



water & sanitation

Department:
Water and Sanitation
REPUBLIC OF SOUTH AFRICA

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LICENCE IN TERMS OF CHAPTER 4 OF THE NATIONAL WATER ACT, 1998 (ACT NO. 36 OF 1998) (THE ACT)

Sifiso Mkhize
I, ~~Dan Mashitsho~~, in my capacity as Director General in the Department of Water and Sanitation, and under authority of the powers delegated to me by the Minister of Water and Sanitation, hereby authorise the following water use in respect of this licence.

SIGNED: *[Signature]*

DATE: *07/08/2012*

LICENCE NO: 07/A42J/GECI/5726
FILE NO: 27/2/A942/3/3

1. **Licensee:** Eskom Holding Soc Pty(Ltd): Matimba Power
Postal Address: Station Ash Disposal Facility
Private Bag x 215
Lephalale
0555
2. **Water Use**
 - 2.1 Section 21(c) of the Act: Impeding or diverting the flow of water in a water course, subject to the conditions set out in Appendices I and II
 - 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
 - 2.3 Section 21(g) of the Act: Disposing of waste in a manner which may detrimentally impact on a water resource, subject to conditions set out in Appendices III
3. **Property in respect of which the licence is issued**
 - 3.1 Farm Zwartwater 507LQ, Grootestryd 465LQ
4. **Registered owner of the property** **B 07946**
 - 4.1 Eskom Holding SOC Pty (Ltd)

5. Licence and Review Period

- 5.1 This licence is valid for a period of twenty (20) years from the date of issuance and it may be reviewed at intervals of not more than five(5) years.

6. 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" means the Head of Provincial Operations: Limpopo, Department of Water and Sanitation, Private Bag X 9506, Polokwane, 0700.

7. Description of the activity

This license authorises Eskom Holding SOC (Pty) Ltd: Matimba Power Station for section 21(c), (i) and (g) water uses of the National Water Act, 1998 (Act no.36 of 1998). The activity is for construction of Ash disposal facility within the foot print of existing ash disposal facility, disposal of ash in Matimba ash disposal facility on 510 hectares of the greenfields.

Eskom Holdings SOC (Pty) Ltd: Matimba Power Station (MPS) is a 3990MW installed capacity base load coal fired power station, consisting of six units and is a dry cooling power station. Matimba Power Station extent the existing ashing facility and associated infrastructure to support the remaining life of the power station (2016 to 2055) which is 39 years.

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.
6. The Licensee shall be responsible for any water use charges or levies imposed by a Responsible Authority.
7. 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.
8. The licence shall not be construed as exempting the Licensee from compliance with the provisions of any other applicable Act, Ordinance, Regulation or By-law.
9. 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.
10. The Licensee must 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.
11. The Licensee must 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 licence is issued and a report on the audit shall be submitted to the Provincial Head within six(6) months of issuance of this licence.
12. Flow metering, recording and integrating devices must be maintained in a sound state of repair and calibrated by a competent person at intervals of not more than two years. Calibration certificates must be available for inspection by the Provincial Head or his/her representative upon request.

13. Any incident that causes or may cause water pollution must be reported to the Provincial Head or his/her designated representative within 24 hours.

APPENDIX II

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

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

1.1 General

1. This licence authorises section 21 (c) and (i) water use activities as set out in Table 1 and in the water use licence application reports submitted to the Department of the Responsible Authority.

Table 1. Location and Coordinates of where the water resource is altered

Water uses	Description/Name of Watercourse	Property Description	Volumes/ Capacities and Dimensions of structure or	Coordinates	
				Longitude	Latitude
Section 21(c) and (i)	Construction an ash disposal facility within the buffer zone of watercourse(non perennial stream)	Zwartwater 507LQ	Non consumption water use	E27°37'.04.60"	S23°41'57.80"
	Construction of an ash disposal facility on top of the drainage line		Non consumption water use	E27°35'.40.03" E27°36'.35.80"	S23°43'39.30" S23°43'17.37"
	Construction of an ash disposal facility and Metsimaholo Dam within 500m distance from the Sandloop river		Non consumption water use	Within the 500m of the ash disposal facility	

- 1.2 The Licensee shall carry out and complete all the activities according to the following:
 - 1.2.1 Report(s) submitted to the Department or the Responsible Authority
 - 1.2.2 Conditions of this licence and
 - 1.2.3 Any written direction issued by the Provincial Head in relation to this licence
- 1.3 No activity shall take place within the 1:100 year flood line or the riparian habitat whichever is the greatest, or within 100m from a borehole or well, unless authorised by this licence.
- 1.4 The conditions of the authorisation shall be brought to the attention of all persons (employees, sub-consultants, contractors etc) associated with undertaking of the activity and the licensee shall 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 must be on site at all times

- 1.6 A suitably qualified person, appointed by the Licensee and approved in writing by Provincial Head, He/She must be responsible for ensuring that the activities are undertaken in compliance with specifications as set out in reports submitted to the Department or Responsible Authority and the conditions of this licence.
- 1.7 The Licensee must ensure that the existing boreholes sited and drilled up gradient of the ash disposal facility should always be used for groundwater monitoring.

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

2. CONSTRUCTION AND OPERATION

2.1 The Licensee must carry out and complete all the activities, including the construction and operation of the facilities indicated in Tables 2 according to the Report and according to the final plans with integrated Water Use Licence Application as approved by the Provincial Head.

Table 2: Geographical Positions of the wastewater management facilities

Water Use(s)	Purpose	Capacity(m ³) / Volume (m ³ /annum)	Property Description	Co-ordinates
Section 21 (g)				
Section 21 (g)	Disposal of leachate from the ash disposal facility and runoff from the dump and haul road into Metsimaholo PCD	360 000 m ³	Zwartwater 507LQ	S 27° 36' 50.79" E 23° 43' 18.8"
	Use of dried sludge for rehabilitation of Ash Disposal Facility	5m ³ /month or 60 m ³ /annum	Zwartwater 507 LQ	S 23° 41' 57.80" E 27° 37'.04.60" S 23° 43' 13.90" E 27° 37'.10.80" S 23° 42' 52.90" E 27° 34'.55.40" S 23° 42' 37.00" E 27° 34'.55.10"
	Storage of Ash on the emergency ash Offloading area	5 580 Maximum 19 500 tons(55 217.85m ³)/5 days of ash to be stored during emergencies	Grootestryd 456LQ	S 23° 36' 00.00" E 27°40'.05.66" S 23° 40' 06.08" E 27° 35'.58.41" S 23° 40' 08.27" E 27° 35'.58.66" S 23° 40' 07.79" E 27° 36'.00.93"
	Disposal of industrial ash deposits on the ash disposal facility	90.5hectares unlined green field. Total coverage of 510 hectares of greenfields including unlined 90.5 hectares at a height of 90m	Zwartwater 507LQ	S 23° 41' 57.80" E 27°37'.04.60" S 23° 43' 13.90" E 27° 37'.10.80" S 23° 43'52.90 " E 27° 34'.55.40"
	Disposal of wastewater for dust suppression of the ash disposal facility	671 625 m ³ /a	Zwartwater 507LQ	S 23° 42'44.38" E 27° 36'.41.8"

3. DISPOSAL OF WASTE OR WATER CONTAINING WASTE

- 3.1 The Licensee is authorized to dispose of a maximum quantity of six hundred and seventy one thousand and six twenty five cubic per annum (671 625 m³/a) of waste water for dust suppression on ash disposal facility.
- 3.2 The quantity of wastewater authorised to be disposed in terms of this licence may not be exceeded without prior authorisation by the Minister or water containing waste into the containment facilities as indicated in Table 2.
- 3.3 The Licensee shall confirm the barrier system and global stability including laboratory test determining interface shear and materials strength parameters as well compressive creep collapse for the service of the ash facility prior the commencement of activity.
- 3.4 The licensee must ensure any spills from Metsimaholo PCD are reported as incidents.
- 3.5 The Licensee must confirm the standard specifications for performance of natural and synthetic material and allow for the products equivalent performance prior commencement of the activity.

4 EXEMPTED LINING OF 95.5 HECTARES FROM 510 HECTARES, THE LICENSEE MUST COMPLY WITH THE FOLLOWING CONDITIONS:

- 4.1 The Licensee must conduct a geophysical survey in an effort to optimise drilling positions for additional two boreholes and to delineate the structural geological features which could act as preferential groundwater flow pathways.
- 4.2 The Licensee must ensure that additional shallow and deeper groundwater monitoring borehole(paired boreholes) which must be incorporated into the existing monitoring programme must be sited and drilled down- gradient of the existing ash disposal facility to a depth that penetrates the whole aquifer.
- 4.3 The Licensee must ensure that the shallow aquifer zone be cased and sealed off in the deeper boreholes to minimize the risk of cross contamination.
- 4.4 The Licensee must ensure that monitoring borehole that can be used for pollution interception should be installed down-gradient of the existing ash disposal facility to minimize the water quality impacts in the boreholes used by other groundwater user.
- 4.5 The Licensee must ensure that boreholes are sited, drilled and constructed in such that they do not unnecessarily penetrate impermeable layers that could possibly create conduits for the migration of leachate pollution to groundwater.
- 4.6 The Licensee must ensure that groundwater monitoring boreholes must be properly sealed at the surface to prevent surface pollution into groundwater system.

- 4.7 The Licensee must ensure groundwater monitoring programme defining the frequency of measurements, parameters to be monitored, database and reporting must be developed and implemented.
- 4.8 The groundwater quality (including the private borehole if exist adjacent to the existing ash disposal facility) must be monitored by the licensee on a quarterly basis by using approved groundwater sampling techniques and analysed by an accredited laboratory. Undue long-term trends in the quality of water will indicate remediation actions.
- 4.9 The Licensee must determine if all the parameters after being monitored for a period of two years or less show an increasing trend, or do not comply with standards for drinking water qualities, a groundwater remediation plan must be developed to ensure that corrective measures are implemented.
- 4.10 All boreholes for groundwater levels to be used for monitoring purposes must be monitored on a quarterly basis.
- 4.11 The Licensee should construct, calibrate a numerical model and used it adequately to assess the monitoring results and possible impacts detection.
- 4.12 During the operational phase the Licensee must ensure local aquifers are not artificially recharged by the seepage emanating from the ash disposal facility.
- 4.13 In the event dewatering deemed to be the best option to intercept contaminated plume, the Licensee should always ensure that the boreholes are not depleted to a level where the static water level reaches the main water strike.
- 4.14 The Licensee must ensure that dewatering volumes must be recorded and groundwater levels be monitored especially during dewatering to avoid exploitation of groundwater within the area.
- 4.15 The Licensee must ensure that the contaminated water must be treated to meet the minimum legal standards and should be rejected(after authorization) back to aquifer system.
- 4.16 In the event that groundwater users become affected by ash disposal activities due to unacceptable water quality as result of contamination plume migrating and emanating from the ash disposal facility, the community must be compensated with portable water.
- 4.17 The Licensee must manage groundwater recharge from waste disposal facility and the water level in the facilities be monitored and kept to a minimum level to avoid decant of poor quality water or effluent into the surface resources, and ensure that surface streams do not act as secondary sources of contamination during operational, decommissioning and closure phases.

- 4.18 Any subsided surface adjacent to the ash disposal facility should be rehabilitated to minimize ingress of surface water in to the ash disposal facility.

5. QUALITY OF WASTE WATER TO BE DISPOSED

- 5.1 The quality of waste water disposed into Metsimaholo Dam and ash disposal facility must comply with the general limits of wastewater standards and the background base of the area.

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 Where necessary works must be constructed to attenuate the velocity of any storm-water discharge and to protect the banks of the affected watercourses.
- 6.4 Storm-water control works must be constructed, operated and maintained in a sustainable manner throughout the impacted area.
- 6.5 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.
- 6.6 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.
- 6.7 The polluted storm water system shall be designed and implemented to provide suitable routing and pumping capacity for contaminated storm water from the associated infrastructure to the respective storm water dam(s) in accordance with the design specifications as contained in the Integrated Water Use Licence Application report.
- 6.8 The polluted storm water captured in the storm water of ash disposal facility shall be pumped to Metsimaholo Dam for reuse and recycling.
- 6.9 An updated stormwater management plan of all associated industrial activities should be implemented within and around the ash disposal facilities.
- 6.10 The Licensee must protect the side slope of ash, protect and vegetated.

- 6.11 The Licensee must design a stormwater management channel as natural as possible with rock, topsoil and vegetation.
- 6.12 The clean storm water must be discharged into attenuation structure outside the drainage line and sandloop river
- 6.13 The Licensee must maintain the hydrological and connectivity along the drainage line

7 ACCESS CONTROL

- 7.5 Strict access procedures must be followed in order to gain access to the properties.
- 7.6 Access to the pollution control dam (Metsimaholo), ash disposal facility must be limited to authorised employees of the Licensee and their Contractors only.
- 7.7 Notices prohibiting unauthorised persons from entering controlled access areas 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.

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

- 9.1 The Licensee shall conduct an annual internal audit on compliance with conditions of this licence. A report on the audit shall be submitted to the Provincial Head within one month of finalisation of the audit, and shall be made available to an external auditor should the need arise.

10 INTEGRATED WATER AND WASTE MANAGEMENT

- 10.1 The Licensee must update an Integrated Water and Waste Management Plan (IWWMP), which must together with the updated Water balance be submitted to the Provincial Head for approval within one (1) year from the date of issuance of this licence.
- 10.2 The IWWMP and water balance shall thereafter be updated and submitted to the Provincial Head for approval, annually.

END OF LICENCE