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ECC-102-277-REP-03-D

ENVIRONMENTAL COMPLIANCE REPORT FOR ML 145 ENVIRONMENTAL CLEARANCE CERTIFICATE RENEWAL

OTJOZONDU MINING

FEBRUARY 2020

PO BOX 91193 Windhoek Namibia
Environmental Compliance Consultancy CC
CC/2013/11404

TITLE AND APPROVAL PAGE

Project Name:	Environmental Compliance Report for ML 145
Project Number	ECC-102-277-REP-03-D
Client Name:	Otjozundu Mining (Pty) Ltd
Ministry Reference:	Environmental Clearance Certificate as Attached
Status of Report:	Final submitted to government
Date of issue:	February 2020
Review Period	NA

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DEFINITIONS AND ABBREVIATIONS

BIF	Banded Iron Formation
ECC	Environmental Compliance Consultancy
EMA	Environmental Management Act
EMP	Environmental Management Plan
EPL	Exclusive Prospecting Licence
MET	Ministry of Environment and Tourism
ML	Mining Licence
Mn	Manganese

1 INTRODUCTION

1.1 PROJECT INTRODUCTION

Otjozondu Mining (Pty) Ltd (herein referred to as Otjozondu Mining) is a Namibian company seeking to continue with mining activities on its Mining Licence (ML 145). In terms of the Environmental Management Act. No. 7 of 2007 a renewal application for the project's environmental compliance certificate is required. As part of this application an environmental compliance review of the works undertaken on site and compliance with the Environmental Management Plan (EMP) is to be submitted to the Ministry of Environment and Tourism (MET).

ML 145 is located approximately 220km north-east of Windhoek, Namibia, near the villages of Otjozondu and Hochfeld, midway between Otjozondu and Okondjatu on the M112 road (refer to FIGURE 1). Otjozondu Mining further owns five (5) Exclusive Prospecting Licences (EPLs) for base and rare metals namely, EPL 3456, EPL 3537 EPL 3538, EPL 3539 and EPL 3879 which covers approximately 1,300km^2.

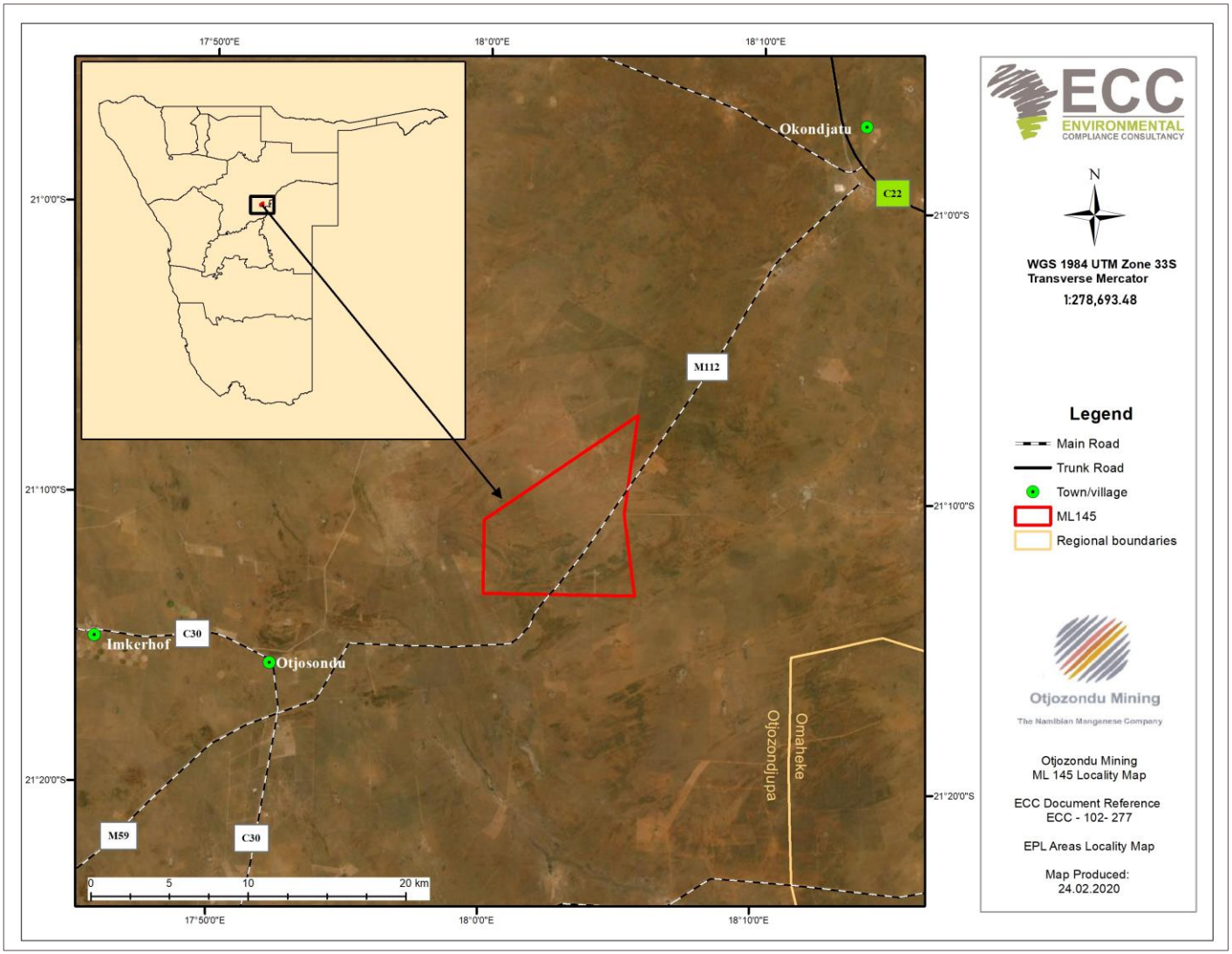

FIGURE 1 - SATELLITE IMAGE INDICATING THE LOCATION OF ML 145

1.2 Purpose of Report

The purpose of this report is to document the findings of an environmental compliance audit, which accompanies the renewal application for the environmental clearance certificate for ML 145. This report does not repeat the findings of previous environmental assessments or environmental reviews which are contained in the following documents:

- Environmental Impact Assessment (EIA) Report (11-314) produced by GCS.

1.3 Environmental Consultancy

Environmental Compliance Consultancy (ECC), a Namibian consultancy registration number 2013/11401, has prepared this report on behalf of the proponent. ECC operates exclusively in the environmental, social, health and safety fields for clients in Namibia in the public and private sector. ECC is independent to the proponent and has no vested or financial interest in the proposed project, except for fair renumeration for professional services rendered.

All compliance and regulatory requirements regarding this assessment document should be forwarded by email or posted to the following address:

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1.4 Ownership and Mineral Licence

Otjozundu Mining (Pty) Ltd owns the Otjozundu Manganese Mine. Details of the proponent are provided in TABLE 1

TABLE 1 - DETAILS OF THE PROPONENT

CONTACT	POSTAL ADDRESS	EMAIL ADDRESS	TELEPHONE	WEBSITE
Otjozondu Mining (Pty) Ltd	PO Box 50847 12 Ongoporo Prosperita	cnel1979@gmail.com richard@highrock.com.au brent@qubepr.com	+264 (0)61 410 950	N/A

2 BACKGROUND TO ML 145

This section provides a brief overview of the mining activities on ML 145. Otjozundu Mining conducts mining activities on the above-mentioned ML.

The Otjozondu Manganese Mine is in a brownfield's manganese production area (existing and currently operating mine), known as the Otjozondu Manganese Field. Mining in the areas has taken place since the 1950s till date. The mine is located on the following Farms: Farm Bosrand 395, Labusrus 425 and Weltevrede 396.

Mining currently produces approximately 100 000 tonnes of product per year. The expected lifespan of the mine is currently 15 years, employing approximately 40- 45 people.

2.1.1 MINING AT THE OTJOZUNDU MINE

The manganese mineralisation is associated with Banded Iron Formation (BIF) deposits approximately 50m thick. The visual impression of homogeneity of the deposit masks variations of mineralogy and variation of Manganese (Mn) grade. The primary ore is located on several layers with paleogeographic and sedimentologic controls implying lateral variation of facies which remains the object of further studies and investigations (GCS, 2012).

The ML will expire on 07 March 2017 and as part of the renewal application an environmental management plan review and update for ML 145 report will be submitted to MET to reflect the proposed current and future mining programme.

2.2 PROPOSED RENEWAL AND ACTIVITIES

The proposed activities once the environmental clearance certificate is renewed include:

- Exploration and mining, and
- Renewal od existing and approved operations.

3 ENVIRONMENTAL COMPLIANCE AUDIT

3.1 SITE INSPECTION

A site inspection was undertaken on the 21st February 2020 by Environmental Compliance Consultancy (ECC), which reviewed the current baseline and evaluated the status of environmental management practices. The findings of this inspection are included in TABLE 2.

3.2 ANNUAL COMPLIANCE AUDIT

Mining activities have been carried out in compliance with the approved EMP granted in terms of the Environmental Management Act, No. 7 of 2007, and the Minerals (Prospecting and Mining) Act, No. 33 of 1992.

During the reporting period (2017-2020) several activities, pit mining, and processing are carried out in compliance with the approved EMP for the mining licences.

This audit was conducted through a series of desktop assessments, revision of relevant reports, and verification of owner documentation, photographs and all records made available to ECC.

In addition to the compliance audit and review in TABLE 2, the EMP will be revised and gaps identified; additional best practice measures that were absent from the previous EMP; will be implemented according to the requirements under the National Policy on the Prospecting and Mining in Protected Areas.

3.3 DEMONSTRATION OF PROACTIVE AND BEST PRACTICE ENVIRONMENTAL MANAGEMENT

This section outlines proactive and good environmental management practices carried out by the proponent during the reporting period.

3.3.1 ENVIRONMENTAL REPORTING AND MONITORING

The proponent has demonstrated good environmental monitoring practices in the following areas:

DUST MONITORING

Dust monitoring stations are in place and reported monthly. All measurements remained within the acceptable limits of 600/900mg/m^2/day. The dust monitoring report for January to February 2020 is presented in Appendix A.

GROUNDWATER LEVELS AND QUALITY

Similarly, the groundwater level is monitored quarterly, currently, only (2) boreholes are being used for processing and portable drinking water. The groundwater level and quality monitoring report for February is presented in Appendix B.

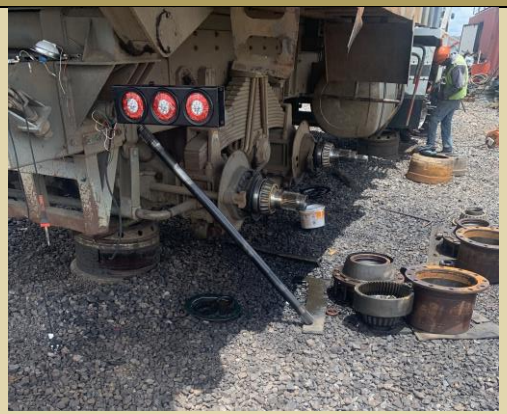
No abstraction permits are currently in place, a water abstraction permit will be applied for, at the Ministry of Agriculture, Water, and Forestry.

3.4 COMPLIANCE AUDIT FINDINGS

The section outlines the findings of the environmental audit completed for the project. It addresses obligations in terms of the key acts that govern the activities on the site, the commitments made in the EMP, and presents the findings and recommended corrective actions where applicable.

TABLE 2 – EXPLORATION EMP AUDIT

REFERENCE	ASPECT AND IMPACT	MITIGATION AND MANAGEMENT ACTIONS	COMPLIANCE	FINDINGS/ OBSERVATIONS	RECOMMENDED ACTIONS
Soil, land capability and land use	- Spills from vehicles/machinery may result in soil contamination	- Vehicles will be regularly monitored and maintained. Maintenance programmes will be established and implemented. - There will be an incident management system, including procedures and training, for dealing with incidents as prescribed within the Environmental Awareness Programme. - If spills do occur and soils become contaminated, the appropriate remedial measures will be identified in consultation with an appropriately qualified specialist. If necessary, the polluted soils will be classified as waste and will be discarded at an appropriate permitted waste site. After removal of the contaminated soils, the affected areas will be landscaped and rehabilitated.	**Partially compliant**	 - Oil store is not up to standard – no proper bunding in place and evidence of spillage not being cleaned. No spill kits were observed on site.	- Ensure hydrocarbon tanks are bunded. Bunds should be designed to hold 110% of the total volume contained in the tanks. - It is recommended that a proper hydrocarbon storage area is designed. - It is recommended that a bioremediation site is created to remediate oil spillages across the site. - Ensure wash bays are in place.

REFERENCE	ASPECT AND IMPACT	MITIGATION AND MANAGEMENT ACTIONS	COMPLIANCE	FINDINGS/ OBSERVATIONS	RECOMMENDED ACTIONS
				  - Oil spills witnessed are not being cleaned	

REFERENCE	ASPECT AND IMPACT	MITIGATION AND MANAGEMENT ACTIONS	COMPLIANCE	FINDINGS/ OBSERVATIONS	RECOMMENDED ACTIONS
Surface water	- Deterioration of water quality as a result of diffuse pollution from the mine.	- Surface water will be monitored in accordance with Section 5.1 of the EMP. - Stormwater controls at all sites of mine infrastructure will be established around all the mining activities in the mining area. - The perimeter or footprint of the plant and surrounding infrastructure will be inspected to see whether stormwater is flowing off-site to the veld. If such activity occurs measures must be implemented for this water to be contained. - Cut-off trenches will be maintained by continuous inspections. The cut off trenches should always be clean, ensuring that they contain no obstacles. - Should any spillages occur, these should be removed immediately.	**Partial compliant**		- Ensure stormwater management plan is in place. To be developed in 2020 and submitted to government once complete.

REFERENCE	ASPECT AND IMPACT	MITIGATION AND MANAGEMENT ACTIONS	COMPLIANCE	FINDINGS/ OBSERVATIONS	RECOMMENDED ACTIONS
	- Leakages from pipelines could result in water losses and discharge of contaminated water.	- Engineering design and controls **In accordance with EMP, Page 48, 49, 51**	**Compliant**	- No evidence of non-compliance	
	- Overflow from sediment dams	- Sediment basins designed to handle sediment discharge. In accordance with Namibian laws of estimated soils and construction. - During the rainy season monitor and re-use appropriately to ensure capacity control. - Engineering design and controls. - Inspection and maintenance.	**Compliant**		

REFERENCE	ASPECT AND IMPACT	MITIGATION AND MANAGEMENT ACTIONS	COMPLIANCE	FINDINGS/ OBSERVATIONS	RECOMMENDED ACTIONS
Groundwater	Deterioration of groundwater quality as a result of diffuse pollution from the plant.	- Dirty water will be contained in fit-for-purpose designed facilities, which will limit infiltration of contaminated water to the groundwater. - Boreholes will be monitored for groundwater level and quality to assess the impacts on the groundwater. - Should it be indicated through monitoring and investigation by a suitably qualified person that any legitimate groundwater users are negatively impacted upon in terms of quantity or quality of borehole water due to mining activities, negotiations between the mine and the groundwater users will be entered into to resolve the situation **In accordance with EMP, Page 49**	**Compliant**		

REFERENCE	ASPECT AND IMPACT	MITIGATION AND MANAGEMENT ACTIONS	COMPLIANCE	FINDINGS/ OBSERVATIONS	RECOMMENDED ACTIONS
				 - Boreholes are monitored as required.	
	- Manganese ore will be exposed at the jig to water and oxygen, potentially resulting in leachate generation, and spills from the site can contaminate groundwater	- Spills from the crushing, screening and washing plant area needs to be cleaned up immediately **In accordance with EMP, Page 49**	**Compliant**	- No evidence of non-compliance	- Continue to ensure spillages are cleaned up immediately

REFERENCE	ASPECT AND IMPACT	MITIGATION AND MANAGEMENT ACTIONS	COMPLIANCE	FINDINGS/ OBSERVATIONS	RECOMMENDED ACTIONS
	- Groundwater contaminant plume from unlined settling ponds.	- All water from pits, jig and production boreholes will be recycled and re-used. The settling ponds will act as water balancing dams. **In accordance with EMP, Page 49**	**Compliant**		
	- Potential seepage from the paste disposal facility may lead to decrease in groundwater quality	- Dirty water will be contained in fit-for-purpose designed facilities, which will limit infiltration of contaminated water to the groundwater. - Boreholes will be monitored for groundwater level and quality to assess the impacts on the groundwater. - Should it be indicated through monitoring and investigation by a suitably qualified person that any legitimate existing groundwater users are negatively impacted upon in terms of quantity or quality of	**Compliant**		

REFERENCE	ASPECT AND IMPACT	MITIGATION AND MANAGEMENT ACTIONS	COMPLIANCE	FINDINGS/ OBSERVATIONS	RECOMMENDED ACTIONS
		borehole water, alternative water sources will be investigated. **In accordance with EMP, Page 49**			
	- The presence of linear infrastructure could lead to an increase in volume and speed of surface water run-off, increasing erosive capacity	- Roads will be constructed with appropriate drains, levelling and surfacing to ensure adequate drainage. - Erosion control measures are required on all slopes exceeding 2% and engineered erosion control measures are required on all slopes exceeding 15%. Slope angles of topsoil stockpiles will not exceed 1:3 (18º). **In accordance with EMP, Page 25**	**Compliant**	  	

REFERENCE	ASPECT AND IMPACT	MITIGATION AND MANAGEMENT ACTIONS	COMPLIANCE	FINDINGS/ OBSERVATIONS	RECOMMENDED ACTIONS
Visual	- The roads will have a visual impact (visual intrusion, visibility and visual exposure).	- If dust fallout reaches an unacceptable level and restricts vision the sealing of roads should be investigated. - An ecological approach to rehabilitation and screening measures, as opposed to a horticultural approach to landscaping should be adopted. For example, communities of indigenous plants enhance biodiversity and blend well with existing vegetation. **In accordance with EMP, Page 50**	**Compliant**	- Dust monitotoing is done monthly, analyses is done at the lab on site. No evidence of non-compliance was observed on site.	
	- The paste disposal facility has a visual impact (visual intrusion, visibility and visual exposure).	- Natural vegetation will be retained wherever possible. - An ecological approach to rehabilitation and screening measures, as opposed to a horticultural approach to landscaping will be adopted. For example, communities of indigenous plants enhance biodiversity and blend well with existing vegetation. - As an alternative option (due to	**Compliant**		

REFERENCE	ASPECT AND IMPACT	MITIGATION AND MANAGEMENT ACTIONS	COMPLIANCE	FINDINGS/ OBSERVATIONS	RECOMMENDED ACTIONS
		the dry nature of the region), waste rock could be used to form the side slopes of the paste disposal facility. This would result in the surface of this facility to be below the top of the side walls during operations which may result in a reduction in wind entrainment from the surfaces. In addition, waste rock can also be used to cover the slopes of the large overburden dump and topsoil piles. This is based on the waste rock dump being the lowest source of windblown dust from all the sources included. **In accordance with EMP, Page 50**			
Traffic	- Direct destruction of organisms and their habitats (including road kills)	- Install highly visible speed limit notices and devices that effectively manage and control average traffic speed. - Train all drivers of vehicles in the necessary procedures to maintain regulated speed. - As much as operationally feasible, driving to and from the mining sites should be avoided at night,	**Compliant**	- No evidence of non-compliance	- When operations become intensive, install road sign for speed limit to 40km/hr - Clearly demarcate roads

REFERENCE	ASPECT AND IMPACT	MITIGATION AND MANAGEMENT ACTIONS	COMPLIANCE	FINDINGS/ OBSERVATIONS	RECOMMENDED ACTIONS
		limited, if possible, only to within each mining area. - Develop road use policy and enforce this through regular checks. - Mark out all construction and mining footprints and clearly convey the rule of staying inside these boundaries to all construction crews and mining staff; make environmental management of construction an explicit part of building contracts with non-performance linked to a penalty clause. **In accordance with EMP, Page 26**			
	- Direct and indirect effects on biodiversity due to change in the environment as a result of excessive dust, noise, light, artificial surface water and	- At any time, confine mining-related activities to as small an area as possible. - Reduce noise and dust as much as possible **In accordance with EMP, Page 26**	**Compliant**	- No evidence of non-complinace, dust is monitored monthly. Only 2-4 vehicles are running daily	

REFERENCE	ASPECT AND IMPACT	MITIGATION AND MANAGEMENT ACTIONS	COMPLIANCE	FINDINGS/ OBSERVATIONS	RECOMMENDED ACTIONS
	human presence				
Noise	- Noise will be generated during the operation of roads by vehicles, machinery and staff on site which could be a nuisance to nearby residence.	- Activities will be reduced during the nighttime. - All the equipment, but especially the diesel-powered mining equipment, will be well maintained. - Select vehicles with low sound power level rating, adequate exhaust silencers. Mufflers will be installed on vehicles that produce too much noise. - Ensure all vehicle noise emissions are within industry norms. - The maintenance schedule will include the checking of exhaust and intake silencers. Any change in the noise emissions characteristics of equipment must serve as an indicator for its immediate withdrawal from service and placement on the maintenance schedule. **In accordance with EMP, Page 27**	**Compliant**	- No evidence of non-compliance	

REFERENCE	ASPECT AND IMPACT	MITIGATION AND MANAGEMENT ACTIONS	COMPLIANCE	FINDINGS/ OBSERVATIONS	RECOMMENDED ACTIONS
	- Noise will be generated during the operation of the ore beneficiation plant by processing activities and staff on site.	- Select equipment with low sound power level rating. - Ensure the rollers used for the conveyor system are machined for optimum roundness. - Limit loud activities to daylight hours as far as possible. - All the equipment, but especially the diesel-powered mining equipment, will be well maintained. - Noise monitoring will be undertaken throughout the life of the mining activities to ensure that noise levels comply with Safety and Health Standards. Noise monitoring will take place in accordance with Section 5.4 of the EMP. **In accordance with EMP, Page 27**	**Compliant**	- No evidence of non-compliance	
	- Blasting impact to surrounding properties and landowners	- Prior to the commissioning of blasting activities at the mine, the technical blasting team of Otjozondu Mine will assess the various blasting schedules in a	**Compliant**	- No evidence of non-compliance. Good relationship with farmers is maintained	

REFERENCE	ASPECT AND IMPACT	MITIGATION AND MANAGEMENT ACTIONS	COMPLIANCE	FINDINGS/ OBSERVATIONS	RECOMMENDED ACTIONS
		working group. - An exclusion zone of 500m will be established around the blast area. - A signature trace analysis will be undertaken prior to the commencement of blasting operations, in order to examine the blasting procedure. It is recommended that the survey to be undertaken by a registered company. - The mine will establish an open channel of communication with surrounding landowners, in order to ensure that all issues and concerns are known and are addressed. **In accordance with EMP, Page 57**			
Safety risk to surrounding residence and passers by	- Blasting creates a safety risk	- Scheduled blasting times will be planned in advance and will be clearly indicated on the mining area. Blasting boards, at the plant gate, as well as at all access areas, will be updated at least 24 hours prior to the blast, displaying the	**Compliant**	- No evidence of non-compliance	

REFERENCE	ASPECT AND IMPACT	MITIGATION AND MANAGEMENT ACTIONS	COMPLIANCE	FINDINGS/ OBSERVATIONS	RECOMMENDED ACTIONS
		time and date of the blast. - Surrounding property owners will be informed of the blasting procedures and schedules. - Employees and outside contractors etc. will be informed of the blasting procedures and the associated safety measures, during induction. - Prior to blasting, all vehicles and machinery will be removed from the blast area and parked at a designated site, as determined by the site manager. - All possible access roads will be blocked by personnel with red flags. - Where access roads cannot be barricaded by means of booms or gates, a vehicle equipped with a red flag will barricade the road. - Warnings will be given prior to blasting. - Blast holes and the placement of			

REFERENCE	ASPECT AND IMPACT	MITIGATION AND MANAGEMENT ACTIONS	COMPLIANCE	FINDINGS/ OBSERVATIONS	RECOMMENDED ACTIONS
		the explosives will be undertaken in such a manner to reduce the possibility of air blasts and ground vibrations. - Explosives material will be handled according to Legislation (Explosives Act 15 of 2003). **In accordance with EMP, Page 57**			
Air quality	- Materials handling operations and soil exposure will produce fugitive dust. - Drilling and blasting will produce fugitive dust	- Section 4.2 indicates the dust control measures that will be implemented. - The dust monitoring programme in Section 5.3. of the EMP will be adhered to. **In accordance with EMP, Page 63**	**Compliant**	- No evidence of non-complinace, dust is monitored monthly.	
	- Wind erosion from exposed areas	- If dust fallout levels from unpaved roads and are found to be exceeding acceptable levels than the sealing of roads must be investigated. - The walls of the paste disposal facility will be vegetated	**Compliant**	- No evidence of non-compliance	

REFERENCE	ASPECT AND IMPACT	MITIGATION AND MANAGEMENT ACTIONS	COMPLIANCE	FINDINGS/ OBSERVATIONS	RECOMMENDED ACTIONS
		progressively throughout the life of mine. The vegetation cover should be such to ensure at least 80% control efficiency for the walls. This should be an on-going process. As an alternative option (due to the dry nature of the region), waste rock could be used to form the side slopes of the paste disposal facility. This would result in the surface of this facility to be below the top of the side walls during operations which may result in a reduction in wind entrainment from the surfaces. This is based on the waste rock dump being the lowest source of windblown dust from all the sources included. **In accordance with EMP, Page 53**			
	- Vehicle-entrained emissions from unpaved and paved roads. - The removal, handling and stockpiling of materials will	- If dust fallout levels from unpaved roads are found to be exceeding acceptable levels than the sealing of roads must be investigated. - Speed limits will be maintained	**Compliant**	- No evidence of non-compliance	

REFERENCE	ASPECT AND IMPACT	MITIGATION AND MANAGEMENT ACTIONS	COMPLIANCE	FINDINGS/ OBSERVATIONS	RECOMMENDED ACTIONS
	increase dust fallout.	**In accordance with EMP, Page 67**			
Socio-economic	- Degradation of roads due to heavy vehicles	- Speed limits will be adhered to. - The transport of manganese material from the Otjozondu Manganese Mine should be confined to Road 59, to avoid damage to majority of roads in the area. **In accordance to EMP, Page 26**	**Compliant**	- No evidence of non-compliance	
	- Damage to vehicles. The poor quality of the road surface resulted in damage to vehicles, specifically suspension and tires.	- Transport of manganese material from the Otjozondu Manganese Mine should be confined to Road 59, to avoid damage to majority of roads in the area. - The mine must ensure that damage caused to roads by the construction related activities, including heavy vehicles, is repaired. - If possible, separate haulage roads should be developed at the cost of the mining company.	**Compliant**	- No evidence of non-compliance	

REFERENCE	ASPECT AND IMPACT	MITIGATION AND MANAGEMENT ACTIONS	COMPLIANCE	FINDINGS/ OBSERVATIONS	RECOMMENDED ACTIONS
		In accordance to EMP, Page 26			
	- Resident's safety due to vehicles on site, reckless driving and passing schools and villages.	- Movement of construction traffic should be limited to weekdays. - Movement of heavy vehicle construction traffic should be limited to Road 59 (see above) and not the C31 via Hochfeld. - Potentially affected farmers should be made aware in advance of planned movements of abnormal loads on local roads. - The mine must ensure that damage caused to roads by the construction related activities, including heavy vehicles, is repaired. - All vehicles must be road-worthy, and drivers must be qualified and made aware of the potential road safety issues and need for strict speed limits. - Otjozondu commits to discuss the possibility of fencing the section of the road that passes through Otjozondu and the primary	**Compliant**	- No evidence of non-compliance	

REFERENCE	ASPECT AND IMPACT	MITIGATION AND MANAGEMENT ACTIONS	COMPLIANCE	FINDINGS/ OBSERVATIONS	RECOMMENDED ACTIONS
		school. **In accordance with EMP, Page 26**			
Waste Generation	- The generation of waste may lead to soil contamination.	- A detailed waste management strategy will be established and implemented (refer Section 4.2 of the EMP for information on the disposal of waste). **In accordance with EMP, Page 38**	**Compliant**	- Waste is removed by a contractor on a regular basis.	- Ensure agreements are in place with the contractor.
	- Handling of waste and transport of building material can cause various types of spills (domestic waste, sewage water, hydrocarbons) which can infiltrate and contaminate the groundwater system.	- Waste should be discarded in the allocated waste area. The waste area should be bunded. Spills should be cleaned up immediately according to the specified conditions, and the DWA Namibia should be notified in the event of a significant spill. - Solid waste must similarly either be stored at site on an approved waste disposal area or removed by credible contractors. - Boreholes will be monitored for groundwater level and quality to assess the impacts on the groundwater.	**Compliant**		

REFERENCE	ASPECT AND IMPACT	MITIGATION AND MANAGEMENT ACTIONS	COMPLIANCE	FINDINGS/ OBSERVATIONS	RECOMMENDED ACTIONS
		In accordance with EMP, Page 38			

4 CONCLUSION AND RECOMMENDATIONS

Development at the mine, and mining activities are being carried out in general compliance with the relevant requirements of the Minerals (Prospecting and Mining) Act, No 33 of 1992. Up until now, no significant impacts resulting from the current licence holders' activities, have been identified and management and mitigation measures are in place for potential risks.

It is recommended that the proponent continue to adhere to all environmental legislation and company standards to ensure that best practical environmental protection continues as exploration and mining activities progress.

On this basis, Environmental Compliance Consultancy is of the professional opinion that the proponent has been able to demonstrate compliance to the approved EMP and that the renewal for environmental clearance certificate (ECC) should be granted to the proponent for the activities at the Otjozundu mining site.

The environmental clearance certificate that was issue don the 07 March 2017 is lost and cannot be found. A letter was submitted to the MET requesting for a duplicate copy, refer to Appendix C for your reference.

4.1 NEXT STEPS

The proponent has a development plan to continue mining and exploration activities on the Otjozundu mining site and during the upcoming years to continue with the following activities:

- In addition to the mineral exploration, mining and development work, the proponent will continue operations in compliance with the EMP,
- Reinstate/ reactivate the weather station at the mine, and
- Develop a storm waste management plan.

APPENDIX A: DUST MONITORING REPORT

Otjozondu Dust Monitoring Report

December- January 2020

Otjozondu Mining

The Namibian Manganese Company

Title	Otjozondu Mine Dust Monitoring: December- January 2020		
	Name	**Signature**	**Date**
Author	Richard Stanton		09/01/20
Document Reviewer	Richard Stanton		09/01/20

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LIST OF ABREVIATIONS

ASTM	American Society of Testing and Materials standard
ASTM D1739	Standard test method for the collection measurement of dustfall (settleable particulate matter)
AQA	National Environmental Management: Air Quality Act
Avg	Average
GN	Government Notice
mg/m²/day	Milligrams per metre squared per day
NEMA	National Environment Management Authority
PM_{10}	Particulate matter where particles are 10 micrometres in diameter or smaller
Reg.	Regulation
SANS	South African National Standard

1 INTRODUCTION

The mine and the processing plant are currently located on the farms Bosrand 395, Labusrus 425 and Weltevrede 396. Otjozondu Mining currently produces approximately 100 000 tonnes of product per year. The Mine's ore beneficiation (processing) is located about 1 km southwest of the Mine offices.

In order to fulfil the conditions of their Environmental Clearance Certificate (ECC) and requirements of the 2012 amended Environmental Management Plan (EMP), Otjozondu Mining conduct Dust Monitoring at the Mine and compile monthly result reports.

This report presents the laboratory results for dust fallout for the monitoring period stated at the beginning of this report. The Scope of Work for this exercise is shown under the following chapter.

2 SCOPE OF WORK

The scope of work is as follows:

1. Monthly collections and analysis of eight (8) single dust fallout buckets
2. Monthly reporting of results.

3 METHODOLOGY

The methodology employed for this exercise (monitoring) is presented below.

3.1 Sampling and Analysis of Dust Fallout Rate

Particle matter (PM) found in the atmosphere can include soil particles, dirt, smoke, pollen, ash, etc. PM is categorised according to size into total suspended particulates (TSP), PM10 and PM2.5. Nuisance dust or TSP with a diameter between 10 and 100 µm accounts for the visible dust that may settle and cause the clogging of machinery as well as having an adverse effect on local flora through the clogging of stomata and settling in the upper airways of people and animals (GCS Water & Environmental Consultants, 2017).

Nuisance dust or TSP sampling follows the ASTM D 1739:1998 methods recommended in SANS 1929:2011 as the most appropriate method to use. It entails exposing a bucket on top of a pole for a period of 30 days (± 3 days) and assessing the dust collected in the bucket through weighing.

There is only one bucket type that is currently installed at Otjozondu Mine, also known as a single bucket type. A single dust bucket consists of a cylindrical 5 litre container (the bucket), which is connected to a 2.6 m galvanised steel pole that has been staked in the ground and secured with a concrete base. The dust buckets are collected by trained personnel and taken to the mine lab for analysis.

Exposed buckets, when returned to the laboratory, are rinsed with water to remove any residue from the sides of the bucket, and the bucket contents are filtered through a coarse (>1 mm) filter to remove insects and other coarse organic detritus. The sample is then filtered through a pre-weighed paper filter to remove the insoluble fraction, or dust fallout. This residue and filter are dried, and gravimetrically analysed to determine the insoluble fraction (dust fallout).

3.2 Standards for Dust Deposition

Due to the fact that Namibia does not have dust deposition standards that can be used in assessing the acceptability of the dust monitoring results, reference was therefore made to the South Africa's National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004) National Dust Control Regulations No. R. 827 promulgated as of 1 May 2013 (NEMA Reg No. 827, 2013). The reference method for measuring the dust fall is ASTM D1739 as per the regulation requirements. Dust deposition rates are expressed in units of $mg/m^2/day$ over a 30-day averaging period (± 3 days).

The regulation sets acceptable dust fallout rates according to restriction areas, namely residential and non-residential. The acceptable rates are presented in **Table 3-1**.

The dominant land use in the region of the Mine is agriculture and tourism on freehold land, with small areas of resettlements, other governmental or parastatal (owned or controlled wholly or partly by the government) and urban land use types (GCS Water & Environmental Consultants, 2012). In other words, the Mine being located between two settlements; Okondjatu and Otjozondu and also surrounded by farms, the classification of the project area is Non - residential.

Table 3-1: Acceptable rates for dust deposition per restriction area (NEMA Reg. No.827, 2013)

Restriction Areas	Dust fallout rate (D) ($mg/m^2/day$)	Permitted frequency of exceeding dust fall rate
Residential area	D<600	Two within a year, not sequential months
Non-Residential area	600<D<1200	Two within a year, not sequential months

3.3 Non-Compliances

Any person who conducts any activity in such a way that gives rise to dust in quantities and concentrations that may exceed the dustfall standard set out in **Table 3-1** above must, upon receipt of a written notice from the air quality officer, implement a dust fall monitoring programme. The permitted frequency of exceeding the dust fallout rate is twice within a year, but not sequential months (GN R827 "National Dust Control Regulations") (GCS Water & Environmental Consultants, 2017).

A person required to implement the dust fall monitoring programme must, within a specified period (set in the written notice); submit a dust fall monitoring report to the air quality officer. If a dust fall monitoring programme is already in existence, the reports of that programme shall be accepted by the air quality officer, if it meets the requirements of a dust monitoring report as set out in the regulation of the Air Quality Act (GN R827 "National Dust Control Regulations").

4 MONITORING NETWORK

The monitoring network of the Mine was set up in accordance to the recommendations given in the amended 2012 Environmental Management Plan for Air Quality (GCS Water & Environmental Consultant, 2012) and upon site visit. The locality of the dust monitoring network is shown in

Figure 4-1 and the co-ordinates and site descriptions of the dust buckets are presented in **Table 4-1** below.

Table 4-1: Dust bucket locations at Otjozondu Mine

Single Dust Bucket ID.	Latitude	Longitude	Site Description
OT1	21°13'8.13"S °	18° 2'31.18"E	Within 30 m of the ore crusher to the south
OT2	21° 13' 04.29" S	18° 02' 24.74"E	Within the vicinity of the Mine laboratory (30 m to its west)
OT3	21° 13' 04.96" S	18° 02' 18.56"E	About 200 m north of the Mine Plant, behind the waste rock dump
OT4	21° 13' 03.17" S	18° 02' 20.53"E	In proximity to bucket OT3 (to the north)
OT5	21° 09' 18.35" S	18° 04' 42.74"E	Far north of the Plant, along the haul road from the mining area (located about 700 m southeast of the North Bosrand pit)
OT6	21° 09' 50.66" S	18° 05' 04.48"E	At the intersection of the haul road to the North Bosrand pit and haul road to the Mine/Plant facilities (about 1.8 km southeast of North Bosrand pit and 7 km northeast of the Mine Plant)
OT7	21° 12' 23.14" S	18° 03' 12.92"E	About 2 km northeast of Mine Plant (next to the haul road)
OT8	21° 13' 08.13" S	18° 02' 31.18"E	In proximity to the Processing Plant (towards the Mine gate, about 200 m east of the Plant)

Figure 4-1: Dust bucket locations at Otjozondu Mine

5 RESULTS

5.1 Single Buckets

The single buckets dust fallout rates for the monitoring period of December- January 2020 is presented in **Table 5-1**. Dust bucket OT1 has the highest dust fallout rate. This value is explained by the fact that the bucket is located very close to the source of dust emission (ore crusher) where the most dust is generated. Bucket OT2, OT3, and OT4 are all within 100 m from the ore crusher/Plant, hence showing slightly higher dust fallout values. Buckets OT5, OT6, OT7 and OT8 are located along mine haul roads that are affected my local road use also.

Table 5-1: Dust fallout rates of the site buckets

Dust bucket	Dust fallout rate ($mg/m^2/day$)
OT1	398
OT2	279
OT3	277
OT4	254
OT5	95
OT6	53
OT7	62
OT8	89

5.2 Dust Fallout Compliance

The dust fallout rates for all 8 Buckets are compliant and under acceptable levels.
OT1 is located close to the crush and screen plant accounting for the higher levels of dust.

6 CONCLUSIONS AND RECOMMENDATIONS

Dust Fallout remains at satisfactory levels for all 8 Buckets.

Grade issues saw intermittent stoppages reducing dust fallout.

Prolonged wet weather reduced dust levels.

Reduced mining saw very low readings on OT5-OT8.

Recommendations

All personnel working within 100m of dust buckets OT1-OT4 are required to wear dust masks at all times.

7 REFERENCES

GCS Water & Environmental Consultants. (2012). *Environmental Impact Assessment for the Proposed Otjozondu Manganese Mine*. Windhoek: Unpublished.

GCS Water & Environmental Consultants. (2012). *Environmental Management Plan (EMP) for Otjozondu Manganese Mine (as Amended)*. Windhoek: Unpublished.

GCS Water & Environmental Consultants. (2017). *ANGLO PLATINUM: Der Brochen Project: Dust Monitoring for the Period of 13 July to 14 August 2017*. Pretoria: Unpublished.

APPENDIX B: GROUNDWATER LEVEL AND QUALITY MONITORING REPORT

OTJOZONDU MINING

Head Office Namibia

PO Box 50847

12 Ongoporo Str. Prosperita

Windhoek

Groundwater Monitoring Report: 2019/10/27 (Water levels and water quality)

1 INTRODUCTION

As part of their Environmental Clearance Certificate (ECC) conditions and 2012 Management Plan (EMP) (amended in 2016), Otjozondu is required to monitor groundwater levels and quality every three months (quarterly) and biannually, respectively. According to the Mine's EMP recommendations, groundwater monitoring should be conducted on selected boreholes. ***(See attached Appendix A)***

1.1 Groundwater monitoring requirements

According to the EMP recommendations, focus on groundwater quality monitoring should be put on the following parameters:

Physical parameters: Groundwater levels; ***on a quarterly basis of selected bore holes as per EMP***.

Chemical field measurements: pH, Electrical Conductivity (EC) & Total Dissolved Solids (TDS); ***on a bi-annual basis as per EMP***.

Laboratory analyses: Anions and cations (Ca, Mg, Na, K, NO_3, Cl, SO_4, F, Fe, Mn, Al, & HCO_3); ***on a bi-annual basis as per EMP***.

2 METHODOLOGY

Water levels in the holes were tested using a dip meter. Casing lengths were also taken into consideration and the final reading represents the surface of the ground to the surface of the underground water.

Certain holes were excluded in the exercise due to the distance from the current working area as well as some holes being not accessible with the dip meter and/or collapsed. (See Appendix A)

Water quality was done using sterile water containers (500ml); all samples were kept in a cooler box and dispatched to Windhoek for full analysis. Where possible water was sampled from the casing pipe to avoid contaminants from dams and additional PVC piping.

3.1 RESULTS: GROUNDWATER QUALITY COMPLIANCE

The samples collected from the boreholes were analysed and compared to the Namibian Group A to Group D water quality drinking guidelines and World Health Organisation (WHO) Drinking Water Standards (as per EMP recommendations). The comparison of the water samples to water quality standards and drinking water guidelines is presented in the below table.

Summary of Otjozondu Mine Water Chemistry Analyses - October 2019

Parameters (units in mg/l unless otherwise stated)	Group A	Group B	Group C	Group D	WHO Drinking Water Guideline -2011	Boreholes											
						OM2	MHO10	BOS T1	BOS T2	BOS T3	BOS T4	HEB 1	HEB 8	JMT1	LAB T1	LAB T2	LAB T3
Date						Oct-19	Oct-19	Oct-19	Oct-19	Oct-19	Oct-19	Oct-19	Oct-19	Oct-19	Oct-19	Oct-19	Oct-19
pH in water at 25°C	0.6-9.0	5.5-9.5	4.0-11.0	4.0-11.0	NS	6.6	6.7	7.4	7.4	7.6	7.2	7.6	7.3	7.8	6.8	6.7	6.6
Turbidity (NTU)	1	5	10	10	NS	0.1	0.2	0.2	0.1	0.2	0.2	0.2	0.1	0.2	0.1	0.2	0.1
Electrical Conductivity in mS/m @ 25°C	150	300	400	400	NS	166	325	255	209	135	150	155	133	180	233	140	175
Total Dissolved Solids (TDS) (calc.)	NS	NS	NS	NS	NS	989	2 189	1 472	1 355	878	897	945	824	1 087	1 289	879	1 045
P-Alkalinity as $CaCO_3$	NS	NS	NS	NS	NS	0	0	0	0	0	0	0	0	0	0	0	0
Total Alkalinity as $CaCO_3$	NS	NS	NS	NS	NS	241	384	361	331	347	322	325	365	360	301	260	230
Total Hardness as $CaCO_3$	300	650	1300	1300	NS	568	1 230	714	706	355	345	498	314	387	587	550	575
Calcium as Ca	150	200	400	400	NS	120	340	215	127	65	58	81	73	192	131	135	106
Magnesium as Mg	70	100	200	200		77	147	78	63	34	68	71	71	67	55	81	71
Calcium hardness as $CaCO_3$	375	500	1000	1000	NS	248	789	524	342	124	192	165	135	324	205	356	360
Magnesium hardness as $CaCO_3$	290	420	840	840	NS	320	724	304	361	230	171	157	142	351	178	231	258
Sodium as Na	100	400	800	800	50	82	148	67	255	148	154	75	81	114	81	95	82
Potassium as K	200	400	800	800	NS	8.4	14.5	61	12	11.7	8.4	5.9	7.4	9.1	8.6	9	7.3
Chloride as Cl^-	250	600	1200	1200	NS	224	798	251	395	65	175	170	178	234	229	251	221
Sulphate as $SO4^{2-}$	200	600	1200	1200	NS	141	215	120	215	91	110	184	74	187	155	122	96
Fluoride F^-	1.5	2	3	3	NS	0.4	0.5	0.5	1.3	1.4	0.9	0.7	0.8	0.9	0.7	0.5	0.3
Nitrate as N	10	20	40	40	11	12	24	23	61	11	14	18	11	18	19	15	18
Nitrite as N	NS	NS	NS	NS	0.9	0.02	<0.01	<0.01	<0.01	<0.01	0.01	0.01	0.02	0.01	<0.01	0.01	0.01
Manganese as Mn	0.05	1	2	2	NS	0.02	0.02	<0.01	<0.01	<0.01	<0.01	0.01	0.01	<0.01	<0.01	0.02	0.01

Explanations:

Group A: Water with excellent quality

Group B: Water with acceptable quality

Group C: Water with a low health risk

Group D: Water with a high health risk, or unsuitable for human consumption

WHO Drinking Water Quality Guideline limit

Notes:

NTU - Nephelometric Turbidity Unit

NS – No standard

mS/m – millisiemens per meter

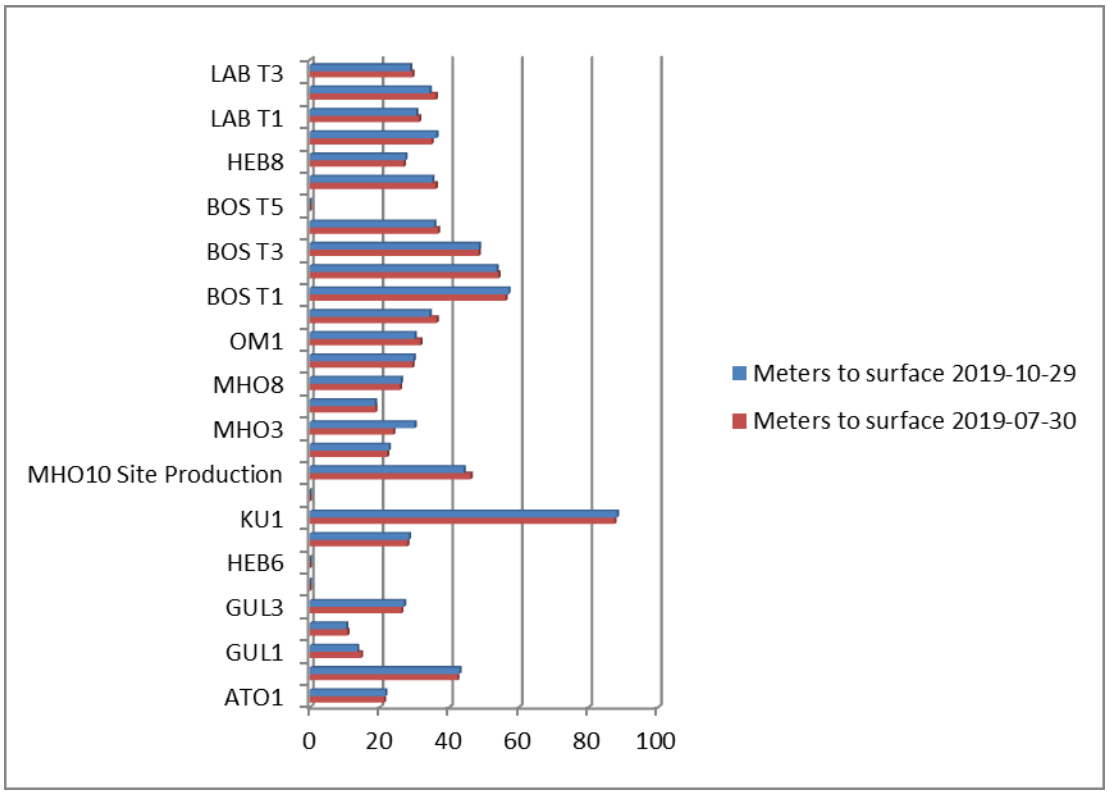
mg/l – milligrams per litre

Based on the drinking water quality standards classification:

- Total Hardness in MHO10 (Mine operations' borehole water) which exceeds the Namibian drinking water quality limits. Furthermore, Sodium and Nitrate from MHO10 samples also have exceeded the WHO limit. As per laboratory analyses overall classification, the OM2 water sample falls under Group C (water with a low health risk) and Group D (water with a high health risk, or unsuitable for human consumption) for MHO10 water sample.
- BOS T1 exceeds Group B for Calcium hardness, as well as Nitrate (Group B).
- BOS T2 exceeds total hardness group B as well as Nitrate for Group D.
- JMT 1 exceeds Total Hardness for Group A as well as Nitrate for Group A.

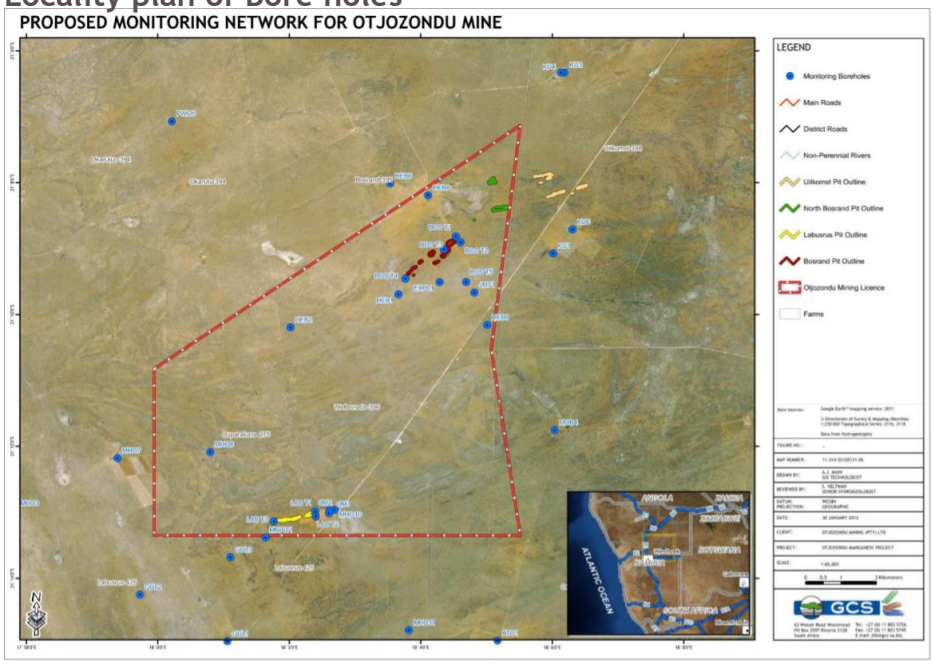
3.2 RESULTS: GROUNDWATER LEVELS

The results obtained for the period under review is listed in the table below. A slight increase in water levels was observed during the period under review. See graph below.



BH Name	Interval	Parameters	Casing length	Meters to surface 2019-07-30	Meters to surface 2019-10-29
ATO1	**Quarterly**	Water level only	0.5	21.35	21.75
EXPL1	**Quarterly**	Water level only	0.55	42.44	43.06
GUL1	**Quarterly**	Water level only	0.3	14.75	13.65
GUL2	**Quarterly**	Water level only	0.3	10.85	10.5
GUL3	**Quarterly**	Water level only	0.5	26.35	27.1
HEB2	**Quarterly**	Water level only	0.7	Blocked at 15m	Blocked at 15m
HEB6	**Quarterly**	Water level only	0.45	Hole closed	Hole closed
HEB9	**Quarterly**	Water level only	0.25	28.05	28.55
KU1	**Quarterly**	Water level only	0.4	87.55	88.24
KU6	**Quarterly**	Water level only	0.52	Bore hole closed	Bore hole closed
MHO10 Site Production	**Quarterly**	Water quality and level	0.28	46.25	44.25
MHO11	**Quarterly**	Water level only	0.45	22.24	22.75
MHO3	**Quarterly**	Water level only	0.4	24	30.15
MHO7	**Quarterly**	Water level only	0.2	18.9	18.75
MHO8	**Quarterly**	Water level only	0.51	25.95	26.2
MOB4	**Quarterly**	Water level only	0.45	29.55	29.85
OM1	**Quarterly**	Water level only	0.4	31.85	30.15
OM2 Site Drink Water	**Quarterly**	Water quality and level	0.41	36.47	34.45
BOS T1	Biannually	Water quality and level	0.3	56.24	57.15
BOS T2	Biannually	Water quality and level	0.51	54.26	53.67
BOS T3	Biannually	Water quality and level	0.29	48.55	48.65
BOS T4	Biannually	Water quality and level	0.6	36.84	35.75
BOS T5	Biannually	Water quality and level	0.42	Dry	Dry
HEB1	Biannually	Water quality and level	0.42	36.2	35.21
HEB8	Biannually	Water quality and level	0.25	27.06	27.54
JMT1	Biannually	Water quality and level	0.10	35	36.41
LAB T1	Biannually	Water quality and level	0.15	31.45	30.6
LAB T2	Biannually	Water quality and level	0.20	36.25	34.51
LAB T3	Biannually	Water quality and level	0.10	29.55	28.9
MNPIT1	Biannually	Water quality and level		No Pit	No Pit

Locality plan of Bore holes



APPENDIX A: SELECTED GROUNDWATER MONITORING BOREHOLES FOR OTJOZONDU MINE AND RECOMMENDED MONITORING FREQUENCY

Position ID	Coordinates		Frequency	Monitoring status
	X	Y		
ATO1	21.2491	18.08619	**Quarterly**	Water level only
BGK1	21.27885	18.04168	**Quarterly**	Not monitored, distance
BGK2	21.27781	18.04219	**Quarterly**	Not monitored, distance
BGK3	21.27766	18.04398	**Quarterly**	Not monitored, distance
BGK8	21.25805	18.04945	**Quarterly**	Not monitored, distance
EXPL1	21.15848	18.07149	**Quarterly**	Water level only
GUL1	21.24926	18.0177	**Quarterly**	Water level only
GUL2	21.23746	17.99549	**Quarterly**	Water level only
GUL3	21.228	18.01843	**Quarterly**	Water level only
GUL4	21.26582	18.02187	**Quarterly**	Not monitored, distance
HEB2	21.16991	18.03365	**Quarterly**	Collapsed
HEB6	21.13353	18.05895	**Quarterly**	Collapsed
HEB9	21.16933	18.08353	**Quarterly**	Water level only
KU1	21.15119	18.10027	**Quarterly**	Water level only
KU3	21.10549	18.10225	**Quarterly**	Not monitored, distance

KU4	21.10551	18.10312	**Quarterly**	Not monitored, distance
KU6	21.14518	18.10517	**Quarterly**	Water level only
MHO10	21.21606	18.04483	**Quarterly**	Water level only
MHO11	21.24646	18.06368	**Quarterly**	Water level only
MHO3	21.2163	17.96398	**Quarterly**	Water level only
MHO7	21.20298	17.98981	**Quarterly**	Water level only
MHO8	21.20141	18.01332	**Quarterly**	Water level only
MOB4	21.19589	18.10063	**Quarterly**	Water level only
OM1	21.2169	18.04341	**Quarterly**	Water level only
OM2	21.2162	18.04352	**Quarterly**	Water level only
PWO5	21.11782	18.00358	**Quarterly**	Water level only
BOS T1	21.14688	18.07557	Biannually and **Quarterly**	Water quality and level
BOS T2	21.14836	18.07675	Biannually and **Quarterly**	Water quality and level
BOS T3	21.1524	18.07176	Biannually and **Quarterly**	Water quality and level
BOS T4	21.15861	18.06371	Biannually and **Quarterly**	Water quality and level

Position ID	Coordinates		Frequency	Monitoring status
	X	Y		
BOS T5	21.1584	18.0782	Biannually and **Quarterly**	Water quality and level
HEB1	21.16155	18.06106	Biannually and **Quarterly**	Water quality and level
HEB8	21.1365	18.06858	Biannually and **Quarterly**	Water quality and level
JMT1	21.16108	18.08027	Biannually and **Quarterly**	Water quality and level
LAB T1	21.21648	18.03996	Biannually and **Quarterly**	Water quality and level
LAB T2	21.21884	18.0292	Biannually and **Quarterly**	Water quality and level
LAB T3	21.21771	18.04007	Biannually and **Quarterly**	Water quality and level
MNPIT1	21.22308	18.02734	Biannually and **Quarterly**	No pit blasted

ENV

APPENDIX C: ENVIRONMENTAL CLEARANCE CERTIFICATE FOR ML 145

+264 81 669 7608
info@eccenvironmental.com
www.eccenvironmental.com

COPY

REFERENCE: ECC - 102-277-LET-02-A
24th February 2020

Ministry of Environment and Tourism
Office of the Executive Director
Private Bag 13306
Windhoek
Namibia

MINISTRY OF ENVIRONMENT AND TOURISM
DEPARTMENT OF ENVIRONMENTAL AFFAIRS
2020 -02- 21
RECEIVED

RECEIVED BY OFFICIAL STAMP
Received by Name:
Date:
Signature:

FOR ATTENTION: **EXECUTIVE DIRECTOR MET (MR. TEOFILUS NGHITILA)**

Dear Mr. Teofilus Nghitila

RE: REQUEST FOR DUPLICATE COPY OF THE ENVIRONMENTAL CLEARANCE CERTIFICATE FOR MINING LICENCE (ML) 145

Environmental Compliance Consultancy (ECC) on behalf of our client, Otjozundu Mining (Pty) Ltd, is hereby requesting for a duplicate copy of an environmental clearance certificate for the Mining Licence (ML) 145, issued by the Ministry of Environment and Tourism (MET). Otjozundu mining is in the process of renewing its clearance certificate and the original environmental clearance is lost and cannot be retrieved, hence the aforementioned request.

ECC hereby submits the following documents to obtain a copy of the clearance:
- **AFFIDAVIT**
- **COPY OF IDENTIFICATION DOCUMENT**

Should you or your office require our assistance with the details contained within this letter or any project specific details, please do not hesitate to contact us and we will gladly assist.

Yours sincerely,

Stephan Bezuidenhout
Environmental Compliance Consultancy
Office: +264 81 669 7608
Email: stephan@eccenvironmental.com

Jessica Mooney
Environmental Compliance Consultancy
Office: +264 81 669 7608
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ENVIRONMENTAL COMPLIANCE CONSULTANCY
CC/2013/11404
24 FEB 2020
ENVIRONMENTAL COMPLIANCE CONSULTANCY
www.eccenvironmental.com

ENVIRONMENTAL COMPLIANCE CONSULTANCY CC
PO BOX 91193 WINDHOEK, NAMIBIA
MEMBERS: J L MOONEY & JS BEZUIDENHOUT
REGISTRATION NUMBER: CC/2013/11404

REPUBLIC OF NAMIBIA

MINISTRY OF ENVIRONMENT AND TOURISM

Tel: +264 61 2842701
Fax: +264 61 240339
Enquiry: Saima Angula

Capital Centre, 6th Floor
Private Bag 13306
Windhoek

OFFICE OF THE ENVIRONMENTAL COMMISSIONER

The Managing Director
Otjozondu Mining (Pty) Limited
P.O. Box 24547
Windhoek, Namibia

Dear Sir or Madam

SUBJECT: ENVIRONMENTAL CLEARANCE FOR MINING LICENCE (ML 145) SITUATED IN OKAHANDJA, OTJOZONDJUPA REGION

The Environmental Management Plan (EMP) submitted is sufficient as it made provisions of the environmental management concerning the proposed mining activities. From this perspective regular environmental monitoring and evaluations on environmental performance should be conducted. Targets for improvements should be established and monitored from time to time.

On the basis of the above, this letter serves as an environmental clearance for the mining activities to commence. However, listed activities that are part of this project are subject to environmental assessments. This clearance letter does not in anyway hold the Ministry of Environment and Tourism accountable of any wrong doing, for insufficient information, nor any adverse effects that may arise from this exploration activity. Instead, full accountability rests with the proponent and his/ her consultants.

This environmental clearance is valid for a period of 3 (three) years, from date of issue unless withdrawn by this office.

P/Bag 13306 Windhoek, Namibia 2013 -08- 09 Office of the Environmental Commissioner

Yours sincerely,

Teofilus Nghitila
ENVIRONMENTAL COMMISSIONER

All official correspondence must be addressed to the Permanent Secretary

OTJOZONDU MINING
Head Office Namibia
PO Box 50847
12 Ongoporo Str. Prosperita
Windhoek
Tel: +264 (0)61 410 950
Fax: +264 (0)61 221 009

Environmental Audit

NAME OF /OFFICE: Otjozondu Mining (PTY) Ltd

Area(s) Inspected:	
Plant /Processing	X
Pit	X
Immediate Environment	X

Inspected by: Christo Nel **Date:** 29-June 2018

Environmental Audit

ITEM	YES	NO	CORRECTIVE ACTION
1. Is there litter or spilled liquid on the floor? /ground	✓		Managed as per EMP – Spills treated as per EMP, Daily Housekeeping with regards to litter. ONGOING ISSUE
2. Are flammable liquids/fluids stored in approved containers?	✓		Diesel per mobile diesel bowzer, diesel farm and bunded.
3. Vehicular traffic and transportation of goods	✓		All vehicles remained on designated roads, oil spillage by vehicles has been cleaned up according to the EMP, all vehicles maintained.
4. Storage, use and disposal of diesel, oil and other hazardous chemical substances	✓		Disposal by contractor, stored in tank with bunded area.
5. High density Human presence	✓		Ongoing induction and training conducted regularly.
6. Waste Generation	✓		Carted away by external contractor
7. Land clearing and construction of infrastructure		✓	Ongoing monitoring and manage plans for cleared areas

8. Ore beneficiation process	✓		All leaks (oil/water) have been addressed and maintained as per EMP
9. Paste disposal and storage	✓		Ongoing visual inspections of the physical integrity of the fines disposal taking place
10. Operation of diesel generators (Power Supply)	✓		All spills that occurred during the period were minor and dealt with immediately according to EMP.
11. Blasting	✓		Blasting done by professional contractors i.e. Sasol Namibia, all relevant parties informed well in advance. Small crews assist with proper induction. Roads blocked.
12. Mining activities	✓		All mining activities continue within pit area, no deviation. No major water inflow into pits. All surrounding water bore holes monitored for level and quality.
13. Material handling and stockpiling			Dust monitoring buckets in place. No erosion noted around stockpiles during the period. Waste, top soil, low grade stockpile separately. Ongoing monitoring of groundwater levels and quality.
14. Sewerage treatment	✓		No instances of excessive odors were noted during the period, all sewerage structures in good condition with removable lids.
15. Groundwater abstraction	✓		Plant uses a closed water circuit. Bore hole run for ave 4 hours a day = 40 000l/day
16. Vegetation on stockpiles and rehab areas		✓	Mining still in progress on Bosrand area, as well as stockpiles still being used.
17. Soil Erosion Issues		✓	No reports of soil erosion.

Recommendations and Comments:

- All staff committed to housekeeping as per morning meetings.
- Maintenance schedules put in place are working well and oil leaks are being minimized.

OTJOZONDU MINING
Head Office Namibia
PO Box 50847
12 Ongoporo Str. Prosperita
Windhoek
Tel: +264 (0)61 410 950
Fax: +264 (0)61 221 009

Environmental Audit

NAME OF /OFFICE: Otjozondu Mining (PTY) Ltd

Area(s) Inspected:	
Plant /Processing	X
Pit	X
Immediate Environment	X

Inspected by: Christo Nel **Date:** 29-November 2018

Environmental Audit

ITEM	YES	NO	CORRECTIVE ACTION
1. Is there litter or spilled liquid on the floor? /ground	✓		Managed as per EMP – Spills recorded on 5/8/2018, 8/11 2018, Report completed and cleaned up as per EMP.
2. Are flammable liquids/fluids stored in approved containers?	✓		Diesel truck showed leakage, this was fixed and improved to avoid future spills.
3. Vehicular traffic and transportation of goods	✓		All vehicles remained on designated roads. Maintenance schedule in place to avoid possible future spills.
4. Storage, use and disposal of diesel, oil and other hazardous chemical substances	✓		Old oil stored in tank with bunded area. Once full a contractor will collect.
5. High density Human presence	✓		Ongoing induction and training conducted regularly.
6. Waste Generation	✓		Carted away by external contractor.
7. Land clearing and construction of infrastructure		✓	Ongoing monitoring and manage plans for cleared areas. No new land clearing or construction.

8. Ore beneficiation process	✓		All leaks (oil/water) have been addressed and maintained as per EMP. Weekly scheduling to prevent possible contamination.
9. Paste disposal and storage	✓		Ongoing visual inspections of the physical integrity of the fines disposal taking place
10. Operation of diesel generators (Power Supply)	✓		All spills that occurred during the period were minor and dealt with immediately according to EMP.
11. Blasting	✓		Blasting done by professional contractors i.e. Sasol Namibia, all relevant parties informed well in advance. Small crews assist with proper induction. Roads blocked.
12. Mining activities	✓		All mining activities continue within pit area, no deviation. No major water inflow into pits. All surrounding water bore holes monitored for level and quality as well as dust collectors.
13. Material handling and stockpiling			Dust monitoring buckets in place. No erosion noted around stockpiles during the period. Waste, top soil, low grade stockpile separately. Ongoing monitoring of groundwater levels and quality.
14. Sewerage treatment	✓		No instances of excessive odors were noted during the period, all sewerage structures in good condition with removable lids.
15. Groundwater abstraction	✓		Plant uses a closed water circuit. Bore hole run for ave. 4 hours a day = 40 000l/day.
16. Vegetation on stockpiles and rehab areas		✓	Mining still in progress on Bosrand area, as well as stockpiles still in use.
17. Soil Erosion Issues		✓	No reports of soil erosion.

Recommendations and Comments:

- A maintenance schedule has been developed by the Maintenance manager, this will minimize future spillage of oil from equipment.
- During morning meetings staff is receiving refresher course on oil spill cleanup.
- Emphasis on being responsible in littering, corrective action communicated as well as disciplinary action against employees not respecting the environment.

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Environmental Audit

NAME OF /OFFICE: Otjozondu Mining (PTY) Ltd

Area(s) Inspected:	
Plant /Processing	X
Pit	X
Immediate Environment	X

Inspected by: Christo Nel **Date:** 29-June 2019

Environmental Audit

ITEM	YES	NO	CORRECTIVE ACTION
1. Is there litter or spilled liquid on the floor? /ground	✓		Managed as per EMP – Housekeeping standards being enforced and driven by Management and supervisors. All employees on board regarding corrective action as well as prevention of oil spills.
2. Are flammable liquids/fluids stored in approved containers?	✓		Comply as per EMP
3. Vehicular traffic and transportation of goods	✓		All vehicles remained on designated roads. Maintenance schedule in place and successful to avoid possible future spills. Oil spillage from Loader on 3/06/2019, seal broke, spillage was cleaned according to EMP.
4. Storage, use and disposal of diesel, oil and other hazardous chemical substances	✓		Old oil stored in tank with bunded area. Once full a contractor will collect.
5. High density Human presence	✓		Ongoing induction and training conducted regularly.
6. Waste Generation	✓		Carted away by external contractor.
7. Land clearing and construction of infrastructure		✓	Ongoing monitoring and manage plans for cleared areas. No new land clearing or construction.

8. Ore beneficiation process	✓		All leaks (oil/water) have been addressed and maintained as per EMP. Weekly scheduling to prevent possible contamination. Pipe burst 21/3/2019, report done and spillage cleaned as per EMP.
9. Paste disposal and storage	✓		Ongoing visual inspections of the physical integrity of the fines disposal taking place
10. Operation of diesel generators (Power Supply)	✓		Re-occurring minor spills when filling the Genset during the period were minor and dealt with immediately by changing thy SOP for filling the Genset.
11. Blasting	✓		Blasting done by professional contractors i.e. Sasol Namibia, all relevant parties informed well in advance. Small crews assist with proper induction. Roads blocked.
12. Mining activities	✓		All mining activities continue within pit area, no deviation. No major water inflow into pits. All surrounding water bore holes monitored for level and quality as well as dust collectors.
13. Material handling and stockpiling			Dust monitoring buckets in place. No erosion noted around stockpiles during the period. Waste, top soil, low grade stockpile separately. Ongoing monitoring of groundwater levels and quality.
14. Sewerage treatment	✓		No instances of excessive odors were noted during the period, all sewerage structures in good condition with removable lids.
15. Groundwater abstraction	✓		Plant uses a closed water circuit. Bore hole run for ave. 4 hours a day = 40 000l/day.
16. Vegetation on stockpiles and rehab areas		✓	Mining still in progress on Bosrand area, as well as stockpiles still in use.
17. Soil Erosion Issues		✓	No reports of soil erosion.

Recommendations and Comments:

- SOP changed for filling of the Genset due to consistent minor spillage of diesel, this had a positive effect on the intensity of spillages as well as the frequency.

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Environmental Audit

NAME OF /OFFICE: Otjozondu Mining (PTY) Ltd

Area(s) Inspected: Plant /Processing	X
Pit	X
Immediate Environment	X

Inspected by: Christo Nel **Date:** 29-November 2019

Environmental Audit

	ITEM	YES	NO	CORRECTIVE ACTION
1.	Is there litter or spilled liquid on the floor? /ground	✓		Emphasis on workshop area, all departments re-inducted on spillage reporting and corrective action as well as prevention.
2.	Are flammable liquids/fluids stored in approved containers?	✓		Used engine oil bay getting prepared for old oil collection from contractor.
3.	Vehicular traffic and transportation of goods	✓		All vehicles remained on designated roads. Maintenance schedule in place and successful to avoid possible future spills. Oil spillage from Excavator at pit on 16/10/2019, hose broke, spillage was cleaned according to EMP.
4.	Storage, use and disposal of diesel, oil and other hazardous chemical substances	✓		Old oil stored in tank with bunded area. Contractor to collect.
5.	High density Human presence	✓		Ongoing induction and training conducted regularly. Also discussed during morning meetings.
6.	Waste Generation	✓		Carted away by external contractor.
7.	Land clearing and construction of infrastructure		✓	No new land clearing or construction.
8.	Ore beneficiation process	✓		All leaks (oil/water) have been addressed

			and maintained as per EMP. Weekly scheduling to prevent possible contamination. Tailings dam overflowed, paste cleaned as per EMP.
9. Paste disposal and storage	✓		Ongoing visual inspections of the physical integrity of the fines disposal taking place. Spillage cleaned at tailings dam. 12/11/2019.
10. Operation of diesel generators (Power Supply)	✓		New SOP for filling the Genset successful.
11. Blasting	✓		Blasting done by professional contractors i.e. Sasol Namibia, all relevant parties informed well in advance. Small crews assist with proper induction. Roads blocked.
12. Mining activities	✓		All mining activities continue within pit area, no deviation. No major water inflow into pits. All surrounding water bore holes monitored for level and quality as well as dust collectors.
13. Material handling and stockpiling			Dust monitoring buckets in place. No erosion noted around stockpiles during the period. Waste, top soil, low grade stockpile separately. Ongoing monitoring of groundwater levels and quality.
14. Sewerage treatment	✓		No instances of excessive odors were noted during the period, all sewerage structures in good condition with removable lids.
15. Groundwater abstraction	✓		Plant uses a closed water circuit. Bore hole run for ave. 4 hours a day = 40 000l/day.
16. Vegetation on stockpiles and rehab areas		✓	Mining still in progress on Bosrand area, as well as stockpiles still in use.
17. Soil Erosion Issues		✓	No reports of soil erosion.

Recommendations and Comments:

- Incident where the tailings dam overflows due to a shutdown, SOP and responsible persons investigated, cleaning of spill done according to EMP.
- Excavator hose burst at pit, report filed and corrective action taken, spill cleaned according to EMP.