



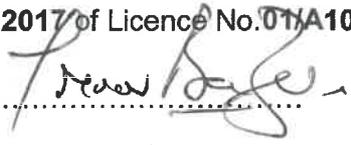
water & sanitation

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)

I, **Trevor Balzer**, in my capacity as Acting Director-General in the Department of Water and Sanitation and acting under authority of the powers delegated to me by the Minister of Human Settlements, Water and Sanitation, hereby authorises the amendment of licences dated **07 August 2017** of Licence No. **01/A1042/ABCEFGI/2013**.

SIGNED: 

DATE: 08/12/2020

LICENCE NO: 01/A1042/ABCEFGI/5213
FILE NO: 27/2/2/A942/2/1
VERSION: 01-2020

1. **Licensee:** Eskom Holding Soc (Pty) Ltd: Medupi Power Station
Postal Address: P.O. Box 1091
JOHANNESBURG
2000

2. **Water Uses**

- 2.1 Section 21 (b) of the Act: Storing water, subject to the conditions set out in Appendices I and I.
- 2.2 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 III.
- 2.3 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 III.
- 2.4 Section 21 (e) of the Act: Engaging in a control activity (irrigation with wastewater or water containing waste), subjects to the conditions set out in Appendices I and IV.
- 2.6 Section 21 (f) of the Act: Discharging waste or water containing waste into a water resource through a pipe, canal, sewer or other conduit.

B12384



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

3. Properties in respect of which this licence is issued

- 3.1 Farm Eenzaamheid 687 LQ
- 3.2 Farm Naawontkomen 509 LQ
- 3.3 Farm Kuipersbult 511LQ
- 3.4 Farm Kroomdraai 690LQ
- 3.5 Hanglip 508 LQ
- 3.6 Grootvallei 515 LQ

4. Registered owners of the Properties

Table 1: Registered owners of the Properties

Property Name	Property Owner	Title deeds number
Farm Eenzaamheid 687 LQ	Eskom Holding SOC Limited	T163156/2007 PTA
Farm Naawontkomen 509 LQ	Eskom Holding SOC Limited	T154755/2007 PTA
Farm Kuipersbult 511LQ	Eskom Holding SOC Limited	T163/157/2007 PTA
Farm Kroomdraai 690LQ	Eskom Holding SOC Limited	T67525/2007 PTA
Farm Hanglip 508 LQ	Eskom Holding SOC Limited	N
Farm Grootvallei 515 LQ	Eskom Holding SOC Limited	T67525/2007 PTA

5. Licence and Review Period

This licence is valid for a period of seventeen (17) years from the date of issuance and it may be reviewed at intervals of not more than five (05) 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.

“Extent of the watercourse” means the outer edge of the 1:100 year floodline or the delineated riparian habitat, whichever is the greatest.

“Regulated area of a wetland” is the use of water for section 21 c and i water uses within 500m radius from the boundary of any wetland.

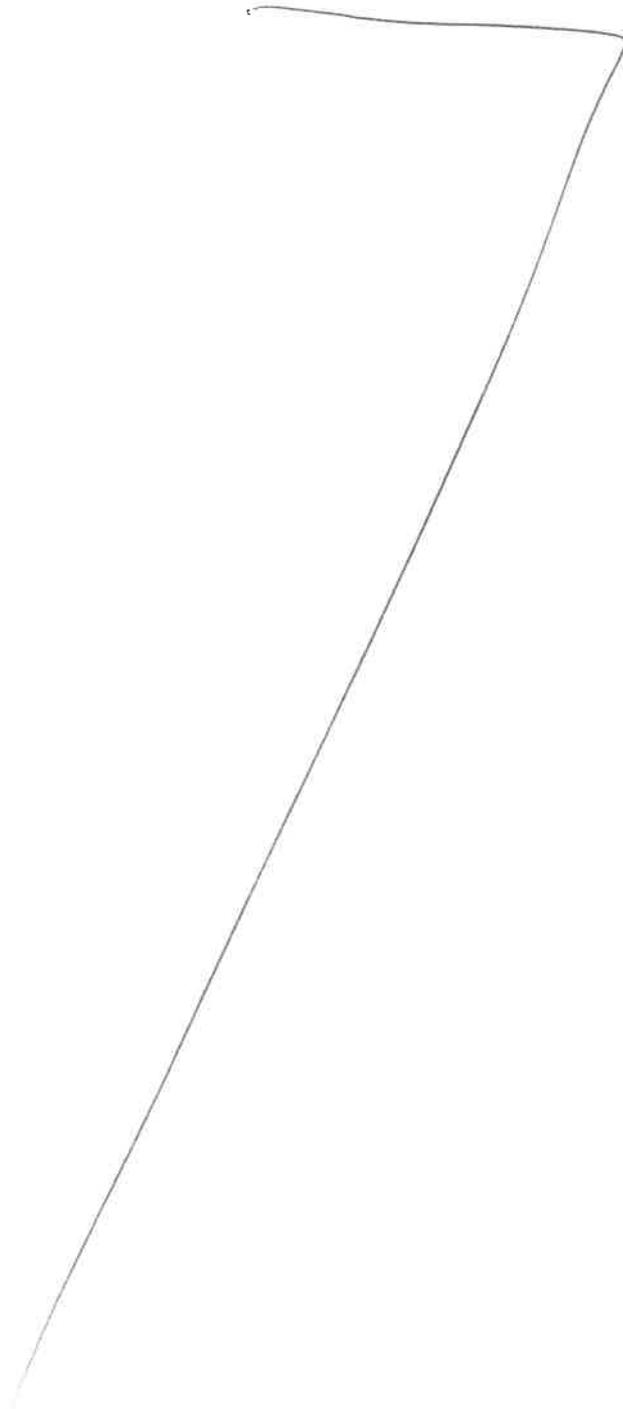
A wetland means land which is transitional between terrestrial and aquatic systems where the water table is usually at or near the surface, or the land is periodically covered with shallow water, and which land in normal circumstances supports or would support vegetation typically adapted to life in saturated soil.

The characteristics of a watercourse/s mean the flow regime, water quality, habitat (including the physical structure of the watercourse/s and associated vegetation) and biota found within the extent of the watercourses. The Resource Quality characteristics as defined in the National Water Act, 1998 (Act 36 of 1998).

7. **Description of activity**

This licence authorises **Eskom Holding SOC Pty (Ltd): Medupi Power Station** for the water use in terms of section 21 (b), (c), (i), (e), (f) and (g) water uses in terms of the National Water Act, 1998 (Act 36 of 1998).

Eskom Holdings (SOC) Limited is a State Owned Company: Medupi Power Station and the its activity is for production of electricity. Eskom Holdings SOC Limited is authorised in terms of a bulk water use licence to abstract 14,5 Mm³/a from Mokolo Dam Water Scheme in October 2011 for both Medupi and Matimba Power Stations. The abstracted water for Medupi Power Station is stored into 800 000 m³ capacity raw water reservoirs from where it is used in the Power Station processes. Pollution Control Dams are erected to contain process effluent and storm water runoff from dirty areas.



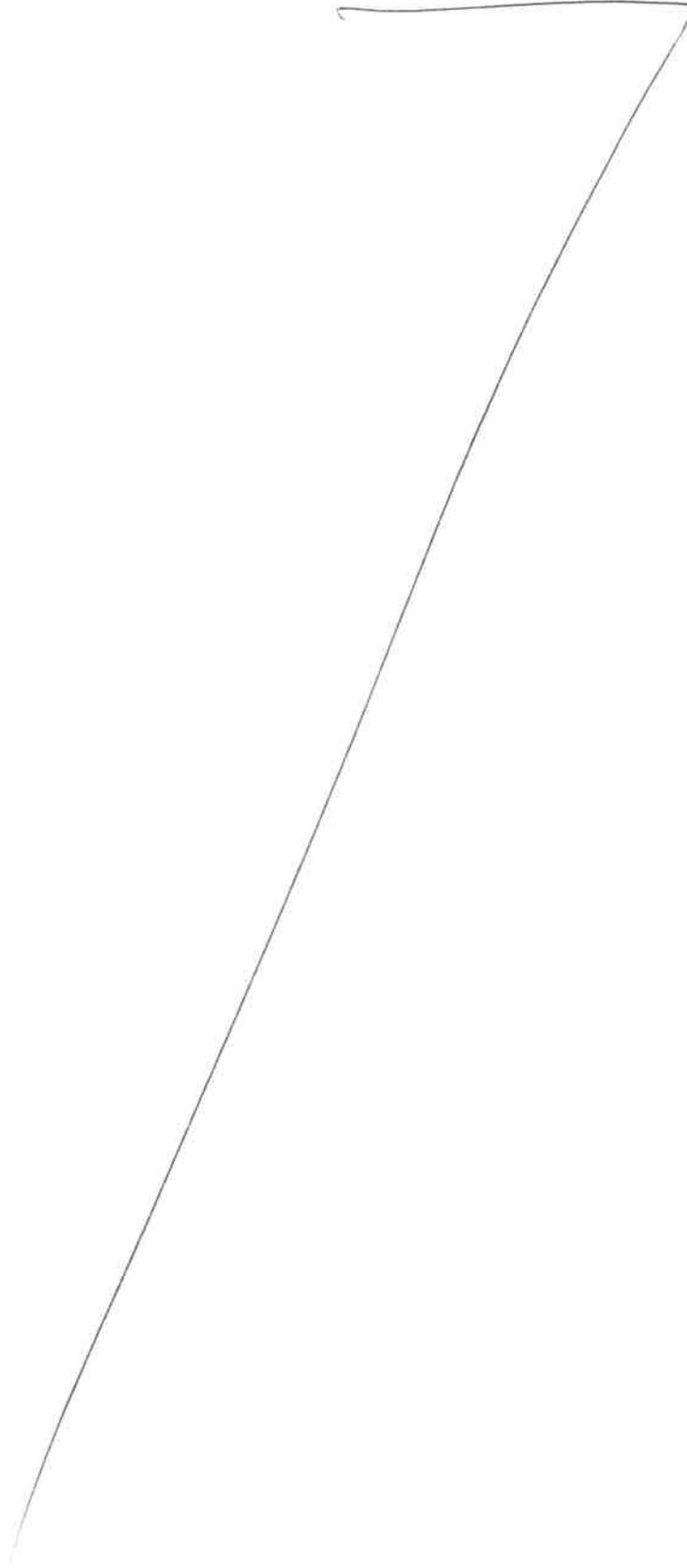
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APPENDIX I

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. Any contravention of or failure to comply with a condition of the Licence constitutes an offence
4. The Minister and any person authorised by him/her in writing may at any time enter upon the premises of the Licensee to perform the functions contemplated in section 125(1), (2) and (3) of the said Act
5. Any person who has timeously lodged a written objection against the application for a license may appeal to Water Tribunal and Tribunal may confirm, amend or withdraw the licence or make any other as it deems appropriate.
6. If the properties in respect of which this licence is issued are subdivided or consolidated, the Licensee must provide full details of all changes in respect of the properties to the Provincial Head within 40 days of the said change taking place.
7. If a Water User Association is established in the area to manage the resource, membership of the Licensee to the Association is compulsory. Rules, regulations and water management stipulation of such association must be adhered to.
8. The Licensee shall be responsible for any water use charges and/or levies imposed by a Responsible Authority or Department in terms of the Raw Water Pricing Strategy, Waste Discharge Charges, Water Resource Management Charge of the Department, or any other water charge or levies that might be imposed in terms of the appropriate legislation
9. The Licensee must immediately inform the Provincial Head of any change of name, address, premises and/or legal status.
10. 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.
11. The licence and amendment of this licence are also subject to all the applicable procedural requirements and other provisions of the Act, as amended from time to time.
12. The Licensee shall be responsible for appointment of a Responsible Person(s) who will give effect to the various conditions and to ensure compliance thereof.
13. 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 the finalization of the audit.
14. The Licensee shall appoint an independent external auditor to conduct an annual external 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 the finalization of the audit.

15. The Licensee must inform the Department at least 90 days before the expiry of the date of the licence whether the licence must be considered for another term.
16. This water use licence supersedes the water use licences dated Licence No: **07 August 2017** of Licence No. **01/A1042/ABCEFGI/5213 of file No. 27/2/A942/2/1**



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APPENDIX II

Section 21 (b) of the Act: Storing of water

1. Storing of water

- 1.1 The Licensee is authorised to store raw water into a raw water reservoirs or dams with the total capacity 800 000 m³ which will be used for power station operations.
- 1.2 The Licensee must have or obtain any proprietary rights or servitudes at their own cost
- 1.3 The Licensee is not indemnified from any detrimental effect that the dams may have on their properties. The Department does not accept any responsibility or liability for any damages or losses that may suffered by any other party as result of the construction and utilisation of the dams
- 1.4 No additional water storage facilities can be constructed on the property without prior written consent of the Provincial Head.

2 Monitoring Requirements

- 2.1 The quantity of water stored must be recorded as at the last day of each month.

3. Construction of Dam(s)

- 3.1 The as-built plans and specifications of the dams must be kept on site by the Licensee and may be requested when compliance monitoring is conducted by the Department.



APPENDIX III

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 This licence authorises Eskom Holding Soc Pty (Ltd): Medupi Power Station for Section 21(c) and (i) water use activities for the facilities as set out in Table 3 and in the water use licence application reports submitted to the Department of Provincial Head.

Table 3. Location and Coordinates of where the water resource is altered

Water uses	Purpose	Property	Coordinates:
21(c)and(i)	Raw water pipeline crossing an unnamed non-perennial water course	Kuipersbult 511 LQ	S 23° 42' 146" E 27° 31' 27"

2. CONSTRUCTION, OPERATION AND MAINTENANCE

- 2.1 The Licensee must keep a set of as-built drawings (not schematic layouts) onsite and must provide them to the Provincial Head or his/her delegated person upon request.
- 2.2 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
- 2.3 Compensation measures for damage to and or mitigation measures must be recommended if avoidance or minimisation of the impacts of the proposed development is not possible or mitigation measures fail to adequately protect the instream and riparian habitat
- 2.4 No material with pollution generating potential will be used in any construction activities
- 2.5 Necessary erosion prevention mechanisms shall be employed to ensure the sustainability of all structures
- 2.6 The Licensee must ensure that section 21(c) and (i) water uses structures are not damaged excessively by floods exceeding the magnitude of floods occurring on average once in every 50 years
- 2.7 The construction activities must be scheduled to take place during low flow periods or dry seasons.
- 2.8 The Licensee must ensure that natural migration of aquatic biota and upstream movement of fishes most not be disturbed
- 2.9 The Licensee must ensure that the river crossing structures does not negatively impede on natural drainages lines



- 2.10 Vehicles and other machinery must be serviced well above the 1:100 year flood line or within horizontal distance of 100 meters from water from any water course. Oils and other potential pollutants must be disposed-off at an appropriate licenced site with the necessary agreement from the owner of such a site.
- 2.11 All reagent storage tanks and reaction units must be supplied with bunded area built to the capacity of the facility and provided with sumps and pumps return the spilled material back into the system
- 2.12 The system shall be maintained in a state of good repair and standby pumps must be provided.
- 2.13 Any hazardous substances must be handled according to the relevant legislation relating to transport, storage and use of the hazardous substance
- 2.14 Pollution caused by spills must be prevented through proper maintenance and effective protective measures especially near the non-perennial crossing.
- 2.15 Any access roads or temporary crossings must be
 - 2.15.1 non –erosive, structurally stable and should not induce any flooding or safety hazard
 - 2.15.2 any damage be repaired immediately to prevent further damage

3. WATER QUALITY

- 3.1 In the event of water flow regime in the water course, the instream water quality must be analysed on monthly basis at the monitoring points for both upstream and downstream of river/water course diversion or crossing for the following variables: pH(range), Electrical Conductivity, Suspended solids, Total Dissolved Solids

4. GENERAL SPECIFICATIONS

- 4.1 A suitably qualified person, appointed by the Licensee and approved, in writing, by the Provincial Head must be responsible for ensuring that the structures are maintained in line with the design specifications
- 4.2 The necessary erosion mechanisms shall be employed to ensure the sustainability of the structures
- 4.3 The Licensee must submit set of as-built detailed drawings (not schematic layouts) to the Provincial Head of the non –perennial stream crossing upon request.

5 PROTECTIVE MEASURES

- 5.1 The impeding structures must not severe impact on the stream flow of water by reducing the overall stream width or obstructing water flow in the stream.
- 5.2 Operation and storage of equipment within the riparian zone must be limited as far as possible.
- 5.3 All activities within the riparian zone must be far as possible.
- 5.4 Any material removed from the instream or riparian habitat, may not be stored within riparian zone or may not be stored in such a way of cause damming of water or wash away.



- 5.6 Alien vegetation must not be allowed to further colonise the area, and all new alien vegetation recruitment must be eradicated or controlled, using standard method approved by the Department.
- 5.7 Soils that have become compacted through activities of the development must be loosened to an appropriate depth to allow seed germination
- 5.8 The proposed development must not impede the upstream movement of fish or aquatic Species
- 5.9 Increased runoff due to vegetation clearance and or soil must be managed and steps must be taken to ensure storm water does not lead to bank instability and excessive level of silt entering the streams.
- 5.10 All reasonable steps should be made to minimise noise and mechanical vibrations in the vicinity of the river.

6 REHABILITATION

- 6.1 All disturbed must be revegetated with indigenous seed mix with consultation indigenous plant expert, ensuring that during rehabilitation only indigenous shrubs, trees and grasses are used in restoring the biodiversity.
- 6.2 The vegetation of the surrounding catchment of the surrounding catchment should also be managed to prevent erosion and siltation of the water course
- 6.3 The licensee must take steps necessary to allow movement of aquatics species, including migratory species during the rehabilitation programme.
- 6.4 The licensee must embark on a systematic long term rehabilitation programme to restore natural watercourses to environmentally acceptable and sustainable conditions after construction, which shall include, but not be limited to:
 - 6.4.1 The rehabilitation of disturbed and degraded riparian areas to restore and upgrade the riparian habitat integrity to sustain a bio-diverse riparian ecosystem and
 - 6.4.2 Annually assess the habitat to monitor the sustainability of the diversions and compliance with these conditions. Action must be taken to rectify any negative impacts.
 - 6.4.3 The licensee must ensure that the volume of flow is not reduced except for natural evaporative losses and the authorised attenuation volumes.

7 GENERAL SURFACE WATER DESIGN REQUIREMENTS AND CRITERIA

- 8.1 The Licensee must clearly indicate all wetlands boundaries within the project area on layout plans.
- 8.2 Design and planning of all proposed construction activities adjacent to or in the vicinity of rivers, streams and wetlands shall consider the following measures:
 - 8.2.1 Impact of alignment on springs and wetlands shall be investigated and monitored and ensure their continued functioning.

8.2.3 Where appropriate, large individual indigenous riparian trees shall be avoided during construction and shall be clearly marked on site.

8.3.3 All construction roads in or adjacent to the riparian zone shall be minimised and if required, shall be aligned and managed so as to minimise disturbance of the riparian zone and instream habitats.

9 SITE SPECIFIC CONDITIONS

9.1 The licensee must submit a legible and in colour rehabilitation plans and plant species plans in A1 format upon request by the Provincial Head.

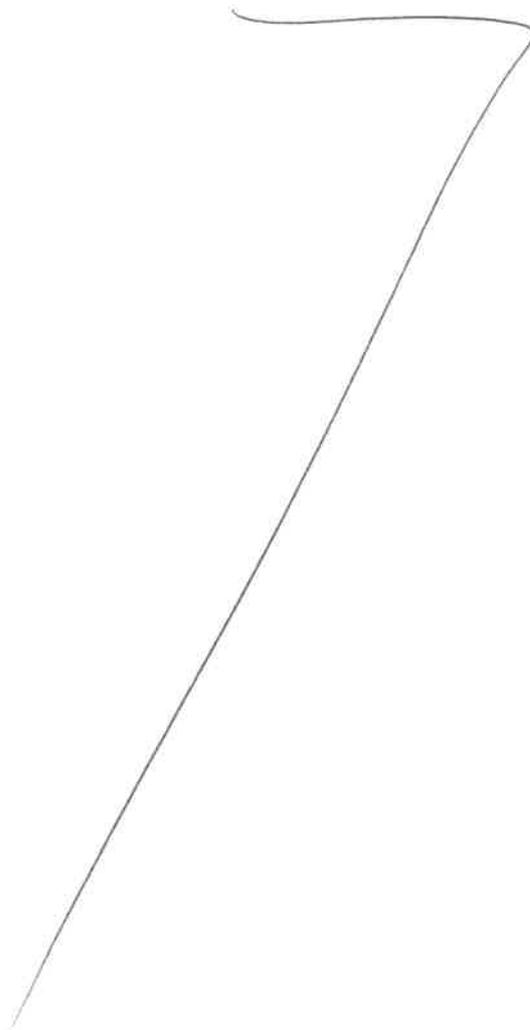
9.2 Should be there blasting on site, blasting and shaping of unsafe Karnes to 1:3 or flatter must be addressed upon request by the Provincial Head.

9.3 Creation of riparian and aquatic habit must be addressed as well as ease movement of aquatic species upon request by Provincial Head.

9.4 The Licensee must submit the proposal to implement better pollution control measures to Provincial Head upon request.

9.5 The Licensee must compile a groundwater management plan within six (6) months of the date of issuance of the licence.

9.6 Shaping and rehabilitation on previous rehabilitated areas must be addressed as directed by Provincial Head.



APPENDIX IV

Section 21 (e) of the Act: Engaging in a controlled activity; irrigation of any land with waste or water containing waste

1. QUANTITY OF WATER CONTAINING WASTE FOR IRRIGATION

1.1 This licence authorises Eskom Holding Soc Pty(Ltd) to irrigate land with maximum quantity of wastewater as detailed in Table 2 of this water use licence.

Table 2: Details of section 21(e) water uses-irrigation of land with wastewater

Descripti on of the activity	Purpose	Volume (m³/a)	Property Description	Coordinates
To irrigate Medupi Gardens	To maintain vegetation	300 0000	Grootestyd 465LQ	S 23° 43' 12.81" E 27° 32' 44.40" S 23° 43' 18.36" E 27° 32' 39.97"

1.2. The quantity of wastewater authorised to be irrigated in terms of this licence may not be exceeded without prior authorisation by the Minister.

2. Crop Type and Area Irrigated

2.1 This licence authorises irrigation of a total surface area as detailed in Table 3

Table 3: Details of crops and area to be irrigated

Description of the activity	Purpose	Hectares
To irrigate Medupi Gardens	To maintain vegetation	575

3. QUALITY OF WATER CONTAINING WASTE FOR IRRIGATION.

3.1 The quality of water containing waste irrigated should not exceed the background water quality limits submitted by Eskom Holding Soc(Pty)Ltd.

3.2 The Provincial Head may through a written notice review the background water quality limits mention above upon reasonable suspicion or scientific finding that impact or pollution is likely to occur or is occurring on the water resources or receiving environment.

4. MONITORING

4.1 The quantity of wastewater to be used for irrigation must be metered and recorded daily.

4.2 Monitoring for the quantity of the water containing waste for irrigation must be done at the inlet and outlet points of the disposal facilities.

- 4.3 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 always be available for inspection by Provincial Head or his or her delegate upon request.
- 4.4 The monitoring points or programme must not be changed without the written approval by the Provincial Head
- 4.5 A monitoring programme to determine compliance with groundwater reserve or properties affected by irrigation with wastewater must be designed in consultation with Provincial Head on the property

5. REPORTING

- 5.1 The reporting requirements applicable in this annexure must be submitted quarterly to the Provincial Head under i reference 27/2/2/A942/3/4 within one (1) month of the close of the period concerned.

6 METHODS OF ANALYSIS

- 6.1 Analyses shall be carried out in accordance with methods prescribed by and obtainable from the South African Bureau of Standards(SABS), in terms of the Standards Act 1982, (Act 30 of 1982) or its amendment, regulations or replacement thereof.
- 6.2 The samples shall be tested in an accredited laboratory
- 6.3 The methods of analysis must not be changed without prior notification to and written approval by the Provincial Head.

7. GENERAL IRRIGATION PRACTICES

- 7.1 Irrigation shall be practiced in accordance with the guidelines prescribed in the document titled "*Guide: Permissible Utilisation and Disposal of Treated Sewage Effluent*", issued by the former Department of Health under reference 11/2/5/3 and dated 30 May 1978, or in accordance with any relevant regulations promulgated under section 26 of the Act.
- 7.2. Irrigation with waste shall be practiced in a systematic manner and precautions shall be taken so as to prevent -
 - 7.2.1 Water logging and pooling of waste in any location
 - 7.2.2 Pollution of underground water or surface water due to seepage or otherwise
 - 7.2.3 Fly breeding, public health hazard, odour or secondary pollution
 - 7.2.4 Runoff from the irrigation area because of wet weather or any other conditions whatsoever and
 - 7.2.5 The site of the irrigation area shall be adequately fenced to prevent the entry of animals and unauthorised persons.
- 7.3 The Licensee must take adequate measures to:
 - 7.3.1 Provide adequate storage capacity for the total inflow of water containing waste during periods while irrigation cannot be practised, with a freeboard of at least 0,8 metre above the expected maximum water level, which shall be based on the average monthly rainfall figures for the catchment area



concerned, less the gross mean evaporation in that area, plus the maximum precipitation to be expected over a period of 24 hours with a frequency of once in 50 years.

7.3.2 Ensure that no irrigation takes place in times of wet weather

7.3.3 Ensure that if irrigation is carried out by a party other than the Licensee, both the third party and Licensee shall comply with conditions as set out in the licence. The Licensee remains responsible for compliance by third party.

7.4 A soil monitoring system shall be implemented to monitor the quality of the soil.

7.5 The irrigation practice must be evaluated on a yearly basis by a competent soil scientist appointed by the licensee to determine the efficient functioning and possible deterioration of soils.

8. PIPELINES

8.1 Pipelines used for the conveyance of waste shall be painted in a conspicuous colour or manufactured of a coloured material distinctly different from the colour of the pipelines in which drinking water is flowing to avoid the possibility of any cross-connections of the different pipelines.

8.2 All stop-valves and taps on the pipelines conveying the effluent shall be of a type that can be opened and closed by means of a loose wrench. This wrench shall be in the safekeeping of a responsible member of the staff to prevent unauthorised use thereof.

8.3 Notices manufactured of a durable weatherproof material warning against the use of water containing waste for drinking and washing purposes shall be displayed at prominent places where the waste is being reused and at all taps. Such notices shall be worded in the official languages applicable in the area.

9. STORMWATER MANAGEMENT

9.1 The Licensee should ensure that all storm water runoff diverted from the site must be received and disposed off in a way that will not negatively impact and total integrity of the receiving water resource

9.2 The Licensee must construct berms or furrows around the irrigation area in order to prevent storm water ingress or water containing waste from entering any river, stream or wetland

9.4 The Licensee must ensure that runoff from the area under irrigation does not flow beyond the boundaries of the irrigation area.

9.5 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 of a combination thereof which is produced, used, stored dumped or spilled on the premises.

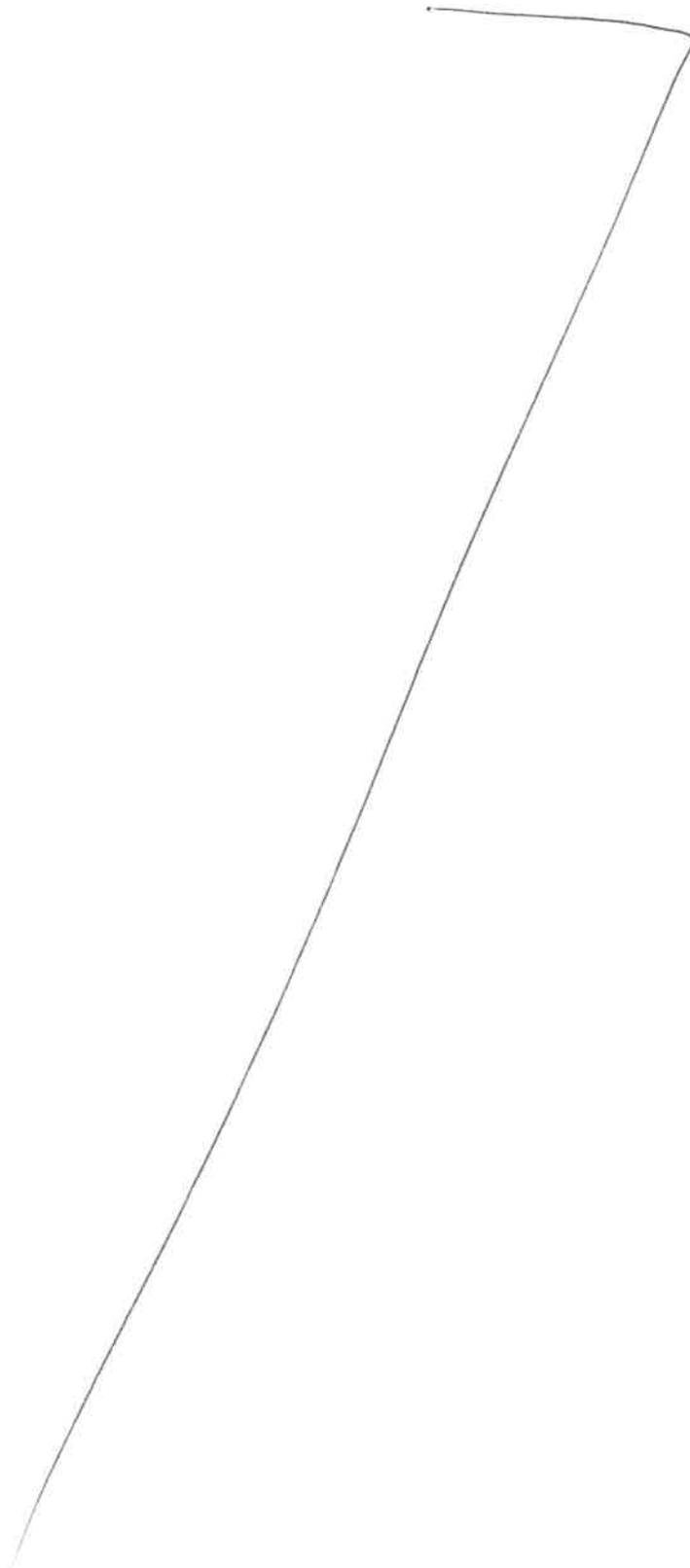
9.6 Increased runoff due to vegetation clearance and soil compaction must be managed, and steps must be taken to ensure that storm water does not lead to bank instability and excessive levels of silt entering the streams.

9.7 Storm water shall be diverted from the constructed works and roads and shall be



managed in such a manner as to disperse runoff and to prevent concentration of storm water flow.

- 9.8 The Licensee must ensure that where necessary works must be constructed to attenuate the velocity of any storm water discharge and to protect the banks of the affected watercourses or receiving environment.
- 9.9 The licensee must ensure that storm water control works must be constructed, operated and maintained in a sustainable manner throughout the project.



APPENDIX IV

Section 21(f) of the Act: Discharging waste or water containing waste into a water resource

1 DISCHARGING OF WATER CONTAINING WASTE

- 1.1 The Licensee is authorized to discharge waste water from the wastewater treatment plant of a maximum quantity of sixty-two thousand cubic meters per annum (62 000m³/a) into the environment.
- 1.2 The Licensee is also permitted to recover the treated effluent to the clean dam for purpose of reuse on-site.

2 QUALITY OF WASTE WATER TO BE DISCHARGED

- 2.1 The quality of wastewater discharged into the water course or receiving environment shall not exceed the limits as set out in Discharge limits and conditions set out in the National Water Act, Government Gazette No. 20526 of October 1999 and subsequent amendments.
- 2.2 The Provincial Head may through a written notice review variable, units and limits referred on 2.1 upon reasonable suspicion or scientific finding that the impact or pollution is likely to occurring on the water course or receiving environment.

3 MONITORING

- 3.1 Monitoring of the quality of water containing waste must be done on a weekly basis at the point of discharge by taking samples in the case where the water containing waste is discharged into the water course or receiving environment.
- 3.2 Flow metering, recording and integrating devices shall be used to measure daily quantity when discharging and 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 shall be available for inspection by Provincial Head or his/her representative upon request.
- 3.3 The quality of waste water being discharged must be analysed, interpreted and reported in line with parameters, units and limits stipulated in Table 3.
- 3.4 The date, time and monitoring point in respect of each sample taken must be recorded together with results of the analysis.
- 3.5 Monitoring points must not be changed prior to notification to and written approval by the Provincial Head.
- 3.6 Analysis must be carried out in accordance with methods prescribed by and obtainable from the South African National Standards(SANS) in terms of Standards Act,1982(Act 30 of 1982).
- 3.7 The methods of analysis must not be changed without prior notification to and written approval by Provincial Head.

4. WATER RESOURCE PROTECTION

- 4.1 The Licensee maybe directed by Provincial Head through a written notice to implement additional wastewater treatment process in order to achieve specified water quality effluent limits before discharge into a water course or receiving environment.

5. REPORTING

- 5.1 The Licensee must update the water balance annually and calculate the loads of waste emanating from the activities. The Licensee must 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 balance reserve compliant point.
- 5.2 The Licensee must submit the results of analysis for the monitoring requirements to the Provincial Head on a quarterly basis under Reference number 27/2/2/A942/3/4

6. PLANT AREAS AND CONVEYANCES

- 6.1 Pollution caused by spills from the conveyances must be prevented through proper maintenance and effective protective measures especially near all streams.
- 6.2 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.
- 6.3 Any hazardous substances must be handled according to the relevant legislation relating to the transport, storage and use of the substance
- 6.4 Any access roads or temporary crossings must be:
- 6.4.1 Non-erosive, structural stable must not induce any flooding or safety hazard and
- 6.4.2 Be repaired immediately to prevent further damage



APPENDIX IV

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

1 CONSTRUCTION AND OPERATION AND MAINTAINANCE

- 1.1 The licensee must ensure that the disposal of the wastewater and the operation and maintenance of the system are done according to the provisions in the Report and as agreed and confirmed
- 1.2 The Licensee shall carry out and complete all the activities, including the construction and operation of the all facilities, according to the Reports and final plans submitted with the Integrated Water Use License Application as approved by Provincial Head.
- 1.3 The construction of wastewater containment facility must be carried out under the supervision of professional Civil Engineer, registered under the Engineering Profession of South Africa Act,1990(Act 114 of 1990) as approved by the designer.
- 1.4 The licensee must use acknowledged methods for sampling and the date, time and sample must be indicated for each sample.
- 1.5 Flow metering, recording and integrating devices shall be used to measure daily quantity when discharging and 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 shall be available for inspection by Provincial Head or his/her representative upon request.
- 1.6 The waste facilities shall be operated and maintained to have minimum freeboard of 0.8 metres above fully supply level and all other water systems related thereto shall be operated in such a manner that it is all times capable of handling the 1:50 year flood event on top of its mean operating level.
- 1.7 The Licensee shall use the 4- year ashing facility as the best practical environmental option for continued ash waste disposal.
- 1.8 The Licensee shall continue to use the ash facility for Medupi ash disposal and the geomembrane test results should only be used to inform the closure of the facility after the anticipated 4 years of operational life.



2 DISPOSAL/STORAGE OF WATER CONTAINING WASTE

2.1 This Licensee is authorised to dispose waste in a manner which may detrimentally impact on a water resource as per the activities detailed in Table 4.

Table 4: Water/water containing waste disposal facilities

Facility Description	Purpose	Volume/Capacity	Coordinates
Coal Stockyards, Ash dump and associated roads	Dust Suppression	120 000 m ³ /a	S 23° 42' 04.96" E 27° 33' 03.69" S 23° 42' 39.22" E 27° 30' 31.79" S 23° 43' 00.54" E 27° 30' 29.10" S 23° 42' 48.98" E 27° 31' 21.91" S 23° 42' 22.60" E 27° 33' 06.27"
Pollution Control Dam (D1)	Disposal of Water containing waste	19 200 m ³	S 23° 42' 19.13" E 27° 32' 30.59"
Pollution Control Dam (D2)	Disposal of Water containing waste	48 700 m ³	S 23° 43' 04.54" E 27° 32' 06.31"
Pollution Control Dam (D2b)	Disposal of Water containing waste	45 000 m ³	S 23° 42' 16.72" E 27° 32' 00.79"
Pollution Control Dam (D3)	Disposal of Water containing waste	69 000 m ³	S 23° 43' 11.2" E 27° 31' 38.6"
Pollution Control Dam (D3b)	Disposal of Water containing waste	69 000 m ³	S 23° 42' 32.41" E 27° 30' 54.35"
Pollution Control Dam (D4)	Disposal of Water containing waste	69 000 m ³	S 23° 43' 28.43" E 27° 30' 35.85"
Pollution Control Dam (D5)	Disposal of Water containing waste	30 000 m ³	S 23° 43' 13.19" E 27° 30' 13.06"
Disposal of Ash(Ash dump)	Ash Disposal	21(g)-6.3 million tons of Ash per annum	S 23° 42' 35.85" E 27° 32' 25.85" S 23° 42' 45.9" E 27° 31' 27.1"



Facility Description	Purpose	Volume/Capacity	Coordinates
			S 23° 43' 04.15" E 27° 30' 15.28"
Temporary storage of ash on the emergency ash dump	Ash Storage	21(g)-0.5Ha	S 23° 42' 33.4" E 27° 33' 31.4"
Disposal of process effluent(Dirty Storm water Dam)	Wastewater disposal	21(g)-145 000 m ³ /a process effluent	S 23° 41' 53.78" E 27° 34' 45.10"
Storm water runoff(Clean Storm water Dam)	Storm water collection	21(g)-172 000m ³ /a storm water runoff	S 23° 41' 47.89" E 27° 34' 43.5"
Storm water runoff (Coal Stockyard)	Storm water collection	21(g)-74 600m ³ /a storm water runoff	S 23° 42' 34.75" E 27° 33' 24.10"
Disposal of treated effluent(Four Maturation Ponds)	Disposal of wastewater	21(g)-6 800 m ³ /a treated effluent	S 23° 41' 46.6" E 27° 34' 34.8"

2.2 The Licensee can use the section of the lined ash dump to store coal temporary given that the liner of ash dump is more strengthened than the liner at the coal stockyard. This is in consideration that at initial stages of commissioning the coal stockpile will be relatively more in volume than the ash pile.

2.3 No additional wastewater disposal facilities can be constructed on the properties without prior written consent of the Provincial Head or responsible authority.

3. MONITORING

3.1. The Licensee shall monitor groundwater resources quality by taking samples at the monitoring points as directed by Provincial Head through a written notice after consultation with Licensee. This consideration is made due to the fact that most facilities are still to be constructed as the construction is still on-going.

3.2 The date, time and monitoring point in respect of each sample taken must be recorded together with results of the analysis.

3.3 Monitoring points must not be changed prior to notification to and written approval by Provincial Head.

3.4 Water Quality testing should be performed on monitoring boreholes in the proximity of the wastewater containing facilities on monthly basis for one hydrological cycle, thereafter should be monitored on a Quarterly basis in order to determine the risk to the receiving environment. Data gathered in the investigation must be reported quarterly to the Provincial Head. If any water quality levels as specified is exceeded, the Licensee must institute an investigation to determine the cause of poor water quality.

3.5 Water quality testing must be conducted every six (6) months interval on the wastewater dams from the facility when returned back to the industry for re-use as processed water.

- 3.6 Chronic toxicity must be addressed and at least three taxonomic groups must be present when water quality tests are performed.
- 3.8 Analysis must be carried out in accordance with methods prescribed by and obtainable from the South African National Standards(SANS), in terms of the Standards Act,1982(Act 30 of 1982) as amended or reviewed on-going basis. The Provincial Head may in addition prescribe other factors, processes or steps with purpose of maintaining the quality relevance or purpose of this analysis.
- 3.8 The methods of analysis must not be changed without prior notification to and written approval by Provincial Head.
- 3.9 If the groundwater is impacted on, the Licensee must ensure that there is water available to external water users who are directly and negatively affected by such impacts. The Provincial Head may require the Licensee to conduct independent impacts studies at the cost of the Licensee.

4. REPORTING

- 4.1 The Licensee must submit the report of analysis for the monitoring requirements to the Provincial Head on a three(3) months basis under Reference number 27/2/2/A942/2/1

5 STORMWATER MANAGEMENT

- 5.1 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 of a combination thereof which is produced, used, stored dumped or spilled on the premises.
- 5.2 Increased runoff due to vegetation clearance and 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.
- 5.3 Storm water runoff arising from dirty areas on the power station sites or facilities must be retained on the site and may not be allowed to drain to any lower lying areas unless permitted in writing by Provincial Head in the event of unforeseen or extreme event(force majeure)
- 5.4 Runoff water from areas above the site must be diverted away from the facility property to the environment and may be discharged into a water course in an environmentally sound manner.
- 5.5 Storm water shall be diverted from the complex site and roads and must be managed in such a manner as to disperse runoff and concentrating the storm-water flow.
- 5.6 Where necessary works must be constructed to attenuate the velocity of any storm water discharge and to protect the banks of the affected watercourses or receiving environment
- 5.7 Storm water control works must be constructed, operated and maintained in a sustainable manner throughout the impacted area
- 5.8 All storm water that would naturally run across the pollution areas must be diverted via channels and trapezoidal drains designed to contain the 1:50 year flood event.

- 5.9 Polluted storm water captured in the storm water control dam(s) must be pumped to the process plant for re-use and recycling.
- 5.10 Polluted storm water system shall be designed and implemented to provide suitable routing and pumping capacity of the 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 and Waste Management Plan.
- 5.11 Polluted storm water captured in the storm water control dams or pollution control dams must be pumped to the process plant for reuse and recycling.

6. ACCESS CONTROL

- 6.1 Strict access procedures must be followed in order to gain access to properties. Access to the waste water containment facilities must be limited to authorised employees of the Licensee and their Contractors and any other persons empowered by law.
- 6.2 Notices prohibiting unauthorised persons from entering the areas referred to in condition 7.1 as well as internationally acceptable signs indicating the risks involved in cases of an unauthorised entry, must be displayed along the boundary fence or line of these areas.

7. PIPELINES

- 7.1 Pipelines used for the conveyance of waste shall be painted in a conspicuous colour or manufactured of a coloured material distinctly different from the colour of the pipelines in which drinking water is flowing to avoid the possibility of any cross-connections of the different pipelines.
- 7.2 Stop-valves and taps on the pipelines conveying the effluent shall be of a type that can be opened and closed by means of a loose wrench. This wrench shall be in the safekeeping of a responsible member of the staff to prevent unauthorised use thereof.

8. MALFUNCTIONS/ABNORMAL CONDITIONS, CONTINGENCY PLANS AND INCIDENT REPORTING

- 8.1 Accurate and up-to-date records must be kept of all system malfunctions resulting in non-compliance with the requirements of this licence. The records must be available for inspection by the Provincial Head upon request or his/her representative upon request.
- 8.2 Such malfunctions shall be tabulated under the following headings with a full explanation of all the contributory circumstances:
 - 8.2.1 Operating errors
 - 8.2.2 Mechanical failures (including design, installation or maintenance)
 - 8.2.3 Environmental factors (e.g. floods)
 - 8.2.4 Loss of supply services (e.g. power failure)
 - 8.2.5 Other causes

- 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:

- 4.3.1 Correct the impacts resulting from the incident;
- 4.3.2 Prevent the incident from causing any further impacts; and
- 4.3.3 Prevent a recurrence of a similar incident.

9 The Licensee must notify by the Provincial Head within 24 hours of the occurrence or potential occurrence of any incident which has the potential to cause, or has caused water and environmental pollution, health risks or which is a contravention of the licence conditions.

10 INTERGRATED WATER AND WASTE MANAGEMENT

10.1 The Licensee shall adhere to the plans stipulated in the integrated Waste Water Management Plan(IWWMP)

10.2 The IWWMP and Rehabilitated Strategy and Implementation Programme (RSIP) shall thereafter be updated and submitted on yearly basis from the date of issuance of this licence

10.3 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 final closure plan, for approval. T

10.4 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

11. SITE SPECIFIC CONDITIONS

11.1 A proper groundwater remediation and management plan must be set with actions, target and dates and responsible officers: it must be submitted to the Department through Provincial Head within six (6) months of issuance of this licence for approval before implementation.

11.2 The Licensee must submit a legible and in colour Rehabilitation Plans and Plant (vegetation) Species Plans within six (6) months of issuance of this licence in relation to waste facilities or negatively impacted areas as maybe directed by Provincial Head.

11.3 The Licensee must submit an updated groundwater models and updated water balance within six (6) months of this issuance and thereafter on annual basis and in such a format as directed by Provincial Head.

END OF LICENCE

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