PROSPECTING RIGHT CLOSURE ON RE AND PORTION 2 OF MELKBOOM 209, PORTION 1 AND 4 OF MATJIESFONTEIN 210, PORTION OF MATJIESDRIFT 329, PORTION OF FARM 323 AND PORTION OF FARM 372

FINAL CLOSURE COMPLIANCE AUDIT REPORT, ENVIRONMENTAL RISK REPORT AND CLOSURE/REHABILITATION PLAN

DMR Ref Nr: WC 30/5/1/1/2/10032PR

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1. INTRODUCTION

DMR issued a Prospecting Right (PR) in respect of bentonite and zeolite prospecting activities on a total of 3098.185ha on RE and Portion 2 of Melkboom 209, Portion 1 and 4 of Martjiesfontein 210, Portion of Matjiesdrift 329, Portion of Farm 323 and Portion of Farm 372, within the Magisterial District of Mossel Bay, in the Western Cape Province.

Prospecting activities commenced during February 2014 and finished during September 2018 when the last and most recent rehabilitation work was done on site. Prospecting methods consisted of:

- Non-invasive desktop studies and foot surveys to create geological maps to determine where trenching and sampling will be necessary.
- Invasive trenching with a back-actor under constant geological specialist supervision so as to minimise unnecessary trenching and expenditure.
- During trenching the topsoil is separated and piled first on one side of the trench and the subsoil is piled separately. This is to conserve the topsoil and subsoil for rehabilitation purposes after sampling. Each trench is a maximum length of 30m, 1.2m wide and 2m deep. In total there were approximately 60 trenches and 268 boreholes sites created within the prospecting right area which disturbed less than 10ha of previously cultivated agricultural lands where samples were taken for analyses.
- A soil sample is then taken for testing and geological mapping and then the trench is firstly backfilled with the stored subsoil followed by the topsoil and then shaped according to surrounding topography to prevent any depressions from forming at the trenching site. Note all of the trenching, sampling and backfilling takes place on the same day.
- The trenching operations and sampling are followed-up by further desktop studies and if feasible drilling thereafter.

Following the results of the prospecting conducted the mining company do not intend to pursue a bentonite and zeolite mining right for the applicable properties at this stage.

Eco Impact was appointed to conduct and compile the final environmental compliance audit report, environmental risk report and rehabilitation/closure plan in support of the application for a prospecting right closure certificate to the DMR.

2. CONDITIONS RELATING TO THIS REPORT

The findings, results, observations, conclusions and recommendations given in this report are based on the author's best scientific and professional knowledge as well as available information. Eco Impact and its staff reserve the right to modify aspects of the report including the recommendations if and when new information may become available from on-going research or further work in this field, as pertaining to this investigation.

This report may not be altered or added to without the prior written consent of the author. This restraint also refers to electronic copies of this report which are supplied as sub portion of other reports, including main reports. Similarly, any recommendations, statements, or conclusions drawn from or based on this report must specifically refer to this report. If such comments form part of a main report for this investigation, the base line report must be included in its entirety as an appendix or separate section to the main report.

3. SCOPE AND TERMS OF REFERENCE FOR THE ASSESSMENT

The following extracts from the MPRDA Regulations are specifically applicable to the preparation of this report:

- **Regulation 56:** Principles for mine closure: In accordance with applicable legislative requirements for mine closure, the holder of a prospecting right, mining right, retention permit or mining permit must ensure that:
  (a) the closure of a prospecting or mining operation incorporates a process which must start at the commencement of the operation and continue throughout the life of the operation
  (b) risks pertaining to environmental impacts must be quantified and managed pro-actively, which includes the gathering of relevant information throughout the life of a prospecting or mining operation
  (c) the safety and health requirements in terms of the Mine Health and Safety Act (Act 29 of 1996) are complied with
  (d) residual and possible latent environmental impacts are identified and quantified
  (e) the land is rehabilitated, as far as is practicable, to its natural state, or to a predetermined and agreed standard or land use which conforms with the concept of sustainable development
  (f) prospecting or mining operations are closed efficiently and cost effectively

- **Regulation 60.** Environmental risk report

An application for a closure certificate must be accompanied by an environmental risk report that must include-

(a) the undertaking of a screening level environmental risk assessment where-
  (i) all possible environmental risks are identified, including those which appear to be insignificant;
  (ii) the process is based on the input from existing data;
  (iii) the risks that are considered are qualitatively ranked as –
    (aa) a potential significant risk;
    (bb) a uncertain risk;
    (cc) an insignificant risk;
(b) the undertaking of a second level risk assessment on issues classified as potential significant risks where-
  (i) appropriate sampling, data collection and monitoring be carried out;
  (ii) more realistic assumptions and actual measurements be made; and

(iii) a more quantitative risk assessment is undertaken, again classifying risks as posing a potential significant risk or insignificant risk.

(c) an assessment of whether risks classified as posing potential significant risks are acceptable without further mitigation;

(d) risks classified as uncertain risks be re-evaluated and re-classified as either posing potential significant risks or insignificant risks;

(e) documenting the status of insignificant risks;

(f) identifying alternative risk prevention or management strategies for potential significant risks that have been identified, quantified and qualified in the second level risk assessment; and

(g) agreeing on management measures to be implemented for the potential significant risks that must include –

(i) a description of the management measures to be applied; a predicted long-term result of the applied management measures;

(ii) the residual and latent impact after successful implementation of the management measures;

(iii) time frames and schedule for the implementation of the management measures;

(iv) responsibilities for implementation and long-term maintenance of the management measures;

(v) financial provision for long-term maintenance; and

(vi) monitoring programmes to be implemented.

- **Regulation 61:** Closure objectives-
  Closure objectives form part of the EMP, and must:
  (a) identify the key objectives for mine closure to guide the project design, development and management of environmental impacts
  (b) provide broad future land use objective(s) for the site
  (c) provide proposed closure costs

- **Regulation 62:** Contents of closure plan: A closure plan contemplated in section 43(3)(d) of the Act, forms part of the EMPR or EMP, as the case may be, and must include:
  (a) a description of the closure objectives and how these relate to the prospecting or mine operation and its environmental and social setting
  (b) a plan contemplated in regulation 2(2), showing the land or area under closure
  (c) a summary of the regulatory requirements and conditions for closure negotiated and documented in the EMPR or EMP, as the case may be
  (d) a summary of the results of the Environmental Risk Report and details of identified residual and latent impacts
  (e) a summary of the results of progressive rehabilitation undertaken
  (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
  (g) details of any long-term management and maintenance expected
  (h) details of a proposed closure cost and financial provision for monitoring, maintenance and post closure management

(i) a sketch plan drawn on an appropriate scale describing the final and future land use proposal and arrangements for the site
(j) a record of interested and affected persons consulted
(k) technical appendices, if any

This report also complies with the relevant requirement as listed in NEMA i.e. Appendix 5 of the NEMA EIA Regulations of 2014 (GNR 982 and GNR 327)

4. ENVIRONMENTAL CLOSURE COMPLIANE AUDIT

4.1 PROCEDURE USED FOR THE AUDIT

The client (prospecting right holder Midden Mining) provided the prospecting results report with associated maps of areas prospected and accompanied the specialist during the site visit to indicate rehabilitated prospecting sites.

A desktop review of available paperwork associated with compliance i.e. environmental management plan and prospecting right was conducted site visits were undertaken during May and September 2018 to assess the level of compliance according to the associated closure/rehabilitation objectives and overall impact on the environmental features as associated with the affected areas.

4.2 EVALUATION CRITERIA USED DURING THE AUDIT

Criteria were determined in terms of the requirements related to the prospecting closure and rehabilitation as according to the approved Environmental Management Programme, the Prospecting Right as well as best practice principles and requirements of the relevant legislation, particularly the Mineral and Petroleum Resources Development Act (Act 28 of 2002) and the National Environmental Management Act (Act 107 of 1998). See table 1 below for a list of the closure/rehabilitation requirements as according to the prospecting right (“PR”), prospecting work programme (“PWP”) and environmental management programme (“EMP”).

4.3 RESULTS OF THE ENVIRONMENTAL CLOSURE/REHABILITATION COMPLIANCE AUDIT

Reference i.e. **PR –** Prospecting Right **PWP** – Prospecting Work Programme **EMP-** Environmental Management Plan	**Closure/Rehabilitation Requirement**	**Compliance**	**Non-compliance**	**Further actions required and/or notes**
PR 4.2.1	Furnish the Regional Manager with all prospecting results and/or information, as well as the general evaluation of the geological, geophysical and borehole data in respect of such abandoned area in so far as it applies to the mineral or any other mineral/s obtained in respect of this right	Prospecting reports were submitted by Mr. Robert Barnett to the DMR.		
PR 4.2.4	Apply for a closure certificate in terms of section 43(3) of the MPRD Act	In progress.		Application process currently in progress.
PWP Table 5.1 - 4	Infilling of pit and trenches and environmental repair of drilling sites immediately after sampling.	All trench and drilling sites have been infilled and stabilised. Refer to 4.4 below for maps and rehabilitation photographs.		No signs of erosion are currently visible at the rehabilitated sites, but not all sites have been replanted/ revegetated with pastures as yet and therefore erosion might still occur after heavy rains. It is therefore recommended that the rehabilitated sites be revisited for a follow-up inspection at the end of July 2019 by an external environmental consultant or specialist and if

				signs of erosion are visible at the sites suitable recommendations for stabilising and preventative measures must be provided and implemented. Additional follow-up inspections may also be required/ recommended. These recommendations have been included in the requirements of the Final Closure/ Rehabilitation Plan. Refer to point 6 in this report.
EMP 1.3; 2.2.3; 6.3	Only areas previously disturbed and ploughed by farming activities may be disturbed by prospecting activities. I.e. all prospecting activities to be restricted to existing pasture land.	All trench and drilling sites were located on previously ploughed and cultivated land.		
EMP 1.3; 3.2.2	No prospecting activities to take place within nor disturb natural vegetation areas.	All trench and drilling sites were located on previously ploughed and cultivated land.		
EMP 1.4; 2.2.3	No prospecting to take place within 100m from buildings.	No prospecting took place within 100m from any buildings.		
EMP 1.4; 2.2.3	No prospecting to take place within 32m of a watercourse.	Most of the sampling areas was more than	Two trenching sites are located within 22-28m	Although these sample trenches were excavated within 32m of the farm dam,

		32m away from any watercourses	as measured from the edge of a farm dam.	the trenching activities did not impact on the farm dam and impacts remained within the previously cultivated agricultural areas.
EMP 2.1.1	Trenches to be backfilled with the subsoil followed by topsoil to return the area disturbed to pasture.	All trench and drilling sites have been infilled and stabilised.		
EMP 2.1.1; 2.2.4	No new roads may have been constructed to the trenching sites, only existing roads used.	No new roads were constructed during prospecting activities.		
EMP 3.2.2	All pits, trenches and/or drilling sites to be backfilled with excavated and stored materials immediately/same day after sampling.	All trench and drilling sites have been infilled and stabilised.		
EMP 4.2	Rehabilitation to take place concurrently with prospecting activities.	Once sampling was completed the disturbed areas was immediately backfilled with excavated materials.		
EMP 4.2; 9.1	Rehabilitation will be the backfilling of trenches with subsoil and topsoil and replanting with appropriate pasture grass.	All trench sites have been infilled and stabilised.	Disturbed areas have not been replanted with pasture grass, but rather left to naturally	Due to the disturbed sites having different types of pastures and vegetation growing on and adjacent to the sites and the landowner himself planting different

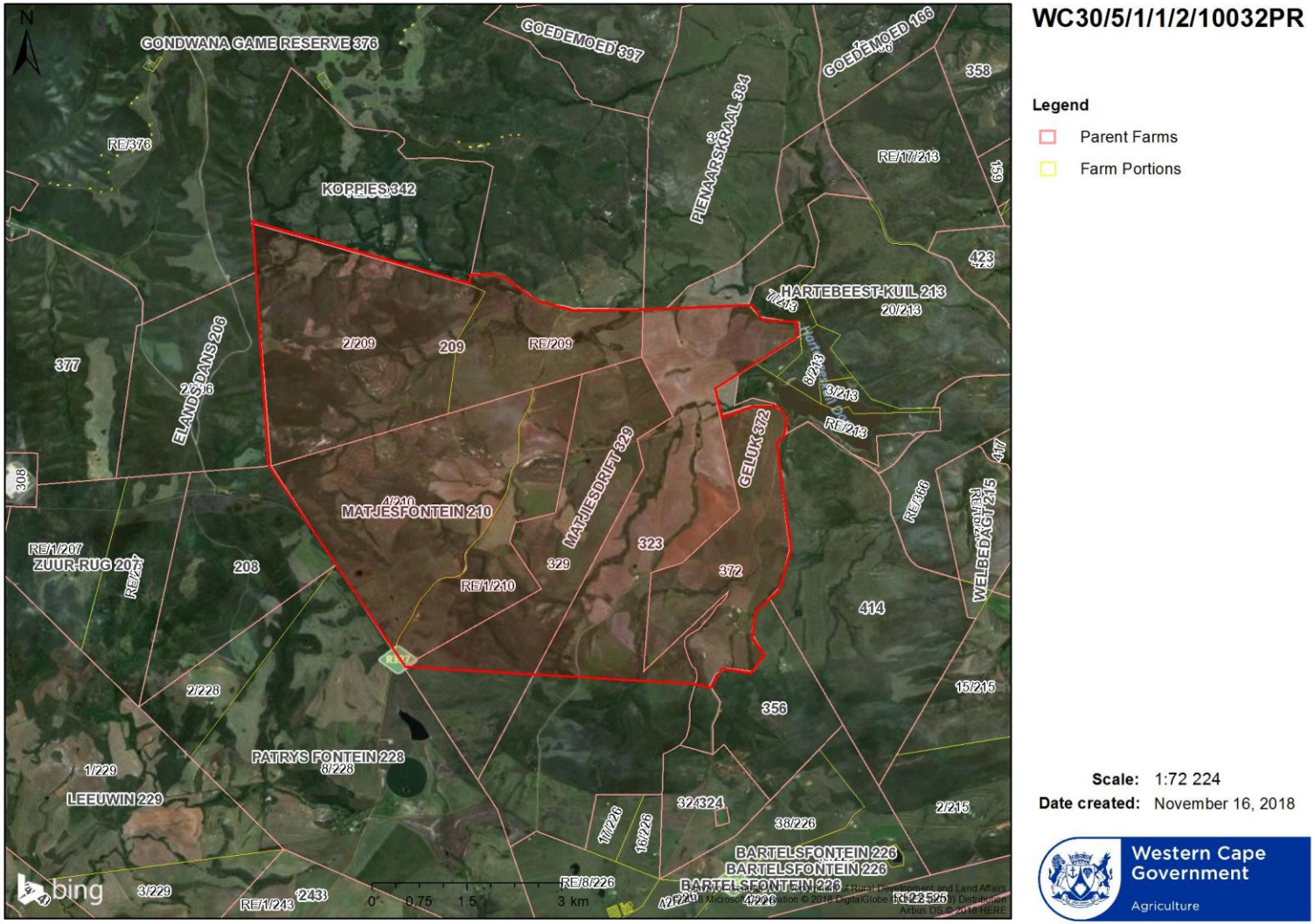
			revegetate.	crops on the various sites it was agreed with the landowner that no replanting will be done by the prospecting company at this stage, but that the sites will be left to naturally revegetate and that the landowner will replant the relevant sites during the next cultivation cycle. However, if evidence of erosion is noted at any of the rehabilitated sites during the follow-up inspection, as recommended for July 2019, the consultant/specialist may recommend the immediate replanting of the eroded sites to promote stabilisation and prevent reoccurring erosion. These recommendations have been included in the requirements of the Final Closure/ Rehabilitation Plan. Refer to point 6 in this report.
EMP 4.2; 9.1	Any drilling footprints to be tilled and replanted with pasture.	All drilling sites have been infilled and stabilised.	Disturbed areas have not been replanted with pasture grass, but rather left to naturally revegetate.	Due to the disturbed sites having different types of pastures and vegetation growing on and adjacent to the sites and the landowner himself planting different crops on the various sites it was agreed with the landowner that no replanting will be done by the

				prospecting company at this stage, but that the sites will be left to naturally revegetate and that the landowner will replant the relevant sites during the next cultivation cycle. However, if evidence of erosion is noted at any of the rehabilitated sites during the follow-up inspection, as recommended for July 2019, the consultant/specialist may recommend the immediate replanting of the eroded sites to promote stabilisation and prevent reoccurring erosion. These recommendations have been included in the requirements of the Final Closure/ Rehabilitation Plan. Refer to point 6 in this report.
EMP 5.2 (i); 5.4	Prospect Manager to record pit and trench rehabilitation with photographic records on a monthly basis during active prospecting periods.		No monthly photographic record of rehabilitation monitoring done during the active prospecting could be provided.	
EMP 5.2 (i); 5.4	After active prospecting has ceased the Prospect Manager must monitor and record the pit and trench rehabilitation on a six monthly basis until either a	In progress.		Six monthly photographic records of all rehabilitated sites to be kept by the Prospect Manager ("PM") until Closure Certificate have

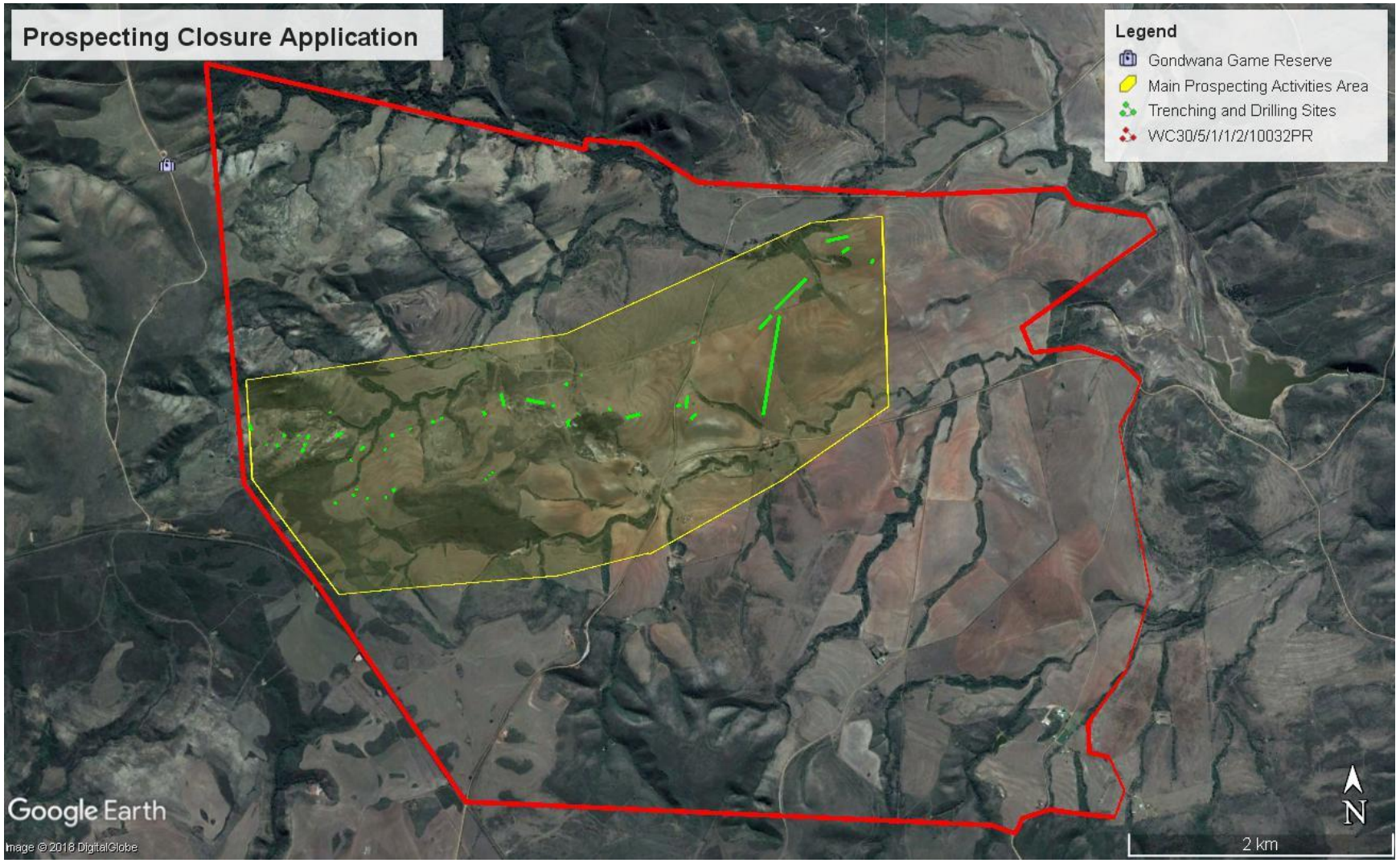
	Mining Right is applied for or a Closure Certificate is obtained.			been obtained. These recommendations have been included in the requirements of the Final Closure/ Rehabilitation Plan. Refer to point 6 in this report
EMP 5.3; 5.4	Rehabilitation monitoring programme will be the responsibility of the Prospect Manager who will conduct the monitoring process personally.	In progress.		Six monthly photographic records of all rehabilitated sites to be kept by the Prospect Manager ("PM") until Closure Certificate have been obtained. It is also recommended that the rehabilitated sites be revisited for a follow-up inspection at the end of July 2019 by an external environmental consultant or specialist and if signs of erosion are visible at the sites suitable recommendations for stabilising and preventative measures must be provided and implemented. Additional follow-up inspections may also be required/ recommended. These recommendations have been included in the requirements of the Final Closure/ Rehabilitation Plan. Refer to point 6 in this report
EMP 5.3; 5.4	On an annual basis, an external environmental consultant will be commissioned to conduct an	First external independent assessment in	No external independent assessments	

	independent assessment of rehabilitation as part of an overall report on the EMP status.	terms of rehabilitation status currently in progress.	were conducted during the active prospecting activities.	
EMP 6.2; 6.3	The closure objective is to return prospected areas to pasture matching the surrounding environment.	All trenching and drilling sites have been infilled and stabilised.	Disturbed areas have not been replanted with pasture grass, but rather left to naturally revegetate.	Due to the disturbed sites having different types of pastures and vegetation growing on and adjacent to the sites and the landowner himself planting different crops on the various sites it was agreed with the landowner that no replanting will be done by the prospecting company at this stage, but that the sites will be left to naturally revegetate and that the landowner will replant the relevant sites during the next cultivation cycle. However, if evidence of erosion is noted at any of the rehabilitated sites during the follow-up inspection, as recommended for July 2019, the consultant/specialist may recommend the immediate replanting of the eroded sites to promote stabilisation and prevent reoccurring erosion. These recommendations have been included in the requirements of the Final Closure/ Rehabilitation Plan. Refer to point 6 in this report.

4.4 RELEVANT MAPS AND PHOTOS OF REHABILITATED SITES



Map 1: Total prospecting right area of 3098.185ha on the applicable properties.



Map 2: Yellow outline indicates main area within which prospecting activities took place and green lines and dots indicated main trenching and drilling sites on completely transformed agricultural lands. (Also refer to Appendix F: Prospecting Results Report) for additional maps and trenching and drilling sites co-ordinates)

Photo 1: Example of sample trench excavated in cultivated land.

Photo 2: Site 1 – Rehabilitation photo taken 05/09/2018 (infill and topsoil material returned and shaped according to surrounding topography)

Photo 3: Site 2 – Rehabilitation photo taken 05/09/2018 (infill and topsoil material returned and shaped according to surrounding topography)

Photo 4: Site 3 – Rehabilitation photo taken 05/09/2018 (infill and topsoil material returned and shaped according to surrounding topography)

Photo 5: Site 4 – Rehabilitation photo taken 05/09/2018 (infill and topsoil material returned and shaped according to surrounding topography)

Photo 6: Site 5 – Rehabilitation photo taken 05/09/2018 (infill and topsoil material returned and shaped according to surrounding topography)

Photo 7: Site 6 – Rehabilitation photo taken 05/09/2018 (infill and topsoil material returned and shaped according to surrounding topography)

Photo 8: Site 7 – Rehabilitation photo taken 05/09/2018 (infill and topsoil material returned and shaped according to surrounding topography)

Photo 9: Site 8 – Rehabilitation photo taken 05/09/2018 (infill and topsoil material returned and shaped according to surrounding topography)

Photo 10: Site 9 – Rehabilitation photo taken 05/09/2018 (infill and topsoil material returned and shaped according to surrounding topography)

Photo 11: Site 10 – Rehabilitation photo taken 05/09/2018 (infill and topsoil material returned and shaped according to surrounding topography)

Photo 12: Site 11 – Rehabilitation photo taken 05/09/2018 (infill and topsoil material returned and shaped according to surrounding topography)

Photo 13: Site 12 – Rehabilitation photo taken 05/09/2018 (infill and topsoil material returned and shaped according to surrounding topography)

Photo 14: Site 13 – Rehabilitation photo taken 05/09/2018 (infill and topsoil material returned and shaped according to surrounding topography)

Photo 15: Site 14 – Rehabilitation photo taken 05/09/2018 (infill and topsoil material returned and shaped according to surrounding topography)

Photo 16: Site 15 – Rehabilitation photo taken 05/09/2018 (infill and topsoil material returned and shaped according to surrounding topography)

Photo 17: Site 16 – Rehabilitation photo taken 05/09/2018 (infill and topsoil material returned and shaped according to surrounding topography)

Photo 18: Site 17 – Rehabilitation photo taken 05/09/2018 (infill and topsoil material returned and shaped according to surrounding topography)

Photo 19: Site 18 – Rehabilitation photo taken 05/09/2018 (infill and topsoil material returned and shaped according to surrounding topography)

Photo 20: Site 19 – Rehabilitation photo taken 05/09/2018 (infill and topsoil material returned and shaped according to surrounding topography)

Photo 21: Site 20 – Rehabilitation photo taken 05/09/2018 (infill and topsoil material returned and shaped according to surrounding topography)

Photo 22: Site 21 – Rehabilitation photo taken 05/09/2018 (infill and topsoil material returned and shaped according to surrounding topography)

Photo 23: Site 22 – Rehabilitation photo taken 05/09/2018 (infill and topsoil material returned and shaped according to surrounding topography)

Photo 24: Site 23 – Rehabilitation photo taken 05/09/2018 (infill and topsoil material returned and shaped according to surrounding topography)

Photo 25: Site 24 – Rehabilitation photo taken 15/05/2018 (infill and topsoil material returned and shaped according to surrounding topography)

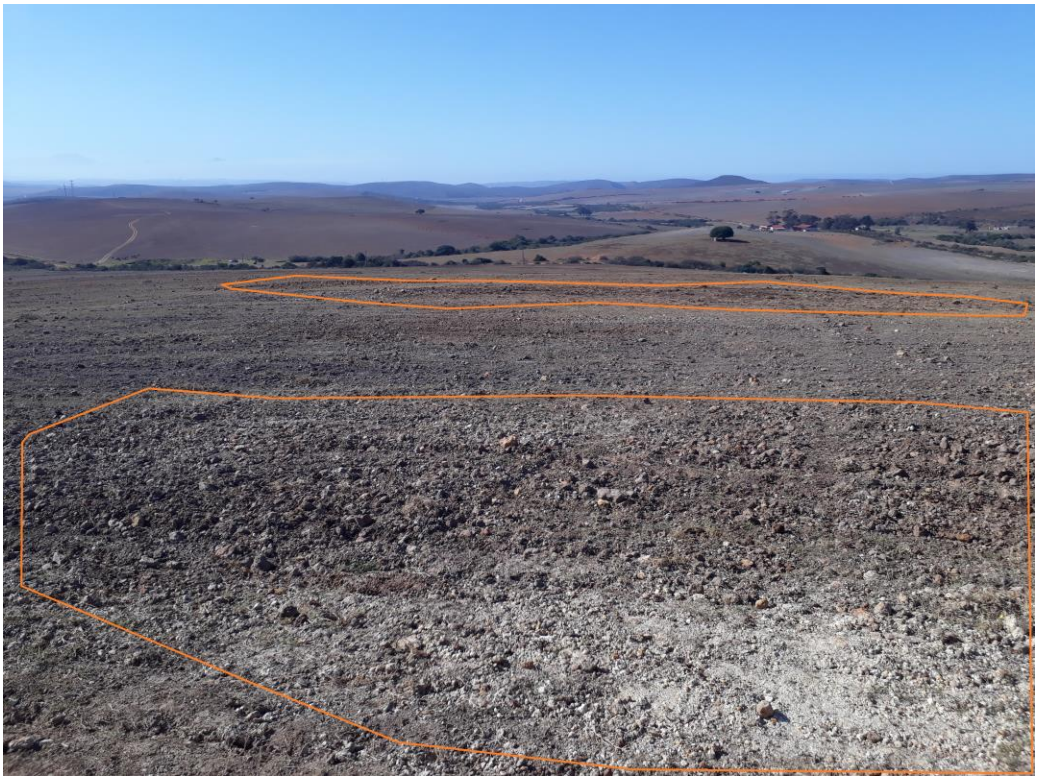


Photo 26: Site 25 – Rehabilitation photo taken 15/05/2018 (infill and topsoil material returned and shaped according to surrounding topography)

Photo 27: Site 26 – Rehabilitation photo taken 15/05/2018 (infill and topsoil material returned and shaped according to surrounding topography)

Photo 28: Site 27 – Rehabilitation photo taken 15/05/2018 (infill and topsoil material returned and shaped according to surrounding topography)

Photo 29: Site 28 – Rehabilitation photo taken 15/05/2018 (infill and topsoil material returned and shaped according to surrounding topography)

Photo 30: Site 29 – Rehabilitation photo taken 15/05/2018 (infill and topsoil material returned and shaped according to surrounding topography)

Photo 31: Site 30 – Rehabilitation photo taken 15/05/2018 (infill and topsoil material returned and shaped according to surrounding topography)

Photo 32: Site 31 – Rehabilitation photo taken 15/05/2018 (infill and topsoil material returned and shaped according to surrounding topography)

Photo 33: Site 32 – Rehabilitation photo taken 15/05/2018 (infill and topsoil material returned and shaped according to surrounding topography)

Photo 34: Site 33 – Rehabilitation photo taken 15/05/2018 (infill and topsoil material returned and shaped according to surrounding topography)

Photo 35: Site 34 – Rehabilitation photo taken 15/05/2018 (infill and topsoil material returned and shaped according to surrounding topography)

Photo 36: Site 35 – Rehabilitation photo taken 15/05/2018 (infill and topsoil material returned and shaped according to surrounding topography)

5. ENVIRONMENTAL RISK REPORT

5.1 RISK ASSESSMENT METHODOLOGY

This section outlines the methodology used to assess the significance of the potential environmental impact/risk. For each impact, the EXTENT (spatial scale), MAGNITUDE (size or degree scale) and DURATION (time scale) are used to ascertain the SIGNIFICANCE of the impact, firstly in the case of no mitigation and then with the most effective mitigation measure(s) in place. The mitigation described in the EMP represents the full range of plausible and pragmatic measures *but does not necessarily imply that they should or will all be implemented*.

Assessment criteria for the evaluation of impacts

CRITERIA	CATEGORY	DESCRIPTION
Extent or spatial influence of impact	**Regional**	Beyond a 20 km radius of the site
	Local	Within a 20 km radius of the centre of the site
	Site specific	On site or within 100 m of the site
Magnitude of impact (at the indicated spatial scale)	**High**	Natural and/ or social functions and/ or processes are *severely* altered
	Medium	Natural and/ or social functions and/ or processes are *notably* altered
	Low	Natural and/ or social functions and/ or processes are *slightly* altered
	Very Low	Natural and/ or social functions and/ or processes are *negligibly* altered
	Zero	Natural and/ or social functions and/ or processes remain *unaltered*
Duration of impact	**Prospecting period Medium Term**	Up to 60 months Up to 10 years after prospecting
	Long Term	More than 10 years after prospecting

The SIGNIFICANCE of an impact is derived by taking into account the temporal and spatial scales and magnitude. The means of arriving at the different significance ratings is explained in the following table.

Definition of significance ratings

SIGNIFICANCE RATINGS	LEVEL OF CRITERIA REQUIRED
High	• High magnitude with a regional extent and long term duration • High magnitude with either a regional extent and medium term duration or a local extent and long term duration • Medium magnitude with a regional extent and long term duration

Medium	• High magnitude with a local extent and medium term duration • High magnitude with a regional extent and mining period or a site specific extent and long term duration • High magnitude with either a local extent and mining period duration or a site specific extent and medium term duration • Medium magnitude with any combination of extent and duration except site specific and mining period or regional and long term • Low magnitude with a regional extent and long term duration
Low	• High magnitude with a site specific extent and mining period duration • Medium magnitude with a site specific extent and mining period duration • Low magnitude with any combination of extent and duration except site specific and mining period or regional and long term • Very low magnitude with a regional extent and long term duration
Very low	• Low magnitude with a site specific extent and mining period duration • Very low magnitude with any combination of extent and duration except regional and long term
Neutral	• Zero magnitude with any combination of extent and duration

Once the significance of an impact has been determined, the PROBABILITY of this impact occurring as well as the CONFIDENCE in the assessment of the impact would be determined using the rating systems outlined in below respectively. It is important to note that the significance of an impact should always be considered in concert with the probability of that impact occurring.

Probability ratings	**Criteria**
Definite	>95% chance of impact occurring.
Probable	5 – 95% chance of impact occurring.
Unlikely	<5% chance of impact occurring.

Confidence ratings	**Criteria**
Certain	Wealth of information on and sound understanding of the environmental factors potentially influencing the impact.
Sure	Reasonable amount of useful information on and relatively sound understanding of the environmental factors potentially influencing the impact.
Unsure	Limited useful information on and understanding of the environmental factors potentially influencing this impact.

Criteria	**Description**		
Nature	a description of what causes the effect, what will be affected, and how it will be affected.		
	Type	**Score**	**Description**

Extent (E)	None (No)	1	Footprint
	Site (S)	2	On site or within 100 m of the site
	Local (L)	3	Within a 20 km radius of the centre of the site
	Regional (R)	4	Beyond a 20 km radius of the site
	National (Na)	5	Crossing provincial boundaries or on a national / land wide scale
Duration (D)	Short term (S)	1	0 – 1 years
	Short to medium (S-M)	2	2 – 5 years
	Medium term (M)	3	5 – 15 years
	Long term (L)	4	> 15 years
	Permanent(P)	5	Will not cease
Magnitude (M)	Small (S)	0	will have no effect on the environment
	Minor (Mi)	2	will not result in an impact on processes
	Low (L)	4	will cause a slight impact on processes
	Moderate (Mo)	6	processes continuing but in a modified way
	High (H)	8	processes are altered to the extent that they temporarily cease
	Very high (VH)	10	results in complete destruction of patterns and permanent cessation of processes.
Probability (P) the likelihood of the impact actually occurring. Probability is estimated on a scale, and a score assigned	Very improbable (VP)	1	probably will not happen
	Improbable (I)	2	some possibility, but low likelihood
	Probable (P)	3	distinct possibility
	Highly probable (HP)	4	most likely
	Definite (D)	5	impact will occur regardless of any prevention measures
Significance (S)	Determined through a synthesis of the characteristics described above: **S = (E+D+M) x P** Significance can be assessed as low, medium or high		
Low: < 30 points:	The impact would not have a direct influence on the decision to develop in the area		
Medium: 30 – 60 points:	The impact could influence the decision to develop in the area unless it is effectively mitigated		
High: < 60 points:	The impact must have an influence on the decision process to develop in the area		
No significance	When no impact will occur or the impact will not affect the environment		
Status	Positive (+)	Negative (-)	

The degree to which the impact can be reversed	Completely reversible (R)	90-100%	The impact can be mostly to completely reversed with the implementation of the correct mitigation and rehabilitation measures.
	Partly reversible (PR)	6-89%	The impact can be partly reversed providing that mitigation measures as stipulated in the EMP are implemented and rehabilitation measures are undertaken
	Irreversible (IR)	0-5%	The impact cannot be reversed, regardless of the mitigation or rehabilitation measures taking place
The degree to which the impact may cause irreplaceable loss of resources	Resource will not be lost (R)	1	The resource will not be lost or destroyed provided that mitigation and rehabilitation measures as stipulated in the EMP are implemented
	Resource may be partly destroyed (PR)	2	Partial loss or destruction of the resources will occur even though all management and mitigation measures as stipulated in the EMP are implemented
	Resource cannot be replaced (IR)	3	The resource cannot be replaced no matter which management or mitigation measures are implemented.
The degree to which the impact can be mitigated	Completely mitigatable (CM)	1	The impact can be completely mitigated providing that all management and mitigation measures as stipulated in the EMP are implemented
	Partly mitigatable (PM)	2	The impact cannot be completely mitigated even though all management and mitigation measures as stipulated in the EMP are implemented. Implementation of these measures will provide a measure of mitigatibility
	Un-mitigatable (UM)	3	The impact cannot be mitigated no matter which management or mitigation measures are implemented.

5.2 ASSESSMENT OF EACH IDENTIFIED POTENTIALLY SIGNIFICANT IMPACT/RISK DURING REHABILITATION

Nature of impact:
Temporary loss of agricultural land during rehabilitation

Discussion:
During rehabilitation of the sites impacted during prospecting cumulative impacts such as erosion of the disturbed sites may lead to temporary loss of agricultural land

Cumulative impacts:
Temporary loss of agricultural land for agricultural use.

Mitigation:

- If natural revegetation of the sites is not taking place fast enough and signs of erosion are detected replanting of the affected sites must be done to stabilise the soils. The crop to be used to replant the rehabilitated sites to prevent further erosion must be discussed and agreed with the landowner and must be similar to previous agricultural crops planted on site. The sites must be inspected by a qualified independent environmental consultant or specialist 6 months after replanting to establish whether it was successful in stabilising the soils and preventing further erosion. If erosion is still detected further mitigation and monitoring measures may be recommended by the consultant/specialist.
- All rehabilitated sites must be revisited for a follow-up inspection at the end of July 2019 by an external environmental consultant or specialist and if signs of erosion are visible at the sites suitable recommendations for stabilising and preventative measures must be provided and implemented. Additional follow-up inspections may also be required/ recommended.

Preferred Prospecting Area			No Go option
	Without Mitigation	With Mitigation	
Extent	3	1	Not Applicable (No prospecting activities to take place during the No-Go Alternative)
Duration	5	1	
Magnitude	6	2	
Probability	4	2	
Significance	56 - Medium	8 - Low	
Status	Medium significance if not mitigated	Low significance if mitigated	
Reversibility	100%		
Irreplaceable loss of resources	1-Will not be lost		
Can impacts be mitigated?	2- Can be partly mitigated.		

Nature of potential impact:
Potential erosion of the site and surrounds during rehabilitation phase

Discussion:
Overland storm water flow during heavy rains could lead to erosion of the rehabilitated sites due to the soil not yet being stabilised.

Cumulative impacts:
Exposing and disturbing soil may lead to erosion of site and surrounds if not mitigated.

Mitigation:

- Existing agricultural land contour structures must be reinstated during rehabilitation
- Implement erosion and storm water runoff management measures as according to EMP requirements to prevent (or if prevention is not possible limit) any erosion from occurring on the prospecting activity areas and surrounds.
- If natural revegetation of the sites is not taking place fast enough and signs of erosion are detected replanting of the affected sites must be done to stabilise the soils. The crop to be used to replant the rehabilitated sites to prevent further erosion must be discussed and agreed with the landowner and must be similar to previous agricultural crops planted on site. The sites must be inspected by a qualified independent environmental consultant or specialist 6 months after replanting to establish whether it was

successful in stabilising the soils and preventing further erosion. If erosion is still detected further mitigation and monitoring measures may be recommended by the consultant/specialist.

- All rehabilitated sites must be revisited for a follow-up inspection at the end of July 2019 by an external environmental consultant or specialist and if signs of erosion are visible at the sites suitable recommendations for stabilising and preventative measures must be provided and implemented. Additional follow-up inspections may also be required/ recommended.

Preferred Prospecting Area			No Go option
	Without Mitigation	With Mitigation	
Extent	2	1	Not Applicable (No prospecting activities to take place during the No-Go Alternative)
Duration	3	1	
Magnitude	6	2	
Probability	4	2	
Significance	44 – Medium	8 - Low	
Status	Medium Significance without Mitigation	Low Significance with Mitigation	
Reversibility	100% Reversible		
Irreplaceable loss of resources	1-Resource will not be lost if mitigated		
Can impacts be mitigated?	1 – Can be completely mitigated		

Nature of potential impact:
Introduction of alien and weed plant species during rehabilitation

Discussion:
Indirect impacts occur mostly during the rehabilitation phase and in this case the nature would vary from the introduction of alien and weed vegetation, to partial disruption of ecological processes due to the effects of the alien and weed species. The extent of the indirect impact in this case will be local.

Cumulative impacts:
Disturbance of the site due to proposed prospecting activities may lead to introduction of alien and weed vegetation encroachment during rehabilitation, which may in turn lead to infestation of surrounding remaining natural areas and drainage lines resulting in disruption and destruction of ecological processes.

Mitigation:

- Only use topsoil and excavated material as derived and conserved from the proposed prospecting site to backfill and rehabilitate impacted areas.
- Alien invasive and weed vegetation monitoring and removal must be undertaken for at least a year after sampling on disturbed prospecting areas or until the landowner starts with the annual cultivation activities on the affected land. This must be done by the applicant, landowner or their appointed contractor, using CapeNature approved methodology depending on the contract agreement that the applicant has with the landowner and the end use objective of the site.

Preferred Prospecting Area			No Go option
	Without Mitigation	With Mitigation	
Extent	3	1	Not Applicable (No prospecting activities to take place during the No-Go Alternative)
Duration	5	1	
Magnitude	6	2	
Probability	4	2	
Significance	56 - Medium	8 - Low	
Status	Medium significance if not mitigated	Low significance if mitigated	
Reversibility	100%		
Irreplaceable loss of resources	1-Will not be lost if mitigated		
Can impacts be mitigated?	1 – Can be completely mitigated		

Nature of potential impact:
Impact of rehabilitation activities on adjacent terrestrial ESAs and CBAs and secondary-, primary drainage lines and man-made dams with associated wetland characteristics and aquatic vegetation as associated with mapped NFEPAs and aquatic CBAs and ESAs

Discussion:
Sensitive environmental and landscape features identified on the property include indigenous vegetation remnants, secondary and primary non-perennial drainage lines, man-made dams with associated wetland characteristics mostly connected to remaining indigenous remnants. Most of these areas have also been mapped classified Terrestrial and Aquatic Critical Biodiversity and Ecological Support Areas ("ESA"), associated buffer areas and National Freshwater Ecosystems Priority Areas ("NFEPA").

The prospecting activities did however not have any significant detrimental impacts on these sensitive environmental and landscape features.

Cumulative impacts:
If erosion or alien/weed plant species encroachment takes place at the rehabilitated sites this may spread to surrounding sensitive environmental landscape features as mentioned above and have a detrimental impact on the ecological functioning of these areas.

Mitigation:

- Existing agricultural land contour structures must be reinstated during rehabilitation
- Implement erosion and storm water runoff management measures as according to EMP requirements to prevent (or if prevention is not possible limit) any erosion from occurring on the prospecting activity areas and surrounds.
- If natural revegetation of the sites is not taking place fast enough and signs of erosion are detected replanting of the affected sites must be done to stabilise the soils. The crop to be used to replant the rehabilitated sites to prevent further erosion must be discussed and agreed with the landowner and must be similar to previous agricultural crops planted on site. The sites must be inspected by a qualified independent environmental consultant or specialist 6 months after replanting to establish whether it was successful in stabilising the soils and preventing further erosion. If erosion is still detected further mitigation and monitoring measures may be recommended by the consultant/specialist.
- All rehabilitated sites must be revisited for a follow-up inspection at the end of July 2019 by an external environmental consultant or specialist and if signs of erosion are visible at the sites suitable recommendations for stabilising and preventative measures must be provided and implemented. Additional follow-up inspections may also be required/ recommended.
- If during the follow-up inspection as recommended to July 2019 it is found that detrimental impacts has occurred within sensitive landscape features surrounding the previously cultivated agricultural lands due to rehabilitated prospecting activities areas the consultant or specialist must provide additional rehabilitation mitigation measures to be implemented to restore these areas and prevent any further detrimental impacts.

	Preferred Prospecting Area		No Go option
	Without Mitigation	With Mitigation	
Extent	2	1	Not Applicable (No prospecting activities to take place during the No-Go Alternative)
Duration	3	1	
Magnitude	6	2	
Probability	4	2	
Significance	44 – Medium	8 - Low	
Status	Medium significance if not mitigated	Low significance if mitigated	
Reversibility	100% Reversible		
Irreplaceable loss of resources	1-Will not be lost if mitigation measures are implemented		
Can impacts be mitigated?	1 – Can be completely mitigated		

6. FINAL CLOSURE/REHABILITATION PLAN

6.1 CLOSURE/REHABILITATION OBJECTIVE

According to the EMP requirements the final closure/rehabilitation objective is to return prospected areas to pasture matching the surrounding environment.

6.2 DETAILS OF ANY LONG-TERM MANAGEMENT, MONITORING AND MAINTENANCE EXPECTED FOR THE REHABILITATED SITES

Ideally, a properly designed and executed rehabilitation plan will leave the prospecting area in a condition requiring no continuing, long-term maintenance to achieve an enduring, high quality environment. The prospecting right holder commits to post-closure maintenance during rehabilitation of the site and until the time of receipt of a closure certificate for all or parts of the prospecting area. Long-term care will include maintenance of all storm water contour infrastructures, erosion rehabilitation and clearing of weed and alien vegetation species until the next ploughing/cultivation season. Thereafter, the responsibility for the ongoing maintenance and monitoring of the site will rest with the landowner.

Management and maintenance is expected to continue until the landowner cultivates the areas impacted by prospecting or after the closure certificate is issued (whichever comes first). Maintenance will be focused on erosion prevention and removal of weed and alien vegetation species on the prospecting area.

In terms of monitoring the EMP requirements states that six monthly photographic records of all rehabilitated sites must be kept by the Prospect Manager ("PM") until the Closure Certificate have been obtained.

Currently all sites have been rehabilitated by means of infilling excavated materials, replacing excavated topsoil and shaping the impacted area according to surrounding contours. No signs of erosion or depressions are currently visible at the rehabilitated sites, but not all sites have been replanted/ revegetated with pastures as yet and therefore erosion might still occur after heavy rains. It is therefore recommended that the rehabilitated sites be revisited for a follow-up inspection at the end of July 2019 by an external environmental consultant or specialist and if signs of erosion or alien/weed encroachment are visible at the sites suitable recommendations for alien/weed eradication, soil stabilising and preventative measures must be provided and implemented. Additional follow-up inspections may also be required/ recommended.

Due to the disturbed sites having different types of pastures and vegetation growing on and adjacent to the sites and the landowner himself planting different crops on the various sites it was agreed with the landowner that no replanting will be done by the prospecting company, but that the sites will be left to naturally revegetate and that the

landowner will replant the relevant sites during the next cultivation cycle. However, if evidence of erosion is noted at any of the rehabilitated sites during the follow-up inspection, as recommended for July 2019, the consultant/specialist may recommend the immediate replanting of the eroded sites to promote stabilisation and prevent reoccurring erosion.

6.3 FINANCIAL PROVISION FOR MONITORING, MAINTENANCE AND POST CLOSURE MANAGEMENT

It remains the responsibility of the prospecting right holder to financially provide for the rehabilitation of the sites impacted during prospecting activities until successful rehabilitation status have been obtained.

The current expected rehabilitation costs associated with the post prospecting closure management requirements as recommended within this report is R 18 000 for 2019 (estimated cost for appointment of external suitably qualified environmental consultant or specialist to conduct follow-up inspection of rehabilitated sites). However should the consultant/specialist find that additional rehabilitation measures must be implemented if the sites are not successfully rehabilitated the prospecting right holder will be responsible to provide adequate funds to implement these recommendations.

7. A RECORD OF INTERESTED AND AFFECTED PERSONS CONSULTED

Registered Interested and Affected Parties and key departments were afforded a 30 day comment period on the Draft Basic Assessment Report, Environmental Audit Report, Risk Report and Final Closure/Rehabilitation Plan. The comments are recorded and the EAP (specialists) respond to the comments and compile the comments and response report where after it is submitted to DMR for a decision. Proof of the public participation process conducted is included under Appendix C of the BAR.

8. CONCLUSION

From assessing the information as provided by the client and conducting the closure site visits it is concluded that there is currently no signs of any significant detrimental impacts on the agricultural lands within which the prospecting activities occurred and that no indigenous vegetation areas, water courses or their ecological functioning were significantly impacted upon.

The assessment revealed that the prospecting areas have been backfilled (with the material as excavated from site during prospecting activities) and shaped according to surrounding topography with no evidence of erosion or depressions at the sites. Due to natural revegetation not yet occurring at most of the recently rehabilitated sites additional follow-up inspection is recommended for July 2019 to determine the success of the rehabilitation measures as implemented thus far and whether or not additional measures will have to be implemented to stabilise the sites so as to return it to its previous agricultural pasture state. Refer to point 6 above for more details on long-term

management, monitoring and maintenance recommended for the sites.

9. DECLARATION AND EXPERTISE OF THE EAP WHO COMPILED THIS REPORT

Johmandie Pienaar (Giliomee) holds a Baccalaureus Technologiae Degree (Cum Laude) in Nature Conservation from the Cape Peninsula University of Technology and has also completed the following short courses at the Centre for Environmental Management:

- Implementing Environmental Management Systems (ISO 14001)(2009);
- Occupational Health and Safety Law for Managers (2010);
- Implementing an OHS Management System based on OHSAS 18001 (2010) and;
- Occupational Health and Safety Management System OHSAS 18001 Audit: A Lead Auditor Course Based on ISO 19011 and ISO 17021 (2011).
- Conduct Outcome Based Assessment (May 2015).

Summary of the EAP's past experience.

Johmandie has been involved in environmental management and assessment aspects since 2005 having worked for South African National Parks and then as an private Environmental Manager for an estate in the Swartland.

Since March 2009 Johmandie has been practicing as an Environmental Assessment Practitioner, as part of an environmental consultancy company, on several projects throughout South-Africa and mainly within the Western Cape.

Johmandie has also been involved in successfully compiling, coordinating and managing Basic Assessment Reports, Environmental Impact Assessments, Section 24G Applications, NEMA EIA Checklists, Environmental Management Programmes, Waste License Applications, Water Use License Applications, Environmental Rehabilitation Plans, Baseline Biodiversity Surveys, Mining Right Applications and Prospecting Right Applications for numerous clients.

Johmandie has also conducted and completed numerous Environmental Control Officer jobs, and since 2011 been involved in Occupational Health and Safety Auditing, Managing and Training specializing in the auditing of consturction sites and implementing and auditing Occupational Health and Safety Management Systems, and providing training on the implementation of Occupational Health and Safety Management System OHSAS 18001.
(Refer to **Appendix A** of the BAR for EAP CV)

DECLARATION

The environmental assessment practitioner

I *Johmandie Pienaar*, as the appointed EAP hereby declare/affirm:

- the correctness of the information provided as part of this Report;
- that I have maintained my independence throughout this process;
- that I have throughout this process met all of the general requirements of EAPs as set out in Regulation 13;
- I have throughout this process disclosed to the applicant, the specialist (if any), the Department and I&APs, all material information that has or may have the potential to influence the decision of the Department or the objectivity of any report, plan or document prepared as part of the application;
- have ensured that information containing all relevant facts in respect of the application was distributed or was made available to I&APs and that participation by I&APs was facilitated in such a manner that all I&APs were provided with a reasonable opportunity to participate and to provide comments;
- have ensured that the comments of all I&APs were considered, recorded and submitted to the Department in respect of the application;
- have ensured the inclusion of inputs and recommendations from the specialist reports in respect of the application, if specialist inputs and recommendations were produced;
- have kept a register of all I&APs that participated during the PPP; and
- am aware that a false declaration is an offence in terms of Regulation 48 of the EIA Regulations, 2014 (as amended).

Signature of the EAP:	
Name of Company:	Eco Impact
Date:	27 November 2018