



## water & sanitation

Department:  
Water and Sanitation  
REPUBLIC OF SOUTH AFRICA

Private Bag X313, Pretoria, 0001, Sedibeng Building Centre, 185 Francis Beard Street, Pretoria,  
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### LICENCE IN TERMS OF SECTION 40 OF THE NATIONAL WATER ACT, 1998 (ACT NO 36 OF 1998) (THE ACT)

I, *Margaret-Ann Diedricks*, in my capacity as Director General in the Department of Water and Sanitation and acting under authority of the powers delegated to me by the Minister of Water and Sanitation, hereby authorises the following water uses in respect of this licence.

SIGNED:

*Margaret-Ann Diedricks (Act)*

DATE:

*2015/10/20*

LICENCE NO: 04/B20G/CGI/3843

FILE NO: 16/2/7/B100/C11

1. Licensee: Elandsfontein Colliery (Pty) Ltd  
Postal address: P. O. Box 33  
Clewer  
1036
2. Water uses
  - 2.1 Section 21(c) of the Act: Impeding or diverting the flow of water in a watercourse; subject to the conditions set out in Appendices I and II.
  - 2.2 Section 21(g) of the Act: Disposing of waste in a manner which may detrimentally impact on a water resource, subject to the conditions as set out in Appendices I and III.
  - 2.2 Section 21(i) of the Act: Altering the bed, banks, course or characteristics of a watercourse; subject to the conditions set out in Appendices I and II.

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3. **Table 1: Properties in respect of which this licence is issued**

No.	Section 21 of the Act	Farm Name and Portion Number	Title Deeds Numbers	Owner's Name
3.1	Section 21 (c) & (i)	Portion 7 Farm Elandsfontein 309 JS	T114486/96	Anker Coal & Mineral Holdings South Africa (Proprietary) Limited
		Portion 8 Farm Elandsfontein 309 JS	T121962/1982	Anker Coal & Mineral Holdings South Africa (Proprietary) Limited
		Portion 1 Farm Elandsfontein 309 JS	T060885/03	Anker Coal & Mineral Holdings South Africa (Proprietary) Limited
3.2	Section 21 (g)	Portion 7 Farm Elandsfontein 309 JS	T114485/96	Anker Coal & Mineral Holdings South Africa (Proprietary) Limited
		Portion 8 Farm Elandsfontein 309 JS	T121962/1982	Anker Coal & Mineral Holdings South Africa (Proprietary) Limited
		Portion 14 Farm Elandsfontein 309 JS	T11485/96	Anker Coal & Mineral Holdings South Africa (Proprietary) Limited

4. **Licence and Review Period**

- 4.1 This licence is valid for a period of five (5) years from the date of issuance with 1 (one) year review period and 2 (two) years thereafter.



**5. Definitions**

"Any terms, words and expressions as defined in the National Water Act, 1998 (Act 36 of 1998) shall bear the same meaning when used in this licence."

"The Provincial Head" Provincial Head of Operations:  
Mpumalanga, Department of Water and  
Sanitation, Private Bag X11259,  
MBOMBELA, 1200.

"Reports" refers to the reports entitled:

- (i) Integrated water use licence application for the proposed Elandsfontein Colliery (Pty) Ltd within the Emalahleni Municipality of the Nkangala District, dated 09 July 2014 by Digby Wells Environmental.

**7. Description of the activity**

This licence authorises Elandsfontein Colliery (Pty) Ltd for section 21(c) & (i) and (g) water uses for coal mining activities on various properties of Farm Elandsfontein 309 JS within the Olifants Water Management Area in the quaternary catchment B20G.



## APPENDIX I

### General conditions for the licence

1. This licence is subject to all applicable provisions of the National Water Act, 1998 (Act 36 of 1998).
2. The responsibility for complying with the provisions of the licence is vested in the Licensee and not any other person or body.
3. The Licensee must immediately inform the Provincial Head of any change of name, address, premises and/or legal status.
4. If the property in respect of which this licence is issued is subdivided or consolidated, the Licensee must provide full details of all changes in respect of the properties to the Provincial Head of the Department within 60 days of the said change taking place.
5. If a water user association is established in the area to manage the resource, membership of the Licensee to this association is compulsory. Rules, regulations and water management stipulation of such association must be adhered to.
6. While effect must be given to the Reserve as determined in terms of the Act, where a desktop determination of the Reserve has been used in issuance of a licence, when a comprehensive determination of the Reserve has finally been made; it shall be given effect to.
7. The licence shall not be construed as exempting the Licensee from compliance with the provisions any other applicable Act, Ordinance, Regulation or By-law.
8. The licence and amendment of this licence are also subject to all the applicable procedural requirements and other applicable provisions of the Act, as amended from time to time.
9. The Licensee shall conduct an annual internal audit on compliance with the conditions of licence. A report on the audit shall be submitted to the Provincial Head within one month of the finalisation of the audit.
10. The Licensee shall appoint an independent external auditor to conduct an annual audit on compliance with the conditions of this licence.
11. Any incident that causes or may cause water pollution shall be reported to the Provincial Head or his/her designated representative within 24 hours.



12. If the water use described in this licence is not exercised within 3 years of the date of the licence, the authorization will be withdrawn. Upon commencement of the water use, the Licensee must inform the relevant authority in writing.
13. The Licensee shall establish and implement a continual process of raising awareness amongst itself, its workers and stakeholders for the need for Water Conservation/Water Demand Management.
14. Notices prohibiting unauthorized persons from entering water use premises must be displayed.
15. The Department accepts no liability for any damage, loss or inconvenience of whatever nature, suffered as a result of/ amongst other things.
  - 15.1 Any force majeure event;
  - 15.2 Siltation of the river or dam basin; and
  - 15.3 Required Reserve releases
16. Licensee shall use water efficiently to minimize total water intake, void usage of water where possible, implement "good" housekeeping and operating practices, and maximize the reuse /recycle of contaminated water.



## APPENDIX II

Section 21 (c) of the Act: Impeding or diverting the flow of water in a watercourse, and

Section 21 (i) of the Act: Altering the bed, banks, course or characteristic of a watercourse

## 1. GENERAL

1.1 The licence authorises Elandsfontein Colliery (Pty) Ltd for the watercourse crossings in terms of section: 21 (c) and (i) of the Act as set out in Table 2 below and in the water use licence application reports submitted to the Department or the Provincial Head (refer to condition 1.2) for:

Table 2: Water Use Activities

Water use(s)	Purpose	Capacity/ Volume (m <sup>3</sup> , tonnes and/or m <sup>3</sup> /annum)	Property Description	Co-ordinates
Section 21 (c) & (i)	River Crossing 1 (Road construction over an unnamed tributary)		Portion 7 Farm Elandsfontein 309 JS	25.90215°S 29.09167°E
	River Crossing 2 (Road across tributary of the Grootspruit)	Height 1.0 m Width 5.0 m Length 10 m		25.90152°S 29.08933°E
	River Crossing 3 (Road across a tributary)	Height 1.0 m Width 5.0 m Length 10 m	Portion 8 Farm Elandsfontein 309 JS	25.90793°S 29.08240°E
	River Crossing 4 (Road across the tributary)	Height 1.0 m Width 5.0 m Length 10 m		25.90179°S 29.08105°E
	PCD 3 located within an unnamed tributary of the Grootspruit	Height 2.0 m Width 3.0 m Length 68 m	Portion 7 Farm Elandsfontein 309 JS	25.90064°S 29.08955°E
	Western Opencast	Height 5.0 m	Portion 1 Farm	Start

Water use(s)	Purpose	Capacity/ Volume (m <sup>3</sup> , tonnes and/or m <sup>3</sup> /annum)	Property Description	Co-ordinates
	Discard River Diversion	Width 5.0 m Length 280 m	Elandsfontein 309 JS	25.91386°S 29.07918°E End 25.91557°S 29.07813°E
	Western Opencast Pit	Height 5.0 m Width 30 m Length 330 m	Portion 8 Farm Elandsfontein 309 JS	25.90973°S 29.08343°E

- 1.2 The Licensee shall carry out and complete all activities listed under condition 1.1 according to the following:
- 1.2.1 Reports submitted to the Department, specifically:
- 1.2.1.1 Elandsfontein Coal Mine Conceptual Rehabilitation Plan by Digby Wells Environmental dated October 2014;
- 1.2.2 Conditions of this licence; and
- 1.2.3 Any other written direction issued by the Provincial Head in relation to this licence.
- 1.3 No activity must take place within the 1:100 year flood line or the delineated riparian habitat, whichever is the greatest, or within 500 m radius from the boundary of any wetland unless authorised by this licence.
- 1.4 The conditions of the authorisation must be brought to the attention of all persons (employees, sub-consultants, contractors etc.) associated with the undertaking of this activities and the Licensee must take such measures that are necessary to bind such persons to the conditions of this licence.
- 1.5 A copy of the water use licence and reports set out under condition 1.2 must be on site at all times.
- 1.6 A suitably qualified person(s), appointed by the Licensee, and approved in writing by the Provincial Head; must be responsible for ensuring that the activities are undertaken in compliance with the specifications as set out in reports submitted to the Department and the conditions of this licence.

## 2. FURTHER STUDIES AND INFORMATION REQUIREMENTS

### 2.1 For water use activities in Table 2:

- 2.1.1 Work method statements, site plan(s) and detailed design drawings for the construction of all infrastructures of impeding and/or diverting flow of watercourses must be submitted to the Provincial Head for a written approval before construction and implemented as directed. The foregoing must indicate the regulated activities, marking the limits of disturbance in relation to the impacted watercourse(s); morphology of the watercourse(s); site specific impacts; and environmental management, particularly erosion and sediment, controls and measures;
- 2.1.2 No fundamental alterations of the work method statements, site plan(s) and drawings are allowed, unless a modification is requested and granted by the Provincial Head in writing;
- 2.1.3 No site activities must occur beyond the proposed site location of the erosion and sedimentation controls and marked limits of disturbance.
- 2.1.4 Revised master plan incorporating the 1:100 year floodline, riparian zones, buffer zones, all affected water courses, wetlands, borrow-pits, bridges and stormwater infrastructure must be submitted to the Provincial Head before commencement of the activities.
- 2.3 An Environmental Management Plan and rehabilitation plan for the decommissioning of any of the water use activities listed in Table 2 must be submitted five (5) years before commencing with closure to the Provincial Head for a written approval.
- 2.4 For all the activities listed under condition 1.1, Table 2, "as-built" plan(s) and engineering drawing(s) prepared by a registered professional engineer, must be submitted to the Provincial Head within six (6) months of completion of new activities and for existing water uses within six (6) months of the date of issuance of this licence. These plan(s) and drawing(s) must indicate the watercourse(s) including wetland boundaries and layout and structure location(s) of all infrastructure of impeding and/or diverting flow of watercourses as well as alterations to watercourse(s) on the property(ies).

## 3. PROTECTIVE MEASURES

### 3.1 Stormwater Management

- 3.1.1 Stormwater management practices must be constructed, operated and maintained in a sustainable manner throughout the project and for the water use





activities set out in condition 1.1 Appendix II and must include but are not limited to the following:

- 3.1.1.1 Increased runoff due to vegetation clearance and/or soil compaction must be managed, and steps must be taken to ensure that stormwater does not lead to bank instability and excessive levels of silt entering the watercourse(s);
- 3.1.1.2 Stormwater must be diverted from the Elandsfontein Colliery (Pty) Ltd and must be managed in such a manner as to disperse runoff and to prevent the concentration of stormwater flow;
- 3.1.1.3 The velocity of stormwater discharges must be attenuated and the banks of the watercourses protected;
- 3.1.1.4 Stormwater leaving the Licensee's premises must in no way be contaminated by any substance, whether such substance is a solid, liquid, vapour or gas or a combination thereof which is produced, used, stored, dumped or spilled on the premises;
- 3.1.1.5 Drainage next to the construction works and mining area must be diverted away from the watercourse(s) to ensure that any contaminated runoff does not flow directly into the watercourse(s) as a stormwater discharge.

### **3.2 Structures, Construction Plant and Materials**

- 3.2.1 Necessary erosion prevention measures must be employed to ensure the sustainability of all structures.
- 3.2.2 The height, width and length of structures must be limited to the minimum dimension necessary to accomplish the intended function.
- 3.2.3 Structures must not be damaged by floods exceeding the magnitude of floods occurring on average once in every 100 years.
- 3.2.4 Structures must be non-erosive, structurally stable and must not induce any flooding or safety hazard.
- 3.2.5 Structures must be inspected regularly for accumulation of debris, blockage, erosion of abutments and overflow areas – debris must be removed and damages must be repaired and reinforced immediately.
- 3.2.6 Construction camp, plant and material stockpiles must be located outside the extent of the watercourse(s) and must be recovered and removed one (1) month after construction has been completed.
- 3.2.7 During construction erosion berms shall be installed to prevent gully formation, according to the slope.



- 3.2.8 All areas affected by construction shall be rehabilitated upon completion of the construction phase of the development. Areas shall be reseeded with indigenous vegetation species as required, and the use of seednets is recommended to prevent erosion.
- 3.2.9 During the construction phase no vehicles shall be allowed to indiscriminately drive through any wetland areas.
- 3.2.10 No construction is allowed within the 1:100 year floodline and/or delineated riparian habitat, whichever is the greatest, or within 500 m radius from the boundary of any wetland unless authorised in this licence.

### 3.3 Water Quality

- 3.3.1 The Licensee shall sample the water quality weekly (during construction) and monthly (during operation) for the mentioned variables (Table 3) at the monitoring points both upstream and downstream of the activities and report to the Provincial Head within thirty (30) days after the results of each sampling event is receive

**Table 3: Water quality parameters relevant for sampling**

Variable	Limit
Flow (l/s)	Not applicable
Temperature (°C)	<10% variation
pH	6.0 – 8.5
Electrical conductivity (EC) (mS/m)	<50
Suspended solids (SS) (mg/l)	<25
Dissolved oxygen (mg/l)	>6
Turbidity (NTU)	<3
Secchi disk depth (m)	>1 meter
Alkalinity (mg CaCO <sub>3</sub> /l)	<100

*The variables may be amended on discretion of the Provincial Head. Only an accredited (SANS 17025) laboratory to be used for analysis.*

- 3.3.2 Monitoring must continue for three (3) years after the cessation of the activities listed in condition 1.1 Appendix II.
- 3.3.3 Monitoring must be undertaken as set out in section 5 Appendix II.
- 3.3.4 Activities that lead to elevated levels of turbidity of any watercourse(s) must be prevented, reduced, or otherwise remediated. Activities must be scheduled to take place during dry seasons when flows are low.
- 3.3.5 The Licensee must ensure that the quality of the water to downstream water users does not decrease because of the water use activities listed under condition 1.1 Appendix II.

- 3.3.6 A qualified person must be appointed to assess the quality of water both upstream and downstream of the activities prior to commencement of construction.
- 3.3.7 Pollution of and disposal/spillage of any material into the watercourse must be prevented, reduced, or otherwise remediated through proper operation, maintenance and effective protective measures. *EMP, near River.*
- 3.3.8 Vehicles and other machinery must be serviced well above the 1:100 year floodline or delineated riparian habitat, whichever is the greatest. Oils and other potential pollutants must be disposed off at an appropriate licensed site, with the necessary agreement from the owner of such a site.
- 3.3.9 Any hazardous substances must be handled according to the relevant legislation relating to transport, storage and use of the substance. *MSDS.*
- 3.3.10 All reagent storage tanks and reaction units must be supplied with a bunded area built to the capacity of the facility and provided with sumps and pumps to return the spilled material back into the system. The system must be maintained in a state of good repair and standby pumps must be provided.
- 3.3.11 The Licensee has to indicate to the Provincial Head within sixty (60) days after issuance of this licence, the strategic placement of bio-swale, bio-filters, silt, litter and hydrocarbon (oil) traps to minimise the risk of pollutants entering the natural drainage system of the area.
- 3.4 Flow
- 3.4.1 The Licensee must determine flood lines (1:50 and 1:100 year) prior to construction to ensure risks are adequately managed. Flood lines must be clearly indicated on the site plan(s) and drawings along with all wetland boundaries.
- 3.4.2 The activities must be conducted in a manner that does not negatively affect catchment yield, hydrology and hydraulics. The Licensee must ensure that the overall magnitude and frequency of flow in the watercourse(s) does not decrease, other than for natural evaporative losses and authorised attenuation volumes.
- 3.4.3 Appropriate design and mitigation measures must be developed to minimise impacts on the natural flow regime of the watercourse i.e. through placement of structures/supports and to minimise turbulent flow in the watercourse.
- 3.4.4 Structures to be designed in a way to prevent the damming of stream/river water and not impact on the flow of the water, during the construction and operational phases of all developments.
- 3.4.5 The development may not impede natural drainage lines.

- 3.4.6 The diversion structures may not restrict river flows by reducing the overall river width or obstructing river flow.
- 3.4.7 Bank filling must restore the channel shape and bed level to pre-construction condition.
- 3.4.8 Where flow in watercourse is permanent, the trench must be staged across part of the channel to maintain flows. Flows must not be stopped.
- 3.5 Riparian and Instream Habitat (Vegetation and Morphology)**
- 3.5.1 Activities (including spill clean-up) must start up-stream and proceed into a down-stream direction, so that the recovery processes can start immediately, without further disturbance from upstream works.
- 3.5.2 Operation and storage of equipment must not take place within the 1:100 year flood line or delineated riparian habitat, whichever is the greatest unless authorised in this license.
- 3.5.3 Activities must not occur in sensitive riffle habitats.
- 3.5.4 Indigenous riparian vegetation, including dead trees, outside the limits of disturbance indicated in the site plans must not be removed from the area.
- 3.5.5 Alien and invader vegetation must not be allowed to further colonise the area, and all new alien vegetation recruitment must be sustainably eradicated or controlled.
- 3.5.6 Existing vegetation composition must be maintained or improved by maintaining the natural variability in flow fluctuations. Rehabilitated areas shall have vegetation basal cover of at least 15% at all times.
- 3.5.7 Recruitment and maintaining of a range of size classes of dominant riparian species in perennial channels must be stimulated.
- 3.5.8 Encroachment of additional exotic species and terrestrial species in riparian zones must be discouraged.
- 3.5.9 Accumulation of woody debris on terraces by periodic flooding must be discouraged.
- 3.5.10 Existing flood terraces and deposition of sediments on these terraces to ensure optimum growth, spread and recruitment of these species must be maintained.
- 3.5.11 All reasonable steps must be taken to minimize noise and mechanical vibrations in the vicinity of the watercourses.



- 3.5.12 Necessary erosion prevention mechanisms must be employed to ensure the sustainability of all structures and activities and to prevent instream sedimentation.
- 3.5.13 Soils that have become compacted through the water use activities must be loosened to an appropriate depth to allow seed germination.
- 3.5.14 Slope/bank stabilisation measures must be implemented with a 1:3 ratio or flatter and vegetated with indigenous vegetation immediately after the shaping. *Rehe Rlan*
- 3.5.15 Stockpiling of removed soil and sand must be stored outside of the 1:100 flood line or delineated riparian habitat, whichever is the greater, to prevent being washed into the river and must be covered to prevent wind and rain erosion.
- 3.5.16 The indiscriminate use of machinery within the instream and riparian habitat will lead to compaction of soils and vegetation and must therefore be strictly controlled.
- 3.5.17 The overall macro-channel structures and mosaic of cobbles and gravels must be maintained by ensuring a balance (equilibrium) between sediment deposition and sediment conveyance maintained. A natural flooding and sedimentation regime must thus be ensured as far as reasonably possible.
- 3.5.18 As much indigenous vegetation growth as possible shall be promoted within the proposed development area in order to protect soil and to reduce the percentage of the surface area which is paved.
- 3.5.19 Run-off from paved surfaces shall be slowed down by the strategic placement of berms.
- 3.5.20 Adequate measures must be implemented to prevent instream siltation during the construction phase.
- 3.5.21 Unless authorised by this licence, access roads must not encroach into the extent of the watercourse(s).
- 3.6 Biota**
- 3.6.1 The Licensee must take all reasonable steps to allow movement of aquatic species, including migratory species.
- 3.6.2 All reasonable steps must be taken not to disturb the breeding, nesting and/or feeding habitats and natural movement patterns of aquatic biota.



- 3.6.3 The current level of diversity of biotopes and communities of animals, plants and microorganisms must be maintained.

#### 4. REHABILITATION AND MANAGEMENT

- 4.1 The Licensee must embark on a systematic long-term rehabilitation programme to restore the watercourse(s) to environmentally acceptable and sustainable conditions after completion of the activities, which must include, but not be limited to the rehabilitation of disturbed and degraded riparian areas to restore and upgrade the riparian habitat integrity to sustain a bio-diverse riparian ecosystem.
- 4.2 All disturbed areas must be re-vegetated with an indigenous seed mix in consultation with an indigenous plant expert, ensuring that during rehabilitation only indigenous shrubs, trees and grasses are used in restoring the biodiversity.
- 4.3 An active campaign for controlling invasive species must be implemented within disturbed zones to ensure that it does not become a conduit for the propagation and spread of invasive exotic plants.
- 4.4 Rehabilitation must be concurrent with construction.
- 4.5 Topsoil must be stripped and redistributed.
- 4.6 Compacted and disturbed areas must be shaped to natural forms and to follow the original contour. In general cut and fill slopes and other disturbed areas must not exceed 1:3 (v: h) ratio, it must be protected, vegetated, ripped and scarified parallel with the contour.
- 4.7 The Provincial Head must sign a release form indicating that rehabilitation was done satisfactory according to specifications as per this licence.
- 4.8 A photographic record must be kept as follows and submitted with reports as set out in section 5 Appendix II:
- 4.8.1 Dated photographs of all the sites to be impacted before construction commences;
- 4.8.2 Dated photographs of all the sites during construction on a monthly basis; and
- 4.8.3 Dated photographs of all the sites after completion of construction, seasonally.
- 4.9 Rehabilitation structures must be inspected regularly for the accumulation of debris, blockages instabilities and erosion with concomitant remedial and maintenance actions.
- 4.10 A comprehensive and appropriate rehabilitation and management programme to restore the watercourse(s) to environmentally acceptable and sustainable conditions after construction must be developed and submitted to the Provincial



Head for written approval within one (1) month from the date of issuance of this licence.

- 4.11 The original contours must be established over the pipeline or bridge or road. After the backfill has subsided, the contour must follow the surrounding contours to stop irregular flows or blockage of biotic movement.
- 4.12 A Wetland Management and Rehabilitation Plan must be compiled by a wetland specialist when wetlands are affected and submitted to the Provincial Head for written approval.
- 4.13 Wetland crossing(s) must be visited by a wetland specialist prior to construction to determine baseline conditions. This shall be repeated during and after rehabilitation measures have been implemented to assess the success of rehabilitation and erosion control measures.

## 5. MONITORING AND REPORTING

- 5.1 The Provincial Head must be notified in writing one week prior to commencement of the licensed activity (ies) and again upon completion of the activity(ies)
- 5.2 A comprehensive and appropriate environmental assessment and monitoring programme (including bio-monitoring) to determine the impact, change, deterioration and improvement of the aquatic system associated with the activities listed under condition 1.1 Appendix II as well as compliance to these water use licence conditions must be developed and submitted to the Provincial Head for a written approval before commencement and must subsequently be implemented as directed.
- 5.3 Six (6) monthly monitoring reports must be submitted to the Provincial Head until otherwise agreed in writing with the Provincial Head.
- 5.4 A qualified and responsible scientist must be retained by the Licensee who must give effect to the various licence conditions and to ensure compliance thereof pertaining to all activities of impeding and/or diverting flow of watercourses as well as alterations to watercourses on the property (ies) as set out in condition 1.1 Appendix II.
- 5.5 The Licensee must conduct an internal audit on compliance with the conditions in this licence. A report on the audit must be submitted to the Provincial Head within one (1) month of the finalisation of the audit. A qualified independent auditor must undertake this audit.
- 5.6 The audit reports must include but are not limited to:

- 5.6.1 Reporting in respect of the monitoring programme referred to in condition 5.2 Appendix III;
- 5.6.2 A record of implementation of all mitigation measures including a record of corrective actions; and
- 5.6.3 Compensation measures for damage where mitigation measures have failed to adequately protect the in-stream and riparian habitat or any other characteristic of the watercourses.
- 5.7 The Licensee must apply in writing to the Provincial Head for alternative reporting arrangements for which written approval must be provided.
- 5.8 An Environmental Management/Monitoring Committee (EMC) must be established consisting of, but not limited to, representatives of the Licensee, the Responsible Person(s) for ensuring compliance with this licence, the Department of Water and Sanitation, the relevant Department of Environmental Affairs, the Department of Minerals and Resources, and other stakeholders.
- 5.9 The EMC must in addition to monitoring compliance with the conditions of the Environmental Management Programme Report, monitor for the duration of its establishment compliance with the conditions of this water use licence.
- 5.10 A wetland specialist must be appointed to monitor the compliance to the wetland management and rehabilitation plan and conditions in this licence pertaining to impacts on wetlands and provide specialist advice for corrective actions and compile audit reports which must be submitted to the Provincial Head.

## 6. OTHER WATER USERS

- 6.1 The Licensee must attempt to prevent adverse effect on other water users. All complaints must be investigated by a suitable qualified person and if investigations prove that the Licensee has impaired the rights of other water users, the Licensee must initiate suitable compensative measures.

## 7. POLLUTION PREVENTION, INCIDENTS AND MALFUNCTIONS

- 7.1 Pollution incidents shall be dealt with in accordance with Section 19 and 20 of the Act.
- 7.2 Any incident that may cause pollution of any water resource shall immediately be reported to the Provincial Head.
- 7.3 If surface and/or groundwater pollution has occurred or may possibly occur, the Licensee must conduct, and/or appoint specialists to conduct the necessary



investigations and implement additional monitoring, pollution prevention and remediation measures to the satisfaction of the Provincial Head.

7.4 The Licensee shall keep all records relating to the compliance or non-compliance with the conditions of this licence in good order. Such records shall be made available to the Provincial Head within 14 (fourteen) days of receipt of a written request by the Department for such records.

7.5 The Licensee shall keep an incident report and complaints register, which must be made available to any external auditors and the Department.

#### 8. BUDGETARY PROVISIONS

8.1 The Licensee must ensure that there is a budget sufficient to complete and maintain the water use and for successful implementation of the rehabilitation programme as set out in this licence.

8.2 The Provincial Head may at any stage of the process request proof of budgetary provisions for rehabilitation and closure of project.

#### 9. SITE SPECIFIC CONDITIONS

9.1 Pollution into the rehabilitated areas and beyond including acid mine drainage should be managed;

9.2 All open voids should be filled;

9.3 PES and EIS should be known of all wetlands and streams, if applicable. The rehabilitation must set a PES and EIS objective to achieve;

9.4 The plant species plan should be submitted six (6) months after the issuance of the licence;

9.5 No wetland rehabilitation should take place in open void areas;

9.6 Alien vegetation species management plan should be submitted six (6) months after the issuance of the licence; and

9.7 Overall rehabilitation plan of the colliery should be submitted six (6) months after the issuance of the licence.

### APPENDIX III

#### Section 21(g) of the Act: Disposing of waste in a manner which may detrimentally impact on a water resource

#### 1. CONSTRUCTION AND OPERATION

- 1.1 The Licensee shall carry out and complete all the activities, including the construction and operation of the Pollution Control Dam according to the Report and according to the final plans Technical Design Report as approved by the Provincial Head.
- 1.2 The construction of the Pollution Control must be carried out under the supervision of a professional Civil Engineer, registered under the Engineering Profession of South Africa Act, 1990 (Act 114 of 1990), as approved by the designer.
- 1.3 Within 30 days after the completion of the activities referred here in accordance with the relevant provisions of this licence, the Licensee shall in writing, under reference 16/2/7/B100/C11, inform the Provincial Head thereof. This shall be accompanied by a signature of approval from the designer referred to above that the construction was done according to the design plans referred to in the Report.
- 1.4 The Licensee must ensure that the disposal of the slurry and the operation and maintenance of the system are done according to the provisions in the Report.
- 1.5 The Licensee shall as well submit a set of as-built drawings to the Provincial Head after the completion of the Pollution Control Dams.
- 1.6 The Pollution Control Dams shall be operated and maintained to have a minimum freeboard of 0.8 metres above full supply level and all other water systems related thereto shall be operated in such a manner that it is at all times capable of handling the 1:50 year flood-event on top of its mean operating level.
- 1.7 The Licensee shall use acknowledged methods for sampling and the date, time and sampler must be indicated for each sample.
- 1.8 Flow metering devices shall be maintained in a sound state of repair and calibrated by a competent person at intervals of not more than once in two years. Calibration certificates shall be available for inspection by the Provincial Head or his representative upon request.




## 2. STORAGE OF WATER CONTAINING WASTE

- 2.1 The Licensee is authorised to dispose of a maximum quantity in cubic metres (m<sup>3</sup>) of waste per year (annum) into the waste management facilities on the properties described in Table 4

Table 4: Waste Management Facilities

Water use(s)	Purpose	Capacity/ Volume (m <sup>3</sup> , tonnes and/or m <sup>3</sup> /annum)	Property Description	Co-ordinates
Section 21 (g)	Runoff from discard dump contained in Pollution Control Dam 1	44 808 m <sup>3</sup> /a	Portion 14 Farm Elandsfontein 309 JS	25.92141°S 29.10757°E
	Seepage from discard dump and PCD 1 is contained in Pollution Control Dam 2	25 300 m <sup>3</sup> /a		25.92253°S 29.10737°E
	Seepage from Northern dirty water area contained in Pollution Control Dam 3	18 000 m <sup>3</sup> /a	Portion 7 Farm Elandsfontein 309 JS	25.90064°S 29.08954°E
	Discard Dump 1	600 000 m <sup>3</sup> /a	Portion 14 Farm Elandsfontein 309 JS	25.919036°S 29.106641°E
	Discard Backfilled into Northern Opencast Pit	1 733 333 m <sup>3</sup> /a	Portion 7 Farm Elandsfontein 309 JS	25.89764°S 29.09352°E
	Slurry Pond	35 200 m <sup>3</sup> /a	Portion 44 Farm Elandsfontein 309 JS	25.89984°S 29.09789°E
	Slurry disposed of in sealed decline	3 650 m <sup>3</sup> /a	Portion 7 Farm Elandsfontein 309 JS	25.90642°S 29.09461°E
	Western Area overburden	233 111 tons/a	Portion 1 Farm Elandsfontein 309 JS	25.91695°S 29.08318°E



Water use(s)	Purpose	Capacity/ Volume (m <sup>3</sup> , tonnes and/or m <sup>3</sup> /annum)	Property Description	Co-ordinates
Section 21(g)	Western area soil stockpile 1	279 000 tons/a	Portion 1 Farm Elandsfontein 309 JS	25.91000°S 29.07974°E
	Western area soil stockpile 2	237 600 tons/a	Portion 1 Farm Elandsfontein 309 JS	25.91161°S 29.07904°E
	Collection of dirty water runoff from mine property into western opencast pit area	381 672 m <sup>3</sup> /a	Portion 8 Farm Elandsfontein 309 JS	25.90973°S 29.08343°E
	Soil stockpile in the Northern Opencast Pit	300 000 tons/a	Portion 7 Farm Elandsfontein 309 JS	25.90084°S 29.09638°E
	Soil Stockpile 1 in the south-eastern area	9 900 tons/a	Portion 14 Farm Elandsfontein 309 JS	25.917959°S 29.110277°E
	Soil Stockpile 2 in the south-eastern area	9 840 tons/a		25.91964°S 29.10934°E

### 3. DUST SUPPRESSION

- 3.1 This licence authorises the use of forty four thousand one hundred cubic metres (44 100 m<sup>3</sup>) of wastewater per annum from the pollution control dam for dust suppression on Portion 1, 7, 8, and 14 Farm Elandsfontein 309 JS.
- 3.2 No excessive dust suppression that leads to saturated conditions and no dust suppression during wet periods.
- 3.3 An annual soil chemistry map must be compiled and submitted, with a report, to the Provincial Head. The soil chemistry map shall cover the areas covered by the dust suppression and map concentrations of pH, Electrical Conductivity and



Sodium. This map must be interpreted by a professional soil scientist and recommendation and conclusions must be included in a report.

#### 4. QUALITY OF WASTE WATER TO BE DISPOSED OF THE WASTE WATER CONTAINMENT FACILITY

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- 4.1 The quality of wastewater disposed of on the waste water containment facility shall not exceed the following limits as specified in Table 5:

Table 5: Water quality for the wastewater to be disposed of the waste water containment facility

SUBSTANCE/PARAMETER	LIMITS
Nitrate NO <sub>3</sub> as N mg/l	10 - 20
Chlorides as Cl mg/l	200-600
Total Alkalinity as CaCO <sub>3</sub> mg/l	No standard
Sulphate as SO <sub>4</sub> mg/l	400 - 600
Calcium as Ca mg/l	150 - 300
Magnesium as Mg mg/l	70 - 100
Sodium as Na mg/l	200 - 400
Potassium as K mg/l	50 -100
Iron as Fe mg/l	0.2 - 2
Manganese as Mn mg/l	0.1 - 1
Conductivity at 25° C in mS/m	150 - 370
pH-Value at 25° C	4-5 or 9.5 - 10
Aluminium as Al mg/l	0.3 - 0.5
Free and Saline Ammonia as N	1 - 2
Fluoride as F mg/l	1 - 1.5

#### 5. MONITORING

##### 5.1 Monitoring of waste water

- 5.1.1 The Licensee shall monitor the water quality of the treated water continuously with online water quality monitoring of the key variables as indicated in Table 5.

##### 5.2 Surface Water Quality

- 5.2.1 The Licensee shall submit within one month of the date of the issuance of the licence, a surface water quality monitoring programme, with the co-ordinates and the criteria used in the selection of the water monitoring points.
- 5.2.2 The location of additional monitoring points, which may from time to time be specified by the Provincial Head, shall be communicated in writing to the Licensee and this communication shall be regarded as part of the licence.

5.2.3 Monitoring for quality shall be carried out at the monitoring points listed in Table 6.

Table 6: Surface water monitoring points

Monitoring Site	Description	Latitude	Longitude
SW1 ✓ S10	North-west of project area, upstream of opencast	-25.903008	29.085863
TCMSW 01 ✓ ClocwceRB	Stream situated west of and downstream of Elandsfontein	-25.908763	29.065314
TCMSW 02 S12	Stream downstream of the western opencast area	-25.923157	29.081559
TCMSW 03 (Pit) ✓ Nothius	Western opencast pit area that is used to direct excess stormwater run-off to.	-25.920826	29.083247
TCMPCD 1 ✓ SP	Pollution control dam 1, situated at the south-eastern coal discard dump.	-25.920826	29.108719
TCMPCD3 ✓ Dam. Pumpwater	Pollution control dam 3, situated on the northern area	-25.90035	29.089059
TCMSW 01 ✓	Stream situated west of and downstream of Elandsfontein	-25.908763	29.065314

5.2.4 The variables (constituents) in Table 7 shall be included in the surface monitoring programme

Table 7: Surface water variables

Variable	Unit
pH	
Electrical Conductivity (EC)	mS/m
Chlorides (Cl)	mg/l
Sulphates (SO <sub>4</sub> )	mg/l
Fluoride (F)	mg/l
Sodium (Na)	mg/l
Potassium (K)	mg/l



Variable	Unit
Calcium (Ca)	mg/l
Magnesium (Mg)	mg/l
Aluminium (Al)	mg/l
Iron (Fe)	mg/l
Manganese (Mn)	mg/l

### 5.3 Groundwater Quality

- 5.3.1 The Licensee shall submit within one month of the date of the issuance of this licence, a ground water quality monitoring programme which must provide the detailed criteria followed in the establishment of the groundwater monitoring point as described in Table 8.

Table 8: Groundwater monitoring points

Monitoring Site	Description	Latitude	Longitude
GW1	South-east of the northern coal discard dump	-25.908375	29.09422
GW2	West side of the western opencast area	-25.915078	29.076539
GW3	Eastern side of western opencast area	-25.915462	29.090777
GW4	Downstream of the western opencast area	-25.922204	29.082243
GW5	Downstream of pollution control dam 1 situated at the south-eastern coal discard dump.	-25.92273	29.10674
TCMBH 01	Borehole located north-west of the project area.	-25.896915	29.082912
TCMBH 02 ① ON STREAM	Borehole located west of the coal discard dump.	-25.908763	29.065314
TCMBH 03	Borehole located on the north east of the project area	-25.90928	29.106834

- 5.3.2 The impact of the activities of the mine on the ground water shall not exceed the groundwater limit detailed in the water quality reserve for the area as indicated in



Table 9

Table 9: Water Quality specification for Groundwater in Quaternary Catchment B20G

Parameter	Units	Limits
pH		8.79
Electrical Conductivity	mS/m	75.52
Calcium	mg/l	32.56
Magnesium	mg/l	32.71
Sodium	mg/l	44.00
Chloride	mg/l	36.34
sulphate	mg/l	10.36
Nitrate	mg/l	0.11
Fluoride	mg/l	0.14

### 6. STORM WATER MANAGEMENT

- 6.1 Storm water leaving the Licensee's premises shall in no way be contaminated by any substance, whether such substance is a solid, liquid, vapour or gas or a combination thereof which is produced, used, stored, dumped or spilled on the premises.
- 6.2 Increase runoff due to vegetation clearance and/or soil compaction must be managed, and steps must be taken to ensure that storm water does not lead to bank instability and excessive levels of silt entering the stream.
- 6.3 Storm water shall be diverted from the site and roads and shall be managed in such a manner as to disperse runoff and concentrating the storm-water flow.
- 6.4 Where necessary works must be constructed to attenuate the velocity of any storm-water discharge and to protect the banks of the affected watercourses.
- 6.5 Storm water control works must be constructed, operated and maintained in a sustainable manner throughout the impacted area.
- 6.6 Increased runoff due to vegetation clearance and/or soil compaction must be managed, and steps must be taken to ensure that storm water does not lead to bank instability and excessive levels of silt entering the streams.





- 6.7 All storm water that would naturally run across the pollution areas shall be diverted via channels and trapezoidal drains designed to contain the 1:50 year flood.
- 6.8 The polluted storm water system shall be designed and implemented to provide suitable routing and pumping capacity for contaminated storm water from the individual facilities to the respective storm water dams in accordance with the design specifications as contained in the Technical Design Report.

## 7. ACCESS CONTROL

- 7.1 Strict access procedures must be followed in order to gain access to the property. Access to the Pollution Control Dams must be limited to authorised employees of the Licensee and their Contractors only.
- 7.2 Notices prohibiting unauthorised persons from entering the areas referred to in condition 2.1 of Appendix III, as well as internationally acceptable signs indicating the risks involved in case of an unauthorised entry must be displayed along the boundary fence of these areas.
- 7.3 The Licensee must take all reasonable steps to maintain service roads in a condition which ensures unimpeded access to the mine residue facility for vehicles involved in closure
- 7.4 The Licensee must ensure that all entrance gates are manned during the hours of operation/closure construction and locked outside the hours of operational/closure construction.

## 8. CONTINGENCIES

- 8.1 Accurate and up-to-date records shall be kept of all system malfunctions resulting in non-compliance with the requirements of this licence. The records shall be available for inspection by the Provincial Head upon request. Such malfunctions shall be tabulated under the following headings with a full explanation of all the contributory circumstances:

- 8.1.1 operating errors;
- 8.1.2 mechanical failures (including design, installation or maintenance);
- 8.1.3 environmental factors (e.g. flood);
- 8.1.4 loss of supply services (e.g. power failure); and
- 8.1.5 other causes.



- 8.2 The Licensee must, within 24 hours, notify the Provincial Head of the occurrence or potential occurrence of any incident which has the potential to cause, or has caused water pollution, pollution of the environment, health risks or which is a contravention of the licence conditions.
- 8.3 The Licensee must, within 14 days, or a shorter period of time, as specified by the Provincial Head, from the occurrence or detection of any incident referred above, submit an action plan, which must include a detailed time schedule, to the satisfaction of the Provincial Head of measures taken to:-
- 8.3.1 correct the impacts resulting from the incident;
  - 8.3.2 prevent the incident from causing any further impacts; and
  - 8.3.3 prevent a recurrence of a similar incident.

## 9. REPORTING

- 9.1 The Licensee shall update the water balance annually and calculate the loads of waste emanating from the activities. The Licensee shall determine the contribution of their activities to the mass balance for the water resource and must furthermore co-operate with other water users in the catchment to determine the mass balance for the water resource reserve compliance point.
- 9.2 The Licensee shall submit the results of analysis for the monitoring requirements to the Provincial Head on a quarterly basis under Reference number 16/2/7/B100/C11.
- 9.3 The Licensee shall submit the nature and the quality of the waste disposed into the following dam.
- 9.3.1 Pollution control dam;
  - 9.3.2 Overburden Stockpile; and
  - 9.3.3 Run Of Mine Coal.

## 10. AUDITING

- 10.1 The Licensee shall conduct an annual internal audit on compliance with the conditions of this licence. A report on the audit shall be submitted to the Provincial Head within one month of finalisation of the report, and shall be made available to an external auditor should the need arise.
- 10.2 The Licensee shall appoint an independent external auditor to conduct an annual audit on compliance with the conditions of this licence. The first audit must be conducted within 3 (three) months of the date this license was issued and a



report on the audit shall be submitted to the Provincial Head within one month of finalisation of the report.

## 11. INTEGRATED WATER AND WASTE MANAGEMENT

- 11.1 The Licensee must prepare an *Integrated Water and Waste Management Plan (IWWMP)*, which must together with the *Rehabilitation Strategy and Implementation Programme (RSIP)*, be submitted to the Provincial Head for approval within six (6) year from the date of issuance of this licence.
- 11.2 The IWWMP and RSIP shall thereafter be updated and submitted to the Provincial Head for approval, annually.
- 11.3 The Licensee must, at least 180 days prior to the intended closure of any facility, or any portion thereof, notify the Provincial Head of such intention and submit any final amendments to the IWWMP and RSIP as well as a final Closure Plan, for approval.
- 11.4 The Licensee shall make full financial provision, for all investigations, designs, construction, operation and maintenance for a water treatment plant should it become a requirement as a long-term water management strategy.

## 12. SITE SPECIFIC CONDITIONS

- 12.1 Mass transport modelling around the mine should be submitted to the Department within six (6) months; *ENP*
- 12.2 More recent numerical groundwater flow modelling that shows the impact of mine on the groundwater quantity should be submitted to the Department within six (6) months;
- 12.3 A clear groundwater monitoring network and monitoring programme should be submitted to the Department within six (6) months;
- 12.4 Management of pollution into the rehabilitated areas and beyond including acid mine drainage;
- 12.5 All voids should be filled;
- 12.6 Present Ecological State (PES) and Ecological Importance and Sensitivity (EIS) should be known of all wetlands and streams, if applicable. The rehabilitation must set a PES and EIS objective to achieve;



- 12.7 The plant species plan should be submitted six (6) months after the issuance of the licence;
- 12.8 No wetland rehabilitation should take place in open void areas;
- 12.9 Alien vegetation species management plan should be submitted six (6) months after the issuance of the licence;
- 12.10 Overall rehabilitation plan of the colliery should be submitted six (6) months after the issuance of the licence;
- 12.11 The rehabilitation plan for the non-compliant voids and the Pollution control dams must be submitted to the Department for approval before implementation;
- 12.12 The watercourse on which the Pollution control dam 3 has been positioned must be diverted and such diversion design details/drawings must be submitted to the Department for approval before implementation;
- 12.13 The monitoring and mitigation plan around existing non-compliant facilities at the mine must be submitted to the Department within sixty (60) working days of the issuance of a water use licence; and
- 12.14 The under drainage system for the discard dump must include lined channels or pipelines that discharge directly into pollution control dam 3 not into the environment is currently indicated.

END OF LICENCE





# water & sanitation

Department:  
Water and Sanitation  
REPUBLIC OF SOUTH AFRICA

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## AMENDMENT ELANDSFONTEIN COLLIERY (PTY) LTD WATER USE LICENCE IN TERMS OF SECTION 50 AND 158 OF THE NATIONAL WATER ACT,

I, **Trevor Balzer**, in my capacity as Deputy Director-General (Special projects) in the Department of Water and Sanitation: and acting under authority of the powers sub-delegated to me by the Acting Director General of Water and Sanitation, hereby authorises the amendment of licence dated 22 October 2015, licence no: **04/B20G/CGI/3843 Elandsfontein Colliery (Pty) Ltd of .**

SIGNED: Trevor Balzer

DATE: 23/07/2019

The above mentioned licence is amended as follows:

### APPENDIX II

**Section 21 (c) of the Act: Impeding or diverting the flow of water in a watercourse, and**

**Section 21 (i) of the Act: Altering the bed, banks, course or characteristic of a watercourse**

#### Amendment of condition 1.1 on page 6 of 28

- 1. Condition 1.1 of the licence is hereby amended-
  - a. by substitution of condition 1.1 with the following condition

1.1 The licence authorises Elandsfontein Colliery (Pty) Ltd for the watercourse crossings in terms of section 21 (c) and (i) of the Act as set out in Table 2 below and in the water use licence application reports submitted to the Department or the Provincial Head (refer to condition 1.2) for:

**Table 2: Water Use Activities**

Water use(s)	Purpose	Capacity/ Volume (m <sup>3</sup> , tonnes and/or m <sup>3</sup> /annum)	Property Description	Co-ordinates
	River Crossing 1(Road construction over an unnamed tributary)		Portion 7 Farm Elandsfontein 309	25.90215°S 29.09167°E

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Water use(s)	Purpose	Capacity/ Volume (m <sup>3</sup> , tonnes and/or m <sup>3</sup> /annum)	Property Description	Co-ordinates
Section 21 (c) & (i)	River Crossing 2 (Road across tributary of the Grootspuit)	Height 1.0 m Width 5.0 m Length 10 m	JS	25.90152°S 29.08933°E
	River Crossing 3 (Road across a tributary)	Height 1.0 m Width 5.0 m Length 10 m	Portion 8 Farm Elandsfontein 309 JS	25.90793°S 29.08240°E
	River Crossing 4 (Road across the tributary)	Height 1.0 m Width 5.0 m Length 10 m		25.90179°S 29.08105°E
	PCD 3 located within an unnamed tributary of the Grootspuit	Height 2.0 m Width 3.0 m Length 68 m	Portion 7 Farm Elandsfontein 309 JS	25.90064°S 29.08955°E
	Western Opencast Discard River Diversion	Height 5.0 m Width 5.0 m Length 280 m	Portion 1 Farm Elandsfontein 309 JS	Start 25.91386°S 29.07918°E End 25.91557°S 29.07813°E
	Western Opencast Pit	Height 5.0 m Width 30 m Length 330 m	Portion 8 Farm Elandsfontein 309 JS	25.904859° S 29.086346° E

**Amendment of condition 1.3 on page 7 of 28**

2. Condition 1.3 of the licence is hereby amended-

b. by substitution of condition 1.3 with the following condition

1.3 No activity must take place within the 1:100 year flood line or the delineated riparian habitat, whichever is the greatest, or within a 41m radius from the boundary of any wetland unless authorised by this licence.

**[END OF AMENDMENT LICENCE]**