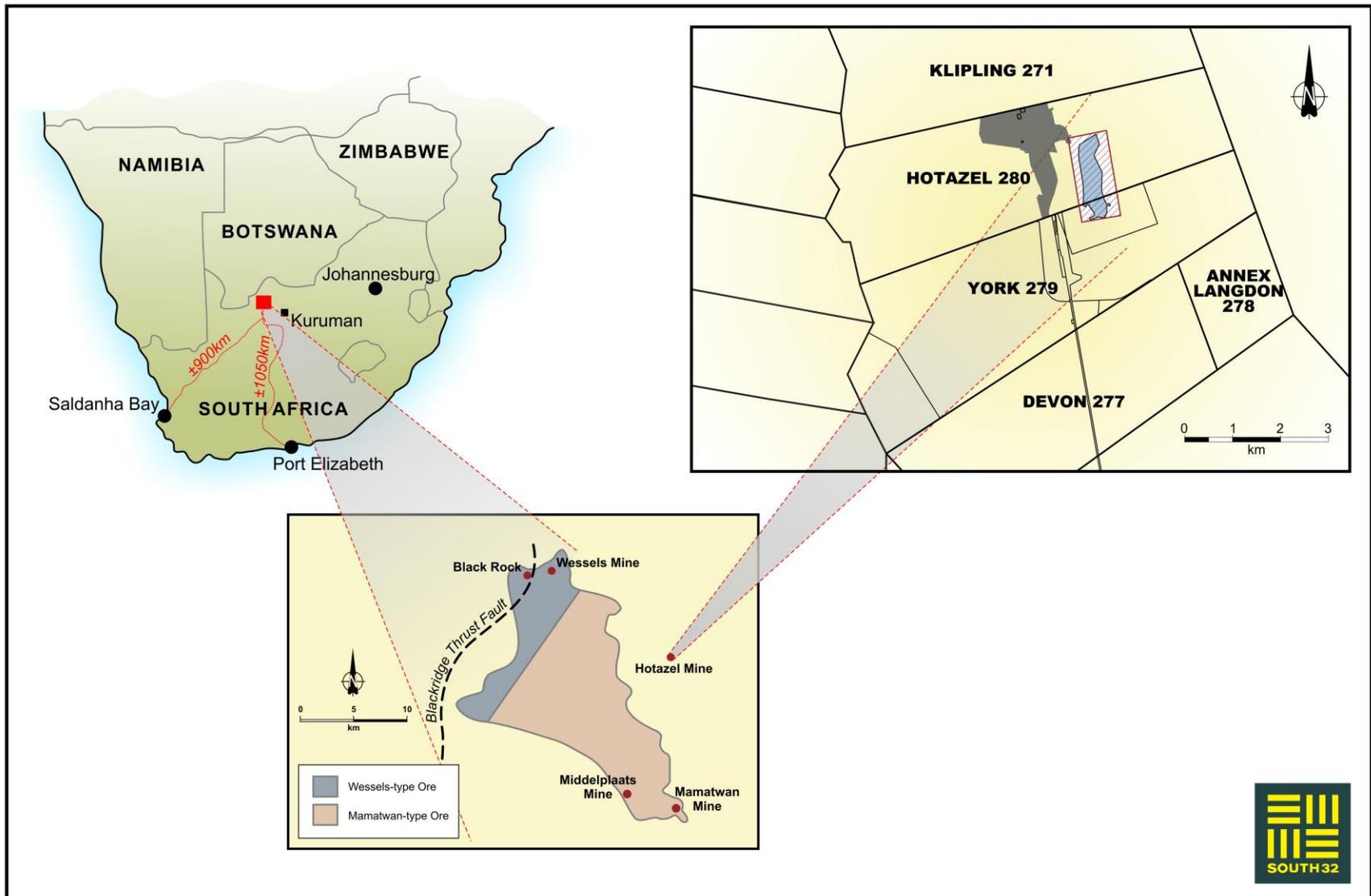


Figure 0-2: HMM Prospecting Right Locality Map

## 1.2 Terms of Reference

The MPRDA Government Notice Regulation (GNR) 527, regulation 55 thereof, requires the monitoring and performance assessments of Environmental Management Programme (EMPR) to assess the continued appropriateness and adequacy of the EMPR. The GNR 527 (55) requires the holder of the EMPR to:

- Conduct continuous monitoring;
- Conduct performance assessments;
- Compile and submit performance assessment reports (PAR) to the DMR.

Regulations 55 (2) states that the frequency of PAR will either be specified in the approved EMPR, every two years or as agreed to in writing by the Minister.

Regulation 55(4) adds that the holder of the mining right may appoint an independent competent person(s) to conduct a performance assessment and compile a PAR.

However, in 2014, the MPRDA was amended (No.49 of 2009) and aligned with the National Environmental Management Act (No. 107 of 1998) as amended (NEMA). Section 39 – 42 relating to the EMPR development, management, financial provisions etc. were repealed and Section 38 A and B were inserted. Section 38 B of the MPRDA states “*an environmental management plan or environmental management programme approved in terms of this Act before and at the time of the coming into effect of the National Environmental Management Act, 1998 shall be deemed to have been approved and an environmental authorisation been issued in terms of the National Environmental Management Act, 1998*”. Therefore, as HMM was in possession of an approved prospecting right at the time of the NEMA Environmental Impact Assessment (EIA) Regulations coming into effect, it is safely deduced that HMM is in possession of an ‘Environmental Authorisation’ (EA)

Regulation 34 of the NEMA EIA Regulations states that a holder of an EA must ensure compliance to conditions contained therein, and be regularly audited at a frequency as stipulated therein or by the Department. Regulation 34 further details the persons whom may undertake the audit, the minimum specifications of the audit report, submission requirements and stakeholder notification requirements.

Following from the above, the approved HMM prospecting right is required to undergo regular auditing in accordance with NEMA EIA Regulations and Appendix 7 thereof, at a frequency stipulated in the EA / Prospecting Right itself.

NTC Group (Pty) was appointed by South32 HMM as the independent Environmental Assessment Practitioner (EAP) to undertake the 2016 annual Prospecting Right (Ref: NC/30/5/1/1/2/10323PR) and EA compliance assessment. This report presents the methodologies and findings thereof.

### 1.3 Assumptions and Limitations

The following assumptions and/or limitations are applicable to the audit process and resulting findings:

- This Audit is a snap-shot representation of the HMMs operation and the audit period assessed includes December 2015 – December 2016 only. Anything occurring prior to this period is assumed to have been audited previously and was thus not included herein. Therefore, such items were determined to be “Not Applicable”;
- Due to the nature and extent of the operation, not all areas were visited during the site assessment. Instead specific areas representative of the operation and assessment period were selected;
- HMM is in the decommissioning phase, and activities relating to Construction, Rehabilitation and/or Closure that were not currently occurring on site were deemed “Not Applicable”;
- Procedures developed by South 32 HMM specifically, are deemed to be appropriately implemented as part of the Integrated Management System by site personnel;
- No prospecting activities, namely drilling, were occurring at the time of the site assessment;
- The prospecting area occurs in a previously mined (disturbed) area and HMM reported rehabilitation and closure of the previously mined area will be incorporated in the HMM prospecting right activities as required. Therefore, rehabilitation and closure of the prospecting right area as a separate entity will not be conducted; and
- Current/relevant legislation will be substituted for legislation referenced in the Prospecting Right EA that is outdated/repealed.

## 2. Auditors

NTC GROUP (PTY) LTD was established in 2005. It is 100% female black owned with a Level 1 Broad Based Black Economic Empowerment (BBBEE) Rating. The company essentially runs two divisions: Chemicals and Environmental Consulting. In terms of environmental capabilities, NTC renders the below (Table 1) services

Table 1: NTC Environmental Services Summary

<b>Environmental Authorisations</b>	<b>Environmental compliance monitoring</b>
Environmental Impact Assessment (EIA)	Compliance audits in line with permits
Environmental Management Program Report (EMPR) for mining right applications	Construction projects monitoring
Environmental Management Plans (EMP)	Environmental Monitoring
Integrated Water Use License Application (IWULA)	Ground & Surface water
Integrated Water and Waste Management plan	Fauna & Flora
Waste Permit application	Air quality
	Bio-monitoring

Other permit applications	Environmental Risk Assessment Environmental Management Systems - ISO 14001
<b>Environmental strategic projects</b>	<b>Specialist studies</b>
Environmental Management Framework (EMF) Strategic Environmental Assessment Environmental Rehabilitation Projects Mine closure studies Rehabilitation of contaminated soil Rehabilitation plans Pollution assessment studies Mine water balance studies Engineering services to complement environmental studies	Land Capability and Land Use/Zoning Assessments Soil Assessments (Description, Classification and Pollution Assessment). Aquatic Ecological Assessments. Hydrological/Surface Water Assessments Air Quality Assessments. Noise level Assessments Geotechnical Studies Environmental Legal Assessments Biodiversity studies

We undertake our services with professional integrity and we have built good reputations with stakeholders in the environmental management field including regulatory authorities and government departments. We undertake all our services within the requirements of applicable South African legislation, as well as acceptable international best practices, norms and standards. The details of the specific environmental consultants who completed and/or assisted with the Compliance Assessment are provided in Table 2 and the Curricula Vitae's are provided in Appendix A, along with the auditor's declaration of independence.

Table 2: EAP Contact Details

Role	Responsible Person	Contact Details
<b>Project Director</b>	Thinga Nethanani is the founding member of NTC Group (Pty) Ltd. She has over 11 years' experience in the Environmental Management field. Thinga provided quality assurance during the audit preparations and report compilations.	Tel: +27 11 4622 022
		Fax: +27 86 665 1864
		Email: <a href="mailto:thinga@ntcgroup.co.za">thinga@ntcgroup.co.za</a>
<b>Project Manager</b>	Janna Bedford-Owen is a Principal Consultant at NTC Group (Pty) Ltd. She has over 10 years' experience in the Environmental Management field including extensive experience within the mining sector. Janna was the Lead Auditor who undertook the audit preparations, site assessment and audit report compilation.	Tel: +27 11 4622 022
		Fax: +27 86 665 1864
		Email: <a href="mailto:janna@ntcgroup.co.za">janna@ntcgroup.co.za</a>

### 3. Audit Methodology

#### 3.1 Information Collation and Review

NTC reviewed the Prospecting Right EA and compiled a checklist, which contained the conditions verbatim (Table 5), that required compliance assessment. During the audit checklist compilation, NTC developed and submitted an information request to HMM in order to begin collation and review thereof. The information verified during the audit included *inter alia*:

- Hotazel Prospecting Right EMP (May 2005);
- Hotazel Prospecting Work Programme (May 2005);
- Topographical layout map;
- Authorisation Compliance Assessment, WSL Aug 16;
- Auditor was guided by HMM personnel through the **Enviro-Sys** online system;
- Proof of submission of the Prospecting Progress Report in terms of MPRDA Regulation 8 (dated 17 December 2015 and stamped acknowledgement 7 January 2016);
- Proof of submission of the EMP Performance Assessment Report in terms of MPRDA Regulation 55 (dated 17 December 2015 and stamped acknowledgement 7 January 2016);
- Environmental Induction Programme, July 2016;
- Various Monthly Tool Box Talk Environmental Topics;
- Contractual Lead / Satisfaction Report, July 2016;
- Waste Site G:S:B+ Permit (B33/2/441/20/P156 dated 23 February 1995);
- Vehicle Inspection and Service Records:
  - Drill Rig Compliance Checklist for MDX319 (WSL-ENG-CHK-0011) May 2016;
  - Drill Rig Compliance Checklist for MDX310 (WSL-ENG-CHK-0011) May 2016;
  - LDV Surface Compliance Checklist (WSL-ENG-CHK-038) for License BG87TVGP, May 2016;
  - LDV Surface Compliance Checklist (WSL-ENG-FRM-050) for License BG87TVGP, June 2016;
  - Compliance Checklist Road Going Loader Truck (MDX 209), June 2016;
- Waste Management Plan (August 2016) Ref: HMM-HSE-SOP-006;
- Hazardous Material Management (Ref: HMM-HSE-SOP-029);
- Quotation for removal of listed wastes verified (Waste Management Proposal - Infra Hazardous Waste) dated 2 November 2016;
- Land and Biodiversity Management Plan (Ref: HMM-HSE-SOP-050, February 2016);
- Manganese SA Asset / HMM, Closure Plan, (FY2014);
- Hotazel Financial Cost, 2016 (FY15);
- Land Disturbance Approval Procedure (HMM-HSE-SOP-066, dated January 2016);
- Hydrocarbon Spill Management Procedure (HMM-HSE-SOP-067, dated February 2016); and

- Hotazel Mine – Exploration Borehole Geotechnical Assessment (July 2016) including before and after photos of each drill site.

### 3.2 Site Verification

The site assessment was completed on 22 November 2016 by Janna Bedford-Owen (NTC), Tendani Lukhaimane (HMM Geologist), and Sylvia Makoele (HMM Environmental Specialist). During the site assessment additional documents were collated and information was verified, HMM personnel were interviewed and selected areas in the prospecting right were visited i.e. verified using photographic evidence presented in Appendix B.

### 3.3 Assessment Methodology

NTC assessed each of the EA conditions according to the criteria provided in Table 3. Only conditions in the Partial- or Non- compliance categories were given recommendations for rectification.

Table 3: Assessment Criteria

Criteria	Acc	Description
<b>Compliant</b>	<b>C</b>	Full Compliance is when the construction or operational activities comply with the EA conditions. No mitigation measures are required where operations comply.
<b>Partially Compliant</b>	<b>PC</b>	Partial Compliance is when construction or operational activities are compliant with some but not all the requirements of the EA condition. Areas where activities could be improved upon are recorded as Partial-Compliances. Partial-Compliances have a low priority and should be addressed only once Non- Compliances have been addressed satisfactorily.
<b>Non-Compliant</b>	<b>NC</b>	Non-Compliance is when construction or operational activities are in contravention with the EA conditions and have the potential to impact on the environment in a detrimental manner. Non-compliance may also be associated with activities breaching legislation. Non-Compliance findings have a high priority and mitigation measures are mandatory
<b>Not Applicable</b>	<b>N/A</b>	Not Applicable is assigned to EA conditions which no longer occur, that do not apply to current activities that may be incorrect and require amendment, fall outside the audit period and/or are duplicates of existing conditions.

The timeframe in which proposed recommendations should be implemented are presented in Table 4.

Table 4: Recommendation timeframes

Timeframe	Description
Short Term	0 – 3 months.
Medium Term	3 – 6 months
Long Term	6 – 12 months

## 4. Results

### 4.1 Summary of Results

This section is aimed at highlighting the identified non-compliances so HMM can prioritise implementation of recommendations and rectification actions. Partial-compliances which are recurring or, in the opinion of the auditor, warrant rectification have been included. The full audit details are included in Table 5 below.

#### 4.1.1 Non-Compliances

##### **F2.4.1 Establishing the vehicle maintenance yard and secured storage areas (d): The location of both the vehicle maintenance yard and the storage areas are to be indicated on the layout plan.**

***Finding:***

Although a vehicle maintenance yard was not required at site, the storage areas were not indicated on the layout plan.

***Recommendation: Short Term***

Details such as drill site location, additional infrastructure and buildings used for prospecting activities should be included on the layout map.

##### **F4.1 Inspections and monitoring (e): Visual inspection on erosion and physical pollution shall be carried out on a regular basis**

***Finding:***

Commitment F4.1(d) refers. HMM reported that visual inspections on erosion and physical pollution were not completed.

***Recommendation: Medium Term***

Regular visual inspections should be completed for future prospecting activities. Where applicable, the provision of additional resources to ensure this is completed should be considered and/or provided by HMM.

#### 4.1.2 Partial Compliances

**F1.3 Responsibility (b): It is the responsibility of the holder of the mining/prospecting right to ensure that the management on the site and the employees are capable of complying with the statutory requirement which must be met in order to mine, which includes implementation of this EMP**

***Finding:***

The induction process includes environmental training (Environmental Induction Programme, July 2016). Various monthly environmental management/awareness topics are discussed during tool box talks on site.

However, HMM reported that compliance inspections in this regard were not undertaken, and it is not clear if implementation of the EMP was conducted on site.

***Recommendation: Medium Term***

The EMP should form part of the induction and contractors pack to ensure implementation during prospecting activities.

**F2.2.1 Establishing access roads on the site (d): If erection of gates / fence lines and the open or closed status of the gates in new and existing positions shall be clarified in consultation with the landowner/tenant and maintained throughout the operational period.**

***Finding:***

The auditor observed gates/fences on existing roads within the prospecting area (Appendix B: Figures 1 and 2). HMM reported that consultation with tenants in this regard was unknown. These gates are maintained by HMM.

***Recommendation: Medium Term***

HMM should consult tenants and agreement/acknowledgement of the use of access roads and the location of gates/fences.

**F2.2.1 Establishing access roads on the site (d): Inspections and monitoring shall be carried out on both the implementation of the programme and the impact on plant and animal life.**

***Finding:***

HMM implement a Land and Biodiversity Management Plan (Ref: HMM-HSE-SOP-050, February 2016). This plan did note that a vegetation survey was not completed. The plan called for monitoring on site, however HMM reported that no such inspections or monitoring on the EMP or Plant/Animal impacts was occurring at the prospecting area.

***Recommendation: Medium Term***

HMM should undertake regular inspections and monitoring on both the EMP and that should be inclusive of Plant/Animal impacts. Where applicable, the provision of additional resources to ensure this is completed should be considered and/or provided by HMM.

## 4.2 Audit Findings

Table 5: Compliance Audit Findings and Recommendations

	Condition	Comp	Finding	Recommendations
	<p><b>Section F: F1.1.1 Site Layout</b></p> <p><i>"An application contemplated in sub-regulation (1) must be accompanied by a plan that must contain –</i></p> <ul style="list-style-type: none"> <li><i>(a) the co-ordinates of the land or area applied for;</i></li> <li><i>(b) the north point;</i></li> <li><i>(c) the scale to which the plan has been drawn;</i></li> <li><i>(d) the name, number and location of the land or area covered by the application; and</i></li> <li><i>(e) in relation to farm boundaries and surveyed points-</i> <ul style="list-style-type: none"> <li><i>(i) the size and shape of the proposed area;</i></li> <li><i>(ii) the boundaries of the land or area comprising the subject of the application concerned;</i></li> <li><i>(iii) the layout of the proposed reconnaissance, prospecting, exploration, mining or production operations;</i></li> <li><i>(iv) surface structures and servitudes;</i></li> <li><i>(v) the topography of the land or area; "</i></li> </ul> </li> </ul>			
a)	A copy of the layout as provided for in Regulations 2.2 must be available at the prospecting/mining site for scrutiny when required.	C	The prospecting area layout as shown in figures above is submitted to the DMR as part of an annual progress report (proof of submission was verified as 17 December and acknowledge by the DMR on 7 January 2016)) and is in compliance with Regulation 2.2 as required. (Although servitude and drilling site location is not presented on a map, the coordinates and photographic evidence is).	None
b)	A final layout must be submitted at closure of the mine of when operations have ceased.	N/A	The drilling activities have been decommissioned, however closure will not occur within the audit period.	
c)	The plan must be updated on a regular basis with regard to the actual progress of the establishment of surface infrastructure, mining operations and	C	The prospecting area layout as shown in figures above is submitted to the DMR as part of an annual progress report (Although servitudes, storage or	None.

Condition	Comp	Finding	Recommendations
final rehabilitation (a copy of the updated plan shall be forwarded to the Regional Manager on a regular basis).		security buildings, and drilling site locations are not presented on a map, the coordinates and photographic evidence is).	
<b>F1.1.2 Demarcating the Mining/Prospecting Area</b>			
<b>a)</b> The mining/prospecting area must be clearly demarcated by means of beacons at its corners, and along its boundaries if there is no visibility between the corner beacons.	<b>C</b>	The prospecting area is clearly demarcated by means of a fence along its boundary (Appendix B: Figures 3 and 4).	None.
<b>b)</b> Permanent beacons as indicated on the layout plan or as prescribed by the Regional Manager must be firmly erected and maintained in their correct position throughout the life of operation.	<b>C</b>	Following on from commitment F1.1.1 (c) the site is clearly fenced and the corners of this represent beacons as referenced here. The corner points are indicated on the site layout.	None.
<b>c)</b> Mining/Prospecting and resultant operations shall only take place within this demarcated area.	<b>C</b>	All drilling sites were within the fenced area and as such no prospecting activities were observed to have occurred outside the demarcated area.	None.
<b>F1.1.3 Demarcating the River and Riverine Environment</b>			
<b>a)</b> Beacons as indicated on the layout plan or prescribed by the Regional Manager must be erected and maintained in their correct position throughout the life of operation.	<b>C</b>	As per F1.1.2 (b).	None.
<b>b)</b> These beacons must be of a permanent nature during the operations and must not be easily removable, especially those in a river channel. The beacons must, however, be removed at the end of the operations.	<b>C</b>	As per F1.1.2 (b). The prospecting area and activities do not occur with a river/riverine area.	None.

Condition	Comp	Finding	Recommendations
c) The mining of and prospecting for any mineral shall only take place within this demarcated mining area.	<b>C</b>	As per F1.1.2 (c).	None.
d) If the riverine vegetation is present in the form of reeds or wetland vegetation, the presence of these must be entered in Part C1.45 of the EMPlan (hereafter referred to as the EA) and indicated on the layout plan.	<b>N/A</b>	The application noted that the nearest watercourse was in excess of 60m from the prospecting site. This watercourse is the non-perennial Ga-magara. The auditor confirmed that there is no watercourse on the site, nor were the drilling sites located in areas containing riverine or wetland vegetation (Appendix B: Figures 5 – 9).	
e) The holder of the mining permit/prospecting right will also be required to permanently demarcate the areas as specified in F1.1.2.	<b>N/A</b>	The auditor confirmed that there is no watercourse on the site, nor is it located within a wetland, pan and/or flood line (Appendix B: Figures 5 – 9).	
<b>F1.2 Restrictions of Mining/Prospecting</b>			
a) On assessment of the application, the Regional Manager may prohibit the conducting of mining or prospecting operations in vegetated areas or over portions of these areas.	<b>N/A</b>	No such prohibitions or similar limitations/restrictions were issued by the Regional Manager.	
b) In the case of areas that are excluded from the mining or prospecting, no operation shall be conducted within 5 m of these areas.	<b>N/A</b>	No such prohibitions or similar limitations/restrictions were issued by the Regional Manager.	
<b>F1.3 Responsibility</b>			
a) The environment affected by the mining/prospecting operations shall be rehabilitated by the holder, as far as practical, to	<b>N/A</b>	The prospecting right expires in 2017 and although prospecting activities have ceased and drilling sites	

Condition	Comp	Finding	Recommendations
<p>its natural state or to a predetermined and agreed standard or land use which conforms with the concept of sustainable development. The affected environment shall be maintained in a stable condition that will not be detrimental to the safety and health of humans and animals and that will not pollute the environment or lead to the degradation thereof.</p>		<p>decommissioned (Appendix B: Figures 5 – 9) rehabilitation will only be undertaken post 2017.</p> <p><i>Note: HMM reported that the prospecting activities occurred within a previously mined area forming part of a larger mining area. As such, rehabilitation and closure responsibilities for the prospecting activities will form part of the larger mining operations responsibilities. The auditor confirmed inclusion of the prospecting area under the mine rehabilitation, closure and financial plans/report.</i></p>	
<p><b>b)</b> It is the responsibility of the holder of the mining/prospecting right to ensure that the management on the site and the employees are capable of complying with the statutory requirement which must be met in order to mine, which includes implementation of this EMP.</p>	<p><b>PC</b></p>	<p>The induction process includes environmental training (Environmental Induction Programme, July 2016). Various monthly environmental management/awareness topics are discussed during tool box talks on site.</p> <p>However, HMM reported that compliance inspections in this regard were not undertaken, and it is not clear if implementation of the EMP was conducted on site.</p>	<p>The EMP should form part of the induction and contractors pack to ensure implementation during prospecting activities.</p> <p><b>Medium Term: 3 – 6 months</b></p>
<p><b>c)</b> If operations are to be conducted in an area that has already been disturbed, the holder must reach specific agreement with the regional Manager concerning the responsibilities imposed upon himself/herself pertaining to the rehabilitation of the area and the pollution control measures to be implemented.</p>	<p><b>N/A</b></p>	<p>Commitment F1.3(a) refers. The responsibility for closure and final rehabilitation remains with HMM. The closure plan will be submitted to the DMR for approval prior to implementation.</p>	<p>If transfer of liabilities is required by HMM, HMM must consult with the Regional Manager and obtain agreement to any transfer of liabilities as per this commitment.</p>

Condition	Comp	Finding	Recommendations
<b>F2 – INFRASTRUCTURE REQUIREMENTS</b>			
<b>F2.1 Topsoil</b>			
a)		The prospecting activities comprised drilling of boreholes and setup of associated drilling rigs. This required removal of vegetation only. No top soil was removed from the drilling sites. <i>NOTE: HMM reported that the Land Disturbance Approval Procedure (HMM-HSE-SOP-066 dated January 2016) is implemented when land disturbance as listed therein is required.</i>	
b)	N/A	Commitment F1.2(a) refers.	
c)	N/A	Commitment F1.2(a) refers.	
d)	N/A	Commitment F1.2(a) refers.	
e)	N/A	Commitment F1.2(a) refers.	
<b>F2.2 ACCESS TO THE SITE</b>			
<b>F2.2.1 Establishing access roads on the site</b>			

Condition	Comp	Finding	Recommendations
<p><b>a)</b> The access road to the mining/prospecting area and the camp/site office must be established in consultation with the landowner/tenant and existing roads shall be used as far as practical.</p>	<b>C</b>	<p>The auditor confirmed, during the site assessment, that existing access roads were utilised (Appendix B: Figures, 5, 8 – 9). Minimum vegetation clearance was conducted to allow access to selected drilling sites (average of less than 10m) (Appendix B: 10 – 14).</p>	<p>None.</p>
<p><b>b)</b> Should a portion of the access road be newly constructed the following must be adhered to:</p> <ul style="list-style-type: none"> <li>• The route shall be selected that a minimum number of bushes or trees are felled and existing fence lines shall be followed as far as possible.</li> <li>• Watercourse and steep gradients shall be avoided as far as practical</li> <li>• Adequate drainage and erosion protection in the form of cut-off berms or trenches shall be provided where necessary.</li> </ul>	<b>C</b>	<p>Commitment F2.2.1(a) refers. The requirements stipulated herein were adhered to (as observed by the auditor) (Appendix B: Figures 8 – 9).</p>	<p>None.</p>
<p><b>c)</b> If imported material is used in the construction or upgrading of the access road this must be listed in C 2.17</p>	<b>N/A</b>	<p>No imported materials were used.</p>	
<p><b>d)</b> The erection of gates in fence lines and the open or closed status of the gates in new and existing positions shall be clarified in consultation with the landowner/tenant and maintained throughout the operational period.</p>	<b>PC</b>	<p>The auditor observed gates/fences on existing roads within the prospecting area (Appendix B: Figures 1 – 2). HMM reported that consultation with tenants in this regard was unknown. These gates are maintained by HMM.</p>	<p>HMM should consult tenants and agreement/acknowledgement of the use of access roads and the location of gates/fences. <b>Medium Term: 3 – 6 months</b></p>

Condition	Comp	Finding	Recommendations
e) No other routes will be used by the vehicles or personnel for the purpose of gaining access to the site.	C	The auditor did not observe alternative roads providing access to the prospecting area. Similarly, the auditor observed that access to the site is strictly controlled and gate keys are held by the HMM Security Office (and only available on approved request) (Appendix B: Figures 3 – 4).	None.
<b>F2.2.2 Maintenance of access roads</b>			
a) In the case of dual or multiple use of access roads by other users, arrangements for multiple responsibility must be made with the other users. If not, the maintenance of the access road shall be the responsibility of the holder of the mining/prospecting right.	C	HMM reported that all access roads in the prospecting area are its responsibility. <i>NOTE: HMM further added that tenants utilise alternative access roads around property (outside the prospecting area), but that the person responsible for maintenance thereof is unknown (not HMM).</i>	None.
b) Newly constructed access roads shall be adequately maintained so as to minimise dust, erosion or undue surface damage.	N/A	No new access roads were required.	
<b>F2.2.3 Dust control on the access and haul roads</b>			
a) The liberation of dust into the surrounding environment shall be effectively controlled by the use of <i>inter alia</i> water spraying and/or other dust allaying agents. The speed of haul trucks and other vehicles must be strictly controlled to avoid dangerous conditions; excessive dust or excessive deterioration of the road being used.	C	The auditor observed dust management control measures such as water spraying and speed limit signage on the access roads leading into and around the prospecting site (roads that are still utilised). No excessive dust or road deterioration was observed during the site assessment (Appendix B for a general overview of site conditions).	None.
<b>F2.2.4 Rehabilitation of access road</b>			

Condition	Comp	Finding	Recommendations
<p><b>a)</b> Wherever a mining/prospecting right is suspended, cancelled or abandoned or if it lapses and the holder does not wish to renew the permit or right, any access road or portions thereof, constructed by the holder which will no longer be required by the landowner/tenant, shall be removed and/or rehabilitated to the satisfaction of the Regional Manager.</p>	<p><b>N/A</b></p>	<p>Commitment F1.1.3(a) refers. The prospecting right expires in 2017 and although prospecting activities have ceased and drilling sites decommissioned, final rehabilitation will only be undertaken post 2017.</p>	
<p><b>b)</b> Any gate or fence erected by the holder which is not required by the landowner/tenant shall be removed and the situation restored to the pre-mining/prospecting situation.</p>	<p><b>N/A</b></p>	<p>Commitment F1.1.3(a) and F2.2.4(a) refer.</p>	
<p><b>c)</b> Roads shall be ripped or ploughed, and if necessary, appropriately fertilized (based on a soil analysis) to ensure the regrowth of vegetation. Imported road construction materials which may hamper regrowth of vegetation must be removed and disposed of in an approved manner prior to rehabilitation.</p>	<p><b>N/A</b></p>	<p>Commitment F1.1.3(a) and F2.2.4(a) refer.</p>	
<p><b>d)</b> If a reasonable assessment indicates that the re-establishment of vegetation is unacceptably slow, the Regional Manager may require that the soil be analysed and any deleterious effects on the soil arising from the mining/prospecting operation, be</p>	<p><b>N/A</b></p>	<p>Commitment F1.1.3(a) and F2.2.4(a) refer.</p>	

	Condition	Comp	Finding	Recommendations
	corrected and the area be seeded with a seed mix to the Regional Manager's specification.			
<b>F2.3 OFFICE/CAMP SITES</b>				
<b>F2.3.1 Establishing office / camp sites</b>				
<b>a)</b>	Office and camp sites shall be established, as far as practical, outside the floodplain, above the 1:50 year flood level mark within the boundaries of the mining/prospecting area.	<b>C</b>	An office/camp for drilling was not required. The auditor noted that an abandoned mine office was used for minimal equipment storage, and a security hut was present on site. These were located outside the 1:50yr flood line and within the boundaries of the mining/prospecting area (Appendix B: Figures 5 – 9).	None.
<b>b)</b>	The area chosen for these purposes shall be the minimum reasonably required and which will involve the least disturbance to vegetation. Topsoil shall be handled as described in F2.1 above.	<b>C</b>	Existing buildings were used where possible (Appendix B: Figure14), and the security hut was observed to be minimal size required for its purpose.	None.
<b>c)</b>	No camp or site office shall be located closer than 100 meters from a stream, river, spring, dam or pan.	<b>N/A</b>	The auditor confirmed that there is no watercourse on the site, nor is it located within a wetland, pan, and/or flood line (Appendix B: Figures 5 – 9).	
<b>d)</b>	No trees or shrubs will be felled or damaged for the purpose of obtaining firewood, unless agreed to by the landowner/tenant.	<b>C</b>	Damage to tree or shrubs for purposes of fires is strictly prohibited and forms part of the employee and/or contractor induction (Environmental Induction Programme, July 2016).	None.
<b>e)</b>	Fires will only be allowed in facilities or equipment specially constructed for this purpose. If required by applicable legislation, a fire-break shall be	<b>C</b>	The restriction of fires on site forms a part of the employee and/or contractor induction (Environmental Induction Programme, July 2016).	None.

	Condition	Comp	Finding	Recommendations
	cleared around the perimeter of the camp and office sites.		A fire break was observed along the boundary and access road between the prospecting area and adjacent farmer (tenant) (Appendix B: Figure 16).	
<b>f)</b>	Lighting and noise disturbance or any other form of disturbance that may have an effect on the landowner/tenant/persons lawfully in the vicinity shall be kept to a minimum.	<b>C</b>	The auditor did not observe light or noise disturbances during the site assessment. Furthermore, drilling activities were located a sufficient distance from adjacent landowners/tenants to ensure minimal disturbance during operations.	None.
<b>F2.3.2 Toilet facilities, waste water and refuse disposal</b>				
<b>a)</b>	As a minimum requirement, the holder of the mining permit/prospecting right shall, at least, provide pit latrines for employees and proper hygiene measures shall be established.	<b>C</b>	HMM reported that a chemical toilet was located on site for drilling contractor and employee use. This was serviced by prestige while daily management and maintenance was completed by HMM personnel (Contractual Lead / Satisfaction Report, July 2016)	None.
<b>b)</b>	Chemical toilet facilities or other approved toilet facilities such as a septic drain shall preferably be used and sited on the camp site in such a way that they do not cause water or other pollution.	<b>C</b>	HMM reported that a chemical toilet was not the source of pollution and no incidents or spills were reported in this regard. It was further reported that spills are managed in accordance with the Hydrocarbon Spill Management Procedure (HMM-HSE-SOP-067, dated February 2016). The chemical toilet had been removed from site at the time of the audit.	None.
<b>c)</b>	The use of existing facilities must take place in consultation with the landowner/tenant.	<b>N/A</b>	No such facilities were used.	

Condition	Comp	Finding	Recommendations
<b>d)</b> In cases where facilities are linked to existing sewerage structures, all necessary regulatory requirements concerning construction and maintenance should be adhered to.	<b>N/A</b>	No links to existing sewage structures was required or used.	
<b>e)</b> All effluent water from the camp washing facility shall be disposed of in a properly constructed French drain, situated as far as possible, but not less than 200m away from any stream, river, pan, dam or borehole.	<b>N/A</b>	HMM reported that a camp washing facility was not required.	
<b>f)</b> Only domestic type water shall be allowed to enter this drain and any effluents containing oil, grease or other industrial substances must be collected in a suitable receptacle and removed from the site, either for resale or appropriate disposal at a recognised facility.	<b>N/A</b>	HMM reported that a camp washing facility was not required.	
<b>g)</b> Spills should be cleaned up immediately to the satisfaction of the Regional Manager by removing the spillage together with the polluted soil and by disposing of them at a recognised facility.	<b>N/A</b>	HMM reported that no reportable spills occurred during drilling activities.	
<b>h)</b> Non-biodegradable refuse such as glass bottles, plastic bags, metal scrap etc. shall be stored in a container at a collecting point and collected on a regular basis and disposed of at a recognised disposal facility. Specific precautions shall be	<b>C</b>	The drilling activities had ceased at the time of the site assessment and no camp site was required. However, HMM reported that bins for domestic, hazardous and recyclables were located on site during drilling. Waste from all waste receptacles on	None.

	Condition	Comp	Finding	Recommendations
	taken to prevent refuse from being dumped on or in the vicinity of the camp site.		site is collected and stored temporarily at the Wessels waste collection point prior to disposal. The Non-biodegradable waste is currently disposed to the mine owned and operated G:S:B+ waste dump (Ref: B33/2/441/20/P156 dated 23 February 1995).	
i)	Biodegradable refuse generated from the office/camp site, processing areas, vehicle yard, storage area or any other area shall either be handled as indicated above or be buried in a pit excavated for that purpose and covered with layers of soil, incorporating a final 0.5 metre thick layer of topsoil (where applicable). Provision should be made for future subsidence of the covering.	C	Commitment F2.3.2(h) refers.	None.
<b>F2.3.3 Rehabilitation of the office/camp site</b>				
a)	On completion of operations, all buildings, structures or objects on the camp/office site shall be dealt with in accordance with Section 44 of the MPRDA.	N/A	Commitment F1.3(a) refers. The prospecting right expires in 2017 and although prospecting activities have ceased and drilling sites decommissioned, final rehabilitation will only be undertaken post 2017.	
b)	Where office/camp sites have been rendered devoid of vegetation/grass or where soils have been compacted owing to traffic, the surface shall be scarified or ripped.	N/A	Commitment F1.3(a) and F2.3(a) refer. The prospecting right expires in 2017 and although prospecting activities have ceased and drilling sites decommissioned, final rehabilitation will only be undertaken post 2017.	

Condition	Comp	Finding	Recommendations
<p><b>c)</b> Areas containing French drains shall be compacted and covered with a final layer of topsoil to a height of 10cm above the surrounding ground surface.</p>	<p><b>N/A</b></p>	<p>Commitment F1.3(a) refers. The prospecting right expires in 2017 and although prospecting activities have ceased and drilling sites decommissioned, final rehabilitation will only be undertaken post 2017.</p>	
<p><b>d)</b> The site shall be seeded with a vegetation seed mix adapted to reflect the local indigenous flora.</p>	<p><b>N/A</b></p>	<p>Commitment F1.3(a) refers. The prospecting right expires in 2017 and although prospecting activities have ceased and drilling sites decommissioned, final rehabilitation will only be undertaken post 2017.</p>	
<p><b>e)</b> If reasonable assessment indicates that the re-establishment of vegetation is unacceptably slow, the Regional Manager may require that the soil be analysed and any deleterious effects on the soil arising from the mining/prospecting operation be corrected and the area be seeded with a vegetation mix to his/her specification.</p>	<p><b>N/A</b></p>	<p>Commitment F1.3(a) refers. The prospecting right expires in 2017 and although prospecting activities have ceased and drilling sites decommissioned, final rehabilitation will only be undertaken post 2017.</p>	
<p><b>f)</b> Photographs of the camp and office sites, before and during the mining/prospecting operation and after rehabilitation, shall be taken at selected fixed points and kept on record for the information of the Regional Manager.</p>	<p><b>N/A</b></p>	<p>Commitment F1.3(a) refers. The prospecting right expires in 2017 and although prospecting activities have ceased and drilling sites decommissioned, final rehabilitation will only be undertaken post 2017.</p>	
<p><b>F2.4 VEHICLE MAINTENANCE YARD AND SECURED STORAGE AREAS</b></p>			
<p><b>F2.4.1 Establishing the vehicle maintenance yard and secured storage areas</b></p>			

Condition	Comp	Finding	Recommendations
<p><b>a)</b> The vehicle maintenance yard and secured storage area will be established as far as is practical, outside the flood plain, above the 1 in 50 flood level mark within the boundaries of the mining/prospecting area.</p>	N/A	<p>The auditor confirmed that there is no watercourse on the site, nor is it located within a wetland, pan and/or flood line (Appendix B: Figures 5 – 9).</p> <p>A vehicle maintenance yard was not required. Vehicles and/or equipment/machinery requiring maintenance or servicing was removed to an offsite facility.</p>	
<p><b>b)</b> The area chosen for these purposes shall be the minimum reasonably required and involve the least disturbance to tree and plant life. Topsoil as per F2.1.</p>	N/A	<p>A vehicle maintenance yard was not required.</p>	
<p><b>c)</b> The storage area shall be securely fenced and all hazardous substances and stocks such as diesel, oils, detergents etc. shall be stored therein. Drip pans, a thin concrete slab or a facility with PVC lining, shall be installed in such storage areas with a view to prevent soil and water pollution.</p>	C	<p>The auditor was not able to confirm storage on site as drilling activities have ceased (July 2016). However, HMM requires that dangerous goods / hazardous substances are to be stored in drip pans capable of handling 110% of the largest container. The equipment store is within the prospecting area boundary fence, and locked inside the storage building.</p>	<p>None</p>
<p><b>d)</b> The location of both the vehicle maintenance yard and the storage areas are to be indicated on the layout plan.</p>	NC	<p>Although a vehicle maintenance yard was not required at site, the storage areas were not indicated on the layout plan.</p>	<p>Details such as drill site location, additional infrastructure and buildings used for prospecting activities should be included on the layout map.</p> <p><b>Medium Term: 3 – 6 months</b></p>

Condition	Comp	Finding	Recommendations
e) No vehicle may be extensively repaired in any place other than in the maintenance yard.	C	HMM reported that all vehicles and/or equipment/machinery requiring maintenance or servicing were removed to an offsite facility.	None
<b>F2.4.2 Maintenance of vehicles and equipment</b>			
a) The maintenance of vehicles and equipment used for any purpose during the mining/prospecting operation will take place only in the maintenance yard area.	C	HMM reported that all vehicles and/or equipment/machinery requiring maintenance or servicing were removed to an offsite facility.	None.
b) Equipment used in the mining/prospecting area must be adequately maintained so that during operations it does not spill oil, diesel, fuel or hydraulic fluid.	C	<p>Various vehicle and/or equipment/machinery inspection checklists (signed by the site manager and drilling contractor) were verified by the auditor:</p> <ul style="list-style-type: none"> <li>• Drill Rig Compliance Checklist for MDX319 (WSL-ENG-CHK-0011) May 2016;</li> <li>• Drill Rig Compliance Checklist for MDX310 (WSL-ENG-CHK-0011) May 2016;</li> <li>• LDV Surface Compliance Checklist (WSL-ENG-CHK-038) for License BG87TVGP, May 2016;</li> <li>• LDV Surface Compliance Checklist (WSL-ENG-FRM-050) for License BG87TVGP, June 2016;</li> <li>• Compliance Checklist Road Going Loader Truck (MDX 209), June 2016;</li> </ul>	None.

	Condition	Comp	Finding	Recommendations
c)	Machinery or equipment used on the mining/prospecting area must not constitute a pollution hazard in respect of the above substances. The Regional Manager shall order such equipment to be repaired or withdrawn from use if he/she considers the equipment or machinery to be polluting and irreparable.	<b>C</b>	HMM reported that all vehicles and/or equipment/machinery requiring maintenance or servicing were removed to an offsite facility. HMM further reported, the vehicles/equipment/machinery were not considered a pollution hazard and no instruction to remove vehicles/equipment/machinery was issued or received from the Regional Manager.	None.
<b>F2.4.3 Waste Disposal</b>				
a)	Suitable, covered receptacle shall be available at all times and conveniently placed for the disposal of waste.	<b>C</b>	<p>HMM utilise various standard operating procedures including:</p> <ul style="list-style-type: none"> <li>• Waste Management Plan (WMP) (August 2016) Ref: HMM-HSE-SOP-006;</li> <li>• Hazardous Material Management (Ref: HMM-HSE-SOP-029);</li> </ul> <p>The WMP indicates waste types, as well as the storage, transport and disposal requirements.</p> <p>The drilling activities had ceased at the time of the site assessment. However, HMM reported that bins for domestic, hazardous and recyclables were located on site during drilling. Waste from all waste receptacles on site is collected and stored temporarily at the Wessels waste collection point prior to disposal.</p>	None.

Condition	Comp	Finding	Recommendations
		<p>The domestic waste is currently disposed to the mine owned and operated G:S:B+ waste dump (Ref: B33/2/441/20/P156 dated 23 February 1995).</p> <p>HMM use an electronic system, Enviro-Sys, to manage environmental aspects, and this includes data recorded and trend analysis of waste handling/recycling/disposal on site (including the prospecting site).</p>	
<b>b)</b>	All used oils, grease or hydraulic fluids shall be placed therein and these receptacles will be removed from the site on regular basis for disposal at a registered or licensed disposal facility.	<b>C</b> Commitment F2.4.3(a) refers. Hazardous waste is removed and disposed of by Interwaste [Quotation for removal of listed wastes verified (Waste Management Proposal - Infra Hazardous Waste) dated 2 November 2016].	None.
<b>c)</b>	All spills should be cleaned up immediately to the satisfaction of the Regional Manager by removing the spillage together with the polluted soil and by disposing of them at a recognised facility.	<b>N/A</b> HMM reported that no reportable spills occurred during the audit period.	
<b>F2.4.4 Rehabilitation of vehicle maintenance yard and secured storage areas</b>			
<b>a)</b>	On completion of mining/prospecting operations, the above areas shall be cleared of any contaminated soil, which must be dumped as referred F2.4.3.	<b>N/A</b> Commitment F1.3(a) refers. The prospecting right expires in 2017 and although prospecting activities have ceased and drilling sites decommissioned, final rehabilitation will only be undertaken post 2017.	
<b>b)</b>	All buildings, structures or objects on the vehicle maintenance yard and secured storage areas	<b>N/A</b> Commitment F1.3(a) refers.	

	Condition	Comp	Finding	Recommendations
	shall be dealt with in accordance with Section 44 of the MPRDA.		The prospecting right expires in 2017 and although prospecting activities have ceased and drilling sites decommissioned, final rehabilitation will only be undertaken post 2017.	
<b>c)</b>	The surface area shall then be ripped or ploughed to a depth of at least 300mm and the topsoil previously stored adjacent the site, shall be spread evenly to its original depth over the whole area. The area shall then be fertilised if necessary (based on a soil analysis).	<b>N/A</b>	Commitment F1.3(a) refers. The prospecting right expires in 2017 and although prospecting activities have ceased and drilling sites decommissioned, final rehabilitation will only be undertaken post 2017.	
<b>d)</b>	The site shall be seeded with a vegetation seed mix adapted to reflect the local indigenous flora.	<b>N/A</b>	Commitment F1.3(a) refers. The prospecting right expires in 2017 and although prospecting activities have ceased and drilling sites decommissioned, final rehabilitation will only be undertaken post 2017.	
<b>e)</b>	If a reasonable assessment indicates that the re-establishment of vegetation is unacceptably slow, the Regional Manager may require that the soil be analysed and any deleterious effects on the soil arising from the mining/prospecting operation, be corrected and the area be seeded with a seed mix to the Regional Manager's specification.	<b>N/A</b>	Commitment F1.3(a) refers. The prospecting right expires in 2017 and although prospecting activities have ceased and drilling sites decommissioned, final rehabilitation will only be undertaken post 2017.	
<b>F3 OPERATING PROCEDURES IN THE MINING AREA</b>				
<b>F3.1 Limitation on mining/prospecting</b>				

Condition	Comp	Finding	Recommendations
<b>a)</b> The mining of or prospecting for precious stoned (assumed error) shall take place only within the approved demarcated mining or prospecting area.	<b>C</b>	<i>It is noted that precious stone referred to herein is erroneous as the prospecting right is for Manganese.</i> Drilling sites were located within the demarcated area, and the auditor did observe evidence of other drilling activities having occurred outside these demarcated areas.	None.
<b>b)</b> Mining/prospecting may be limited to the areas indicated by the Regional Manager on assessment of the application.	<b>C</b>	The prospecting right area was noted upon application approval by the DMR and related activities occurred within this demarcated boundary.	None.
<b>c)</b> The holder of the mining permit / prospecting right shall ensure that operations take place only in the demarcated areas (Section F1.1.2).	<b>C</b>	Commitment 33.1(a) refers.	None.
<b>d)</b> Operations will not be conducted closer than one and a half times the height of the bank from the edge of the river channel and in such a manner that the stability of the bank of the river is affected.	<b>N/A</b>	The auditor confirmed that there is no watercourse on the site, nor is it located within a wetland, pan, and/or flood line (Appendix B: Figures).	
<b>e)</b> Precautions shall also be taken to ensure that the bank of the river is adequately protected from scouring or erosion. Damage to the bank of the river caused by the operations, shall be rehabilitated to condition acceptable to the Regional Manager at the expense of the holder.	<b>N/A</b>	The auditor confirmed that there is no watercourse on the site, nor is it located within a wetland, pan, and/or flood line (Appendix B: Figures).	
<b>f)</b> Restrictions on the disturbance of the riverine vegetation in the form of reeds or wetland vegetation must be adhered to. The presence of	<b>N/A</b>	The auditor confirmed that there is no watercourse on the site, nor is it located within a wetland, pan, and/or flood line (Appendix B: Figures).	

	Condition	Comp	Finding	Recommendations
	these areas must be entered in Part of the programme and indicated in the layout plan.			
<b>F3.2 Mining/Prospecting operations within the riverine environment</b>				
<b>a)</b>	The mining of or prospecting for precious stones ( <i>assumed error</i> ) in the river or the banks of the river will be undertaken only after the Regional Manager has consulted with the Department of Water Affairs (now Department of Water and Sanitation “DWS”)	<b>N/A</b>	The auditor confirmed that there is no watercourse on the site, nor is it located within a wetland, pan, and/or flood line.  As such water use authorisation and consultation in this regard, was not required.	
<b>b)</b>	The canalisation of the river will not be undertaken unless the necessary permission has been obtained from the DWS. Over and above the conditions imposed by the said DWS, which conditions shall form part of this EA the following shall also apply:  The canalisation of the flow of the river over different parts of the river bed shall be constructed in such a manner that the following are adhered to at all times:  The flow of the river may not be impeded in any way and damming upstream may not occur. The canalisation of the flow may not result in scouring or erosion of the river-bank. Well points or extraction pumps in use by other riparian users may not be interfered with and canalisation may not impede the extraction of water at these points.	<b>N/A</b>	The auditor confirmed that there is no watercourse on the site, nor is it located within a wetland, pan, and/or flood line (Appendix B: Figures).  River canalization was not required nor undertaken by HMM.	
<b>c)</b>	Access to the riverbed for the purpose of conducting excavations in the riverbed, shall be through the use of only one access at a time. The	<b>N/A</b>	The auditor confirmed that there is no watercourse on the site, nor is it located within a wetland, pan, and/or flood line (Appendix B: Figures).	

	Condition	Comp	Finding	Recommendations
	location of the access to the river channel across the river bank shall be at a point of the river bank where the least excavation and damage to vegetation will occur and shall not be wider than is reasonably required. The position of the river access together with all planned future access points, must be indicated on the layout plan.		Access roads to possible watercourse areas outside the prospecting right were not observed.	
<b>F3.2.1 Rehabilitation of access to river bed</b>				
<b>a)</b>	When rehabilitating the access point, the original profile of the river bank will be established by backfilling the access point with the original material excavated or other suitable material.	<b>N/A</b>	Commitment F1.3(a) refers. The prospecting right expires in 2017 and although prospecting activities have ceased and drilling sites decommissioned, final rehabilitation will only be undertaken post 2017. The auditor confirmed that there is no watercourse on the site where drilling activities did occur.	
<b>b)</b>	The topsoil shall then be returned over the whole area to its original depth and if necessary fertilised and the vegetation allowed to grow.	<b>N/A</b>	Commitment F.3.2.1(a) refers.	
<b>c)</b>	If a reasonable assessment indicates that the re-establishment of vegetation is unacceptably slow, the Regional Manager may require that the soil be analysed and any deleterious effects on the soil arising from the mining/prospecting operation, be corrected and the area be seeded with a seed mix to the Regional Manager's specification.	<b>N/A</b>	Commitment F.3.2.1(a) refers.	

Condition	Comp	Finding	Recommendations
<b>d)</b>	In the event of damage from an occurrence where high flood waters scour and erode access points in the process of rehabilitation over the river bank or an access point currently in use, repair of such damage shall be the sole responsibility of the holder of the mining/prospecting right.	N/A	Commitment F.3.2.1(a) refers.
<b>e)</b>	Repair to the river bank to reinstate its original profile to the satisfaction of the Regional Manager must take place immediately after such event has occurred and the river has subsided to a point where repairs can be undertaken.	N/A	Commitment F.3.2.1(a) refers.
<b>f)</b>	Final acceptance of rehabilitated river access points will be awarded only after the vegetation has re-established to a point where the Regional Manager is satisfied that the river bank is stable and that the measures installed are of durable nature and able to withstand high river flow conditions.	N/A	Commitment F.3.2.1(a) refers.
<b>F3.2.1 Rehabilitation of mining/prospecting areas in the bed of the river</b>			
<b>a)</b>	The goal of the rehabilitation with respect to the area where mining/prospecting has taken place in the river bed is to leave the area level and even and in a natural state containing no foreign debris or other materials and to ensure the hydrological	N/A	Commitments F1.3(a) and F3.2.1(a) refer. No water course is present on site, and final rehabilitation activities will only occur post 2017.

Condition	Comp	Finding	Recommendations
integrity of the river by not attenuating or diverting any of the natural flow.			
<b>b)</b> All scrap and other foreign materials will be removed from the bed of the river and disposed of as per Section F2.3.2, whether these accrue directly from the mining/prospecting operation or are washed on to the site from upstream.	<b>N/A</b>	Commitments F1.3(a) and F3.2.1(a) refer. No water course is present on site, and final rehabilitation activities will only occur post 2017.	
<b>c)</b> Removal of these materials shall be done on a continuous basis and not only at the start of rehabilitation.	<b>N/A</b>	Commitments F1.3(a) and F3.2.1(a) refer. No water course is present on site, and final rehabilitation activities will only occur post 2017.	
<b>d)</b> Where reeds or other riverine vegetation have been removed from the areas, these shall be re-established systematically in the approximate areas where they occurred before mining/prospecting.	<b>N/A</b>	Commitments F1.3(a) and F3.2.1(a) refer. No water course is present on site, and final rehabilitation activities will only occur post 2017.	
<b>e)</b> An effective control programme for the eradication of invader species and other exotic plants shall be instituted on a regular basis over the entire area under the control of the holder, both during mining/prospecting and at the stage of final rehabilitation.	<b>N/A</b>	Commitments F1.3(a) and F3.2.1(a) refer. No water course is present on site for controlling these species and final rehabilitation activities will only occur post 2017.	
<b>F3.3 EXCAVATIONS</b>			
<b>F3.3.1 Establishing the excavation area</b>			

	Condition	Comp	Finding	Recommendations
a)	<p>Wherever any excavation is undertaken for the purpose of locating and/or extracting ore bodies of all types of minerals, including precious stone bearing gravels, the following operating procedures shall be adhered to:</p> <ul style="list-style-type: none"> <li>• Topsoil shall, in all cases (except when excavations are made in the river-bed), be handled as described in F 2.1 above.</li> <li>• Excavations shall take place only within the approved demarcated mining/prospecting area.</li> <li>• Overburden rocks and coarse material shall be placed concurrently in the excavations or stored adjacent to the excavation, if practicable, to be used as backfill material once the ore or gravel has been excavated.</li> <li>• Trenches shall be backfilled immediately if no ore or precious stone-bearing gravel can be located.</li> </ul>	N/A	HMM reported that no excavations were undertaken as part of the prospecting activities; only test borehole drilling was necessary.	
<b>F3.3.2 Rehabilitation of excavation areas</b>				
a)	The following operating procedures shall be adhered to”	N/A	Commitment F3.3.1(a) refers. No excavations were required for prospecting activities.	

Condition	Comp	Finding	Recommendations
<ul style="list-style-type: none"> <li>• The excavated area must serve as a final depositing area for the placement of tailings during processing.</li> <li>• Rocks and coarse material removed from the excavation must be dumped into the excavation simultaneously with the tailings.</li> <li>• Waste, as described in paragraph F 2.3.2 above, will not be permitted to be deposited in the excavations.</li> <li>• Once excavations have been refilled with overburden, rocks and coarse natural materials and profiled with acceptable contours and erosion control measures, the topsoil previously stored, shall be returned to its original depth over the area.</li> <li>• The area shall be fertilised if necessary to allow vegetation to establish rapidly. The site shall be seeded with a local or adapted indigenous seed mix in order to propagate the locally or regionally occurring flora.</li> <li>• If a reasonable assessment indicates that the re-establishment of vegetation is unacceptably slow, the Regional Manager</li> </ul>			

	Condition	Comp	Finding	Recommendations
	<p>may require that the soil be analysed and any deleterious effects on the soil arising from the mining/ prospecting operation, be corrected and the area be seeded with a vegetation seed mix to his or her specification.</p>			
<b>F3.4 PROCESSING AREAS AND WASTE PILES (DUMPS)</b>				
<b>F3.4.1 Establishing processing areas and waste piles</b>				
<b>a)</b>	<p>Processing areas and waste piles shall not be established within 100 metres of the edge of any river channel or other water bodies.</p>	<b>N/A</b>	<p>The prospecting activities did not and do not require a processing area on site. All core samples were transported to an offsite laboratory for analysis. No watercourses or similar were located near the drilling activities.</p>	
<b>b)</b>	<p>Processing areas should be established, as far as practicable, near the edge of excavations to allow the waste, gravel and coarse material to be processed therein.</p>	<b>N/A</b>	<p>Commitment F3.4.1(a) refers.</p>	
<b>c)</b>	<p>The areas chosen for this purpose shall be the minimum reasonably required and involve the least disturbance to vegetation.</p>	<b>N/A</b>	<p>Commitment F3.4.1(a) refers.</p>	
<b>d)</b>	<p>Prior to development of these areas, the topsoil shall be removed and stored as described in paragraph F 2.1 above.</p>	<b>N/A</b>	<p>Commitment F3.4.1(a) refers.</p>	

Condition	Comp	Finding	Recommendations
<b>e)</b> The location and dimensions of the areas are to be indicated on the layout plan and once established, the processing of ore containing precious stones shall be confined to these areas and no stockpiling or processing will be permitted on areas not correctly prepared.	<b>N/A</b>	Commitment F3.4.1(a) refers.	
<b>f)</b> Tailings from the extraction process must be so treated and/or deposited that it will in no way prevent or delay the rehabilitation process.	<b>N/A</b>	Commitment F3.4.1(a) refers.	
<b>F3.4.2 Rehabilitation of processing areas</b>			
<b>a)</b> Coarse natural material used for the construction of ramps must be removed and dumped into the excavations.	<b>N/A</b>	Commitment F.1.13(a) refers. The prospecting right expires in 2017 and although prospecting activities have ceased and drilling sites decommissioned, final rehabilitation will only be undertaken post 2017. The auditor confirmed that there is no watercourse on the site and drilling activities did occur within such.	
<b>b)</b> On completion of mining/prospecting operations, the surface of the processing areas especially if compacted due to hauling and dumping operations, shall be scarified to a depth of at least 300mm and graded to an even surface condition and the previously stored topsoil will be returned to its original depth over the area.	<b>N/A</b>	Commitment F3.4.2(a) refers.	

Condition	Comp	Finding	Recommendations
c) Prior to replacing the topsoil, the material that was removed from the prospecting area will be replaced in the same order as it originally occurred.	N/A	Commitment F3.4.2(a) refers.	
d) The area shall then be fertilised if necessary to allow vegetation to establish rapidly. The site shall be seeded with a local, adapted indigenous seed mix.	N/A	Commitment F3.4.2(a) refers.	
e) If a reasonable assessment indicates that the re-establishment of vegetation is unacceptably slow, the Regional Manager may require that the soil be analysed and any deleterious effects on the soil arising from the mining/prospecting operation be corrected and the area be seeded with a seed mix to his or her specification.	N/A	Commitment F3.4.2(a) refers.	
<b>F3.5 TAILINGS DAM(S) (SLIMES DAM)</b>			
a) The permission of the Regional Manager must be obtained should a tailings dam be constructed for the purpose of handling the tailings of the mining/prospecting operations. The construction, care and maintenance of tailings dams have been regulated as regulation 73, section 56 of the MPRDA.	N/A	A tailings dam was not required for purposes of the prospecting operations.	
<b>F3.6 FINAL REHABILITATION</b>			

Condition	Comp	Finding	Recommendations
a) All infrastructure, equipment, plant, temporary housing and other items used during the mining period will be removed from the site (section 44 of the MPRDA).	N/A	Commitment F1.3(a) refers. The prospecting right expires in 2017 and although prospecting activities have ceased and drilling sites decommissioned, final rehabilitation will only be undertaken post 2017.	
b) Waste material of any description, including receptacles, scrap, rubble and tyres, will be removed entirely from the mining area and disposed of at a recognised landfill facility. It will not be permitted to be buried or burned on the site.	N/A	Commitment F1.3(a) refers. The prospecting right expires in 2017 and although prospecting activities have ceased and drilling sites decommissioned, final rehabilitation will only be undertaken post 2017.	
c) Final rehabilitation shall be completed within a period specified by the Regional Manager.	N/A	Commitment F1.3(a) refers. The prospecting right expires in 2017 and although prospecting activities have ceased and drilling sites decommissioned, final rehabilitation will only be undertaken post 2017.	
<b>F4 MONITORING AND REPORTING</b>			
<b>F4.1 Inspections and monitoring</b>			
a) Regular monitoring of all the environmental management measures and components shall be carried out by the holder of the prospecting right, mining permit or reconnaissance permission in order to ensure that the provisions of this programme are adhered to.	C	NTC Group (Pty) Ltd was appointed as the independent EAP to undertake the 2015-2016 EA Compliance Assessment. This report provides evidence thereof. Similarly, proof of submission of the 2014-2015 Compliance Assessment Report to the DMR was verified by the auditor (submitted 17 December 2015, acknowledge 7 January 2016).	None.
b) Ongoing and regular reporting of the progress of implementation of this programme will be done.	C	As noted, NTC was appointed to assess compliance to the EA implementation and report compliance,	None.

	Condition	Comp	Finding	Recommendations
			non-compliance thereto, as well as provide trend analysis and recommendations for rectification.	
c)	Various points of compliance will be identified with regard to the various impacts that the operations will have on the environment.	C	Commitment F4.1(b) refers.	None
d)	Inspections and monitoring shall be carried out on both the implementation of the programme and the impact on plant and animal life.	PC	HMM implement a Land and Biodiversity Management Plan (Ref: HMM-HSE-SOP-050, February 2016). This plan did note that a vegetation survey was not completed. The plan called for monitoring on site, however HMM reported that no such inspections or monitoring on the EMP or Plant/Animal impacts was occurring at the prospecting area.	HMM should undertake regular inspections and monitoring on both the implementation of the programme and that should be inclusive of Plant/Animal impacts. Where applicable, the provision of additional resources to ensure this is completed should be considered and/or provided by HMM. <b>Medium Term: 3 – 6 months</b>
e)	Visual inspection on erosion and physical pollution shall be carried out on a regular basis.	NC	Commitment F4.1(d) refers. HMM reported that visual inspections on erosion and physical pollution were not completed.	Regular visual inspections should be completed for future prospecting activities. Where applicable, the provision of additional resources to ensure this is completed, should be considered and/or provided by HMM. <b>Medium Term: 3 – 6 months</b>

	Condition	Comp	Finding	Recommendations
f)	Regulation 55 promulgated in terms of the MPRDA.	C	This regulation has been replaced with NEMA Regulation 34. Commitment F4.1(b) refers.	None.
<b>F4.2 Compliance reporting/ submission of information</b>				
a)	Layout plans will be updated on a regular basis and updated copies will be submitted on a biennial basis to the Regional Manager.	C	The prospecting area layout as shown in figures above is submitted to the DMR as part of an annual progress report (proof of submission was verified as 17 December and acknowledge by the DMR on 7 January 2016) and is in compliance with Regulation 2.2 as required. (Although servitude and drilling site location is not presented on a map, the coordinates and photographic evidence is)	None.
b)	Reports confirming compliance with various points identified in the environmental management programme will be submitted to the Regional Manager on a regular basis and as decided by the said manager.	C	Commitment F4.1(b) refers.	None.
c)	Any emergency or unforeseen impact will be reported as soon as possible.	N/A	HMM reported that no reportable incidents or emergencies occurred during the audit period.	
d)	An assessment of environmental impacts that were not properly addressed or were unknown when the programme was compiled shall be carried out and added as a corrective action.	N/A	HMM reported that no reportable incidents or emergencies occurred during the audit period. Additionally, the drilling activities did not lead to the rise of additional or unknown impacts during the audit period.	
<b>F5 CLOSURE</b>				

Condition	Comp	Finding	Recommendations
<p>a) When the holder of the prospecting right, mining permit or reconnaissance permission intends closing down his/her operations, an environmental risk report shall accompany the application for closure. The requirements of such a risk report is contained in regulation 60 of the Regulations promulgated in terms of the Act.</p>	N/A	<p>Commitment F1.3(a) refers. The prospecting right expires in 2017 and although prospecting activities have ceased and drilling sites decommissioned, final rehabilitation will only be undertaken post 2017.</p> <p>NOTE: HMM has a mine closure plan, which is to be regularly updated and includes the prospecting right areas (Manganese SA Asset / HMM, Closure Plan, FY2014).</p>	
<b>F5.1 Environmental Risk report</b>			
<p>a) Regulation 60 of the MPRDA quoted.</p>	N/A	<p>Commitment F5(a) refers. The prospecting right expires in 2017 and although prospecting activities have ceased and drilling sites decommissioned, closure and final rehabilitation will only be undertaken post 2017.</p>	
<b>F5.2 Closure Objectives</b>			
<p>a) Closure objectives form part of this EA and must:</p> <ul style="list-style-type: none"> <li>a) Identify the key objectives for mine closure to guide the project design, development and management of environmental objectives;</li> <li>b) Provide broad future land use objective(s) for the site; and</li> <li>c) Provide proposed closure cost.</li> </ul>	C	<p>Closure objectives were not included into the referenced EA, however a separate Closure Plan was developed (2014) which included closure objectives to guide mine closure, provides broad future land use planning, and includes closure and final rehabilitation costs.</p>	None.
<b>F5.2 Contents of closure plan</b>			

	Condition	Comp	Finding	Recommendations
<b>a)</b>	<p>A closure plan forms part of the EA and must include the following:</p> <ul style="list-style-type: none"> <li>a) A description of the closure objective and how these relate to the prospecting or mine operation and its environmental and social setting;</li> <li>b) A plan contemplated in Regulation 2(2), coordinated according to generally accepted standards, showing the land or area under closure;</li> <li>c) A summary of the regulatory requirements and conditions for closure negotiated and documented in the environmental management programme or plan;</li> <li>d) A summary of the results of the environmental risk report and details of identified residual and latent impacts;</li> <li>e) A summary of the results of progressive rehabilitation undertaken;</li> <li>f) A description of the methods to decommission each prospecting or mining component and the mitigation or management strategy proposed to avoid, minimise and manage residual or latent impacts;</li> </ul>	<b>C</b>	<p>Commitment 5.1(a) refers. Nevertheless, HMM drafted a closure plan that incorporates the prospecting area and final rehabilitation requirements therein (Manganese SA Asset / HMM Closure Plan (FY2014)) and caters for items a) – k) as required, more specifically:</p> <ul style="list-style-type: none"> <li>a) Section 1 and 4 refers;</li> <li>b) A set plan will be developed as/when closure is required. Section 5.3 commits the provision of such design five years prior to closure.</li> <li>c) Section 4.1 refers.</li> <li>d) Section 6 refers.</li> <li>e) Section 5.2.3 refers.</li> <li>f) Sections 5.2 and 5.3 refer.</li> <li>g) Section 5.8 refers.</li> <li>h) Section 7 refers.</li> <li>i) A set plan will be developed as/when closure is required. Section 5.3 commits the provision of such design five years prior to closure.</li> <li>j) Section 5.7 refers.</li> <li>k) References and related documents listed.</li> </ul>	None.

	Condition	Comp	Finding	Recommendations
	g) Details of any long-term management and maintenance expected; h) Details of financial provision for monitoring, maintenance and post closure management, if required; i) A plan or sketch at an appropriate scale describing the final land use proposal and arrangements for the site; j) A record of interested and affected persons consulted; and k) Technical appendices, if any,			
<b>F5.4 Transfer of Environmental Liabilities to a competent person</b>				
a)	Should the holder of the prospecting right, mining permit or reconnaissance permission wish to transfer any environmental liabilities and responsibilities to another person or persons, the following will pertain: <ol style="list-style-type: none"> <li>1. An application to transfer environmental liabilities to a competent person in terms of section 48 of the Act, must be completed on Form O as set out in Annexure 1 to the Regulations and be lodged to the Minister for consideration.</li> <li>2. The holder of a prospecting right, mining permit may transfer liabilities and</li> </ol>	N/A	HMM did not transfer its' environmental liabilities during the audit period nor does HMM have intentions to do such in the near future.	This commitment is understood and should be adhered to as/when applicable.

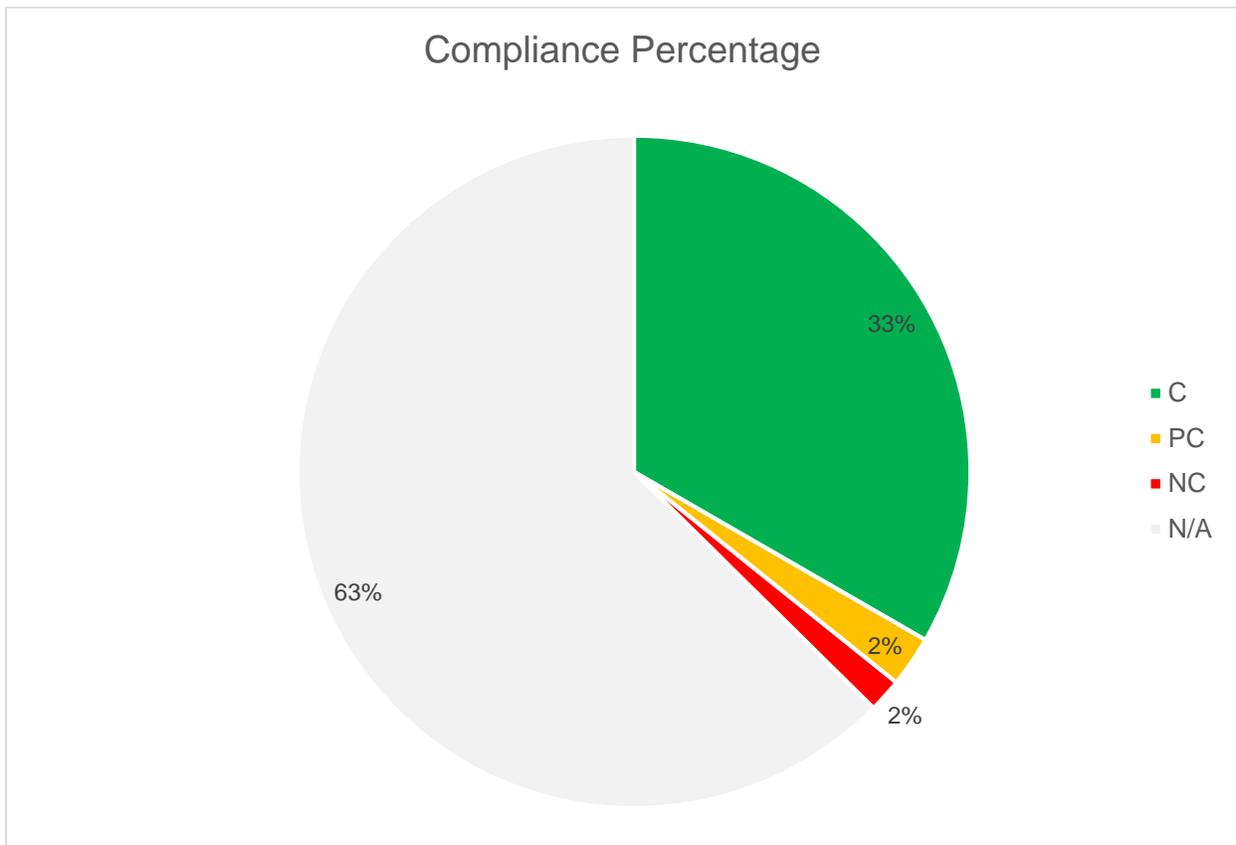
	Condition	Comp	Finding	Recommendations
	<p>responsibilities as identified in the environmental management plan and the required closure plan to a competent person as contemplated in Regulation 58.</p> <p>3. When considering the transfer of environmental liabilities and responsibilities in terms of section 48 of the Act, the Minister must consult with any State department which administers any law relating to matters affecting the environment.</p> <p>4. No transfer of environmental liabilities and responsibilities to a competent person may be made unless the Chief Inspector of Mines and the Department of Water and Sanitation have confirmed in writing that the person whom the liabilities and responsibilities is transferred to, have the necessary qualifications pertaining to health and safety and management of potential pollution of water resources.</p>			
<b>F5.5 Notes on legal provisions</b>				
<b>a)</b>	The holder of the prospecting right, mining permit or reconnaissance permission must also take cognisance of the provisions of other legislation	<b>C</b>	HMM developed and implemented a legal register (Authorisation Compliance Assessment, WSL Aug 16) which takes cognisance of the referred legislation	None

Condition	Comp	Finding	Recommendations
<p>dealing with matters relating to conservation, and which include, <i>inter alia</i>, the following:</p> <p>National Monuments Act, 1969 (Act 28 of 1969).  National Parks Act, 1976 (Act 57 of 1976)  Environmental Conservation Act, 1989 (Act 73 of 1989)  National Environmental Management Act, 1998 (Act No. 107 of 1998)  Atmospheric Pollution Prevention Act, 1965 (Act 45 of 1965)  The National Water Act, 1998 (Act 36 of 1998)  Mine Safety and Health Act, 1996 (Act 29 of 1996)  The Conservation of Agricultural Resources Act, 1983 (Act 43 of 1983).</p>		<p>(and where relevant amended and new acts relevant to the prospecting right and operations).</p>	

## 5. Conclusion

The Auditors noted that the prospecting activities, namely drilling of test boreholes, had ceased in July 2016 and the drill rigs were decommissioned and the test boreholes filled in August 2016. Furthermore, the prospecting area is situated within a previously disturbed area by both underground and open cast mining activities. HMM reported that closure and final rehabilitation of this previously mined area forms part of the HMM Closure and final rehabilitation plans. The above were considerations during the compliance assessment and notes in this regard were included in the audit findings where relevant.

The trend analysis results for the December 2015 – 2016 EA Compliance Assessment are presented graphically in the figure below.



**Figure 0-3: Summary of EA Percentage Compliance**

The above figure indicates that the main areas for improvement are:

- **EA Monitoring and Inspection:**

The implementation of the EA can be greatly improved through its inclusion in the contractor's pack and induction material. Similarly, regular inspection and reporting on the level of compliance with the EA during prospecting activities, by appointed site personnel, will ensure continual improvement and provide accurate records for annual assessment reporting. These inspections will also facilitate improved site management on a daily basis and prevent unwanted impacts arising.

- **Consultation with Tenants:**

It is understood that adjacent landowners/tenants utilise alternative access roads, and the maintenance of these roads does not form part of HMM duties. However, the landowners/tenants should be consulted to ensure their agreement thereto. Similarly, this consultation should include confirmation of which access roads are used and where gates or fences are and will be located.

- **Layout Map:**

The layout map outlining drilling activities includes majority of the information required by the DMR, however detail regarding storage or existing buildings was not included therein and should be included in future iterations of this layout map. This will provide an accurate record of all site activities and improve management thereof.

## APPENDIX A – CURRICULA VITAE & SPECIALIST DECLARATION OF INDEPENDENCE

The Environmental Assessment Practitioner General declaration:

I, Janna Bedford-Owen, declare that –

- I act as the independent environmental practitioner in this Audit;
- I will perform the work relating to the audit in an objective manner, even if this results in views and findings that are not favourable to the auditee;
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting environmental compliance audits, including knowledge of the Act, regulations and any guidelines that have relevance to the proposed activity;
- I will comply with the Act, Regulations and all other applicable legislation;
- I have not and will not engage in, conflicting interests in the undertaking of the activity;
- I will provide the competent authority with access to all information at my disposal regarding the audit, whether such information is favourable to the auditee or not; will perform all other obligations as expected from an environmental assessment practitioner in terms of the Regulations; and
- I realise that a false declaration is an offence in terms of regulation 48 and is punishable in terms of section **24F of the Act**.

### **Disclosure of Vested Interest (delete whichever is not applicable)**

I do not have and will not have any vested interest (either business, financial, personal or other) in the activity other than remuneration for work performed in terms of the Environmental Impact Assessment Regulations, 2014;

Signature 

Company: NTC Group (Pty) Ltd

Date: 2 December 2016

**APPENDIX B – PHOTOGRAPHIC EVIDENCE (DECEMBER 2015- DECEMBER 2016)**



Figure 1: Surrounding Access Road



Figure 2: Surrounding Access Road and gate



Figure 3: Prospecting Boundary Fence



Figure 4: Prospecting Access Gate



Figure 5: Prospecting Test Borehole (sealed)



Figure 6: Prospecting Test Boreholes (sealed)



Figure 7: Prospecting Test Borehole (sealed)



Figure 8: Prospecting Test Boreholes along the access road (sealed)



Figure 9: Prospecting Test Boreholes along the access road (sealed)



Figure 10: Prospecting Test Borehole (sealed) with remnants of vegetation clearing



Figure 11: Prospecting Test Borehole (sealed) with remnants of vegetation clearing



Figure 12: Prospecting Test Borehole (sealed) with remnants of vegetation clearing



Figure 13: Prospecting Test Borehole (sealed) with remnants of vegetation clearing



Figure 14: Prospecting Test Borehole (sealed) with remnants of vegetation clearing



Figure 15: Old mine office building utilised for storage



Figure 16: Firebreak along the adjacent tenant farmer's property