MAKHANDA MINING (PTY) LTD

REMAINING EXTENT OF THE FARM BRAKKEFONTEIN 243

MAKHANDA, EASTERN CAPE PROVINCE

ENVIRONMENTAL PERFORMANCE ASSESSMENT

DMRE REFERENCE NUMBER:	**EC 30/5/1/2/2/0056 MR**
AUDIT PERIOD:	**JULY 2021 – AUGUST 2022**

PREPARED FOR:

Makhanda Mining (Pty) Ltd

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PREPARED BY:

Greenmined Environmental
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1. PROJECT SPECIFIC DETAIL

ITEM	MINING RIGHT HOLDER
Company Name	Makhanda Mining (Pty) Ltd
Contact Person	Mr Colin Meyer
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Cell Number	082 578 9480
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ITEM	**CONSULTANT DETAIL**
Company Name	Greenmined Environmental (Pty) Ltd
Contact Person	Ms Christine Fouché
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ITEM	**LOCATION AND AREA INFORMATION**
Site Name	Makana Brick – Beaconsfield Farm
Property Description	Remaining Extent of the farm Brakkefontein 243
Location	Makana Brick is located ±5 km to the northeast of Makhanda along Mayfield Cemetery Road on Beaconsfield farm.
Size of Mining Area	644.9686 ha

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2. ENVIRONMENTAL AUDIT REPORT

PROJECT DETAIL

Right Number:	119/2008 (EC 30/5/1/2/2/0056 MR)	**Date of commencement:**	2008
Site name:	Makana Brick – Beaconsfield Farm	**Inspection date:**	11 August 2022
Right Holder:	Makhanda Mining (Pty) Ltd	**Other authorisations:**	• Air Emissions Licence: EC/CAR/MAK/021/2016 • Water Use Licence: 28024307 • Zoning Consent: 52085
Report number:	03		

DETAIL OF AUDITOR

***(APPENDIX 7 SUB-REGULATION 3(A) & (B))*:**

ECO:	Christine Fouché
Expertise:	Ms Fouche has a Diploma in Nature Conservation and a BSc in Botany and Zoology with sixteen years' experience in doing environmental impact assessments and compliance monitoring in South Africa.
Declaration of independence:	I, Christine Fouche, in my capacity as environmental control officer declare that– • I act as independent environmental control officer in this compliance audit; • I will perform the work relating to the audit in an objective manner, even if the results and findings are not favourable to the holder of the authorisation; • I have expertise in conducting environmental compliance audits, including knowledge of the Act and regulations that have relevance to the activity; • I will adhere to and comply with all responsibilities as indicated in the National Environmental Management Act and Environmental Impact Assessment Regulations. • I do not have and will not have any vested interest in the activity other than remuneration for work performed in terms of the Environmental Impact Assessment Regulations, 2014.  Christine Fouche Date: 25 August 2022

SCOPE & PURPOSE OF ENVIRONMENTAL AUDIT

***(APPENDIX 7 SUB-REGULATION 3(C))*:**

This environmental audit report was compiled in terms of the requirements of the NEMA EIA Regulations, 2014 (as amended).

OBJECTIVE:

The objective of the environmental audit report (EAR) is to evaluate compliance of the operational activities with the Environmental Management Programme Report (EMPR) as approved by the Department of Mineral Resources and Energy.

INSPECTED AREAS:

The inspection included an assessment of the following areas:

- Clamp yard;
- Clay quarry;
- Crushing, screening, milling areas;
- Dam;
- Factory;
- Hacklines;
- Offices and storage areas;
- Shale quarry;
- Stockpile areas; and
- Workshop and wash bay area.

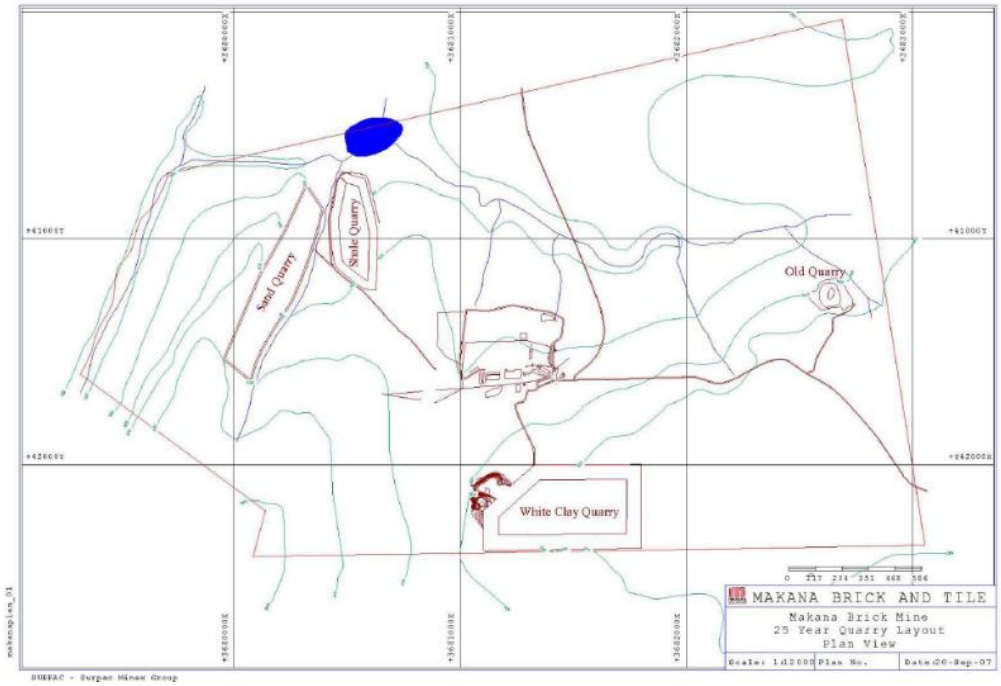
In order to establish the environmental compliance assessment of the operation, the mining site and associated infrastructure, was inspected on foot by the Environmental Control Officer, Christine Fouche, from Greenmined Environmental accompanied by site management.

ASSUMPTIONS, UNCERTAINTIES OR GAPS IN KNOWLEDGE

(APPENDIX 7 SUB-REGULATION 3(F)):

The assumptions made in this document, stem from specific information gathered during the site audit and background information supplied by the mining right holder. No uncertainties or gaps in knowledge could be identified that is applicable during this audit period.

LOCATION

Site location:	Makana Brick is located ±5 km to the northeast of Makhanda along Mayfield Cemetery Road on Beaconsfield farm.	
Site map:		
Site coordinates:	A -33.238603°	26.553268°
	B -33.242792°	26.563274°
	C -33.269224°	26.570285°
	D -33.272461°	26.545368°
	E -33.245687°	26.544979°
	F -33.246190°	26.547142°
	G -33.242746°	26.550538°

PROJECT DESCRIPTION

Makhanda Mining (Pty) Ltd holds a mining right over 644 ha of the Remaining Extent of the farm Brakkefontein 243 in the Makhanda area. The mining footprint contains four quarries namely the clay-, sand- and shale quarries, as well as the old kaolin quarry that has not been mined since Makana Brick purchased the farm in 1994.

The right holder extracts residual kaolinite (hereafter referred to as clay) from the clay quarry using an opencast method. An excavator digs and loads the clay onto dumper trucks that deliver it to the factory area where it is stockpiled until used in the manufacturing of clay bricks. The clay quarry is currently mined along the eastern- and southern banks.

The material from the sand and shale quarries are only used within the farm boundaries (non-commercial purposes). The sand is packed between the layers of bricks to prevent it sticking together, while the shale is used as road building material (for the internal farm roads).

SITE CONDITIONS

Sunny clear day with wet soil conditions in some areas due to recent rains.

REPORTABLE ENVIRONMENTAL INCIDENTS

Incident date:	Makana Brick keeps an incident register on site. No environmental related incidents occurred during the audit period that had to be reported to DMRE/DEDEA.
Incident no:	
Incident:	
How addressed:	
When addressed:	

ADOPTED METHODOLOGY

***(APPENDIX 7 SUB-REGULATION 3(D)*:**

COMPLIANCE SCORE	DESCRIPTION
1	Task not achieved
2	Task 20% achieved
3	Task 50% achieved
4	Task 80% achieved
5	Task 100% achieved in accordance with the EMP

NON-COMPLIANCE SCORE	DESCRIPTION
1	**LOW** – Mitigation not needed / mitigation measures to be maintained
2	**MEDIUM** – Mitigation should be considered
3	**HIGH** – Mitigation compulsory

INSPECTION ASPECTS

DESCRIPTION	COMPLIANCE SCORE	NON-COMPLIANCE SCORE	STATUS	COMMENTS
LEGISLATION COMPLIANCE:				
National Environmental Management Act, 1998 (Act No 107 of 1998) and the Environmental Impact Assessment Regulations, 2014 (as amended 2017)	5	-	Compliant	The competent authority deems the approved EMPR and MR of Makana Brick compatible with an Environmental Authorisation in terms of NEMA, 1998.
Copy of the EA and EMPR available on site	N/A	-	-	-
Mineral and Petroleum Resources Development Act, 2002 (Act No 28 of 2002)	5	-	Compliant	-
Mining right available on site	5	-	Compliant	The mining right is valid until 04 March 2038.
Mine plan annually reviewed	1	3	To be addressed	The mine plan must annually be updated and a copy of the latest version must be submitted to the DMRE and available on site.
National Environmental Management: Air Quality Act, 2004 (Act No 39 of 2004)	5	-	Compliant	Makana Brick holds an air emissions licence. Please note that the compliance of the holder with the AEL conditions did not fall within the ambit of this audit.
National Environmental Management: Waste Act, 2008 (Act No 59 of 2008)	4	3	To be addressed	The waste management practices of the site with specific reference to sewerage handling needs to be updated (see general report).
National Water Act, 1998 (Act 36 of 1998)	4	3	To be addressed	• The mine has a water authorisation that allows the taking of water from a watercourse in terms of Section 21(a) as well as the storing of water in terms of Section 21(b) of the NWA, 1998. • It is proposed that the location and frequency of water quality monitoring be increased (see general report).
Copy of Water Use Authorisation available on site.	5	-	Compliant	A copy of the water certificate is available.
National Environmental Management: Biodiversity Act, 2004 (Act No 10 of 2004) (NEM:BA)	4	3	To be addressed	The listed problem plants noticed on the site need to be eradicated.
Hazardous Substances Act, 1973 (Act 15 of 1973)	5	-	Compliant	The site has copies of the fire chief's approval of the hazardous material storage tanks.

DESCRIPTION	COMPLIANCE SCORE	NON-COMPLIANCE SCORE	STATUS	COMMENTS
ASPECTS OF THE AFFECTED ENVIRONMENT				
PROCEDURES AND PLANS (EMPR PG 30, 33, 37, 44, 45):				
Emergency Preparedness Plan on site	5	-	Compliant	-
Incident register up to date	5	-	Compliant	The incident register forms part of the complaints register and is available on site.
Code of Practice (CoP) – Spill Management	1	3	To be addressed	At the time of the inspection this CoP was still being drafted (requirements listed in EMPR pg 29).
Inspection program to confirm mechanical integrity & operability of containment infrastructure, emergency shutdown systems and associated equipment.	5	-	Compliant	-
Standard operating procedure (SOP) for filling storage tanks and other containers/equipment.	1	3	To be addressed	At the time of the inspection this CoP was still being drafted (requirements listed in EMPR pg 30).
Method statements (MS) submitted for construction activities.	N/A	-	-	No new MS were needed during the audit period.
CoP – Hazardous Substance Management	3	3	To be addressed	A CoP on hazardous substance management was still in process (EMPR pg 37).
CoP – Waste Management	4	3	To be addressed	The site has a waste management policy. As discussed the waste management policy must be updated to elaborate on the manner sewerage is handled on site.
CoP – Airborne Quality Management	5	-	Compliant	The CoP is available on site.
CoP – Noise Control	5	-	Compliant	A CoP on noise control was developed for the site.
TOPSOIL & OVERBURDEN MANAGEMENT (EMPR PG 34, 35):				
Topsoil stripping done	5	-	Compliant	When new areas are opened the topsoil is stripped.
Topsoil storage (heaps not exceeding 2.5 m)	5	-	Compliant	The topsoil is stockpiled and protected on site.
Overburden stripped	5	-	Compliant	-
Overburden storage (heaps not exceeding 2.5 m)	5	-	Compliant	Management must ensure all stockpiles stay below 2.5 m.
Storage berms vegetated	5	-	Compliant	The berms on site vegetates through natural succession.
Topsoil returned to rehabilitated area	5	-	Compliant	Coarse material, overburden and topsoil are returned to rehabilitated areas when applicable.
Reinstated slopes maintained at 15º	4	3	To be addressed	The slope of the rehabilitated area along the western side of the clay quarry is steeper than 15º but will be reduced during final rehabilitation of the quarry.

DESCRIPTION	COMPLIANCE SCORE	NON-COMPLIANCE SCORE	STATUS	COMMENTS
VEGETATION (EMPR PG 36):				
Cussionia (cabbage tree) sheltered from mining activities	5	-	Compliant	-
Indigenous groundcovers used to re-vegetate reinstated areas.	5	-	Compliant	-
Cynodon used instead of kikuyu	5	-	Compliant	-
Runoff furrows vegetated	5	-	Compliant	-
FAUNA:				
All animals, birds and reptiles protected on site	5	-	Compliant	-
Operational pits providing an escape route for trapped animals	5	-	Compliant	-
Operational areas daily inspected for signs of trapped animals	5	-	Compliant	-
AIR QUALITY (EMPR PG 44):				
Denuded areas limited to operational areas	5	-	Compliant	-
Water sprayers and sprinklers used to wet stockpiles	5	-	Compliant	Dust suppression was in progress at the time of the inspection.
Water tankers used to moisten roads	5	-	Compliant	
Windbreaks in place west of the storage depot/factory area	5	-	Compliant	Site management continuously plant new trees to increase the wind breaks at the site.
Brick rubble used on road/working surfaces to reduce dust	5	-	Compliant	Where needed.
Clay milling area enclosed	5	-	Compliant	-
Dust masks available to workers	5	-	Compliant	-
Visible dust level acceptable	5	-	Compliant	At the time of the inspection the visible dust level was acceptable.
Monthly dust monitoring implemented and monitoring equipment in place.	5	-	Compliant	The latest monitoring report shows the site to be compliant with the applicable standard.
Speed restrictions implemented	5	-	Compliant	-
Vehicles transporting kaolin, spoil, topsoil or other dust material on public roads covered	N/A	-	-	Trucks transporting raw material that could generate dust does not leave the site and does not make use of public roads.
Air quality monitoring (PM_{10})	5	-	Compliant	The results are available on site.
Sulphur Dioxide Analysis done	5	-	Compliant	

DESCRIPTION	COMPLIANCE SCORE	NON-COMPLIANCE SCORE	STATUS	COMMENTS
NOISE CONTROL (EMPR PG 45):				
Machinery and equipment in good working order (silencers, slipping fan-belts, bearings)	5	-	Compliant	At the time of the inspection this appeared to be true.
Equipment turned off when not in use	5	-	Compliant	-
Written notice given to surrounding residents when excessive noise is expected	N/A	-	-	Not applicable during the audit period.
No amplified music allowed	5	-	Compliant	-
Hearing protection available to employees	5	-	Compliant	-
Noise monitoring done	5	-	Compliant	The results are available on site.
HERITAGE MANAGEMENT (EMPR PG 47):				
Archaeological, cultural and/or heritage remnants protected.	N/A	-	-	No archaeological, cultural or heritage remnants were discovered or reported on during the audit period.
WATER MANAGEMENT (EMPR PG 42):				
Stormwater diversion channels adequate and contaminated stormwater contained	4	3	To be addressed	Site management formalised some of the stormwater channels on site. However, there is still a need to separate dirty and clean water (see general report).
Water quality analyses done of water in the settling ponds.	3	3	Being addressed	As mentioned earlier, the locality and frequency of water quality monitoring must be increased (see general report).
Does water results conform to SAWQG standards	TBC	-	-	To be confirmed.
Silt trap and bio-filter settling ponds in place and operational.	5	-	Compliant	The silt trap and bio-filters were in place at the time of the inspection. The proposed water quality monitoring will show whether the filters are operational.
Areas with erosion reinstated	5	-	Compliant	-
Vehicle repairs contained to workshop, or drip trays used during emergency break downs.	2	3	To be addressed	The surface of the vehicle service area must be lined to prevent soil contamination, and any spillages/contaminated water must drain into an operational oil sump. Repairs must be contained to the service area. Site management must ensure that the drip

DESCRIPTION	COMPLIANCE SCORE	NON-COMPLIANCE SCORE	STATUS	COMMENTS
				trays used on site are of adequate size and stable to prevent secondary contamination caused by drip tray tipping over (see general report).
VISUAL EXPOSURE:				
Is the contractor implementing good visual and housekeeping standards.	4	3	To be improved	Although the overall appearance of the site is clean, the management of the workshop-/wash bay area can be improved as well as the disposal of sewerage at Plant 1.
MANAGEMENT OF FUEL AND HAZARDOUS PRODUCTS (EMPR PG 30, 37-40):				
Hazardous material stored within a bunded area (110% capacity)	3	3	To be addressed	• As discussed, all chemicals stored on site must be kept within bunded areas. • Any used-oil tanks must be kept in a formal bund wall with a lined surface, and no containers holding chemicals/hydrocarbons may be placed directly on the soil. • The bund walls of all the dangerous goods storage tanks must be sealed.
Bund wall of diesel tanks impermeable	3	3	To be addressed	
Refuelling nozzles resting a sleeve to prevent leaks	5	-	Compliant	-
Fuel stations equipped with fire extinguishers	5	-	Compliant	-
Spills inside bund walls treated as hazardous waste	5	-	Compliant	-
Management of fuel and oil spills.	4	3	Management to be improved	Site management confirmed that any contaminated soil generated as a result of fuel/oil spills are collected and burned at the kiln with the other hazardous waste of the site. As discussed on site, the wash bay needs to drain into a sealed oil sump. No wash water from the dirty areas (such as the workshop) may be allowed to flow into the stormwater ponds.
List of types & quantities of hazardous materials available.	5	-	Compliant	The MSDS of the chemicals used on site were obtained. As discussed, the MSDS's must be stored near the products to be easily accessible when needed.
Locations of hazardous materials and activities on an emergency plan site map.	1	3	To be addressed	To be compiled.

DESCRIPTION	COMPLIANCE SCORE	NON-COMPLIANCE SCORE	STATUS	COMMENTS
Chemical products securely stored (access controlled).	5	-	Compliant	-
Fire chief approval for storage of hazardous substances.	5	-	Compliant	-
Material safety data sheets (MSD's) available for each chemical product	5	-	Compliant	-
Controlled loading/unloading (areas where hazardous material is handled) with impervious paving/PVC sheeting (EMPR pg 40).	3	3	To be addressed	As the vehicle service area is located in front of the workshop where the chemicals are stored, it is proposed that the lining of the vehicle service area (mentioned earlier) will also address this condition.
Signage in vicinity of flammable liquid storage areas	5	-	Compliant	-
All containers with chemicals in must be clearly marked.	5	-	Compliant	-
Sealed drip trays used and management to standard	5	-	Compliant	-
Mining equipment mechanically sound without visible oil leaks	5	-	Compliant	At the time of the inspection this appeared to be true.
Sump and oil separator operational	1	3	To be addressed	At the time of the inspection the wash bay did not drain into a sump / oil separator. This must be rectified (see general report).
Complete oil/fuel spill kits available on site	5	-	Compliant	An oil spill kit was placed on site.
FIRE MANAGEMENT (EMPR PG 31 - 32):				
No open fires permitted on site	5	-	Compliant	According to site management fires (cooking/heating) are contained in fire drums.
Increase of fire risk due to burning of waste	N/A	-	-	The site does not burn any waste apart from that which is fed into the kiln under controlled conditions.
Adequate & appropriate fire-fighting equipment	5	-	Compliant	-
No fuel & chemicals stored under trees and vegetation in vicinity of storage areas removed	5	-	Compliant	-
Fuel and gas stored separately	5	-	Compliant	-
Employees trained in firefighting	5	-	Compliant	-
Major fires or explosions reported.	N/A	-	-	-

DESCRIPTION	COMPLIANCE SCORE	NON-COMPLIANCE SCORE	STATUS	COMMENTS
WASTE MANAGEMENT (EMPR PG 41):				
Waste separation implemented (general / hazardous)	5	-	Compliant	The waste of the site is sorted between that which will be burned at the kiln and that which needs to be removed from the site to the landfill site.
Recycling & re-use implemented	5	-	Compliant	-
Waste storage not exceeding 30 days	5	-	Compliant	General waste is weekly removed from site by Skipgo.
Waste collected in sealable containers	3	3	To be addressed	The skip was covered with a lid, however some of the dust bins still required lids.
Site free of day-to-day litter	4	3	To be addressed	The plastic noticed along especially the stormwater channels needs to be removed from site.
General waste dumped at a recognised landfill site	5	-	Compliant	Makana Brick makes use of Skipgo to remove the general waste from site, who then dumps it at the municipal dump site.
Hazardous waste removed by a registered waste handling contractor	N/A	-	-	Presently none of the hazardous waste generated on site needs to be disposed of site. Site management burns the waste at the kiln in accordance with the air emissions licence.
Proof of waste disposal filed for auditing purposes	5	-	Compliant	-
No site toilet, septic tank near a watercourse	5	-	Compliant	-
Ablution facilities operational	4	3	To be addressed	As discussed on site, the use of long drop toilets must be phased out and all ablutions must drain into septic tanks with operational French drains (see general report).
Spillages not disposed of into the environment, ditches, drains or water courses	3	3	To be addressed	The wash bay needs to drain into an operational oil sump.
No waste stockpile area allowed outside the boundaries of the mining area	5	-	Compliant	-
Proper sanitation facilities available to employees	4	3	To be addressed	See general report.
MINE AND EQUIPMENT MANAGEMENT:				
Mining area demarcated with visible beacons	5	-	Compliant	The mining area is fenced.
Mining contained to designated mining area	5	-	Compliant	-
Unnecessary surface disturbance avoided	5	-	Compliant	-

DESCRIPTION	COMPLIANCE SCORE	NON-COMPLIANCE SCORE	STATUS	COMMENTS
VEHICLE AND TRAFFIC MANAGEMENT (EMPR PG 46-47):				
Access roads demarcated with "no entry" signs where applicable	N/A	-	-	The mining area and brick making plant is fenced with lockable gates.
Damage to public roads repaired (if caused by Makana Brick)	N/A	-	-	Makana Brick assists with the maintenance of the public access road to the site.
Abnormal loads scheduled to avoid peak-hours	N/A	-	-	The traffic volume on the access road is low and not affected by vehicles leaving/visiting Makana Brick.
Access road maintained	5	-	Compliant	-
Movement of project related vehicles & machinery restricted to existing roads. No crisscrossing through undisturbed areas.	5	-	Compliant	-
Drains in access road maintained and operational	5	-	Compliant	-
EMPLOYEE AND SAFETY MANAGEMENT (EMPR PG 48, 51):				
Controlled access to the mine	5	-	Compliant	-
Danger tape & signage used around trenches & open pits	5	-	Compliant	Although Makana Brick doesn't make use of danger tape, the operational area has been fenced off and signposted to prevent unauthorised entry. Danger tape can be used when temporary trenches are dug.
No workers residing on the mining area	5	-	Compliant	-
Workers provided with PPE	5	-	Compliant	-
Emergency contact details displayed on site	5	-	Compliant	-
No herbicides used in windy/rainy conditions	5	-	Compliant	-
Employees attended environmental induction training	5	-	Compliant	-
Proof of training available for auditing purposes	5	-	Compliant	-

COMMENTS OR COMPLAINTS RECEIVED FROM I&AP'S

***(APPENDIX 7 SUB-REGULATION 3(G) & (J))*:**

No written environmental related complaints were received during the audit period.

AUDITING OF EA, EMPR AND REPORTING THEREOF

***(REGULATION 34)*:**

Date of previous EAR/EPA:	23 July 2021
Proof of submission to DMRE available:	The EAR/EPA was submitted to the DMRE on 13 August 2021, and proof of submission is available from Greenmined Environmental (Pty) Ltd.
EAR/EPA compiled by independent person with environmental auditing expertise:	The 2022 performance assessment were compiled by Greenmined Environmental (Pty) Ltd.
Potential and registered I&AP's notified within 7 days of the submission date, and report available on publicly accessible website.	This report will be made available on the Greenmined Environmental (Pty) Ltd website and any registered I&AP's (if applicable) will be informed of the availability of the report within 7 days of the submission date.

GENERAL REPORT

Compliance of the Makana Brick operations with the EMPR was reviewed during the site assessment. The mining area recorded a compliance score of 91% that is an increase of 4% from the previous audit.

Mining continues along the eastern- and southern banks of the clay quarry. No new areas were opened during the audit period as the depth of the quarry was merely increased, and because of this no progressive rehabilitation could be done. Since the last audit the (surface) water in the north-eastern section of the quarry increased substantially. At the time of the inspection the clay quarry was neat and well managed.

The material from the sand- and shale quarries within the mining right footprint are used on site for non-commercial purposes, and therefore these areas were not included in this report. However, the shale quarry was visited during the inspection and not matters of concern were noted.

As the brick factory forms part of the approved mining right footprint and EMPR, the operational areas were included as part of this environmental performance assessment.

Waste Management:

The general waste is still removed from site by SkipGo. As requested in the previous report, the skip was fitted with a lid to prevent litter from blowing out and rainwater accumulating inside.

The new waste/scrap storage area is neatly fenced, and mainly used for the storage of scrap material. Site management mentioned that the old scrap yard will also be sorted, and the materials moved to the relevant divisions of the new storage area.

As mentioned, all contaminated waste must be kept inside bunded areas. The site continues with the separation of the waste materials into waste that can be burned at the kiln (in accordance with the air emissions licence), and those that needs to be removed from site. All used oil, oil filters, contaminated soil and such like materials are burned at the kiln and the site therefore does not have any hazardous waste in need of disposal. The burning of waste does not trigger the thresholds of the National Environmental Management: Waste Act, 2008 as the site does not burn/reuse more than 1 ton of waste per day. Although the EMPR does not allow for the burning of waste at the site, the present method implemented by Makana Brick is believed to be in the best interest of the environment, as it reduces the amount of waste that needs to be disposed of at landfill sites (general and/or hazardous) and contributes (in the case of used oil) to the reduction of diesel/fuel usage on site. Further to this, the stack emission results show that the operations comply with the requirements of the air emissions licence.

At the time of the inspection some waste bins still needed lids, and the black plastic noted in the stormwater channels and along the eastern fence needs to be picked up. Site management must ensure that the plastic is daily removed from the operational areas to prevent it blowing/being washed into the stormwater channels.

The EMPR notes that "*sewage from chemical toilets may not be dumped into the environment but must be removed to a proper wastewater treatment facility*". In light of the above and as mentioned earlier, the use of long drops must be phased out and all site ablutions must drain into septic tanks of sufficient size that either empties into a French drain, or is serviced by an accredited sewerage handling contractor.

Water Quality Monitoring:

The Right Holder has a water authorisation that allows the taking of water from a watercourse in terms of Section 21(a) as well as the storing of water in terms of Section 21(b) of the NWA, 1998. The water authorisation allows the taking of 36 000 m³ water per year and the storing of 40 000 m³ water in one dam. The water use is registered for industrial purposes.

The EMPR notes (on page 50) that the dams must be monitored, as well as the areas below the pollution dams to ensure that no pollution/spillage is taking place. The EMPR does not specify a monitoring frequency. Site management tested the water of the dam in 2020, upon which the results showed that the dam water had a very high *E.coli* count (presumably originating from the upstream municipal sewerage works). Following receipt of the results, a new water filtration- and chlorination system was installed at the pump station (2021). All the water used at the mining area and/or brick plant is filtrated through this system before it is used on site.

It is proposed that water samples are collected from the following additional areas, and that the frequency be increased to annual tests:

- water in the quarry sump;
- water from all the settling/pollution dams; and
- water from the main dam (adjacent to the shale quarry).

Management of Storm Water:

The storm water management of the factory and workshop areas must be improved to separate dirty and clean water. Clean water (e.g. rainwater) must be kept clean and be routed to a natural watercourse by a system separate from the dirty water system. Clean water must be prevented from running or spilling into

dirty water systems. Further to this, site management must distinguish between dirty water that can be directed to the pollution/settling ponds (e.g. runoff water with a high non-hazardous sediment load for instance the processing area or carbon stockpile) and contaminated water (e.g. wash water from the wash bay and vehicle service areas) that must be directed to an oil separation sump. No water containing hydrocarbons/other non-organic chemicals may be directed to the pollution/settling ponds.

It is proposed that the surface of the vehicle service area be lined to prevent soil contamination, and any spillages/contaminated water must drain into an operational oil sump. Vehicle/equipment repairs must be contained to the service area.

Storage of Chemicals and Hazardous Substances:

All chemicals and hazardous substances must be stored in a closed facility with an impermeable floor. The storage area must meet the following conditions:

- Construct storage area on a level area with an impermeable floor.
- Access to the materials/substances may only take place with the prior notification of the responsible officer.
- Fuel- or other chemical storage tanks must have an impermeable bund wall and base within which the tanks sits, raised above the floor, on plinths. The bund capacity must be sufficient to contain 110% of the tank's maximum capacity.
- Consider the distance and height of the bund wall relative to that of the tank to ensure that the substance does not spout beyond the confines of the bund.
- Establish a formal inspection routine to check all equipment in the bund area, as well as the bund area itself for malfunctions or leakages. Inspection should be at least monthly and any accumulated rainwater must be removed, and treated as wastewater.
- All valves and outlets must be checked to ensure that they are intact and closed securely.
- Slope the bund base towards an oil separation sump of sufficient size.
- Contain contaminated water until it can be collected by a registered hazardous waste handling contractor or be disposed of at a registered hazardous waste handling facility.

As mentioned earlier the following site specific matters must be addressed:

- All chemicals stored on site must be kept within bunded areas.
- Any used-oil tanks must be kept in a formal bund wall with a lined surface, and no containers holding chemicals/hydrocarbons may be placed directly on the soil.
- All the bund walls must be sealed.

Since the last inspection, the MSDS's of the chemicals used on site were obtained and filed. As discussed, it was proposed that copies be kept in proximity to the chemicals. The EMPR further requires that the location of hazardous materials and activities is indicated on an emergency plan site map.

Weeds and Invader Plants:

The Tumbleweed (*Salsola kali*) noted around the site must be removed as it is a Category 1b species in terms of the Alien and Invasive Species List, 2016.

Greening Projects:

Since the previous audit, numerous trees were planted that will act as windbreaks between the buildings and operational areas.

DOCUMENT CHECKLIST:

• Mining right	-	Present
• Mine works program	-	Present
• Social and labour plan	-	Present
• Approved EMPR	-	Present
• Mine Plan	-	Present (2021)
• Financial provision	-	Present
• Environmental Audit Report	-	Present
• Water Use Licence	-	Present
• Permit for waste removal	-	Present (General Waste)
• Emergency Preparedness Plan	-	Present
• CoP: Spill Management	-	To be finalised
• CoP: Hazardous Substance Management		To be finalised
• CoP: Waste Management	-	Present
• CoP: Airborne Quality Management	-	Present
• CoP: Noise Control	-	Present
• SoP: for filling tanks and containers	-	To be compiled
• Monitoring results	-	Dust Monitoring (Present) Air Quality Monitoring (Present) Noise Monitoring (Present) Water monitoring (Present – testing to be expanded) Pre-start Checklists (Present)
• Incident & Complaints Register	-	Present
• Environmental Awareness Training	-	Present
• Material Safety Data Sheets	-	Present
• Closure Plan	-	Present as part of the EMPR.

MATTERS TO BE ADDRESSED:

1. Update the mine plan and keep a copy available on site;
2. Replace all long drops with ablutions that drains into septic tanks;
3. Increase the sampling locations and frequency of water quality monitoring to once a year;
4. Remove the tumbleweed from the site;
5. Prepare and implement the procedures and plans as listed in this report;
6. Attend to the slope of the rehabilitated area;
7. Improve the storm water control of the site as listed above;
8. Line the surface of the vehicle service area, formalise the wash bay and ensure all runoff water drains into an operational oil sump;
9. Ensure all chemicals and hazardous substances are stored in a bunded area;
10. Seal all the bund walls;
11. Prepare an emergency plan site map as specified above;
12. Cover all refuse bins with lids;
13. Remove the black plastic from the stormwater channels and eastern fence line.

ABILITY OF EMPR TO ADEQUATELY MANAGE OR MITIGATE ENVIRONMENTAL IMPACTS *(APPENDIX 7 SUB-REGULATION 3(E)*:

It is believed that the EMPR currently adequately manage and/or mitigate environmental impacts at the mining area.

NEED FOR AMENDMENT OF THE EMPR:

No need was identified for the amendment of the EMPR.

FINANCIAL PROVISION:

The previous calculations were undertaken by Greenmined Environmental (Pty) Ltd in 2021 and the financial provision value for the rehabilitation of the mining area was in the sum of R 567 003.36. The right holder has a financial guarantee to the value of R 405 000 lodged with DMRE.

The NEMA Financial Provision Regulations, 2015 stipulates that a holder of right must annually review/assess/adjust the financial provision of the site, and therefore the financial provision calculation of Makhanda Mining (Pty) Ltd was reviewed as part of the environmental performance audit. The 2022 financial provision required to rehabilitate the mining area in accordance with the Guideline Document for the Evaluation of the Quantum of Closure-related Financial Provision by a Mine and as prescribed in terms of Regulation 54 (1) is R 600 462.27.

ECO SIGNATURE

NAME:	SIGNATURE:	DATE:
Christine Fouche		25 August 2022

PHOTOGRAPHS





PANORAMIC VIEW OF THE CLAY QUARRY

Dust suppression in progress

Bunded area to be sealed

Scrap yard that will be sorted

Bunded area to be sealed

Contaminated waste to be placed in bunded area

Pallet repair area – neatly managed

Bin to be fitted with a lid

Plastic to be removed from stormwater drains

Plant areas neatly managed

		
Area cleaned daily	Ablutions to be upgraded	Plastic waste to be removed from beyond the fence
		
Tumble weed to be removed from site		



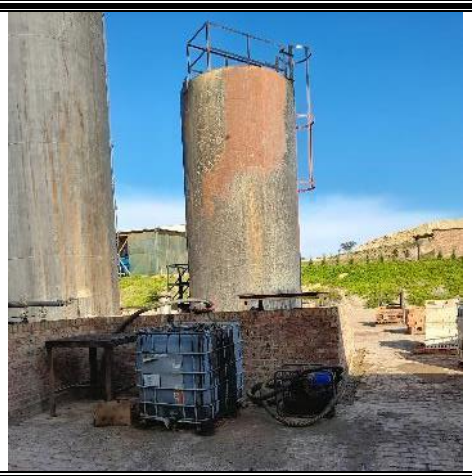

Neatly managed operational areas

Improvement of stormwater drainage

Flow bins to removed from site

Unused material to be removed

Signs posted on flow bins



Used oil to be placed inside bunded areas

		
Oil spill kit	**Skip fitted with lid**	**Hazardous waste contained inside the workshop**
		

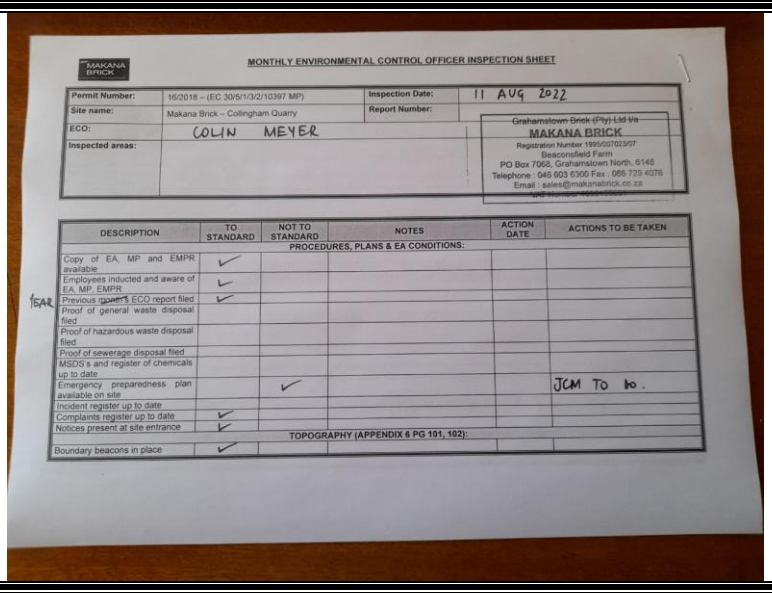
Service and washbay area to be surfaced and runoff to be directed into an oil sump

Trees planted on site

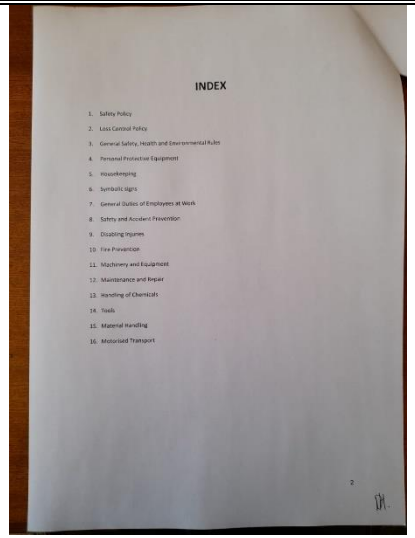
New waste management area

Shale quarry

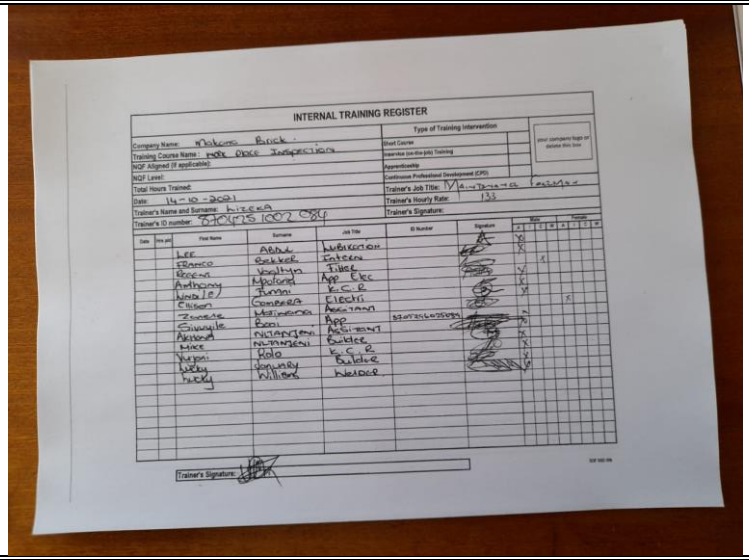
Proof of Skipgo appointment



Monthly Environmental Checklist



Staff Training



Proof of Training

INTERNAL TRAINING REGISTER

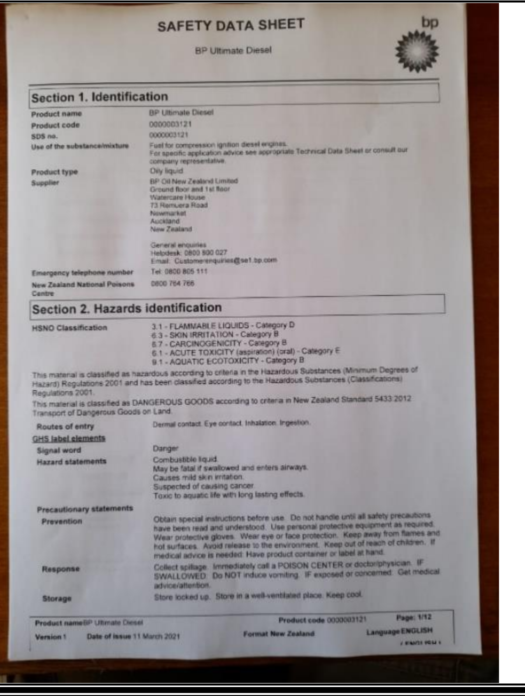
Company Name: Makana Brick	**Type of Training Intervention**
Training Course Name: Basic Rules of Maintenance	Short Course
NQF Aligned (if applicable):	Inservice (on-the-job) Training
NQF Level:	Apprenticeship
Total Hours Trained:	Continuous Professional Development (CPD)
Date: 19-11-21	Trainer's Job Title: Maintenance Foreman
Trainer's Name and Surname: Lizeka Menziwa	Trainer's Hourly Rate: 133
Trainer's ID number: [illegible]	Trainer's Signature:

your company logo or delete this box

Date	Hrs pd	First Name	Surname	Job Title	ID Number	Signature	Male A	Male I	Male C	Male W	Female A	Female I	Female C	Female W
		Lee	Abdul	Lubrication		[signature]	X							
		Msindisi	Jolo	App		M January	Y							
		Lucky	Williams	Welder		[signature]	X							
		Sivuyile	Booi	App	[illegible]	[signature]	X							
		Sonwabo	Blue	App		[signature]	Y							
		Mbodisi	January	Welder		M January	Y							
		Hein	Verwey	K.C.R		[signature]	[illegible]							
		Franco	Bekker	Intern		[signature]	X							
		Zanele	Matinana	Assistant		[signature]					X			
		Akhona	Ntshangeni	Assistant		[signature]	X							
		Lindile	Funani	K.C.R		[signature]	X							
		Nkosinathi	Gindo	Lubrication		[signature]	X							
		Sinthemba	Makhebengu	K.C.R		[signature]	X							
		Vuyani	Rala	K.C.R		[signature]	X							
		Akhona	Nkwinti	K.C.R App		[signature]	X							
		Asanda	Tefe	Fitter		[signature]	Y							

Trainer's Signature: [signature]

Proof of Training



SAFETY DATA SHEET

BP Ultimate Diesel

bp

Section 1. Identification

Product name	BP Ultimate Diesel
Product code	0000003121
SDS no.	0000003121
Use of the substance/mixture	Fuel for compression ignition diesel engines. For specific application advice see appropriate Technical Data Sheet or consult our company representative.
Product type	Oily liquid
Supplier	BP Oil New Zealand Limited Ground floor and 1st floor Watercare House 73 Remuera Road Newmarket Auckland New Zealand General enquiries Helpdesk: 0800 800 027 Email: Customerenquiries@se1.bp.com
Emergency telephone number	Tel: 0800 805 111
New Zealand National Poisons Centre	0800 764 766

Section 2. Hazards identification

HSNO Classification	3.1 - FLAMMABLE LIQUIDS - Category D 6.3 - SKIN IRRITATION - Category B 6.7 - CARCINOGENICITY - Category B 6.1 - ACUTE TOXICITY (aspiration) (oral) - Category E 9.1 - AQUATIC ECOTOXICITY - Category B

This material is classified as hazardous according to criteria in the Hazardous Substances (Minimum Degrees of Hazard) Regulations 2001 and has been classified according to the Hazardous Substances (Classifications) Regulations 2001.

This material is classified as DANGEROUS GOODS according to criteria in New Zealand Standard 5433:2012 Transport of Dangerous Goods on Land.

Routes of entry	Dermal contact. Eye contact. Inhalation. Ingestion.
GHS label elements	
Signal word	Danger
Hazard statements	Combustible liquid. May be fatal if swallowed and enters airways. Causes mild skin irritation. Suspected of causing cancer. Toxic to aquatic life with long lasting effects.
Precautionary statements	
Prevention	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required. Wear protective gloves. Wear eye or face protection. Keep away from flames and hot surfaces. Avoid release to the environment. Keep out of reach of children. If medical advice is needed: Have product container or label at hand.
Response	Collect spillage. Immediately call a POISON CENTER or doctor/physician. IF SWALLOWED: Do NOT induce vomiting. IF exposed or concerned: Get medical advice/attention.
Storage	Store locked up. Store in a well-ventilated place. Keep cool.

Product name BP Ultimate Diesel | Product code 0000003121 | Page: 1/12
Version 1 | Date of issue 11 March 2021 | Format New Zealand | Language ENGLISH

Proof of MSDS's on site