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No FUTURE QUERIES WILL BE HANDLED IN CONNECTION WITH THE ABOVE.

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*The closing time is **15:00** sharp on the following days:*

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LIST OF TARIFF RATES FOR PUBLICATION OF NOTICES

COMMENCEMENT: 1 APRIL 2016

NATIONAL AND PROVINCIAL

Notice sizes for National, Provincial & Tender gazettes 1/4, 2/4, 3/4, 4/4 per page. Notices submitted will be charged at R1000 per full page, pro-rated based on the above categories.

Pricing for National, Provincial - Variable Priced Notices		
Notice Type	Page Space	New Price (R)
Ordinary National, Provincial	1/4 - Quarter Page	250.00
Ordinary National, Provincial	2/4 - Half Page	500.00
Ordinary National, Provincial	3/4 - Three Quarter Page	750.00
Ordinary National, Provincial	4/4 - Full Page	1000.00

EXTRA-ORDINARY

All Extra-ordinary National and Provincial gazette notices are non-standard notices and attract a variable price based on the number of pages submitted.

The pricing structure for National and Provincial notices which are submitted as **Extra ordinary submissions** will be charged at **R3000** per page.

GOVERNMENT PRINTING WORKS - BUSINESS RULES

The **Government Printing Works (GPW)** has established rules for submitting notices in line with its electronic notice processing system, which requires the use of electronic *Adobe Forms*. Please ensure that you adhere to these guidelines when completing and submitting your notice submission.

CLOSING TIMES FOR ACCEPTANCE OF NOTICES

1. The *Government Gazette* and *Government Tender Bulletin* are weekly publications that are published on Fridays and the closing time for the acceptance of notices is strictly applied according to the scheduled time for each gazette.
2. Please refer to the Submission Notice Deadline schedule in the table below. This schedule is also published online on the Government Printing works website www.gpwnonline.co.za

All re-submissions will be subject to the standard cut-off times.

All notices received after the closing time will be rejected.

Government Gazette Type	Publication Frequency	Publication Date	Submission Deadline	Cancellations Deadline
National Gazette	Weekly	Friday	Friday 15h00 for next Friday	Tuesday, 15h00 - 3 days prior to publication
Regulation Gazette	Weekly	Friday	Friday 15h00, to be published the following Friday	Tuesday, 15h00 - 3 days prior to publication
Petrol Price Gazette	As required	First Wednesday of the month	One week before publication	3 days prior to publication
Road Carrier Permits	Weekly	Friday	Thursday 15h00, to be published the following Friday	3 days prior to publication
Unclaimed Monies (justice, labour or lawyers)	January / As required 2 per year	Any	15 January / As required	3 days prior to publication
Parliament (acts, white paper, green paper)	As required	Any		3 days prior to publication
Manuals	As required	Any	None	None
State of Budget (National Treasury)	Monthly	Any	7 days prior to publication	3 days prior to publication
Legal Gazettes A, B and C	Weekly	Friday	One week before publication	Tuesday, 15h00 - 3 days prior to publication
Tender Bulletin	Weekly	Friday	Friday 15h00 for next Friday	Tuesday, 15h00 - 3 days prior to publication
Gauteng	Weekly	Wednesday	Two weeks before publication	3 days after submission deadline
Eastern Cape	Weekly	Monday	One week before publication	3 days prior to publication
Northern Cape	Weekly	Monday	One week before publication	3 days prior to publication
North West	Weekly	Tuesday	One week before publication	3 days prior to publication
KwaZulu-Natal	Weekly	Thursday	One week before publication	3 days prior to publication
Limpopo	Weekly	Friday	One week before publication	3 days prior to publication
Mpumalanga	Weekly	Friday	One week before publication	3 days prior to publication
Gauteng Liquor License Gazette	Monthly	Wednesday before the First Friday of the month	Two weeks before publication	3 days after submission deadline
Northern Cape Liquor License Gazette	Monthly	First Friday of the month	Two weeks before publication	3 days after submission deadline
National Liquor License Gazette	Monthly	First Friday of the month	Two weeks before publication	3 days after submission deadline
Mpumalanga Liquor License Gazette	2 per month	Second & Fourth Friday	One week before	3 days prior to publication

GOVERNMENT PRINTING WORKS - BUSINESS RULES

EXTRAORDINARY GAZETTES

3. *Extraordinary Gazettes* can have only one publication date. If multiple publications of an *Extraordinary Gazette* are required, a separate Z95/Z95Prov *Adobe* Forms for each publication date must be submitted.

NOTICE SUBMISSION PROCESS

4. Download the latest *Adobe* form, for the relevant notice to be placed, from the **Government Printing Works** website www.gpwonline.co.za.
5. The *Adobe* form needs to be completed electronically using *Adobe Acrobat / Acrobat Reader*. Only electronically completed *Adobe* forms will be accepted. No printed, handwritten and/or scanned *Adobe* forms will be accepted.
6. The completed electronic *Adobe* form has to be submitted via email to submit.egazette@gpw.gov.za. The form needs to be submitted in its original electronic *Adobe* format to enable the system to extract the completed information from the form for placement in the publication.
7. Every notice submitted **must** be accompanied by an official **GPW** quotation. This must be obtained from the *eGazette* Contact Centre.
8. Each notice submission should be sent as a single email. The email **must** contain **all documentation relating to a particular notice submission**.
 - 8.1. Each of the following documents must be attached to the email as a separate attachment:
 - 8.1.1. An electronically completed *Adobe* form, specific to the type of notice that is to be placed.
 - 8.1.1.1. For *National Government Gazette* or *Provincial Gazette* notices, the notices must be accompanied by an electronic Z95 or Z95Prov *Adobe* form
 - 8.1.1.2. The notice content (body copy) **MUST** be a separate attachment.
 - 8.1.2. A copy of the official **Government Printing Works** quotation you received for your notice .
(Please see *Quotation* section below for further details)
 - 8.1.3. A valid and legible Proof of Payment / Purchase Order: **Government Printing Works** account customer must include a copy of their Purchase Order. **Non-Government Printing Works** account customer needs to submit the proof of payment for the notice
 - 8.1.4. Where separate notice content is applicable (Z95, Z95 Prov and TForm 3, it should **also** be attached as a separate attachment. (Please see the *Copy Section* below, for the specifications).
 - 8.1.5. Any additional notice information if applicable.
9. The electronic *Adobe* form will be taken as the primary source for the notice information to be published. Instructions that are on the email body or covering letter that contradicts the notice form content will not be considered. The information submitted on the electronic *Adobe* form will be published as-is.
10. To avoid duplicated publication of the same notice and double billing, Please submit your notice **ONLY ONCE**.
11. Notices brought to **GPW** by "walk-in" customers on electronic media can only be submitted in *Adobe* electronic form format. All "walk-in" customers with notices that are not on electronic *Adobe* forms will be routed to the Contact Centre where they will be assisted to complete the forms in the required format.
12. Should a customer submit a bulk submission of hard copy notices delivered by a messenger on behalf of any organisation e.g. newspaper publisher, the messenger will be referred back to the sender as the submission does not adhere to the submission rules.

GOVERNMENT PRINTING WORKS - BUSINESS RULES**QUOTATIONS**

13. Quotations are valid until the next tariff change.
 - 13.1. **Take note:** GPW's annual tariff increase takes place on **1 April** therefore any quotations issued, accepted and submitted for publication up to **31 March** will keep the old tariff. For notices to be published from 1 April, a quotation must be obtained from **GPW** with the new tariffs. Where a tariff increase is implemented during the year, **GPW** endeavours to provide customers with 30 days' notice of such changes.
14. Each quotation has a unique number.
15. Form Content notices must be emailed to the eGazette Contact Centre for a quotation.
 - 15.1. The *Adobe* form supplied is uploaded by the Contact Centre Agent and the system automatically calculates the cost of your notice based on the layout/format of the content supplied.
 - 15.2. It is critical that these *Adobe* Forms are completed correctly and adhere to the guidelines as stipulated by **GPW**.
16. **APPLICABLE ONLY TO GPW ACCOUNT HOLDERS:**
 - 16.1. **GPW** Account Customers must provide a valid **GPW** account number to obtain a quotation.
 - 16.2. Accounts for **GPW** account customers **must** be active with sufficient credit to transact with **GPW** to submit notices.
 - 16.2.1. If you are unsure about or need to resolve the status of your account, please contact the **GPW** Finance Department prior to submitting your notices. (If the account status is not resolved prior to submission of your notice, the notice will be failed during the process).
17. **APPLICABLE ONLY TO CASH CUSTOMERS:**
 - 17.1. Cash customers doing **bulk payments** must use a **single email address** in order to use the **same proof of payment** for submitting multiple notices.
18. The responsibility lies with you, the customer, to ensure that the payment made for your notice(s) to be published is sufficient to cover the cost of the notice(s).
19. Each quotation will be associated with one proof of payment / purchase order / cash receipt.
 - 19.1. This means that the quotation number can only be used once to make a payment.

GOVERNMENT PRINTING WORKS - BUSINESS RULES**COPY (SEPARATE NOTICE CONTENT DOCUMENT)**

20. Where the copy is part of a separate attachment document for Z95, Z95Prov and TForm03

20.1. Copy of notices must be supplied in a separate document and may not constitute part of any covering letter, purchase order, proof of payment or other attached documents.

The content document should contain only one notice. (You may include the different translations of the same notice in the same document).

20.2. The notice should be set on an A4 page, with margins and fonts set as follows:

Page size = A4 Portrait with page margins: Top = 40mm, LH/RH = 16mm, Bottom = 40mm;
Use font size: Arial or Helvetica 10pt with 11pt line spacing;

Page size = A4 Landscape with page margins: Top = 16mm, LH/RH = 40mm, Bottom = 16mm;
Use font size: Arial or Helvetica 10pt with 11pt line spacing;

CANCELLATIONS

21. Cancellation of notice submissions are accepted by **GPW** according to the deadlines stated in the table above in point 2. Non-compliance to these deadlines will result in your request being failed. Please pay special attention to the different deadlines for each gazette. Please note that any notices cancelled after the cancellation deadline will be published and charged at full cost.

22. Requests for cancellation must be sent by the original sender of the notice and must be accompanied by the relevant notice reference number (N-) in the email body.

AMENDMENTS TO NOTICES

23. With effect from 01 October 2015, **GPW** will not longer accept amendments to notices. The cancellation process will need to be followed according to the deadline and a new notice submitted thereafter for the next available publication date.

REJECTIONS

24. All notices not meeting the submission rules will be rejected to the customer to be corrected and resubmitted. Assistance will be available through the Contact Centre should help be required when completing the forms. (012-748 6200 or email info.egazette@gpw.gov.za). Reasons for rejections include the following:

24.1. Incorrectly completed forms and notices submitted in the wrong format, will be rejected.

24.2. Any notice submissions not on the correct *Adobe* electronic form, will be rejected.

24.3. Any notice submissions not accompanied by the proof of payment / purchase order will be rejected and the notice will not be processed.

24.4. Any submissions or re-submissions that miss the submission cut-off times will be rejected to the customer. The Notice needs to be re-submitted with a new publication date.

GOVERNMENT PRINTING WORKS - BUSINESS RULES**APPROVAL OF NOTICES**

25. Any notices other than legal notices are subject to the approval of the Government Printer, who may refuse acceptance or further publication of any notice.
26. No amendments will be accepted in respect to separate notice content that was sent with a Z95 or Z95Prov notice submissions. The copy of notice in layout format (previously known as proof-out) is only provided where requested, for Advertiser to see the notice in final Gazette layout. Should they find that the information submitted was incorrect, they should request for a notice cancellation and resubmit the corrected notice, subject to standard submission deadlines. The cancellation is also subject to the stages in the publishing process, i.e. If cancellation is received when production (printing process) has commenced, then the notice cannot be cancelled.

GOVERNMENT PRINTER INDEMNIFIED AGAINST LIABILITY

27. The Government Printer will assume no liability in respect of—
 - 27.1. any delay in the publication of a notice or publication of such notice on any date other than that stipulated by the advertiser;
 - 27.2. erroneous classification of a notice, or the placement of such notice in any section or under any heading other than the section or heading stipulated by the advertiser;
 - 27.3. any editing, revision, omission, typographical errors or errors resulting from faint or indistinct copy.

LIABILITY OF ADVERTISER

28. Advertisers will be held liable for any compensation and costs arising from any action which may be instituted against the Government Printer in consequence of the publication of any notice.

CUSTOMER INQUIRIES

Many of our customers request immediate feedback/confirmation of notice placement in the gazette from our Contact Centre once they have submitted their notice – While **GPW** deems it one of their highest priorities and responsibilities to provide customers with this requested feedback and the best service at all times, we are only able to do so once we have started processing your notice submission.

GPW has a 2-working day turnaround time for processing notices received according to the business rules and deadline submissions.

Please keep this in mind when making inquiries about your notice submission at the Contact Centre.

29. Requests for information, quotations and inquiries must be sent to the Contact Centre ONLY.
30. Requests for Quotations (RFQs) should be received by the Contact Centre at least **2 working days** before the submission deadline for that specific publication.

GOVERNMENT PRINTING WORKS - BUSINESS RULES

PAYMENT OF COST

31. The Request for Quotation for placement of the notice should be sent to the Gazette Contact Centre as indicated above, prior to submission of notice for advertising.
32. Payment should then be made, or Purchase Order prepared based on the received quotation, prior to the submission of the notice for advertising as these documents i.e. proof of payment or Purchase order will be required as part of the notice submission, as indicated earlier.
33. Every proof of payment must have a valid **GPW** quotation number as a reference on the proof of payment document.
34. Where there is any doubt about the cost of publication of a notice, and in the case of copy, an enquiry, accompanied by the relevant copy, should be addressed to the Gazette Contact Centre, **Government Printing Works**, Private Bag X85, Pretoria, 0001 email: info.egazette@gpw.gov.za before publication.
35. Overpayment resulting from miscalculation on the part of the advertiser of the cost of publication of a notice will not be refunded, unless the advertiser furnishes adequate reasons why such miscalculation occurred. In the event of underpayments, the difference will be recovered from the advertiser, and future notice(s) will not be published until such time as the full cost of such publication has been duly paid in cash or electronic funds transfer into the **Government Printing Works** banking account.
36. In the event of a notice being cancelled, a refund will be made only if no cost regarding the placing of the notice has been incurred by the **Government Printing Works**.
37. The **Government Printing Works** reserves the right to levy an additional charge in cases where notices, the cost of which has been calculated in accordance with the List of Fixed Tariff Rates, are subsequently found to be excessively lengthy or to contain overmuch or complicated tabulation.

PROOF OF PUBLICATION

38. Copies of any of the *Government Gazette* or *Provincial Gazette* can be downloaded from the **Government Printing Works** website www.gpwonline.co.za free of charge, should a proof of publication be required.
39. Printed copies may be ordered from the Publications department at the ruling price. The **Government Printing Works** will assume no liability for any failure to post or for any delay in despatching of such *Government Gazette(s)*.

GOVERNMENT PRINTING WORKS CONTACT INFORMATION

Physical Address:
Government Printing Works

149 Bosman Street

Pretoria

Postal Address:

Private Bag X85

Pretoria

0001

GPW Banking Details:
Bank: ABSA Bosman Street

Account No.: 405 7114 016

Branch Code: 632-005

For Gazette and Notice submissions: Gazette Submissions:

For queries and quotations, contact: Gazette Contact Centre:

E-mail: submit.egazette@gpw.gov.za
E-mail: info.egazette@gpw.gov.za
Tel: 012-748 6200

Contact person for subscribers: Mrs M. Toka:

E-mail: subscriptions@gpw.gov.za
Tel: 012-748-6066 / 6060 / 6058

Fax: 012-323-9574

GOVERNMENT NOTICES • GOEWERMENTSKENNISGEWINGS

DEPARTMENT OF AGRICULTURE, FORESTRY AND FISHERIES**NO. 152****02 MARCH 2018**

EXCLUSION OF CERTAIN PROPERTIES FROM THE PROVISIONS OF THE SUBDIVISION OF AGRICULTURAL LAND ACT, ACT 70 OF 1970 IN FRANSHOEK, KLAPMUTS, LAMOTTE, LYNDOKH, PNIELLANQUEDOCKYLEMORE, RAITHBY, WEMMERSHOEK AND STELLENBOSCH, STELLENBOSCH LOCAL MUNICIPALITY - WESTERN CAPE PROVINCE.

NOTICE FOR PUBLIC

I, Senzeni Zokwana, Minister of Agriculture, Forestry and Fisheries hereby give notice to all interested institutions, organizations and individuals on the exclusion of certain properties from the provisions of the Subdivision of Agricultural Land Act, Act no 70 of 1970 in the following areas: Franshoek, Klapmuts, Lamotte, Lyndoch, Pniellanquedockylemore, Raithby, Wemmershoek and Stellenbosch, Stellenbosch Local Municipality - Western Cape Province.

The properties to be included in the town planning scheme of individual areas are as follows:

Franshoek

Mooi Water 1073, Paarl
Farm 1076, Paarl
Vrede 1080, Paarl
Farm 1413, Paarl
Farm 1586, Paarl
Farm 1658, Paarl
Goede Rust 1706, Paarl

Klapmuts

Portion 3 (Paarl RD), Portions: 5, 27 and 31 (Paarl), all of the farm Groenfontein Annex 716, Paarl
Remainder of the farm Groenfontein Annex 717, Paarl RD
Remainder of the farm Groenfontein Annex 744, Paarl RD
Portions: 1 (Paarl RD), Portions: 2, 3, 4, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 30 and 34 (Paarl), all of the Farm Bronkhorst 748, Paarl
Klapmuts School 752 to 757 and 768
Remainder and Portions: 1 to 3, all of Klapmuts School 758

Lamotte

Remainder of Portion 3, Portions: 3 and 27, all of Lamotte 1041, Paarl
Portion 1 of Keyersdrift 1158, Paarl
Remainder of Farm 1339, Paarl RD
Portion 3 of Farm 1339, Paarl
Farm 1653, Paarl
Remainder of 1653, Paarl

Lyndoch

Remainder Welmoed Estate 468 (Stellenbosch RD) and Portions: 3, 4, 27, 41, 51 and 52, all of Welmoed Estate 468, Stellenbosch

Pniel/Lanquedock/Lemore

Portion 4 of Old Bethlehem 153, Stellenbosch
Portions: 6 and 9, all of Rhonen and Lanquedoc 1173, Paarl
Portion 1 of Langedok 1176, Paarl
Farm 1357, Paarl
Portion 2 of Farm 1647, Paarl
Remainder of Farm 1649, Paarl RD

Raithby

Erven 1 to 98, 121, 123, 145, 148, 150, 154 to 156, 166, 167, 248, 249, 252, 253, 255 to 257, 288 to 290, 298, 329, 330 to 347, 353 to 373 and 379, to 405, Stellenbosch

Wemmershoek

Remainder and Portion 3 of farm 1025, Paarl
Portion 1 of Wemmershoek Outspan South 1027, Paarl
Wemmershoek Cemetery 1028, Paarl
Wemmershoek Public School 1029, Paarl
Portion 4 of Farm 1615, Paarl
Remainder (Paarl) and Remainder of Portion 3 (Paarl RD) of Farm 1615

Stellenbosch

Portions: 4, 8 and 29 of Cloetesdal 81
Remainder of Portion 22 and Remainder, all of Weltevreden 82
Remainder of Patrysen Valley 85
Farm 103
Portion 1 of Farm 119
Portion 1 of Lindani 167
Remainder, Portions 1 and 2, all of Retreat & The Willows 168
Remainder and Remainder of Portion 1, all of Watergang 182
Remainder, Remainder of Portion 3, Remainder of Portion 5 and Portions: 7, 10, 22, 23, 36, 37, 52, 60, 65 and 71, all of Grootvlei 183
Sunirac 184
Portion 2 of Morgenster 203
Veldwachters Rivier Outs 280
Vredenburg 281, Remainder of Vredenburg 283 and Remainder of Vredenburg 284
Remainder and Portion 1 of Drodyke 284
Remainder and Portions: 1116, 1117, 1118, 1119, 1120, 1121, 1122, 1123, 1124, 1125, 1126, 1052, 1053, 1054, 1055, 1056, 1057, 1058, 1059, 1060, 1061, 1062, 1063, 1064, 1065, 1066, 1067, 1068, 1069, 1070, 1071, 1072, 1073, 1074, 1075, 1076, 1077, 1078, 1079, 1080, 1081, 1082, 1083, 1084, 1085, 1086, 1087, 1088, 1089, 1090, 1091, 1092, 1093, 1094, 1095, 1096, 1097, 1098, 1099, 1100, 1101, 1102, 1103, 1104, 1105, 1106, 1107, 1108, 1109, 1110, 1111, 1112, 1113, 1114, 1115, 1127, 1128, 1129, 1130, 1131, 1132, 1133, 1134, 1135, 1136, 1137, 1138, 1139, 1140, 1141, 1142, 1143, 1144, 1145, 1146, 1147, 1148, 1149, 1150, 1151, 1152, 1153, 1154, 1155, 1156, 1157, 1158, 1159, 1160, 1161, 552, 38, all of Blaauwklip 510
Remainder of Groote Zalse 998
Farm 1168
Farm 1310
Farm 1357
Remainder of Farm 1514
Portions: 1 to 4 of Farm 1514

COMMENTS OR OBJECTION MUST BE SENT WITHIN 30 DAYS FROM THE DATE OF THIS NOTICE TO:
LydiaB@daff.gov.za or MashuduMa@daff.gov.za (012) 319 7686/7619 or alternatively Private Bag X120,
PRETORIA, 0001

DEPARTMENT OF AGRICULTURE, FORESTRY AND FISHERIES**NO. 153****02 MARCH 2018****DEPARTMENT OF AGRICULTURE, FORESTRY AND FISHERIES (DAFF)****EXCLUSION OF CERTAIN PROPERTIES FROM THE PROVISIONS OF THE SUBDIVISION OF AGRICULTURAL LAND ACT, ACT 70 OF 1970 IN THE TLOKWE LOCAL MUNICIPALITY, NORTH WEST PROVINCE.****NOTICE FOR PUBLIC**

I, Senzeni Zokwana, Minister of Agriculture, Forestry and Fisheries hereby give notice to all interested institutions, organizations and individuals on the exclusion of certain properties from the provisions of the Subdivision of Agricultural Land Act, Act no 70 of 1970 in the Tlokwe Local Municipality, North West Province.

The properties to be included in the town planning scheme are:

Portions 6 to 26, 79 to 83, 100, 101, 106, 107 and 110, all of the farm Harpington 461-IQ

Portions 19 to 26 and 29 to 95, all of the farm Haaskraal 460-IQ

Farm Oudrif 587-IQ

Portions 248 to 268, 270 to 275, 277, 280 to 305, 308 to 326, 329, 402 and 472, all of the farm Town and Townlands of Potchefstroom 435-IQ

Portions 4, 18 to 21, 24 to 29, 31, 32, 35 to 53, 56 to 100, 105, 107 to 134, 143, 145, 148, 149, 152, 153, 154, 160 to 178, 180 to 184, 186, 187, 189, 190, 192 to 195, 197, 199 to 202, 219, 221, 234, 244, 249 to 251 and Remainder, all of the farm Welgeboom 458-IQ

Portions 6, 18, 19, 20, 23, 25 to 30, 32, 35, 37, 38, 39, 40, 41, 43, 46, 47, 48, 58 and 59, all of the farm Elandsheuvel 436-IQ

Farm Vyfhoek 418-IQ

Farm Vyfhoek 421-IQ

Farm Vyfhoek 423-IQ

Portions 4, 5, 7, 8, 9, 11, 12, 13, 16, 17, 19, 21, 22, 23, 24, 34, 36, 38 and 46, all of the farm Vyfhoek 424-IQ

Portions 1, 3, 8, 9, 13, 14, 15, 18, 19, 20, 35, 46 to 51, 64, 67, 70 to 82, 83, 87 to 90, 96 to 99, 103 to 108, 110, 111, 112, 115, 116, 117, 119, 120, 122, 124, 130, 131, 133 to 140, 144 to 147, 150, 151, 154, 188, 191, 362, 369, 371, 379, 398, 394, 416 to 418, 420, 421, 431, 436, 441, 462, 483, 507, 549, 598 to 600, 602, 607, 612, 630, 631, 654, 666, 685, 686, 692 to 695 to 698, 701, 702, 727, 730, 741, 743, 745 to 748, 752, 759, 761, 763, 765 to 768, 806 to 809, 812, 814, 815, 831, 837, 849, 864, 883, 886, 887, 888, 894, 895, 897, 903, 911, 912, 908, 909, 918, 921, 924, 925, 927, 940, 946 to 948, 976, 978, 980, 988, 990, 996, 1036, 1041, 1046, 1047, 1053, 1054, 1059, 1074 to 1077, 1079, 1083, 1084, 1091, 1094, 1100, 1102, 1104, 1105, 1108, 1109, 1121 to 1123, 1129, 1130, 1131, 1145, 1153, 1159, 1167, 1173, 1177, 1396 to 1398, 1418, 1441-1445, 1456, 1478 all of the farm Vyfhoek 428-IQ

Enquiries: LydiaB@daff.gov.za or MashuduMa@daff.gov.za (012) 319 7686/7619 or alternatively Private Bag X120, PRETORIA, 0001

DEPARTMENT OF AGRICULTURE, FORESTRY AND FISHERIES**NO. 154****02 MARCH 2018****EXCLUSION OF CERTAIN PROPERTIES FROM THE PROVISIONS OF THE SUBDIVISION OF AGRICULTURAL LAND ACT, ACT 70 OF 1970 IN THE CITY OF CAPE TOWN METRO MUNICIPALITY - WESTERN CAPE PROVINCE.****NOTICE FOR PUBLIC**

I, Senzeni Zokwana, Minister of Agriculture, Forestry and Fisheries hereby give notice to all interested institutions, organizations and individuals on the exclusion of certain properties from the provisions of the Subdivision of Agricultural Land Act, Act no 70 of 1970 in City of Cape Town Metro Municipality - Western Cape Province.

The properties to be included in the town planning scheme are as follows:

Erven: 1 to 76, 79 to 1137, 1141 to 1161, 1163 to 1165, 1167 to 1519, 1527 to 1529, 1895, 1899 to 2487, Malmesbury

Erven: 1 to 500, 692, 702, 703, 707, 708, 1137 to 1139, 1142 to 1193, 1195 to 1198, 1205, 1257, 1259, 1787 to 1792, 1806 to 1816, 2364 to 2368, 2448 to 2455, 2568, 2569, 2573 to 2575, 2652 to 2658, 2885, 3993, 4377, 4378, 4870, 4872 to 4884, RE/4884, 4885 to 4888, RE/4888, RE/4889, 4889 to 4892, 5295 to 5307, 5466, 5777, 6309, 13466, 13467, RE/13469, 13476, 13477, 13479 to 13492, 13495, 13496, 13499 to 13511, 13514 to 13516, 14265 to 14273, 14285 to 14290, 14293, 14416, 14422, 14845, 15017, 15193 to 15195, 15621, 15812, 15844 to 15852, 16020, 16694, 16889 to 16898, RE/16896, 16902, 17039, 17040, 18030, 18031, 18386, 18396, 18397, 18450, 18451 and 18770, Stellenbosch

Portion 8 and Remainder of Grootte Springfontein No.1, Cape

Remainder, Remainder of Portion 1, Portion 1 and Portion 5 of Witzand No.2, Cape

Portion 5 of Groote Springfontein No.2, Cape

Remainder, Remainder of Portion 6, Portion 1, 3 and 5 of Melkpost No. 3, Cape

Portion: 1, 3, 5, 6, 8, 10, 11, 12, 14 to 19, 22, 24 to 29, 33, 35, 40, 48, 49, 58, 61, 62, 64, 65, 66, 76, 78 to 80, 82, 84 to 86, 93, 110, 112 to 115, 122, 126 to 129, 131 to 133, 136, 140, 141, 144, 151, 159, 162, 164 to 166, 171, 175 to 178, 183, 206, 207, 209, 210, 212, 214, 215, 216, 218, 220 to 223 of Melkpost No.4, Cape

Remainder of Portion: 11, 43, 44, 69, 93, 120 and 219 of Melkpost No.4, Cape

Remainder and Portion 1 to 3 of Papekuil Outspan No.6, Cape

Portion 1 of Papekuil Outspan No.6, Malmesbury

Farm No. 7, Cape

Mission Lot 8, Cape

Della Annex No. 10, Cape

Remainder and Portion 1 of Farm No. 12, Cape

Remainder of farm No.13, Cape

Remainder and Portion 1 of Farm No.14, Cape

Portion 9 of Klein Dassenberg No.20, Cape

Portion 1 to 8, 14, 17 to 20 and 23 of Vogelvlei No.21, Cape

Remainde of Portion 9 to 12 of Vogelvlei No.21, Cape

Portio 27 to of Kleine Springfontyn No. 33, Cape

Remainder, Portion 2, 7 to 11, 14, 22, 24, 28, 31 and 33 of Dassenvaley No.45, Cape

Portion 11 of Klipheuwel Annex No.52, Cape

Portion 1 of Farm No.53, Cape

Portion 13, 14, 16, 17, 20 and 26 of Vryheid No.55, Cape

Remainder, Remaindr of Portion 1, Remainder of Portion 3, Portion 2, 4 to 6, 8 and 10 of Radio No.56, Cape
Remainder of Groot Oliphants Kop No.81
Remainder, Portion 2, 5 and 6 of Farm No.88
Portion 2 and 6 of Blaauwe Berg No.89, Cape
Remainder and Portion 2 of Blaauwe Berg No.91, Cape
Remainder, Portion 1 to 3 of Klein Melkbosch No.94, Cape
Remainder, Portion 1, 4 and 5 of Farm No.101, Cape
Road station No.140, Cape
Remainder, Remainder of Portion 6 and Remainder of Portion 21 of Morning Star No.141, Cape
Portion 5 to 23, 25 to 27, 29, 34, 35, 37, 41 to 46, 51 to 67, 73, 75 to 83 of Morning Star No.141, Cape
Remainder of Portion 18, Remainder of Portion 20, Portion 2, 3, 14 to 17, 19, 21 to 35 f Farm No.152, Cape
Vissershok Outspan No.153, Cape
Remainder and Remainder of Portion 1 of Farm No.224, Cape
Remainder of Portion 1and 2, Portion 7, 10 and 11 of Van No.431, Cape
Remainder and Portion 2 of Farm No.544, Cape
Remainder of Vergenoegd No.547, Cape
Remainder and Portion 8 of Farm No.631, Stellenbosch
Remainder of Farm No.648, Cape
Remainder, Remainder of Portion 12, Portion 1 to 3 and 19, of Vergenoegd No.653, Cape
Portion 5 of Croydon No.654, Cape
Portion 3, 8 to 10, 14, 24, 26 and 28 of Croydon No.654, Stellenbosch
Portion 14, 15 of Farm No.659, Cape
Portion 25 to 27 of Farm No.659, Stellenbosch
Portion 1, 48, 84, 85, 105, 110, 117 and 118 of Zandvliet No.664, Stellenbosch
Remainder of Drift Sands NO.789, Stellenbosch
Farm 790, Stellenbosch
Remainder of Portion 44, 53, 56, 77 and 128 of Farm 794, Cape
Portion 25, 34, 53, 70 to 76, 79 to 85, 108, 113, 119, 128 to 132 and 134 of Farm 794, Stellenbosch
Portion 4 of Farm 843, Stellenbosch
Remainder of Portion 66, Remainder of Portion 86, Portion 3 to 17, 20 to 34, 36 and 41 to 109 of Farm No.843, Stellenbosch
Remainder and Portion 1 of Outspan No.849, Stellenbosch
Farm No.856, Stellenbosch Stellenbosch
Farm No.857, Stellenbosch
Portion 1 and 2 of Farm No.860, Stellenbosch
Remainder of Outspan No. 866, Stellenbosch
Remainder of Farm No.866, Stellenbosch
Remainder of Farm No.869, Stellenbosch
Portion 2 of Goede Verwachting No.870, Stellenbosch
Farm No.871, Stellenbosch
Farm No.878, Stellenbosch
Farm No.879, Stellenbosch
Farm No.880, Stellenbosch
Remainder of Farm No.881, Stellenbosch
Rockery No.882, Stellenbosch
Rockery No.883, Stellenbosch
Farm No.884, Stellenbosch
Portion 2 of Farm No.884, Stellenbosch
Portion 1 of Outspan No.886, Stellenbosch
Remainder of Outspan No.891, Stellenbosch
Remainder and Portion 1 of Outspan No.892, Stellenbosch
Remainder of Outspan No.893, Stellenbosch
Remainder and Portion 1 of Outspan No.895, Stellenbosch
Outspan No.896, Stellenbosch

Outspan No.897, Stellenbosch
Remainder and Portion 1 of Outspan No.898, Stellenbosch
Remainder, Portion 1 and 2 of Outspan No.899, Stellenbosch
Remainder and Portion 1 Farm No.900, Stellenbosch
Toll House Lot 901, Stellenbosch
Farm No.902, Stellenbosch
Farm No.903, Stellenbosch
Farm No.906, Stellenbosch
Remainder of Portion 24, Remainder of Portion 40, Portion 16 to 18, 20, 21, 23 to 38, 40 to 43, 53, 58, 111 to 116, 124 to 126, 129, 141, 147 to 152, 157 to 162, 166 to 169, 203 to 212, 228 to 245, 275, 290, 291, 327, 328, 331 to 333 of Firland No.959, Stellenbosch
Remainder of Groenekloof No.971, Malmesbury
Mamre Reserve No.972, Malmesbury
Remainder of Mamre Reserve No.974, Malmesbury
Remainder of Farm No.975, Cape
Portion 1 of Farm No.975, Stellenbosch
Remainder of Mamre Reserve No.975, Malmesbury
Remainder of and Portion 1 of Cruywagengkraal No.977, Malmesbury
Remainder, Portion 1 to 3 of Farm 978, Malmesbury
Farm No.979, Malmesbury
Remainder of Buffelsrivier No.980, Cape
Cravensgift No.981, Buffelsrivier No.981, Malmesbury
Remainder, Portion 1 and 4 of Farm 982, Malmesbury
Remainder of Mamre Reserve No.984, Malmesbury
Farm No.1041, Stellenbosch
Remainder, Portion 2 and 3 of Farm No.1054, Stellenbosch
Remainder, Portion 2 and 4 of Greystones No.1061, Stellenbosch
Portion 2 to 25 of Kleine Zoute Rivier No.1063, Cape
Farm No.1082, Stellenbosch
Farm No.1093, Malmesbury
Remainder, Portio 1 to 3 of Blaauwklip No.1150, Stellenbosch
Remainder, Remainder of Portion 4, 33, 117 and 128, Portion 1, 3 4, 6, 8, 11 to 14, 24 to 27, 33, 37, 38, 40, 42 to 45, 47 to 52, 54 to 60, 62 to 70, 72, 74, 75, 77, 78, 86 to 88, 91 to 99, 102 to 104, 107, to 109, 112, 116, 119, 122, 125 to 129, 132 to 134, 136, 141, 143, 145 to 153, 157, 158, 162 to 165, 169 to 171, 174, 177, 181, 183, 186, 188, 190, 193 to 195, 199, 200, 202 to 206, 209, 212, 214, 215 and 217 of Farm No.1183, Cape
Fram No. 1184, Cape
Farm 1262, Stellenbosch
Remainder and Portion 1 Farm 1309, Stellenbosch
Farm 1393, Cape
Outspan No, Stellenbosch
Remainder and Portion 1 of Farm No. 1502, Cape
Farm No.1504, Cape
Melkpost No. 1507, Cape
Farm No.1519, Stellenbosch
Fram No.1531, Cape, Cape
Portion 1 Farm No.1543
Remainder of Farm No.1543, Cape
Farm N.1547, Cape

COMMENTS OR OBJECTION MUST BE SENT WITHIN 30 DAYS FROM THE DATE OF THIS NOTICE TO:
LydiaB@daff.gov.za or MashuduMa@daff.gov.za (012) 319 7686/7619 or alternatively Private Bag X120,
PRETORIA, 0001

DEPARTMENT OF AGRICULTURE, FORESTRY AND FISHERIES

NO. 155

02 MARCH 2018

EXCLUSION OF CERTAIN PROPERTIES FROM THE PROVISIONS OF THE SUBDIVISION OF AGRICULTURAL LAND ACT, ACT 70 OF 1970 IN ABBOTSDALE, MOREESBURG, ONGEGUND, RIEBEECKKASTEEL AND YZERFONTEIN, SWARTLAND LOCAL MUNICIPALITY - WESTERN CAPE PROVINCE.

NOTICE FOR PUBLIC

I, Senzeni Zokwana, Minister of Agriculture, Forestry and Fisheries hereby give notice to all interested institutions, organizations and individuals on the exclusion of certain properties from the provisions of the Subdivision of Agricultural Land Act, Act no 70 of 1970 in the following areas: Abbottsdale, Moreesburg, Ongegund, Riebeeckkasteel and Yzerfontein, Swartland Local Municipality - Western Cape Province.

The properties to be included in the town planning scheme of individual areas are as follows:

Abbottsdale

Remainder of Tweefonteinen 696, Malmesbury RD
Remainder of Portion 15 of Olyphants Fonteyn 766, Malmesbury RD
Remainder of Portion 8, 10, 14 and Portion 9, 19, 20 to 22 of Olyphants Fontyn 766, Malmesbury
Remainder of Farm 771, Malmesbury
Remainder, Remainder of Portion 1, 2 and 3 of Farm 1113, Malmesbury

Moreesburg

Erven: 3715, 4156 to 4285, 4288 to 5553, Malmesbury

Ongegund

Remainder, Portion 1 and 3 of Ongegunde 508, Malmesbury

Riebeeckkasteel

Portion 4 of Allesverloren 641, Malmesbury
Remainder and Portion 11 of Botmas Kloof 661, Malmesbury
Remainder and Portion 2 to 11 of Klein Deel 668, Malmesbury

Yzersfontein

Remainder, Portion 28 and 40 of Yzerfontein 560, Malmesbury
Erven: 2703, 2130, 2132 and Re/ 2131 (Yzerfontein 560), Malmesbury

COMMENTS OR OBJECTION MUST BE SENT WITHIN 30 DAYS FROM THE DATE OF THIS NOTICE TO:
LydiaB@daff.gov.za or MashuduMa@daff.gov.za (012) 319 7686/7619 or alternatively Private Bag X120,
PRETORIA, 0001

DEPARTMENT OF AGRICULTURE, FORESTRY AND FISHERIES**NO. 156****02 MARCH 2018****EXCLUSION OF PROPERTIES FROM THE PROVISIONS OF THE SUBDIVISION OF AGRICULTURAL LAND ACT, ACT 70 OF 1970
IN THE KWADUKUZA MUNICIPALITY, KWAZULU-NATAL PROVINCE.****NOTICE FOR PUBLIC**

I, Senzeni Zokwana, Minister of Agriculture, Forestry and Fisheries hereby give notice to all interested institutions, organizations and individuals on the exclusion of certain properties from the provisions of the Subdivision of Agricultural Land Act, Act No 70 of 1970 in the Kwadukuza Municipality, KwaZulu-Natal Province.

The properties to be included in the town planning scheme are:

Remainder of Portion 70 and Portion 140, both of Lot 56 No. 931-FU
Remainder and Portion 157 (42), 235, 236, 237, 238, 239 of Portion 221 of the Farm Lot 69 No. 917-FU
Remainder of Portion 19, 20, 28, 42, 43, 102, 143 of the Farm Lot 69 No. 917-FU
Portion 13, 14, 15, 21, 24, 26, 29, 31, 33, 34, 37, 39, 53, 103, 109, 144 (143), 150 of Portion 19 of the Farm Lot 69 No. 917-FU
Remainder of Farm No. 18349-FU
Remainder of the Farm No. 18348-FU
Remainder of the farm Gledhow Mount No. 1983 FU
Remainder of the Farm Newlands 16511-FU
Portion 31 and 34, both of the Farm Umhlaliwagen Drift No. 1559-FU
Remainder and Portion 1, both of Farm No. 18435-FU
Remainder, Portion 3, 59, 92, 96, 110, 115, 116, 174, 131, 126, 127, 129 and 183, all of the Farm Compensation No. 868-FU
Remainder and Portion 5, both of Farm 18077-FU
Portion 2 of the Farm Zimbali West No. 17744-FU
Portion 7 of Farm 17952-FU
Farm Blythdale No. 17461-FU
Remainder and Portion 4, 5, 8, 9, 13, 14, 16 to 21, 24 to 31 and 33 to 39, all of the Farm Addington 1385-FU
Portion 16, 18, 24, 27, 28, 40, 41, 46, 55, 59, 60, 66, 67 and 77 to 80, all of the Farm Chantilly No. 1804
Remainder of the Farm Forest Park No. 17950-FU
Remainder of the Farm Garland No. 17192-FU
Remainder of the Farm Hyde Park No. 1023-FU
Remainder, Portion 3 to 7, 9, 14, 16 and 17, all of Lot 1-FU
Portion 144 and 228, both of Lot 2 No. 1673-FU
Portion 1 and 6 to 12, all of Lot 55 No. 1569-FU
Portion 5, 12, 15, 19, 20, 32, 365, 467, 557, 558, 570, 571, 583, 606, 629, 627, 635, 631, 655, 656, 630, 659, 722 to 724, all of Lot 56 No. 931-FU
Portion 2, 4, 8, 10, 38, 69, 80, 100, 177, 290, 304, 314, 453, 456, 572, 576, 577, 580, 581, 585, 589, 590, 596, 597, 598, 599, 617, 631, 633, 639 to 657, 660 to 670, 682 and 690, all of Lot 61 No. 1521-FU
Remainder, Portion 10, 13, 15, 18, 19, 20, 24, 26, 28, 31, 33, 37, 39, 42, 43, 44, 53, 83, 85, 102, 139, 140, 150, 151, 177, 208, 210, 212, 214, 215 and 237, all of Lot 69 No. 917-FU
Erf 339 Gledhow FU
Erf 3120 Stanger FU
Portion 4 and 9 to 13, all of Lot 52 No. 1566-FU
Portion 32 of the Farm De Jagers Kraal No. 874-FU
Portion 572 of (22) of Lot 61 of the Farm No. 1521-FU
Portion 162, 185, 186, 187, 189, 190, 191, 192, 193 and 194 of Portion 6 of the Farm Compensation No. 868-FU
Remainder and Portion 1, both of the Farm Mathonsi No. 16515-FU

Remainder and portion 3 to 5, all of the Farm Pencarrow No. 17860-FU
Remainder and Portion 4, both of the Farm Royal Palm No. 17904-FU
Portion 9 to 12 and 21 to 23, all of the Farm Sans Souci No. 2990-FU
Portion 2, 3, 7, 10, 11, 12, 25, 26, 30, 34, 38 to 42 and 60, all of the Farm Umhlaliwage Drift No. 1559-FU

Enquiries: LydiaB@daff.gov.za or MashuduMa@daff.gov.za (012) 319 7686/7619 or alternatively Private Bag X120, PRETORIA, 0001

DEPARTMENT OF AGRICULTURE, FORESTRY AND FISHERIES

NO. 157

02 MARCH 2018

EXCLUSION OF PROPERTIES FROM THE PROVISIONS OF THE SUBDIVISION OF AGRICULTURAL LAND ACT, ACT 70 OF 1970 IN THE UMSWATHI MUNICIPALITY, KWAZULU-NATAL PROVINCE.

NOTICE FOR PUBLIC

I, Senzeni Zokwana, Minister of Agriculture, Forestry and Fisheries hereby give notice to all interested institutions, organizations and individuals on the exclusion of certain properties from the provisions of the Subdivision of Agricultural Land Act, Act no 70 of 1970 in the Mandeni and Umswathi Municipality, KwaZulu-Natal Province.

The properties to be included in the town planning scheme in Mandeni Municipality are:

Lot 35C Inyoni 13915
Lot 33 Inyoni 13881
Lot 30 Inyoni 13890
Lot 29 Inyoni 13884
Lot 26 Inyoni 13878
Lot 27 Tugela 13889
Lot 13 Tugela 13862/Lot 27 Tugela 13889
Lot 5C 8440
Lot 5B 4351
Reserve No 7A 15826
Ayikindaba 11678

The properties to be included in the town planning scheme in Umswathi Municipality are:

Remainder, Portion 2 and 3, all of the Farm Groothoek No. 920-FT
Portion 2, 3, 13, 18, 20 and 21, all of the Farm Appelsbosch No. 1293-FT
Portion 10, 11, 12 and 20, all of the Farm Welte Vreden No. 1344-FT
Remainder and Portion 1 to 4, all of the Farm Frenchay West 2235-FT
Portion 1, 3 and 4, all of the Farm Umvoti Slopes No. 2239-FT
Remainder and Portion 1, both of the Farm Frenchay East No. 2241-FT
Remainder of the Farm Glen Roy No. 3166-FT
Portion 18 to 20, 31 and 36, all of the Farm Umvoti Location No. 4667-FT
Portion 6 of the Farm 4675-FT
Remainder and Portion 1 to 4 of, all the Farm Berlin No. 6353-FT
Remainder of the Farm Ifaye No. 7542-FT
Portion 2 and 4, both of the Farm Redcliff Vale No. 8365-FT
Remainder of the Farm Tennessee No. 8036-FT
Remainder and Portion 1, 2, 4 to 10 to 14, 16 to 18, 20 to 33, all of the Farm Gcumisa No. 16545-FT

Enquiries: LydiaB@daff.gov.za or MashuduMa@daff.gov.za (012) 319 7686/7619 or alternatively Private Bag X120, PRETORIA, 0001

DEPARTMENT OF AGRICULTURE, FORESTRY AND FISHERIES**NO. 158****02 MARCH 2018****EXCLUSION OF PROPERTIES FROM THE PROVISIONS OF THE SUBDIVISION OF AGRICULTURAL LAND ACT, ACT 70 OF 1970
IN THE RICHMOND AND IMPENDLE MUNICIPALITY, KWAZULU-NATAL PROVINCE.****NOTICE FOR PUBLIC**

I, Senzeni Zokwana, Minister of Agriculture, Forestry and Fisheries hereby give notice to all interested institutions, organizations and individuals on the exclusion of certain properties from the provisions of the Subdivision of Agricultural Land Act, Act no 70 of 1970 in the Richmond and Impendle Municipality, KwaZulu-Natal Province.

The properties to be included in the town planning scheme are:

Richmond Municipality

Portion 2, 7, 8, 10, 15 to 42, 46 to 60, 62 and 83, all of the Farm Hopewell No. 881-FT

Remainder of the Farm Vinks Rivier No. 1057-FT

Remainder of the Farm Inkoman 2 No. 10104-ET

Remainder of the Farm Vumakwenza No. 17746-ET

Impendle Municipality

Remainder and Portion 1 to 26 of Farm No. 16535-FS

Remainder and Portion 10 of Farm No. 14851-FS

Portion 3 and 17 to 19 of Farm 16615-FS

Remainder of the Farm Brentwood No. 15508-FS

Remainder and Portion 2, 4, 5, 7, 8, 11, 10, 12, 13, 14, 63, 67,68, 69, 99, 101,110, 111, 116, 117, 120,127 and 128, all of the Farm Elands Rivier Drift No. 4770-FT

Remainder of the Farm Essex No. 6007-FS

Enquiries: LydiaB@daff.gov.za or MashuduMa@daff.gov.za (012) 319 7686/7619 or alternatively Private Bag X120, PRETORIA, 0001

DEPARTMENT OF AGRICULTURE, FORESTRY AND FISHERIES**NO. 159****02 MARCH 2018****EXCLUSION OF CERTAIN PROPERTIES FROM THE PROVISIONS OF THE SUBDIVISION OF AGRICULTURAL LAND ACT, ACT 70 OF 1970****NOTICE FOR PUBLIC**

I, Senzeni Zokwana, Minister of Agriculture, Forestry and Fisheries hereby give notice to all interested institutions, organizations and individuals on the exclusion of certain properties from the provisions of the Subdivision of Agricultural Land Act, Act No 70 of 1970 in:

UMGENI LOCAL MUNICIPALITY - KWAZULU NATAL PROVINCE.

Remainder, Portions 1 and 2, all of Amber Valley 17959-FT

Portion 22 of Arden 14074

Portions: 2 to 42, 44 to 46, 48 to 62 all of Bartholomew 16169-FT

Remainder of Portion 29, Portions: 1 to 3, 6 to 19, 21 to 26, 31, 34 to 80, 84 to 104, all of Broadacres 13814-FT

Portion 1 of Broeders hoek 793-FT

Portions: 2, 7, 18 and 20 Brookdales 935-FT

Portions: 3, 5, 12, 12, 60, 98, 104, 117, 140, 177, 207, 208, 216, 257, 261, 262, 270, 315, 316, 317, 319, 320, 321 and 322, all of Drie Fonteynen 952-FT

Erven: 1 to 21, 25, 26, 30 to 34, 38, 39, 42, 55 to 68, 73, 75 to 84, 86 to 88, 97 to 106, 110 to 115, 120 to 141, 144, 145, 147 to 210, 218, 219, 222 to 226, 235 to 594, 612 to 627, 741 to 757 and 770, all of FT Major Region

Remainder, Remainder of Portion: 1, 6, 10, 11, 16, 17, 40, 58, 64, 68, 70, 71, 83, 84, 86, 88, 91, 138, 147, 183 and 209 of farm Gowrie 1930-FT

Portions: 4, 5, 13, 14, 18 to 23, 26, 28 to 30, 33, 35 to 42, 52 to 55, 57, 69, 72, 74, 75, 78, 80 to 82, 85, 89, 91 to 95, 100 to 102, 104 to 111, 113, 115 to 120, 124 to 126, 128, 130, 132 to 134, 137 to 145, 147, 155, 161 to 164, 166, 170, 172 to 176, 183, 184, 186 to 188, 193, 197 to 199, 201 to 216, 218 to 228, 236, 244 to 247, all of Gowrie 1930-FT

Remainder, Remainder of Portion: 32, 40 to 43 and 49 of Hilton 12304-FT

Portions: 2, 5 to 7, 9, 11, 24 to 32, 34 to 53, 57, 58, 60 to 64, 70, 99, 101, 104 to 111, 168 to 173, 178 to 183, 304 to 316, all of Hilton 12304-FT

Portions: 7 to 9 of Hymany 15173-FT

Ila 13613-FT

Portions: 1 and 4 of Lot 34 866 (18081)-FT

Portions: 2 to 5 of Lot 50 2559-FT

Maryland 17961-FT

Remainder, Portion 1 and 2 of Nxamalala 17491-FT

Remainder, Portion 1 and 5 of Oatlands 16124-FT

Remainder, Remainder of Portion: 1, 10, 12, 16, 19 and 20 of Ongegund 795-FT

Portions: 2, 6, 9, 11, 12, 21 to 24, 26, 27, 29 and 30 of Ongegund 795-FT

Remainder, Remainder of 7 and 57, Portions: 6, 8 to 20, 22 to 24, 26, 28 to 33, 43, 47, 49 to 51, 53, 54, 57, 63, 67, 68, 73, 74 and 79 of Riet Spruit 899-FT

Portion 76 of Riet Vallei 1206-FT

Portion 8 and 9 of Rosedene 15098-FT

Remainder of Portion 20, 22, 27, 54, 145, 191 and 226, Portion 1, 4, 6 to 11, 13 to 17, 23, 25, 29, 32 to 34, 57, 58, 64 to 66, 75, 78 to 84, 87, 90, 91, 100 to 103, 105, 112 to 116, 120 to 122, 125, 136, 146, 148, 149, 164, 168 to 177, 188, 192 to 200, 202 to 204, 207 to 212, 214, 227 to 233, 235, 236, 245, 247, 249 and 253 of Spring Grove 2169-FT

Stockbarth 16270-FT

Remainder of Portion 120, Portion 2, 3, 7, 45, 67, 87, 116, 118, 122, 126, 130, 131 and

140 of Stocklands & Oatlands 878-FT

Umgeni Valley 15051-FT

Portion 12, 13, 14 and 75 of Wilde Als Spruit 1085-FT

Woodstock 15193-FT

Remainder and Portion 1 to 5 of Farm 16881-FT

Farm 18606-FT

Remainder of Farm 17275

WITBANK, EMALAHLENI LOCAL MUNICIPALITY - MPUMALANGA PROVINCE

Portion 26, Portion 27, Portion 28, Portion 56, Portion 98, Portion 104, Portion 137, Portion 156, Portion 168, Portion 171, Portion 172, Portion 199, Portion 200, Portion 201, Portion 202, Portion 203, Portion 204, Portion 245, Portion 246, Portion 258 and Portion 260, all of the farm Kromdraai No. 296-JS

Remainder of Portion 153, Remainder of Portion 154, Remainder of Portion 187, Remainder of Portion 188, Remainder of Portion 189, Remainder of Portion 210, Remainder of Portion 218 and Remainder of Portion 226, all of the farm Kromdraai No. 296-JS

MPOFANA LOCAL MUNICIPALITY - KWAZULU NATAL PROVINCE

Portions: 64, 324, 325, 327, 326 and 239 of Spring Vale 2170-FS

Remainder of Three Springs 10995

Remainder of South View 11211

Erven 669 to 802 (Major Region-FT)

MKHAMBATHINI LOCAL MUNICIPALITY - KWAZULU NATAL PROVINCE

Erven: 37 (Re/37), 41 (Re/41), 41 (1/41), 4 (4/41), 5 (5/41), 42 (42/42), 43 (43/43), all Major Region FT

Remainder of Portion 773, 320 and 844, Portion 218, 271, 272, 274, 301 to 305, 332 to 334, 341, 639, 641, 715 to 722, 851, 853, 854, 856, 893 to 900 and

903 of Vaalkop & Dadelfontein 885-FT

Portion 3, 4 and 65 of Onverwacht 1225-FT

Portion 62, 151 and 188 of Camperdown 1330-FT

Portion 1, 2, 3, 5 to 9 and 12 of Goedverwachting 1349-FT

Dromore B 3797-ET

Farm 18631-FT

Portion 4676 of Umlazi Native Location 4676-ET

S & T 4688-ET

Remainder, Portion 1 and 2 of Tilonko 5559-ET

Gulubie View C 5620-ET

Shiol 7290-ET

Inhlazuka Ridges No 1 11439-ET

Dalston 13456-ET

Eden 15085-ET

Remainder, Portion 1 and 3 of Mapumulo 16546-FT

Remainder and Portion 3 to 13 of Manyavu 16547-FT

Remainder and Portion 1 of Umacula Gwala Tribal Authority 16640-FT

COMMENTS OR OBJECTION MUST BE SENT WITHIN 30 DAYS FROM THE DATE OF THIS NOTICE TO: LydiaB@daff.gov.za or MashuduMa@daff.gov.za (012) 319 7686/7619 or alternatively Private Bag X120, PRETORIA, 0001

DEPARTMENT OF AGRICULTURE, FORESTRY AND FISHERIES**NO. 160****02 MARCH 2018****EXCLUSION OF CERTAIN PROPERTIES FROM THE PROVISIONS OF THE SUBDIVISION OF AGRICULTURAL LAND ACT, ACT 70 OF 1970 IN THE CITY OF MATLOSANA LOCAL MUNICIPALITY, NORTH WEST PROVINCE AND MAKHADO LOCAL MUNICIPALITY, LIMPOPO PROVINCE****NOTICE FOR PUBLIC**

I, Senzeni Zokwana, Minister of Agriculture, Forestry and Fisheries hereby give notice to all interested institutions, organizations and individuals on the exclusion of certain properties from the provisions of the Subdivision of Agricultural Land Act, Act no 70 of 1970 in the City of Matlosana Local Municipality, North West Province and Makhado Local Municipality, Limpopo Province.

The properties to be included in the town planning scheme are:**City of Matlosana Local Municipality, North West Province**

Remainder, Portion 297 and 306, all of the farm 297-IP

Portion 5, Portion 176, 206 and Remainder of portion 8, all of the farm Kafferskraal 400-IP

Portion 20 and 21, all of the farm Nooitgedacht 429-IP

Portion 15, 48, 49, 128 and 149, all of the farm Stilfontein 408-IP

Portion 392 of Townlands of Klerksdorp 424-IP

Remainder of the farm Uraan 295-IP

Remainder, remainder of portion 295, Portions 12, 13, 15, and 35, all of the farm Wildebeestpan 442-IP

Makhado Local Municipality, Limpopo Province

Portion 5 and 6, 21 to 24, 27, 28 and 30 of the Farm Cloudend 279-LS

Remainder of portion 4, 7 to 20, 26, 25, 29 and 31 of the Farm Cloudend 279-LS

Portion 32 to 70 of the Farm Cloudend 279-LS

Remainder of the Farm Cloudend 279-LS

Enquiries: LydiaB@daff.gov.za or MashuduMa@daff.gov.za (012) 319 7686/7619 or alternatively Private Bag X120, PRETORIA, 0001

DEPARTMENT OF AGRICULTURE, FORESTRY AND FISHERIES

NO. 161

02 MARCH 2018

**NATIONAL AGRICULTURAL MARKETING COUNCIL
MARKETING OF AGRICULTURAL PRODUCTS ACT, 1996, AS AMENDED
(ACT No. 47 OF 1996)**

**REQUEST FOR THE CONTINUATION OF STATUTORY MEASURES RELATING TO
LEVIES, REGISTRATION AND RECORDS & RETURNS IN THE RED MEAT INDUSTRY
IN TERMS OF THE MARKETING OF AGRICULTURAL PRODUCTS ACT**

It is hereby made known that, in terms of section 10 of the Marketing of Agricultural Products Act, 1996 (Act No. 47 of 1996) (MAP Act), the Minister of Agriculture, Forestry and Fisheries has received a request from the red meat industry for the continuation of statutory measures relating to levies, registration, the keeping of records and the rendering of returns. The Red Meat Industry Forum (RMIF), representative of most of the role-players in the red meat industry, applied for these statutory measures.

The current statutory measures in the red meat industry will expire on 4 November 2018. The RMIF requested ministerial approval for the continuation of these statutory measures for a new period of two years, from 5 November 2018 to lapse on 4 November 2020. In terms of this application, the red meat industry refers to role-players involved in the production and marketing of cattle, goats, sheep and its products, as well as products purchased for processing.

The proposed statutory measures in the red meat industry will be administrated by the Red Meat Levy Administrator (RMLA), which performed this role for the past few years. The proposed new levies will be as follows:

Cattle	From 5/1 / 2018 until 4/11/2019	From 5/11/2019 until 4/11/2020
Deducted and retained from the selling price of each designated animal by any buyer of such animal. In the event the said buyer disposes of such animal other than by sale, export, or delivery to an abattoir for slaughter, or if such animal dies or is stolen before the said buyer disposes of it, the buyer shall pay the levy thus deducted and retained over to the Levy Administrator. For avoidance of doubt, the buyer is only entitled to retain the levy thus deducted where the relevant designated animal is sold, exported or delivered to an abattoir for slaughter.	R6.24 per head	R6.61 per head
Payable by the owner at slaughter, to the abattoir who slaughters such animal; the abattoir shall be liable to collect such levy from the owner and pay it over to the Levy Administrator. Where the abattoir is the owner, the abattoir shall make payment directly to the Levy Administrator.	R10.40 per head	R11.02 per head
Payable by each meat trader to the Levy Administrator, in respect of each outlet through which red meat, red meat products or processed pork is sold.	R659 per year during which the meat trader sells red meat, red meat products or processed pork	R699 per year during which the meat trader sells red meat, red meat products or processed pork
Payable by the importer to the Levy Administrator prior to being issued with an import permit. The levy receipt number is to be submitted with the permit application to the issuing officer.	R1160 per container or consignment	R1 230 per container or consignment
Payable by the exporter to the Levy Administrator.	R10.40 per head exported live	R11.02 per head exported live
Payable by the livestock agent to the Levy Administrator.	0.102% of commission	0.108% of commission
Payable by the processor for every hide locally produced to the Levy Administrator. Payable by the exporter for every unprocessed hide exported to the Levy Administrator.	2.01c per kg	2.13c per kg

Sheep and Goats	From 5/11/2018 until 4/11/2019	From 5/11/2019 until 4/11/2020
Deducted and retained from the selling price of each designated animal by any buyer of such animal. In the event the said buyer disposes of such animal other than by sale, export, or delivery to an abattoir for slaughter, or if such animal dies or is stolen before the said buyer disposes of it, the buyer shall pay the levy thus deducted and retained over to the Levy Administrator. For avoidance of doubt, the buyer is only entitled to retain the levy thus deducted where the relevant designated animal is sold, exported or delivered to an abattoir for slaughter.	R1.34 per head	R1.42 per head

Payable by the owner at slaughter, to the abattoir which slaughters such animal; the abattoir shall be liable to collect such levy from the owner and pay it over to the Levy Administrator. Where the abattoir is the owner, the abattoir shall make payment directly to the Levy Administrator.	R2.02 per head	R2.14 per head
Payable by each meat trader to the Levy Administrator, in respect of each outlet through which red meat, red meat products or processed pork is sold.	R659 per year	R699 per year
Payable by the importer to the Levy Administrator prior to being issued with an import permit. The levy receipt number is to be submitted with the permit application to the issuing officer.	R1 160 per container or consignment.	R1 230 per container or consignment.
Payable by the exporter to the Levy Administrator.	R2.02 per head	R2.14 per head
Payable by the livestock agent to the Levy Administrator.	0.102% of the commission	0.108% of the commission
Payable by the processor for every skin locally produced to the Levy Administrator. Payable by the exporter for every unprocessed skin exported to the Levy Administrator.	2.01c per kg	2.13c per kg

Processors	From 5/11/2018 until 4/11/2019	From 5/11/2019 until 4/11/2020
For red meat products and processed pork purchased by registered meat processors for processing to be paid over to the Levy Administrator.	2.01c per kg	2.13c per kg

Notes:

- Only one amount of R659 per year is payable by a meat trader in respect of each outlet through which the said meat trader sells red meat, red meat products or processed pork.
- A 3% collection fee may be deducted from the levies collected by the abattoir before the levies are paid over to the Levy Administrator.
- Every import permit issued will attract a minimum of R1 160 statutory levy charge payable by the applicant. Where an import permit is issued for more than one container or load per consignment, then each individual container or load per consignment up to a maximum of 28mt will attract the levy charge payable by the applicant. Where a master import permit is issued the R1 160 statutory levy will be payable by the applicant for every multiple of 25mt.

Exclusions: Where an import permit is issued for the importation of samples, and the quantity to be imported is less than 200kg then the statutory levy shall be waived for that import permit.

The estimated income from the proposed levies is between R45,2 million (for 2018/19) and R47,9 million per annum (for 2019/20). The proposed statutory levies will finance the following functions, namely –

- Consumer communication and education;
- Transformation and development;
- Consumer assurance;
- Research and development;
- Industry liaison;
- Production development;
- Compliance to legislation; and
- Administration.

The MAP Act stipulates that a statutory levy may not exceed 5% of the price released for a specific agricultural product at the first point of sale. The maximum of 5% must be based on a guideline price calculated as the average price at the first point of sale over a period not exceeding three years. The RMIF calculated the guideline price for cattle at R9 100 per head and the proposed levy of R10.40 per head from 5 November 2018, until 4 November 2019 equates to 0.12% of the guideline price. For sheep/goats the guideline price was calculated at R1 600 per head and the proposed levy is R2.02 per head for the first year equates to 0.13% of the guideline price. Both the proposed statutory levies for cattle and sheep/goats of 0.12% and 0.13% of the guideline prices respectively, are well within the requirement of 5% as stipulated in the MAP Act.

The RMIF decided that the proposed statutory levies will be a proportional transaction based levy to ensure that all directly affected groups in the red meat value chain are making a contribution.

The purpose of the statutory measure relating to registration is to compel all relevant role-players in the red meat industry to register with the Levy Administrator. The purpose of the statutory measure relating to records and returns is to compel all relevant role-players in the red meat industry to render records and returns to the Levy Administrator. By prescribing the keeping of records with the rendering of returns on an individual basis, market information for the whole of the industry can be processed and published. These statutory measures are necessary to ensure that continuous, timeous and accurate information relating to the designated animals slaughtered and their products, is available to all role-players. Market information is deemed essential for all role-players in order for them to make informed decisions.

The National Agricultural Marketing Council (NAMC) took cognisance that the proposed continuation of the statutory measures relating to levies, registration, the keeping of records and the rendering of returns in the red meat industry as requested by RMIF, is consistent with the objectives of the MAP Act. The request is currently being investigated by the NAMC and recommendations in this regard will be made to the Minister in the near future.

Directly affected groups in the red meat industry are kindly requested to submit any comments, regarding the proposed statutory measures, to the NAMC on or before 16 March 2018, to enable the Council to finalise its recommendation to the Minister in this regard.

Submissions should be in writing and be addressed to:

National Agricultural Marketing Council

Private Bag X 935

PRETORIA

0001

Enquiries: Mr Ndumiso Mazibuko

E-mail : ndumiso@namc.co.za

Tel No. : (012) 341 1115

: (073) 551 8388

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DEPARTMENT OF ENVIRONMENTAL AFFAIRS

NO. 162

02 MARCH 2018

**NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998
(ACT NO. 107 OF 1998)****CONSULTATION ON THE GENERIC ENVIRONMENTAL MANAGEMENT PROGRAMME
APPLICABLE TO AN APPLICATION FOR OVERHEAD ELECTRICITY TRANSMISSION AND
DISTRIBUTION INFRASTRUCTURE FOR WHICH AN ENVIRONMENTAL AUTHORISATION IS
REQUIRED**

I, Bomo Edith Edna Molewa, Minister of Environmental Affairs, hereby publish for public comments, under section 24(5) of the National Environmental Management Act, 1998 (Act No. 107 of 1998), regulations 19(4) and 23(4) of the Environmental Impact Assessment Regulations, 2014 and Appendix 4 to the regulations, the draft Generic Environmental Management Programme applicable to an application for environmental authorisation for overhead electricity transmission and distribution infrastructure for which an environmental authorisation is required for activity 11 or activity 47 of Environmental Impact Assessment Regulations Listing Notice 1 or for activity 9 of Environmental Impact Assessment Regulations Listing Notice 2, or for any other listed and specified activity necessary for the realisation of such infrastructure, as set out in the Schedule hereto.

Members of the public are invited to submit to the Minister, within 45 days from the date of publication of this Notice in the *Gazette*, written comments or inputs to the following addresses:

By post to: The Director-General:
 Department of Environmental Affairs
 Attention: Mr Alfred Mocheke
 Private Bag X447
 PRETORIA
 0001

By hand at: Reception, Environment House, 473 Steve Biko Road, Arcadia, Pretoria, 0083.

By e-mail: amocheke@environment.gov.za.

Any inquiries in connection with the Notice can be directed to Mr Alfred Mocheke at 012 399 9315.

Comments received after the closing date will not be considered.



BOMO EDNA EDITH MOLEWA
MINISTER OF ENVIRONMENTAL AFFAIRS

SCHEDULE

A person applying for an environmental authorisation for overhead electricity transmission and distribution infrastructure, when such facilities trigger—

- activity 11 or 47 of Environmental Impact Assessment Regulations Listing Notice 1 of 2014 and any other listed and specified activities necessary for the realisation of such facilities;
- activity 9 of Environmental Impact Assessment Regulations Listing Notice 2 of 2014; or
- any other listed or specified activity necessary for the realisation of such facilities,

must use the generic Environmental Management Programme, contemplated in regulations 19(4), 23(4) and Appendix 4 to the Environmental Impact Assessment Regulations, 2014. The generic Environmental Management Programme is set out in Appendix 1.

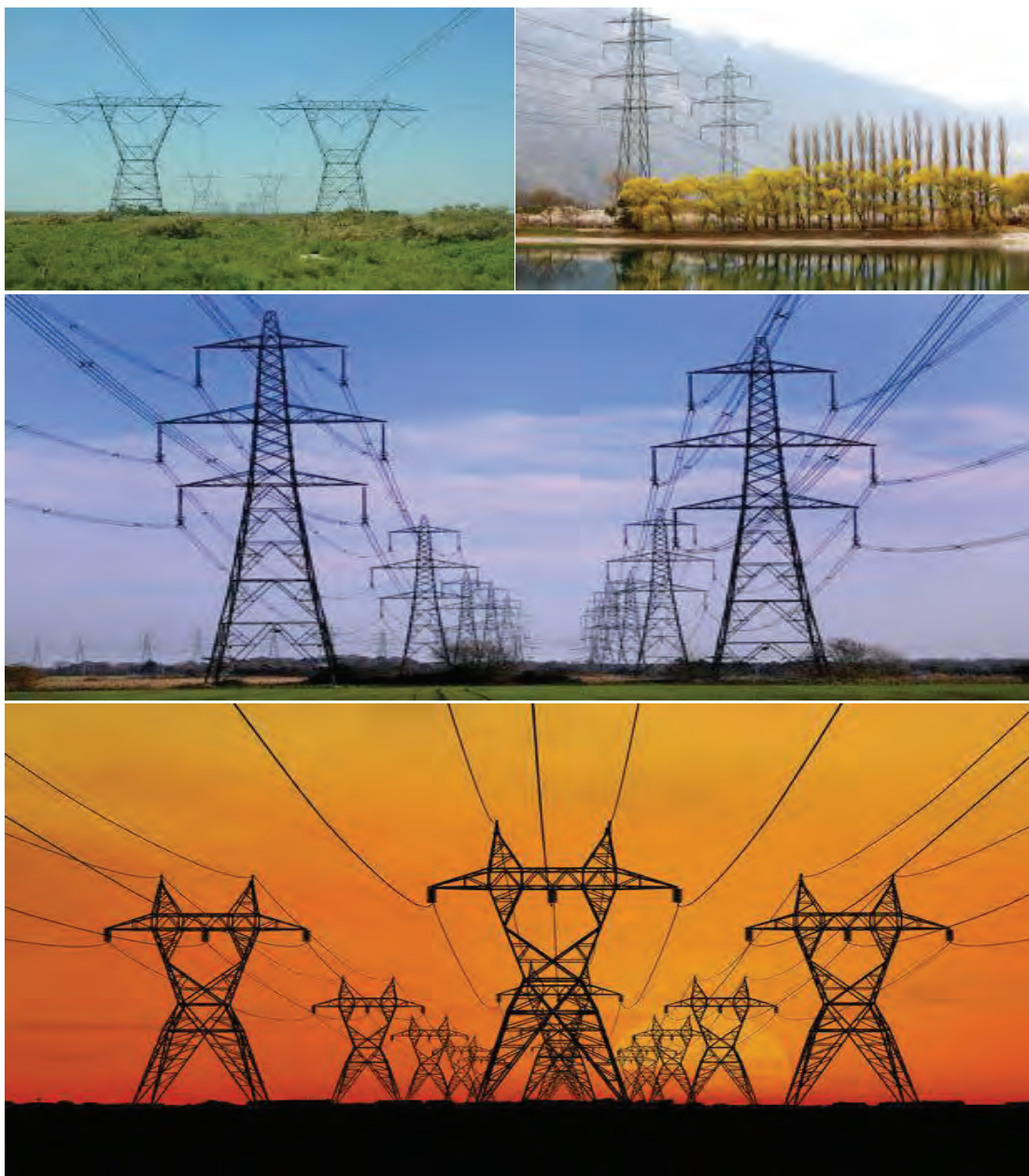
APPENDIX 1**GENERIC ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPr) FOR THE
DEVELOPMENT AND EXPANSION FOR OVERHEAD ELECTRICITY
TRANSMISSION AND DISTRIBUTION INFRASTRUCTURE****environmental affairs**Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

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INTRODUCTION

1. Background

The National Environmental Management Act 107 of 1998 (NEMA) requires that an environmental management programme (EMPr) be submitted where an environmental impact assessment (EIA) has been identified as the environmental instrument to be utilised as the basis for a decision on an application for environmental authorisation (EA). The content of an EMPr must either contain the information set out in Appendix 4 of the EIA Regulations, 2014, or must be a generic EMPr relevant to an application as identified and gazetted by the Minister in a government notice. Once the Minister has identified, through a government notice that a generic EMPr is relevant to an application for EA, that generic EMPr must be applied by all parties involved in the EA process, including but not limited to the applicant and the competent authority (CA).

2. Purpose

This document constitutes a generic EMPr relevant to applications for the development or expansion for overhead electricity transmission and distribution infrastructure, and all listed and specified activities necessary for the realisation of such infrastructure.

3. Objective

The objective of this generic EMPr is to prescribe and pre-approve generally accepted impact management outcomes and actions which can commonly and repeatedly be used for the avoidance, management and mitigation of impacts and risks associated with the development or expansion for overhead electricity transmission and distribution infrastructure. The use of a generic EMPr is intended to reduce the need to prepare and review individual EMPrs for applications of a similar nature.

4. Scope

The scope of this generic EMPr applies to the development or expansion overhead electricity transmission and distribution infrastructure requiring EA in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), i.e. with a capacity of 33 kilovolts or more. This generic EMPr applies to activities requiring EA, mainly activity 11 and 47 of the Environmental Impact Assessment Regulations Listing Notice 1 of 2014 and activity 9 of the Environmental Impact Assessment Regulations Listing Notice 2 of 2014, and all associated listed or specified activities necessary for the realization of such infrastructure.

5. Structure of this document

This document is structured in three parts with an Appendix as indicated in the table below:

Part	Section	Heading	Content
A		Provides general guidance and information and is not legally binding	Definitions, acronyms, roles & responsibilities and documentation and reporting.
B	1	Pre-approved generic EMPr template	Contains generally accepted impact management outcomes and actions required for the avoidance, management and mitigation of impacts and risks associated with the development or expansion overhead electricity transmission and distribution infrastructure, which are presented in the form of a template that has been pre-approved. The template in this section is to be completed by the contractor, with each completed page signed and dated by the holder of the EA prior to commencement of the activity. Once completed and signed, the template represents the EMPr for the activity approved by the CA and is legally binding. The template is not required to be submitted to the CA and does not need approval. Once the generic EMPr is gazetted for implementation, it has been approved by the CA. To allow interested and affected parties access to the pre-approved EMPr template for consideration through the authorisation process, the applicant(s)/proponent(s) or the EAP on behalf of the applicant (s)/proponent (s) must make the location of the document known to the potential registered interested and affected parties. Should the potential registered interested and affected parties not have access to electronic media, the applicant(s) or the EAP must make a hard copy available at a public location.
	2	Site specific information	Contains preliminary infrastructure layout and a declaration that the applicant/holder of the EA will comply with the pre-approved generic EMPr template contained in <u>Part B: Section 1</u> , and understands that the impact management outcomes and actions are

Part	Section	Heading	Content
			legally binding. The preliminary infrastructure layout must be finalized to inform final EMPr that is to be submitted with BAR or EIAR before commencement, ensuring that all impact management outcomes and actions have been either pre-approved or approved in terms of <u>Part C</u>. This section must be submitted to the CA as part of the BAR or EIAR, for consideration of, and decision on, the application for EA. The information submitted for EA will be considered to be incomplete should a signed copy of <u>Part B: section 2</u> not be submitted. Once approved, this Section forms part of the EMPr for the site and is legally binding.
C		Site specific sensitivities/ attributes	If any specific environmental sensitivities/ attributes are present on the site which require site specific impact management outcomes and actions not included in the pre-approved generic EMPr to manage impacts, these specific impact management outcomes and actions must be included in this section. These specific environmental attributes must be referenced spatially and impact management outcomes and actions must be provided. These specific impact management outcomes and actions must be presented in the format of the pre-approved EMPr template (<u>Part B: section 1</u>) If <u>Part C</u> is applicable to the site, it is required to be submitted as part of the BAR or EIAR, for consideration of, and decision on, the application for EA. The information in this section must be prepared by an EAP and the name and expertise of the EAP, including the curriculum vitae are to be included. Once approved, Part C forms part of the EMPr for the site and is legally binding. This section applies only to additional impact management outcomes and actions that are necessary for the avoidance, management and mitigation of impacts and risks associated with the specific development or expansion

Part	Section	Heading	Content
			and which are not already included in <u>Part B: section 1</u> . This section will not be required should the site contain no specific environmental sensitivities or attributes.
	Appendix 1		Contains the method statements to be prepared prior to commencement of the activity. The method statements are not required to be submitted to the competent authority.

6. Completion of part B: section 1: the pre-approved generic EMPr template

The template is to be completed prior to commencement of the activity, by providing the following information for each environmental management action:

- For implementation
 - a 'responsible person',
 - a method for implementation,
 - a timeframe for implementation
- For monitoring
 - a responsible person
 - frequency
 - evidence of compliance.

The completed template must be signed and dated by the holder of the EA prior to commencement of the activity. The method statements prepared and agreed to by the holder of the EA must be appended to the template as Appendix 1. Each method statement must be signed and dated on each page by the holder of the EA. This template once signed and dated is legally binding. The holder of the EA will remain responsible for its implementation.

7. Amendments of the impact management outcomes and actions

Once the activity has commenced a holder of an EA may make amendments to the impact management outcomes and actions in the following manner:

- Amendment of the impact management outcomes – in line with regulation 37 of the EIA Regulation, 2014
- Amendment of the impact management actions – in line with regulation 36 of the EIA Regulations, 2014

8. Documents to be submitted as part of part B: section 2 site specific information and declaration

Part B: Section 2 has three distinct sub-sections. The first and third sub-sections are in a template format. Sub-section two requires a map to be produced.

Sub-section 1 contains the project name, the applicants name and contact details, the site information which includes coordinates of the corridor in which the proposed overhead electricity transmission and distribution infrastructure is proposed as well as the 21-digit Surveyor General code of each cadastral land parcel and where available the farm name.

Sub-section 2 is to be prepared by an EAP or an applicant in the case of exemption, and must contain his/her name and expertise including a curriculum vitae. This sub-section must include a map of the site sensitivity overlaid with the preliminary infrastructure layout. Once the web-based screening tool identified in regulation 16(1)(v) of the EIA Regulations, 2014 is available, the sensitivity map must be prepared from this system. The map is to indicate areas/features of sensitivity based on the findings of the assessment and illustrated according to four tiers, Very High, High, Medium or Low. The sensitivity map shall also identify the nature of each sensitive feature e.g. raptor nest, threatened plant species, archaeological site, etc. Sensitivity maps shall identify features both within the planned working area and any known sensitive features in the surrounding landscape. The overhead transmission and distribution profile shall be illustrated at an appropriate resolution to enable fine scale interrogation. It is recommended that <20 km of overhead transmission and distribution length is illustrated per page in A3 landscape format. Where considered appropriate, photographs of sensitive features in the context of tower positions shall be used.

Sub-section 3 is the declaration that the applicant (s)/proponent (s) or holder of the EA in the case of a change of ownership must complete which confirms that the applicant/EA holder will comply with the 'generic EMPr' in Section 1 and understands that the impact management outcomes and actions are legally binding.

(i) Amendments to Part B: Section 2 – site specific information and declaration

Should the EA be transferred, Part B: Section 2 must be completed by the new applicant/proponent and submitted with the application for amendment of the EA in terms of regulations 29 or 31 of the EIA Regulations, 2014. The information submitted for an amendment to an EA will be considered to be incomplete should a signed copy of Part B: Section 2 not be submitted. Once approved, Part B: Section 2 forms part of the EMPr for the site and the EMPr becomes legally binding to the new EA holder once the amendment process has been concluded.

PART A – GENERAL INFORMATION

1. DEFINITIONS

In these EMPr any word or expression to which a meaning has been assigned in the NEMA or EIA has that meaning, and unless the context requires otherwise –

Clearing means the clearing and removal of vegetation, whether partially or in whole, including trees and shrubs, as specified;

Contractor - The Contractor has overall responsibility for ensuring that all work, activities, and actions linked to the delivery of the contract, are in line with the Environmental Management Programme and that Method Statements are implemented as described.

Construction camp is the area designated for key construction infrastructure and services, including but not limited to offices, overnight vehicle parking areas, stores, the workshop, stockpile and lay down areas, hazardous storage areas (including fuels), the batching plant (if one is located at the construction camp), designated access routes, equipment cleaning areas and the placement of staff accommodation, cooking and ablution facilities, waste and wastewater management;

Method Statement means a written submission by the Contractor to the Project Manager in response to this EMPr or a request by the Project Manager and ECO. The Method Statement must set out the equipment, materials, labour and method(s) the Contractor proposes using to carry out an activity identified by the Project Manager when requesting the Method Statement. This must be done in such detail that the Project Manager and ECO is able to assess whether the Contractor's proposal is in accordance with this specification and/or will produce results in accordance with this specification;

The Method Statement shall cover applicable details with regard to:

- (i) Construction procedures;
- (ii) Plant, materials and equipment to be used;
- (iii) Transporting the equipment to and from site;
- (iv) How the plant/ material/ equipment will be moved while on site;
- (v) How and where the plant/ material/ equipment will be stored;
- (vi) The containment (or action to be taken if containment is not possible) of leaks or spills of any liquid or material that may occur;
- (vii) Timing and location of activities;
- (viii) Compliance/ non-compliance; and
- (ix) Any other information deemed necessary by the Project Manager.

Hazardous Substances is a substance governed by the Hazardous Substances Act, 1973 (Act No. 15 of 1973) as well as the Hazardous Chemical and Substances Regulations, 1995;

Slope means the inclination of a surface expressed as one unit of rise or fall for so many horizontal units;

Solid waste means all solid waste, including construction debris, hazardous waste, excess cement/ concrete, wrapping materials, timber, cans, drums, wire, nails, food and domestic waste (e.g. plastic packets and wrappers);

Spoil means excavated material which is unsuitable for use as material in the construction works or is material which is surplus to the requirements of the construction works;

Topsoil means a varying depth (up to 300 mm) of the soil profile irrespective of the fertility, appearance, structure, agricultural potential, fertility and composition of the soil;

Works means the Works to be executed in terms of the Contract

2. ACRONYMS and ABBREVIATIONS

CA	Competent Authority
cEO	Contractors Environmental Officer
dEO	Developer Environmental Officer
DPM	Developer Project Manager
DSS	Developer Site Supervisor
ECA	Environmental Conservation Act No. 73 of 1989
ECO	Environmental Control Officer
EA	Environmental Authorisation
EIA	Environmental Impact Assessment
ERAP	Emergency Response Action Plan
EMPr	Environmental Management Programme Report
EAP	Environmental Assessment Practitioner
FPA	Fire Protection Agency
HCS	Hazardous chemical Substance
NEMA	National Environmental Management Act, 1998 (Act No. 107 of 1998)
MSDS	Material Safety Data Sheet
RI&AP's	Registered Interested and affected parties

3. ROLES AND RESPONSIBILITIES FOR ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPr) IMPLEMENTATION

The effective implementation of this generic EMPr is dependent on established and clear roles, responsibilities and reporting lines within an institutional framework. This section of the EMPr gives guidance to the various environmental roles and reporting lines.

Table 1: Guide to roles and responsibilities for implementation of an EMPr

Function	Role and Responsibilities
Developer's Project Manager (DPM)	<u>Role</u> The Project Developer is accountable for ensuring compliance with the EMPr and any conditions of approval from the competent authority (CA). An independent environmental control officer (ECO) must be contracted by the Project Developer to objectively monitor the implementation of the EMPr according to relevant environmental legislation, and the conditions of environmental authorization (EA). The Project Developer is further responsible for providing and giving mandate to enable the ECO to perform responsibilities, and he must ensure that the ECO is integrated as part of the project team while remaining independent. <u>Responsibilities</u> - Be fully conversant with the conditions of the EA; - Ensure that all stipulations within the EMPr are communicated and adhered to by the Developer and its Contractor(s); - Monitor the implementation of the EMPr throughout the project by means of site inspections and meetings. Overall management of the project and EMPr implementation; and - Ensure that periodic environmental performance audits are undertaken on the project implementation.
Developer Site Supervisor (DSS)	<u>Role</u> The DSS reports directly to the DPM, oversees site works, liaises with the contractor(s) and the ECO. The DSS is responsible for the day to day implementation of the EMPr and for ensuring the compliance of all contractors with the conditions and requirements stipulated in the EMPr.

Function	Role and Responsibilities
	<u>Responsibilities</u> - Ensure that all contractors identify a contractor's Environmental Officer (cEO); - Must be fully conversant with the conditions of the EA. Oversees site works, liaison with Contractor, DPM and ECO; - Must ensure that all landowners have the relevant contact details of the site staff, ECO and cEO; - Will issue all non-compliances to contractors; and - Ratify the Monthly Environmental Report.
Environmental Control Officer (ECO)	<u>Role</u> The ECO should be employed by the developer for the duration of the project. The ECO should have appropriate training and experience in the implementation of environmental management specifications. The primary role of the ECO is to act as an independent quality controller and monitoring agent regarding all environmental concerns and associated environmental impacts. In this respect, the ECO is to conduct periodic site inspections, attend regular site meetings, pre-empt problems and suggest mitigation and be available to advise on incidental issues that arise. The ECO is also required to conduct compliance audits, verifying the monitoring reports submitted by the cEO. The ECO provides feedback to the DSS and Project Manager regarding all environmental matters. The Contractor, cEO and dEO are answerable to the Environmental Control Officer for non-compliance with the Performance Specifications as set out in the EA and EMPt. The ECO provides feedback to the DSS and Project Manager, who in turn reports back to the Implementing Agent and potential and Registered Interested & Affected Parties (RI&AP's), as required. Issues of non-compliance raised by the ECO must be taken up by the Project Manager, and resolved with the Contractor as per the conditions of his contract. Decisions regarding environmental procedures, specifications and requirements which have a cost implication (i.e. those that are deemed to be a variation, not allowed for in the Performance Specification) must be endorsed by the Project Manager. The ECO must also, as specified by the EA, report to the relevant CA as and when required. <u>Responsibilities</u> The responsibilities of the ECO will include the following:

Function	Role and Responsibilities
	- Be aware of the findings and conclusions of all EA related to the development; - Be familiar with the recommendations and mitigation measures of this EMP; - Be conversant with relevant environmental legislation, policies and procedures, and ensure compliance with them; - Undertake regular and comprehensive site inspections / audits of the construction site according to the generic EMP and applicable licenses in order to monitor compliance as required; - Educate the construction team about the management measures contained in the EMP and environmental licenses; - Compilation and administration of an environmental monitoring plan to ensure that the environmental management measures are implemented and are effective; - Monitoring the performance of the Contractors and ensuring compliance with the EMP and associated Method Statements; - In consultation with the Developer Site Supervisor order the removal of person(s) and/or equipment which are in contravention of the specifications of the EMP and/or environmental licenses; - Liaison between the DPM, Contractors, authorities and other lead stakeholders on all environmental concerns; - Issuing of site instructions to the Contractor for corrective actions required; - Compile a regular environmental audit report highlighting any non-compliance issues as well as satisfactory or exceptional compliance with the EMP; - Validating the regular site inspection reports, which are to be prepared by the contractor Environmental Officer (cEO); - Checking the cEO's record of environmental incidents (spills, impacts, legal transgressions etc.) as well as corrective and preventive actions taken; - Checking the cEO's public complaints register in which all complaints are recorded, as well as action taken; - Assisting in the resolution of conflicts; - Facilitate training for all personnel on the site – this may range from carrying out the training, to reviewing the training programmes of the Contractor and/or sub-contractors;

Function	Role and Responsibilities
	- In case of non-compliance, the ECO must first communicate this to the Senior Site Supervisor, who has the power to ensure this matter is addressed. Should no action or insufficient action be taken, the ECO may report this matter to the authorities as non-compliance; - Maintenance, update and review of the EMPr; - Communication of all modifications to the EMPr to the relevant stakeholders.
developer Environmental Officer (dEO)	<u>Role</u> The dEOs will report to the Project Manager and are responsible for implementation of the EMPr, environmental monitoring and reporting, providing environmental input to the Project Manager and Contractor's Manager, liaising with contractors and the landowners as well as a range of environmental coordination responsibilities. <u>Responsibilities</u> - Be fully conversant with the EMPr; - Be familiar with the recommendations and mitigation measures of this EMPr, and implement these measures; - Ensure that all stipulations within the EMPr are communicated and adhered to by the Employees, Contractor(s) and its sub-contractor(s); - Confine the development site to the demarcated area; - Conduct environmental internal audits with regards to EMPr and authorisation compliance (on cEO); - Assist the contractors in addressing environmental challenges on site; - Assist in incident management; - Reporting environmental incidents to developer and ensuring that corrective action is taken, and lessons learnt shared; - Assist the contractor in investigating environmental incidents and compile investigation reports; - Follow-up on pre-warnings, defects, non-conformance reports; - Measure and communicate environmental performance to the Contractor; - Conduct environmental awareness training on site together with ECO and cEO; - Ensure that the necessary legal permits and / or licenses are in place and up to date;

Function	Role and Responsibilities
	- Acting as Developer's Environmental Representative on site and work together with the ECO and contractor; - Audit carried out by an independent auditor/consultant.
Contractor	<u>Role</u> The Contractor appoints the cEO and has overall responsibility for ensuring that all work, activities, and actions linked to the delivery of the contract are in line with the EMPr and that Method Statements are implemented as described. External contractors must ensure compliance with this EMPr while performing the onsite activities as per their contract with the Project Developer. The contractors are required, where specified, to provide Method Statements setting out in detail how the management actions contained in the EMPr will be implemented during the development or expansion for overhead electricity transmission and distribution infrastructure activities. <u>Responsibilities</u> - project delivery and quality control for the development services as per appointment; - employ a suitably qualified person to monitor and report to the Project Developer's appointed person on the daily activities on-site during the construction period; - ensure that safe, environmentally acceptable working methods and practices are implemented and that equipment is properly operated and maintained, to facilitate proper access and enable any operation to be carried out safely; - attend on site meeting(s) prior to the commencement of activities to confirm the procedure and designated activity zones; - ensure that contractors' staff (or sub-contractors) repair, at their own cost, any environmental damage as a result of a contravention of the specifications contained in EMPr, to the satisfaction of the ECO.
contractor Environmental Officer (cEO)	<u>Role</u> Each Contractor affected by the EMPr should appoint a cEO, who is responsible for the on-site implementation of the EMPr (or relevant sections of the EMPr). The Contractor's representative can be the site agent; site engineer; a dedicated environmental officer; or an independent consultant. The Contractor

Function	Role and Responsibilities
	must ensure that the Contractor's Representative is suitably qualified to perform the necessary tasks and is appointed at a level such that she/he can interact effectively with other site Contractors, labourers, the Environmental Control Officer and the public. As a minimum the cEO shall meet the following criteria: The cEO ensures that all Sub-contractors working under the Contractor abide by the requirements of the generic EMPr. The Contractor is answerable to the Project Manager for all environmental issues associated with the project. <u>Responsibilities</u> - Be on site throughout the duration of the project and be dedicated to the project; - Ensure all their staff are aware of the environmental requirements, conditions and constraints with respect to all of their activities on site; - Implementing the environmental conditions, guidelines and requirements as stipulated within the EA, EMPr and Method Statements; - Attend the Environmental Site Meeting; - Undertaking corrective actions where non-compliances are registered within the stipulated timeframes; - Report back formally on the completion of corrective actions; - Assist the ECO in maintaining all the site documentation; - Prepare the site inspection reports and corrective action reports for submission to the ECO; - Assist the ECO with the preparing of the monthly report; and - Where more than one Contractor is undertaking work on site, each company appointed as a Contractor will appoint a cEO representing that company.

4. ENVIRONMENTAL DOCUMENTATION REPORTING AND COMPLIANCE

To ensure accountable and demonstrated implementation of the EMPr, a number of reporting systems, documentation controls and compliance mechanisms must be in place for all overhead electricity transmission and distribution infrastructure projects as a minimum requirement.

4.1 Document control/Filing system

The holder of the EA is solely responsible for the upkeep and management of the EMPr file. At a minimum, all documentation detailed below will be stored in the EMPr file. A hard copy of all documentation shall be filed, while an electronic copy may be kept where relevant. A duplicate file will be maintained in the office of the DSS (where applicable). This duplicate file will be the responsibility of the ECOs and must remain current and up-to-date. The filing system must be updated and relevant documents added as required. The EMPr file must be made available at all times on request by the CA (in terms of NEMA EIA regulation) or other relevant authorities. The EMPr file will form part of any environmental audits undertaken as prescribed in the EIA Regulations.

4.2 Documentation to be available

At the outset of the project the following documents shall be placed in the filing system and be accessible at all times:

- Full copy of the signed EA from the CA in terms of NEMA, granting approval for the development or expansion;
- Copy of the generic and site specific EMPr as well as any amendments thereof;
- Copy of declaration of implementing generic EMPr and subsequent approval of site specific EMPr and amendments thereof;
- All method statements;
- Completed environmental checklists;
- Minutes and attendance register of environmental site meetings;
- An up-to-date environmental incident log;
- A copy of all instructions or directives issued;
- A copy of all corrective actions signed off. The corrective actions must be filed in such a way that a clear reference is made to the non-compliance record;
- Complaints register.

4.3 Weekly Environmental Checklist

The ECOs are required to complete a Weekly Environmental Checklist, the format of which is to be agreed prior to commencement of the activity. The ECOs are required to sign and date the checklist, retain a copy in the EMPr file and submit a copy of the completed checklist to the DSS on a weekly basis.

The checklists will form the basis for the Monthly Environmental Reports. Copies of all completed checklists will be attached as Annexures to the Environmental Audit Report as required in terms of the EIA regulations, 2014.

4.4 Environmental site meetings

Minutes of the environmental site meetings shall be kept. The minutes must include an attendance register and will be attached to the Monthly Report that is distributed to attendees. Each set of minutes must clearly record "Matters for Attention" that will be reviewed at the next meeting.

4.5 Required Method Statements

The method statement will be done in such detail that the ECOs are enabled to assess whether the contractor's proposal is in accordance with the EMPr.

The method statement shall cover applicable details with regard to:

- development procedures;
- materials and equipment to be used;
- getting the equipment to and from site;
- how the equipment/ material will be moved while on site;
- how and where material will be stored;
- the containment (or action to be taken if containment is not possible) of leaks or spills of any liquid or material that may occur;
- timing and location of activities;
- compliance/ non-compliance with the EMPr; and
- any other information deemed necessary by the ECOs.

Unless indicated otherwise by the Project Manager, the Contractor shall provide the following method statements to the Project Manager no less than 14 days prior to the commencement date of the activity:

- Site establishment – Camps, Lay-down or storage areas, satellite camps, infrastructure;
- Batch plants;
- Workshop or plant servicing;
- Handling, transport and storage of Hazardous Chemical Substance's;
- Vegetation management – Protected, clearing, aliens, felling;
- Access management – Roads, gates, crossings etc.;
- Fire plan;
- Waste management – transport, storage, segregation, classification, disposal (all waste streams);
- Social interaction – complaints management, compensation claims, access to properties etc.;
- Water – use (source, abstraction and disposal), access and all related information, crossings and mitigation;
- Emergency preparedness – Spills, training, other environmental emergencies;
- Dust and noise management methodologies;
- Fauna interaction and risk management – only if the risk was identified – wildlife interaction especially on game farms; and
- Heritage and palaeontology management.

The ECOs shall ensure that the contractors perform in accordance with these method statements. Completed and authorised method statements shall be captured in Appendix 1.

4.6 Environmental Incident Log (Diary)

The ECOs are required to maintain an up-to-date and current Environmental Incident Log (environmental diary). The Environmental Incident Log is a means to record all environmental incidents and/or all non-compliance notice would not be issued. An environmental incident is defined as:

- Any deviation from the listed impact management actions (listed in this EMPr) that may be addressed immediately by the ECOs. (For example a contractor's staff member littering or a drip tray that has not been emptied);
- Any environmental impact resulting from an action or activity by a contractor in contravention of the environmental stipulations and guidelines listed in the EMPr which as a single event would have a minor impact but which if cumulative and continuous would have a significant effect (for example no toilet paper available in the ablutions for an afternoon); and
- General environmental information such as road kills or injured wildlife.

The ECOs are to record all environmental incidents in the Environmental Incident Log. All incidents regardless of severity must be reported to the Developer. The Log is to be kept in the EMPr file and at a minimum the following will be recorded for each environmental incident:

- The date and time of the incident;
- Description of the incident;
- The name of the Contractor responsible;
- The incident must be listed as significant or minor;
- If the incident is listed as significant, a non-compliance notice must be issued, and recorded in the log;
- Remedial or corrective action taken to mitigate the incident; and
- Record of repeat minor offences by the same contractor or staff member.

The Environmental Incident Log will be captured in the EAR.

4.7 Non-compliance

A non-compliance notice will be issued to the responsible contractor by the ECOs via the DSS or Project Manager. The non-compliance notice will be issued in writing; a copy filed in the EMPr file and will at a minimum include the following:

- Time and date of the non-compliance;
- Name of the contractor responsible;
- Nature and description of the non-compliance;
- Recommended / required corrective action; and
- Date by which the corrective action to be completed.
- The contractors shall act immediately when a notice of non-compliance is received and correct whatever is the cause for the issuing of the notice. Complaints received regarding activities on the development site pertaining to the environment shall be recorded in a dedicated register and the response noted with the date and action taken. The ECO should be made aware of any complaints. Any non-compliance with the agreed procedures of the EMPr is a transgression of the various statutes and laws that define the manner by which the environment is managed. Failure to redress

the cause shall be reported to the relevant CA for them to deal with the transgression, as it deems fit. The contractor is deemed not to have complied with the EMPr if, inter alia, There is a deviation from the environmental conditions, management outcomes and actions activities, as approved in generic and site specific EMPr as relevant as set out in the EMPr, which deviation has, or may cause, an environmental impact.

4.8 Corrective action records

For each non-compliance notice issued, a documented corrective action must be recorded. On receiving a non-compliance notice from the DSS, the contractor's cEO will ensure that the corrective actions required take place within the stipulated timeframe. On completion of the corrective action the cEO is to issue a Corrective Action Report in writing to the ECOs. If satisfied that the corrective action has been completed, the ECOs are to sign-off on the Corrective Action Report, and attach the report to the non-compliance notice in the EMPr file. A corrective action is considered complete once the report has signed off by the ECOs.

4.9 Photographic record

A digital photographic record will be kept. The photographic record will be used to show before, during and post rehabilitation evidence of the project as well used in cases of damages claims if they arise. Each image must be dated and a brief description note attached.

The Contractor shall:

1. Allow the ECOs access to take photographs of all areas, activities and actions.

The ECOs shall keep an electronic database of photographic records which will include:

1. Pictures of all areas designated as work areas, camp areas, development sites and storage areas taken before these areas are set up;
2. All bunding and fencing;
3. Road conditions and road verges;
4. Condition of all farm fences;
5. Topsoil storage areas;
6. All areas to be cordoned off during construction;
7. Waste management sites;
8. Ablution facilities (inside and out);
9. Any non-conformances deemed to be "significant";
10. All completed corrective actions for non-compliances;
11. All required signage;
12. All areas before, during and post rehabilitation; and
13. Include relevant photographs in the Final Environmental Audit Report.

4.10 Complaints register

The ECOs shall keep a current and up-to-date complaints register. The complaints register is to be a record of all complaints received from communities, stakeholders and individuals. The Complaints Record shall:

1. Record the name and contact details of the complainant;
2. Record the time and date of the complaint;
3. Contain a detailed description of the complaint;
4. Where relevant and appropriate, contain photographic evidence of the complaint or damage (ECOs to take relevant photographs); and
5. Contain a copy of the ECOs written response to each complaint received and keep a record of any further correspondence with the complainant. The ECO's written response will include a description of any corrective action to be taken and must be signed by the Contractor, ECO and affected party. Where a damage claim is issued by the complainant, the ECOs shall respond as described in **(section 4.11)** below.

4.11 Claims for damages

In the event that a Claim for Damages is submitted by a community, landowner or individual, the ECOs shall:

1. Record the full detail of the complaint as described in **(section 4.10)** above;
2. The ECOs will evaluate the claim and associated damage and submit the evaluation to the Senior Site Representative for approval;
3. Following consideration by the DPM, the claim is to be resolved and settled immediately, or the reason for not accepting the claim communicated in writing to the claimant. Should the claimant not accept this, the ECO shall, in writing report the incident to the Developer's negotiator and legal department; and
4. A formal record of the response by the ECOs to the claimant as well as the rectification of the method of making payments not amount will be recorded in the EMPr file.

4.12 Interactions with affected parties

Open, transparent and good relations with affected landowners, communities and regional staff are an essential aspect to the successful management and mitigation of environmental impacts.

The ECOs shall:

1. Ensure that all queries, complaints and claims are dealt within an agreed timeframe;
2. Ensure that any or all agreements are documented, signed by all parties and a record of the agreement kept in the EMPr file;
3. Ensure that a complaints telephone numbers are made available to all landowners and affected parties; and
4. Ensure that contact with affected parties is courteous at all times;

4.13 Environmental audits

Internal Environmental Audits of the activity and implementation of the EMPr will be undertaken by the ECO. The findings and outcomes of these audits will be recorded in the

EMPr file. The environmental audits and associated reports must be conducted and submitted to the CA at intervals as indicated in the EA.

The ECOs must prepare a monthly EAR. The report will be tabled as the key point on the agenda of the Environmental Site Meeting. The Report is submitted for acceptance at the meeting and the final report will be circulated to the Project Manager and filed in the EMPr file. At a frequency determined by the EA, the ECOs shall submit the monthly reports to the CA in terms of NEMA. At a minimum the Monthly report is to cover the following:

- Weekly Environmental Checklists;
- Deviations and non-compliances with the checklists;
- Non-compliances issued;
- Completed and reported corrective actions;
- Environmental Monitoring;
- General environmental findings and actions; and
- Minutes of the Bi-monthly Environmental Site Meetings.

4.14 Final environmental audits

On final completion of the entire activity, the ECOs are required to prepare a final EAR. The report is to be submitted to the CA for acceptance and approval. The environmental report must comply with Appendix 7 of the EIA Regulations, 2014.

- Details of the independent person who prepared the report;
- Details of the expertise of independent person that compiled the report;
- A declaration that the independent auditor is independent in a form as may be specified by the CA;
- An indication of the scope of, and the purpose for which, the environmental audit report was prepared;
- A description of the methodology adopted in preparing the environmental audit report;
- An indication of the ability of the EMPr, and where applicable, the closure plan to-
 - Sufficiently provide for the avoidance, management and mitigation of environmental impacts associated with the undertaking of the activity on an on-going basis;
 - Sufficiently provide for the avoidance, management and mitigation of environmental impacts associated with the closure of the facility; and
 - Ensure compliance with the provisions of EA, EMPr, and where applicable, the closure plan;
- A description of any assumptions made, and any uncertainties or gaps in knowledge;
- A description of any consultation process that was undertaken during the course of carrying out the EAR;
- A summary and copies of any comments that were received during any consultation process; and
- Any other information requested by the CA.

Submission of the final EAR to the CA will indicate the end of the entire activity.

PART B: SECTION 1: Pre-approved generic EMPr template**5. IMPACT MANAGEMENT OUTCOMES AND ACTIONS**

This section provides a pre-approved generic EMPr template with activities that are common to the development of overhead electricity transmission and distribution infrastructure. There are 30 doings identified for the development or expansion of overhead electricity transmission and distribution infrastructure, and for each doing a set of prescribed impact management outcomes and associated management actions have been identified. Holders of EAs are responsible to ensure the implementation of these controls for all projects as a minimum requirement for mitigating the impact of activities identified for the development or expansion of overhead electricity transmission and distribution infrastructure.

The template provided below is to be completed by providing the information under each headings for each environmental management action:

The completed template must be signed and dated on each page by both the contractor and the holder of the EA prior to commencement of the activity. The method statements prepared and agreed to by the holder of the EA must be appended to the template as Appendix 1. Each method statement must also be duly signed and dated on each page by the contractor and the holder of the EA. This template once signed and dated is legally binding. The holder of the EA will remain responsible for its implementation.

5.1 Environmental awareness training

Impact management outcome: All onsite staff are aware and understands the individual responsibilities in terms of this EMP.						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
- All staff must receive environmental awareness training prior to commencement of the activities; - The Contractor must allow for sufficient sessions to train all personnel with no more than 20 personnel attending each course; - Refresher environmental awareness training is available as and when required; - All staff are aware of the conditions and controls linked to the EA and within the EMP and made aware of their individual roles and responsibilities in achieving compliance with the EA and EMP; - The Contractor must erect and maintain information posters at key locations on site; - Environmental awareness training should include as a minimum the following: a) Description of significant environmental impacts, actual or potential, related to their work activities; b) Mitigation measures to be implemented when carrying out specific activities;						

c) Emergency preparedness and response procedures; d) Emergency procedures; e) Procedures to be followed when working near or within sensitive areas; f) Wastewater management procedures; g) Water usage and conservation; h) Solid waste management procedures; i) Sanitation procedures; and j) Disease prevention.						
– A record of all environmental awareness training courses undertaken as part of the EMP must be available; – Educate workers on the dangers of open and/or unattended fires; – A staff attendance register of all staff to have received environmental awareness training must be available. – Course material must be available and presented in appropriate languages.						

5.2 Site Establishment development

Impact management outcome: Impacts on the environment are minimised when developing new infrastructure and the development footprint are kept to demarcated development area.		
Impact Management Actions	Implementation	Monitoring

Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
- A method statement must be provided by the contractor prior to any onsite activity that includes the layout of the construction camp in the form of a plan showing the location of key infrastructure and services (where applicable), including but not limited to offices, overnight vehicle parking areas, stores, the workshop, stockpile and lay down areas, hazardous materials storage areas (including fuels), the batching plant (if one is located at the construction camp), designated access routes, equipment cleaning areas and the placement of staff accommodation, cooking and ablution facilities, waste and wastewater management; - Location of camps must be within approved area to ensure that the site does not impact on sensitive areas identified in the environmental assessment or site walk through; - Sites should be located where possible on previously disturbed areas; - The camp must be fenced in accordance with Section 5.5: Fencing and gate installation; and - The use of existing accommodation for contractor staff, where possible, is encouraged.					

5.3 No-Go areas

Impact management outcome: Access to No go areas prevented.	
Impact Management Actions	Monitoring

Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
- Identification of No-Go areas is to be informed by the environmental assessment, site walk through and any additional areas identified during development; - Erect, demarcate and maintain a temporary fence around the perimeter of any No-Go area; - Fencing of No-Go areas is to be undertaken in accordance with Section 5.5: Fencing and gate installation; and - Unauthorised access and development related activity inside No-Go areas is prohibited.					

5.4 Access roads

Impact management outcome: Minimise impact to the environment through the planned and restricted movement of vehicles on site.					
Impact Management Actions	Implementation			Monitoring	
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Evidence of compliance
- Access to the servitude and tower positions must be negotiated with the relevant landowner and must fall within the assessed and authorised area; - An access agreement must be formalised and signed by the DPM, Contractor and landowner before commencing with the activities; - The access roads to tower positions must be signposted after access has been negotiated and before the commencement of the activities;					

- Any access route deviation from that in the written agreement must be closed and re-vegetated immediately, at the contractor's expense; - Maximum use of both existing servitudes and existing roads must be made; - In circumstances where private roads must be used, the condition of the said roads must be recorded in accordance with section 6.9: photographic record; prior to use and the condition thereof agreed by the landowner, the DPM, and the contractor; - All private roads used for access to the servitude must be maintained and upon completion of the works, be left in at least the original condition. As far as possible, access roads must follow the contours in hilly areas, as opposed to winding down steep slopes; - Access is to be established by vehicles passing over the same track on natural ground, multiple tracks are not permitted. Access roads must only be developed where necessary at watercourses, on steep slopes or where boulders prohibit vehicular traffic; and - Upon completion of development, only roads as indicated by the DPM must be closed.					
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5.5 Fencing and Gate installation

Impact management outcome: To minimise impact to the environment and ensure safe and controlled access to the site through the erection of fencing and gates where required.	
Impact Management Actions	Implementation
	Monitoring

Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
- Use existing gates provided to gain access to all parts of the defined Working Area, where possible; - Existing and new gates to be recorded and documented in accordance with section 4.9: photographic record; - All gates must be fitted with locks and be kept locked at all times during the development phase, unless otherwise agreed with the landowner; - At points where the line crosses a fence in which there is no suitable gate within the extent of the line servitude, on the instruction of the DPM, a gate must be installed at the approval of the landowner; - Care must be taken that the gates must be so erected that there is a gap of no more than 100 mm between the bottom of the gate and the ground; - Where gates are installed in jackal proof fencing, a suitable reinforced concrete sill must be provided beneath the gate; - Original tension must be maintained in the fence wires; - All gates installed in electrified fencing must be re-electrified; - All demarcation fencing and barriers must be maintained in good working order for the duration of overhead transmission and distribution electricity infrastructure development activities; - Fencing must be erected around the camp, batching plants, hazardous storage areas, and all designated no-go areas, where applicable; - All fencing must be developed of high quality material bearing the SABs mark; - The use of razor wire as fencing must be avoided;					

- Fenced areas with gate access must remain locked after hours, during weekends and on holidays if staff is away from site. Site security will be required at all times; - On completion of the development phase all temporary fences are to be removed; - The contractor must ensure that all fence uprights are appropriately removed, ensuring that no uprights are cut at ground level but rather removed completely.						

5.6 Water Supply Management

Impact management outcome: Undertake responsible water usage.						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
- All abstraction points or bore holes must be registered with the DWS and suitable water meters installed to ensure that the abstracted volumes are measured on a daily basis; - Should water abstraction be required and the necessary authorisation from DWS and permission from the landowner has been received, the Contractor must ensure the following: a. The vehicle abstracting water from a river does not enter or cross it and does not operate from within the river; b. No damage occurs to the river bed or banks and that the abstraction of water does not entail stream diversion activities; and c. All reasonable measures to limit pollution or sedimentation of the downstream watercourse are implemented.						

– Ensure water conservation is being practiced by: a. Minimising water use during cleaning of equipment; b. Undertaking regular audits of water systems; and c. Including a discussion on water usage and conservation during environmental awareness training.						
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5.7 Storm and waste water management

Impact management outcome: Impacts to the environment caused by storm water and wastewater discharges during construction are avoided.						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Appropriate pollution control facilities necessary to prevent discharge of water containing polluting matter or visible suspended materials into watercourses or water bodies must be designed and implemented; – Runoff from the cement/ concrete batching areas must be strictly controlled, and contaminated water must be collected, stored and either treated or disposed of off-site, at a location approved by the project manager; – All spillage of oil onto concrete surfaces must be controlled by the use of an approved absorbent material and the used absorbent material disposed of at an appropriate waste disposal facility; – Natural storm water runoff not contaminated during the development and clean water can be discharged directly to watercourses and water bodies, subject to the Project Manager's approval and support by the ECO;						

Water that has been contaminated with suspended solids, such as soils and silt, may be released into watercourses or water bodies only once all suspended solids have been removed from the water by settling out these solids in settlement ponds. The release of settled water back into the environment must be subject to the Project Manager's approval and support by the ECO.					
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5.8 Solid waste management

Impact management outcome: Wastes are appropriately stored, handled and safely disposed of at a recognised waste facility.						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
- All measures regarding waste management must be undertaken using an integrated waste management approach; - Sufficient, covered waste collection bins (scavenger and weatherproof) must be provided; - A suitably positioned and clearly demarcated waste collection site must be identified and provided; - The waste collection site must be maintained in a clean and orderly manner; - Waste must be segregated into separate bins and clearly marked for each waste type; - Staff must be trained in waste segregation; - Bins must be emptied regularly;						

- General waste produced onsite must be disposed of at recognised waste disposal sites/ recycling company; - Hazardous waste must be disposed of at a registered waste disposal site; - Certificates of safe disposal for general, hazardous and recycled waste must be maintained.						
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5.9 Protection of watercourses

Impact management outcome: Pollution and contamination of the watercourse environment and erosion are prevented.						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
- All watercourses must be protected from direct or indirect spills of pollutants such as solid waste, sewage, cement, oils, fuels, chemicals, aggregate tailings, wash and contaminated water or organic material resulting from the Contractor's activities; - In the event of a spill, prompt action must be taken to clear the polluted or affected areas; - Where possible, no development equipment must traverse any seasonal or permanent wetland; - Development of permanent watercourse crossing must only be undertaken where no alternative access to tower position is available; - When working in or near any watercourse or wetland, the following environmental controls and consideration must be taken:						

a) River levels during the period of construction; b) During the execution of the Works, appropriate measures to prevent pollution and contamination of the riverine environment must be implemented e.g. including ensuring that construction equipment is well maintained; c) Where earthwork is being undertaken in close proximity to any watercourse, slopes must be stabilised using suitable materials, i.e. sandbags or geotextile fabric, to prevent sand and rock from entering the channel; and d) Appropriate rehabilitation and re-vegetation measures for the river banks must be implemented timeously. In this regard, the banks should be appropriately and incrementally stabilised as soon as development allows.						
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5.10 Vegetation clearing

Impact management outcome: Vegetation clearing is restricted to the authorised development footprint of the proposed infrastructure.						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
General: - Indigenous vegetation which does not interfere with the development must be left undisturbed; - Protected or endangered species may occur on or near the development site. Special care should be taken not to damage such species;						

- Search, rescue and replanting of all protected and endangered species likely to be damaged during project development must be identified by the relevant specialist and completed prior to any development or clearing; - Permits for removal must be obtained from the relevant CA prior to the cutting or clearing of the affected species, and they must be filed; - The Environmental Report must confirm that all identified species have been rescued and replanted; - Trees felled due to construction must be monitored and listed in the Audit Environmental Report; - Rivers and watercourses must be kept clear of felled trees, vegetation cuttings and debris; - Only a registered pest control operator may apply herbicides on a commercial basis and commercial application must be carried out under the supervision of a registered pest control operator, supervision of a registered pest control operator or is appropriately trained; - A daily register must be kept of all relevant details of herbicide usage; - All protected species and sensitive vegetation not removed must be clearly marked and such areas fenced off if required in accordance with No-Go procedure in Section 5.3: No-Go areas. When working in or near any watercourse or wetland, the following environmental controls and consideration shall be taken.					
Servitude: - Vegetation that does not grow high enough to cause interference with overhead overhead transmission and distribution infrastructures, or cause a fire hazard to any					

plantation, should not be cut or trimmed unless it is growing in the road access area, and then only at the discretion of the Project Manager; - Where clearing for access purposes is essential, the maximum width to be cleared within the servitude must be in accordance to the specifications - Alien invasive vegetation should be removed according to a plan (in line with relevant municipal and provincial procedures, guidelines and recommendations) and disposed of at a recognised waste disposal facility; - Vegetation should be trimmed where it is likely to intrude on the minimum vegetation clearance distance (MVCD) or will intrude on this distance before the next scheduled clearance. MVCD is determined from SANS 10280; - Debris resulting from clearing and pruning must be disposed of at a recognised waste disposal facility, unless the landowners wish to retain the cut vegetation; - In the case of the development of new overhead transmission and distribution infrastructures, a one metre "trace-line" must be cut through the vegetation for stringing purposes only and no vehicle access must be cleared along the "trace-line". Alternative methods of stringing which limit impact to the environment must always be considered.						
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5.11 Protection of fauna

Impact management outcome: minimise disturbance to fauna.		
Impact Management Actions	Implementation	Monitoring

Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
- No interference with livestock must occur without the landowner's written consent and with the landowner or a person representing the landowner being present; - The breeding sites of raptors and other wild birds species must be taken into consideration during the planning of the development programme; - Breeding sites must be kept intact and disturbance to breeding birds must be avoided. Special care must be taken where nestlings or fledglings are present; - Nesting sites on existing parallel lines must be documented; - Special recommendations of the avian specialist must be adhered to at all times to prevent unnecessary disturbance of birds; - Bird guards and diverters must be installed on the new line as per the recommendations of the specialist; - No poaching must be tolerated under any circumstances. All animal dens in close proximity to the works areas must be marked as No-Go areas.					

5.12 Protection of heritage resources

Impact management outcome: impact to heritage resources is minimised.						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
- Identify, demarcate and prevent impact to all known sensitive heritage features on site in accordance with the No-go procedure in Section 5.3: No-Go areas; - Carry out general monitoring of excavations for potential fossils, artefacts and material of heritage importance; - All work must cease immediately, if any human remains and/or other archaeological, palaeontological and historical material are uncovered. Such material, if exposed, must be reported to the nearest museum, archaeologist/palaeontologist (or the South African Police Services), so that a systematic and professional investigation can be undertaken. Sufficient time should be allowed to remove/collect such material before development recommences.						

5.13 Safety of the public

Impact management outcome: all precautions are taken where possible to minimise the risk of injury, harm or complaints.						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
- Identify fire hazards, demarcate and restrict public access to these areas as well as notify the local authority of any potential threats e.g. large brush stockpiles, fuels etc.; - All unattended open excavations must be adequately fenced or demarcated; - Adequate protective measures must be implemented to prevent unauthorised access to and climbing of partly constructed towers and protective scaffolding; - Ensure structures vulnerable to high winds are secured; - Maintain an incidents and complaints register in which all incidents or complaints involving the public are logged.						

5.14 Sanitation

Impact management outcome: clean and well maintained toilet facilities are available to all staff in an effort to minimise the risk of disease and impact to the environment.						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance

- Mobile chemical toilets are installed onsite if no other ablation facilities are available; - The use of ablation facilities and or mobile toilets must be used at all times and no indiscriminate use of the veld for the purposes of ablutions must be permitted under any circumstances; - Where mobile chemical toilets are required, the following must be ensured: a) Toilets are located no closer than 100 m to any watercourse or water body; b) Toilets are secured to the ground to prevent them from toppling due to wind or any other cause; c) No spillage occurs when the toilets are cleaned or emptied and the contents are managed in accordance with the EMPr; d) Toilets have an external closing mechanism and are closed and secured from the outside when not in use to prevent toilet paper from being blown out; e) Toilets are emptied before long weekends and workers holidays, and must be locked after working hours; f) Toilets are serviced regularly and the ECO must inspect toilets to ensure compliance to health standards; - A copy of the waste disposal certificates must be maintained.				
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5.15 Prevention of disease

Management outcome: All necessary precautions linked to the spread of disease are taken.						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Undertake environmentally-friendly pest control in the camp area; – Ensure that the workforce is sensitised to the effects of sexually transmitted diseases, especially HIV/AIDS; – The Contractor must ensure that information posters on AIDS are displayed in the Contractor Camp area; – Information and education relating to sexually transmitted diseases to be made available to both construction workers and local community, where applicable; – Free condoms will be made available to all staff on site at central points; – Medical support must be made available; – Provide access to Voluntary HIV Testing and Counselling Services.						

5.16 Emergency procedures

Impact management outcome: emergency procedures are in place to enable a rapid and effective response to all types of environmental emergencies.						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Compile an Emergency Response Action Plan (ERAP) prior to the commencement of the proposed project; – The Emergency Plan must deal with accidents, potential spillages and fires in line with relevant legislation; – All staff must be made aware of emergency procedures as part of environmental awareness training; – The relevant local authority must be made aware of a fire as soon as it starts; – In the event of emergency necessary mitigation measures to contain the spill or leak must be implemented (see Hazardous Substances section 5.17).						

5.17 Hazardous substances

Impact management outcome: safe storage, handling, use and disposal of hazardous substances.						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
- The use and storage of hazardous substances to be minimised and non-hazardous and non-toxic alternatives substituted where possible; - All hazardous substances will be stored in suitable containers as defined in the Method Statement; - Containers will be clearly marked to indicate contents, quantities and safety requirements; - All storage areas will be banded. The banded area will be of sufficient capacity to contain a spill / leak from the stored containers; - An Alphabetical Hazardous Chemical Substance (HCS) control sheet will be drawn up and kept up to date on a continuous basis; - All hazardous chemicals that will be used on site will have Material Safety Data Sheets (MSDS); - All employees working with HCS will be trained in the safe use of the substance and according to the safety data sheet; - Employees handling hazardous substances / materials must be aware of the potential impacts and follow appropriate safety measures. Appropriate personal protective equipment must be made available;						

- The Contractor must ensure that diesel and other liquid fuel, oil and hydraulic fluid is stored in appropriate storage tanks or in bowzers; - The tanks/ bowzers must be situated on a smooth impermeable surface (concrete) with a permanent bund. The impermeable lining must extend to the crest of the bund and the volume inside the bund must be 130% of the total capacity of all the storage tanks/ bowzers (110% statutory requirement plus an allowance for rainfall); - The floor of the bund must be sloped, draining to an oil separator; - Provision must be made for refueling at the storage area by protecting the soil with an impermeable groundcover. Where dispensing equipment is used, a drip tray must be used to ensure small spills are contained; - All empty externally dirty drums must be stored on a drip tray or within a bunded area; - No unauthorised access into the hazardous substances storage areas shall be permitted; - No smoking must be allowed within the vicinity of the hazardous storage areas; - Adequate fire-fighting equipment must be made available at all hazardous storage areas; - Where refueling away from the dedicated refueling station is required, a mobile refueling unit must be used. Appropriate ground protection such as drip trays must be used; - An appropriately sized spill kit kept onsite relevant to the scale of the activity/s involving the use of hazardous substance must be available at all times; - The responsible operator must have the required training to make use of the spill kit in emergency situations;						
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- In the event of a spill, contaminated soil must be collected in containers and stored in a central location and disposed of according to the National Environmental Management: Waste Act 59 of 2008. Refer to Section 5.7 for procedures concerning waste water management and 5.8 for solid waste management.						
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5.18 Workshop, equipment maintenance and storage

Impact management outcome: Soil, surface water and groundwater contamination is minimized.						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
- Where possible and practical all maintenance of vehicles and equipment must take place in the workshop area; - During servicing of vehicles or equipment, especially where emergency repairs are effected outside the workshop area, a suitable drip tray must be used to prevent spills onto the soil. The relevant local authority must be made aware of a fire as soon as it starts; - Leaking equipment must be repaired immediately or be removed from site to facilitate repair; - Workshop areas must be monitored for oil and fuel spills; - Appropriately sized spill kit kept onsite relevant to the scale of the activity taking place must be available; - The workshop area must have a bunded concrete slab that is sloped to facilitate runoff into a collection sump or suitable oil						

/ water separator where maintenance work on vehicles and equipment can be performed; – Water drainage from the workshop must be contained and managed in accordance Section 5.7: Waste water management .						

5.19 Batching plants

Impact management outcome: Minimise spillages and contamination of soil, surface water and groundwater.						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Concrete mixing must be carried out on an impermeable surface (such as on boards and/or within a bunded area with an impermeable surface) or make a hard surface and remove when done; – Concrete mixing areas must be fitted with a containment facility for the collection of cement laden water. This facility must be impervious to prevent soil and groundwater contamination; – Bagged cement must be stored in an appropriate facility and at least 10 m away from any water courses, gullies and drains; – A washout facility must be provided for washing of concrete associated equipment. Water used for washing must be restricted; – Hardened concrete from the washout facility or concrete mixer can either be reused or disposed of at an appropriate licenced disposal facility;						

– Empty cement bags must be secured with adequate binding material if these will be temporarily stored on site; – Sand and aggregates containing cement must be kept damp to prevent the generation of dust (Refer to Section 5.20: Dust emissions) – Any excess sand, stone and cement must be removed or reused from site on completion of construction period and disposed at a registered disposal facility; – Temporary fencing must be erected around batching plants in accordance with Section 5.5: Fencing and gate installation.						
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5.20 Dust emissions

Impact management outcome: dust prevention measures are applied to minimise the generation of dust.						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Take all reasonable measures to minimise the generation of dust as a result of project development activities to the satisfaction of the ECO; – Removal of vegetation must be avoided until such time as soil stripping is required and similarly exposed surfaces must be re-vegetated or stabilised as soon as is practically possible; – Excavation, handling and transport of erodible materials must be avoided under high wind conditions or when a visible dust plume is present;						

- During high wind conditions, the ECO will evaluate the situation and make recommendations as to whether dust-damping measures are adequate, or whether working will cease altogether until the wind speed drops to an acceptable level; - Where possible, soil stockpiles must be located in sheltered areas where they are not exposed to the erosive effects of the wind; - Where erosion of stockpiles becomes a problem, erosion control measures must be implemented at the discretion of the ECO; - Vehicle speeds must not exceed 40km/h along dust roads or 20km/h when traversing unconsolidated and non-vegetated areas; - Appropriate dust suppression measures must be used when dust generation is unavoidable, e.g. dampening with water; particularly during prolonged periods of dry weather in summer. Such measures must also include the use of temporary stabilising measures (e.g. chemical soil binders, straw, brush packs, chipping); - Straw stabilisation must be applied at a rate of one bale/10m² and harrowed into the top 100 mm of top material, for all completed earthworks; - For significant areas of excavation or exposed ground, spray water or wet areas using trucks to minimise the spread of dust.						
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5.21 Blasting

Impact management outcome: impact to the environment is minimised through a safe blasting practice.

Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
- Any blasting activity must be conducted by a suitably licensed blasting contractor; and - Notification of surrounding landowners, emergency services site personnel of blasting activity 24 hours prior to such activity taking place on Site.						

5.22 Noise

Management outcome: To prevent unnecessary noise to the environment by ensuring that noise from development activity is mitigated.						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
- Operating hours as determined by the environmental authorisation are adhered to during the development phase. Where not defined, development must be limited to daylight hours.						

5.23 Fire prevention

Impact management outcome: Prevention of uncontrollable fires.						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
- Designate smoking areas where the fire hazard could be regarded as insignificant; - Firefighting equipment must be available on all vehicles located on site; - The local Fire Protection Agency (FPA) must be informed of construction activities; - Contact numbers for the FPA and emergency services must be communicated in environmental awareness training and displayed at a central location on site; - Two way swap of contact details between ECO and FPA.						

5.24 Stockpiling and stockpile areas

Impact management outcome: To reduce erosion and sedimentation as a result of stockpiling						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance

- All material that is excavated during the project development phase (either during piling (if required) or earthworks) must be stored appropriately on site in order to minimise impacts to watercourses, wetlands and water bodies; - All stockpiled material must be maintained and kept clear of weeds and alien vegetation growth by undertaking regular weeding and control methods; - Stockpiles must not exceed 2 m in height; - During periods of strong winds and heavy rain, the stockpiles should be covered with appropriate material (e.g. cloth, tarpaulin etc.); - Where possible, sandbags (or similar) should be placed at the bases of the stockpiled material in order to prevent erosion of the material.						
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5.25 Finalising tower positions

Impact management outcome: No environmental degradation occurs as a result of the survey and pegging operations.						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
- No vegetation clearing must occur during survey and pegging operations; - No new access roads must be developed to facilitate access for survey and pegging purposes; - Project manager, botanical specialist and contractor to agree on final tower positions based on survey within assessed and approved areas;						

- The surveyor is to demarcate (peg) access roads/tracks in consultation with ECO. No deviations will be allowed without the prior written consent from the ECO.							
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5.26 Installation of foundations

Impact management outcome: No environmental degradation occurs as a result of the survey and pegging operations.							
Impact Management Actions	Implementation			Monitoring			
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance	
- Batching of cement to be undertaken in accordance with Section 5.19 : Batching; - Residual cement must be disposed of in accordance with Section 5.8: Solid Waste Management.							

5.27 Assembly and erecting towers

Impact management outcome: No environmental degradation occurs as a result of assembly and erecting of towers.							
Impact Management Actions	Implementation			Monitoring			
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance	
- Prior to erection, assembled towers and tower sections must be stored on elevated surface (suggest wooden blocks) to minimise damage to the underlying vegetation;							

- In sensitive areas, tower assembly must take place off-site or away from sensitive positions; - The crane used for tower assembly must be operated in a manner which minimises impact to the environment; - The number of crane trips to each site must be minimised; - Wheeled cranes must be utilised in preference to tracked cranes; - Consideration must be given to erecting towers by helicopter or by hand where it is warranted to limit the extent of environmental impact; - Access to tower positions to be undertaken in accordance with access requirements in specified in Section 8.4: Access Roads; - Vegetation clearance to be undertaken in accordance with general vegetation clearance requirements specified in Section 8.10: Vegetation clearing; - No levelling at tower sites must be permitted unless approved by the Development Project Manager or Developer Site Supervisor; - Topsoil must be removed separately and stored for later use during rehabilitation of such tower sites; - Topsoil must be stored in heaps not higher than 1m to prevent destruction of the seed bank within the topsoil; - Excavated slopes must be no greater than 1:3, but where this is unavoidable, appropriate measures must be undertaken to stabilise the slopes; - Fly rock from blasting activity must be minimised and any pieces greater than 150 mm falling beyond the Working Area, must be collected and removed; - Only existing disturbed areas are utilised as spoil areas;						
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- Drainage is provided to control groundwater exit gradient with the spill areas such that migration of fines is kept to a minimum; - Surface water runoff is appropriately channeled through or around spoil areas; - During backfilling operations, care must be taken not to dump the topsoil at the bottom of the foundation and then put spoil on top of that; - The surface of the spoil is appropriately rehabilitated in accordance with the requirements specified in Section 5.29: Landscaping and rehabilitation; - The retained topsoil must be spread evenly over areas to be rehabilitated and suitably compacted to effect re-vegetation of such areas to prevent erosion as soon as construction activities on the site is complete. Spreading of topsoil must not be undertaken at the beginning of the dry season.						
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5.28 Stringing

Impact management outcome: No environmental degradation occurs as a result of stringing						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
- Where possible, previously disturbed areas must be used for the siting of winch and tensioner stations. In all other instances,						

the siting of the winch and tensioner must avoid No-Go areas and other sensitive areas; - The winch and tensioner station must be equipped with drip trays in order to contain any fuel, hydraulic fuel or oil spills and leaks; - Refueling of the winch and tensioner stations must be undertaken in accordance with Section 5.17: Hazardous substances; - In the case of the development of overhead transmission and distribution infrastructure, a one metre "trace-line" may be cut through the vegetation for stringing purposes only and no vehicle access must be cleared along "trace-lines". Vegetation clearing must be undertaken by hand, using chainsaws and hand held implements, with vegetation being cut off at ground level. No tracked or wheeled mechanised equipment must be used; - Alternative methods of stringing which limit impact to the environment must always be considered e.g. by hand or by using a helicopter; - Where the stringing operation crosses a public or private road or railway line, the necessary scaffolding/ protection measures must be installed to facilitate access. If, for any reason, such access has to be closed for any period(s) during development, the persons affected must be given reasonable notice, in writing; - No services (electrical distribution lines, telephone lines, roads, railways lines, pipelines fences etc.) must be damaged because of stringing operations. Where disruption to services is unavoidable, persons affected must be given reasonable notice, in writing;					
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- Where stringing operations cross cultivated land, damage to crops is restricted to the minimum required to conduct stringing operations, and reasonable notice (10 work days minimum), in writing, must be provided to the landowner; - Necessary scaffolding protection measures must be installed to prevent damage to the structures supporting certain high value agricultural areas such as vineyards, orchards, nurseries.						
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5.29 Temporary closure of site

Impact management outcome: Minimise the risk of environmental impact during periods of site closure greater than five days.						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
- Bunds must be emptied (where applicable); - Hazardous storage areas must be well ventilated; - Fire extinguishers must be serviced and accessible. Service records to be filed and audited at last service; - Emergency and contact details displayed must be displayed; - Security personnel must be briefed and have the facilities to contact or be contacted by relevant management and emergency personnel; - Night hazards such as reflectors, lighting, traffic signage etc. must have been checked; - Fire hazards identified and the local authority must have been notified of any potential threats e.g. large brush stockpiles, fuels etc.; - Structures vulnerable to high winds must be secured;						

– Wind and dust mitigation must be implemented; – Cement and materials stores must have been secured; – Toilets must have been emptied and secured; – Refuse bins must have been emptied and secured; – Drip trays must have been emptied and secured.						
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5.30 Landscaping and rehabilitation

Impact management outcome: No environmental degradation occurs as a result of the survey and pegging operations.						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– All areas disturbed by construction activities must be subject to landscaping and rehabilitation; – All spoil and waste will be disposed to a registered waste site and certificates of disposal provided; – All slopes in excess of 2% (1:50) must be contoured in accordance with the Conservation of Agricultural Resources Act, No 43 of 1983; – All slopes in excess of 12% (1:8.3) must be terraced in accordance with the Conservation of Agricultural Resources Act, No 43 of 1983; – Berms that have been created should have a slope of 1:4 and be replanted with indigenous species and grasses; – Where new access roads have crossed cultivated farmlands, that lands must be rehabilitated by ripping to a minimum depth of 600 mm;						

						- Rehabilitation of tower sites and access roads outside of farmland; - Indigenous species will be used for replanting; - Stockpiled topsoil must be used for rehabilitation (refer to Section 5.23: Stockpiling and stockpiled areas); - Stockpiled topsoil will be evenly spread so as to facilitate seeding and minimise loss of soil due to erosion; - Before placing topsoil, all visible weeds from the placement area and from the topsoil must be removed; - Subsoil must be ripped before topsoil is placed; - The project must be timed so that rehabilitation can take place at the optimal time for vegetation establishment; - Where impacted through construction related activity, all sloped areas must be stabilised to ensure proper rehabilitation is effected and erosion is controlled as per the instruction from the ECO; - Sloped areas stabilised using design structures or vegetation as specified in the design to prevent erosion of embankments. The contract design specifications must be adhered to and implemented strictly; - Where required, re-vegetation can be enhanced using a vegetation seed mixture as described below. A mixture of seed can be used provided the mixture is carefully selected to ensure the following: a) Annual and perennial plants are chosen; b) Pioneer species are included; c) Species chosen must grow in the area feasible to grow; d) Root systems must have a binding effect on the soil; e) The final product should not cause an ecological imbalance in the area
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6 ACCESS TO THE GENERIC EMPr

Once completed and signed, to allow the public access to the generic EMPr, the holder of the EA must make the EMPr available to the public in accordance with regulation 26 (h) of the Environmental Impact Assessment Regulations, 2014.

PART B: SECTION 2**7 SITE SPECIFIC INFORMATION AND DECLARATION****7.1 Sub-section 1: contact details and description of the project**

7.1.1 Details of the applicant:

Name of applicant:

Tel No:

Fax No:

Postal Address:

Physical Address:

7.1.2 Details and expertise of the EAP:

Name of applicant:

Tel No:

Fax No:

E-mail address:

Expertise of the EAP (Curriculum Vitae included):

7.1.3 Project name:

7.1.4 Description of the project:

7.1.5 Project location:

NO	FARM NAME(if applicable)	FARM NUMBER(if applicable)	PORTION NAME	PORTION NUMBER	LATITUDE	LONGITUDE

7.16 Preliminary technical specification of the overhead transmission and distribution:

- Length
- Tower parameters
 - Number and types of towers
 - Tower spacing (mean and maximum)
 - Tower height (lowest, mean and height)
 - Conductor attachment height (mean)
 - Minimum ground clearance

7.2 Sub-section 2: Development footprint site map

This sub-section must include a map of the site sensitivity overlaid with the preliminary infrastructure layout. Once the web-based screening tool identified in regulation 16(1) (v) of the Environmental Impact Assessment Regulations, 2014 is available, the sensitivity map must be prepared from this system. The map is to indicate areas/features of sensitivity based on the findings of the assessment and illustrated according to four tiers, Very High, High, Medium or Low. The sensitivity map shall also identify the nature of each sensitive feature e.g. raptor nest, threatened plant species, archaeological site, etc. Sensitivity maps shall identify features both within the planned working area and any known sensitive features in the surrounding landscape. The overhead transmission and distribution profile shall be illustrated at an appropriate resolution to enable fine scale interrogation. It is recommended that <20 km of overhead transmission and distribution length is illustrated per page in A3 landscape format. Where considered appropriate, photographs of sensitive features in the context of tower positions shall be used.

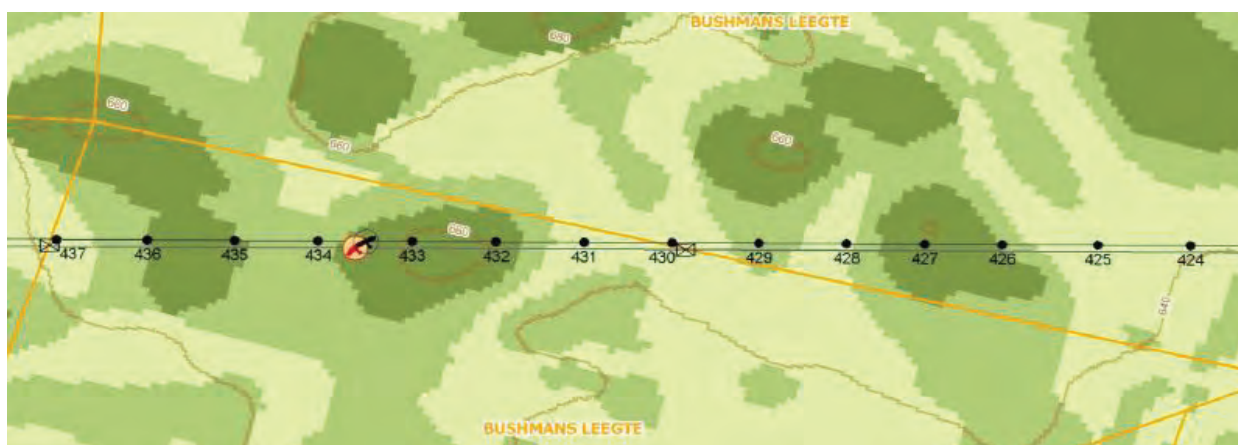


Figure 1: Example of an environmental sensitivity map in the context of a final overhead transmission and distribution profile

7.3 Sub-section 3: Declaration

The proponent or applicant or holder of EA affirms that they will abide and comply with the prescribed impact management outcomes and actions as stipulated in part B: section 1 of the generic EMPr and have the understanding that the impact management outcomes and actions are legally binding.

Signature Proponent/applicant/ holder of EA

Date:

7.4 Sub-section 4: amendments to site specific information (Part B; section 2)

Should the EA be transferred, Part B: Section 2 must be completed by the new applicant and submitted with the application for amendment of the EA in terms of regulations 29 or 31 of the Environmental Impact Assessment Regulations, 2014. The information submitted for an amendment to an environmental authorization will be considered to be incomplete should a signed copy of Part B: Section 2 not be submitted. Once approved, Part B: Section 2 forms part of the EMPr for the development and the EMPr becomes legally binding to the new EA holder.

PART C

8 SITE SPECIFIC ENVIRONMENTAL ATTRIBUTES

If any specific environmental sensitivities/attributes are present on the site which require more specific impact management outcomes and actions not included in the pre-approved generic EMPr template to manage impacts, those impact management outcomes and actions must be included in this section. These specific management controls must be referenced spatially, and must include impact management outcomes and actions. The management controls including impact management outcomes and actions must be presented in the format of the pre-approved generic EMPr template. This applies only to additional impact management outcomes and actions that are necessary.

If Part C is applicable to the site, it is required to be submitted to the CA for approval prior to commencement of the activity. The information in this section must be prepared by an EAP and the name and expertise of the EAP, including the curriculum vitae are to be included. Once approved, Part C forms part of the EMPr for the site and is legally binding.

This section will **not be required** should the site contain no specific environmental sensitivities or attributes.

APPENDIX 1: METHOD STATEMENTS

To be prepared by the contractor prior to commencement of the activity. The method statements are **not required** to be submitted to the CA.

DEPARTMENT OF ENVIRONMENTAL AFFAIRS

NO. 163

02 MARCH 2018

**NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998
(ACT NO. 107 OF 1998)****CONSULTATION ON THE GENERIC ENVIRONMENTAL MANAGEMENT PROGRAMME RELEVANT
TO AN APPLICATION FOR AN ENVIRONMENTAL AUTHORISATION FOR SUBSTATION
INFRASTRUCTURE FOR THE TRANSMISSION AND DISTRIBUTION OF ELECTRICITY**

I, Bomo Edna Edith Molewa, Minister of Environmental Affairs, hereby publish for public comment, in terms of section 24(5) of the National Environmental Management Act, 1998 (Act No. 107 of 1998), regulations 19(4) and 23(4) of the Environmental Impact Assessment Regulations, 2014 and Appendix 4 to the regulations, the draft Generic Environmental Management Programme relevant to an application for substation infrastructure for the transmission and distribution of electricity, which require an environmental authorisation for activity 11 or 47 of Environmental Impact Assessment Regulations Listing Notice 1 or for activity 9 of Environmental Impact Assessment Regulations Listing Notice 2, or any other listed and specified activity necessary for the realisation of such infrastructure, as set out in the Schedule hereto.

Members of the public are invited to submit to the Minister, within 45 days from the date of the publication of this Notice in the *Gazette*, written comments or inputs to the following addresses:

By post to: The Director-General:
Department of Environmental Affairs
Attention: Mr Alfred Mocheko
Private Bag X447
Pretoria
0001

By hand at: Reception, Environment House, 473 Steve Biko Road, Arcadia, Pretoria, 0083

By e-mail: amocheko@environment.gov.za

Any inquiries in connection with the Notice can be directed to Mr Alfred Mocheko at 012 399 9315.

Comments received after the closing date will not be considered.



BOMO EDNA EDITH MOLEWA
MINISTER OF ENVIRONMENTAL AFFAIRS

SCHEDULE

An applicant for an environmental authorisation for substation infrastructure for the transmission and distribution of electricity, when such facilities trigger—

- activity 11 or 47 of Environmental Impact Assessment Regulations Listing Notice 1 of 2014 and any other listed and specified activities necessary for the realisation of such facilities; or
- activity 9 of Environmental Impact Assessment Regulations Listing Notice 2 of 2014; or
- any other listed or specified activities necessary for the realisation of such facilities;

must use the generic Environmental Management Programme, contemplated in regulations 19(4), 23(4) and Appendix 4 to the Environmental Impact Assessment Regulations, 2014. The draft Generic Environmental Management Programme is set out in Appendix 1.

APPENDIX 1**ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPr) FOR THE
DEVELOPMENT AND EXPANSION OF SUBSTATION INFRASTRUCTURE FOR THE
TRANSMISSION AND DISTRIBUTION OF ELECTRICITY****environmental affairs**Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

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INTRODUCTION

1. Background

The National Environmental Management Act 107 of 1998 (NEMA) requires that an environmental management programme (EMPr) be submitted where an environmental impact assessment (EIA) has been identified as the environmental instrument to be utilised as the basis for a decision on an application for environmental authorisation (EA). The content of an EMPr must either contain the information set out in Appendix 4 of the EIA Regulations, 2014, or must be a generic EMPr relevant to an application as identified and gazetted by the Minister in a government notice. Once the Minister has identified, through a government notice that a generic EMPr is relevant to an application for EA, that generic EMPr must be applied by all parties involved in the EA process, including but not limited to the applicant, environmental assessment practitioner and the competent authority (CA).

2. Purpose

This document constitutes a generic EMPr relevant to applications for EA for the development or expansion of substation infrastructure for the transmission and distribution of electricity and all listed and specified activities necessary for the realisation of such infrastructure.

3. Objective

The objective of this generic EMPr is to prescribe and pre-approve generally accepted impact management outcomes and actions which can commonly and repeatedly be used for the avoidance, management and mitigation of impacts and risks associated with the development and expansion of substation infrastructure for the transmission and distribution of electricity. The use of a generic EMPr is intended to reduce the need to prepare and review individual EMPrs for applications of a similar nature.

4. Scope

The scope of this generic EMPr applies to the development or expansion of substation infrastructure for the transmission and distribution of electricity requiring EA in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), i.e. with a capacity of 33 kilovolts or more. This generic EMPr applies to activities requiring EA, mainly activity 11 and 47 of the EIA Regulations Listing Notice 1 of 2014 and activity 9 of the EIA Regulations Listing Notice 2 of 2014, and all associated listed or specified activities necessary for the realization and expansion of such infrastructure.

5. Structure of this document

This document is structured in three parts with an Appendix as indicated in the table below:

Part	Section	Heading	Content
A		Provides general guidance and information and is not legally binding	Definitions, acronyms, roles & responsibilities and documentation and reporting.
B	1	Pre-approved EMPr template	Contains generally accepted impact management outcomes and actions required for the avoidance, management and mitigation of impacts and risks associated with the development or expansion of substation infrastructure for the transmission and distribution of electricity, which are presented in the form of a template that has been pre-approved. The template in this section is to be completed by the contractor, with each completed page signed and dated by the holder of the EA prior to commencement of the activity. Once completed and signed, the template represents the EMPr for the activity approved by the CA and is legally binding. The template is not required to be submitted to the CA and does not need approval. Once the generic EMPr is gazetted for implementation, it has been approved by the CA. To allow interested and affected parties access to the pre-approved EMPr template for consideration through the authorisation process, the applicant (s)/proponent(s) or the EAP on behalf of the applicant/proponent must make the location of the document known to the potential registered interested and affected parties. Should the potential registered interested and affected parties not have access to electronic media, the applicant (s) or EAP must make a hard copy available at a public location.
	2	Site specific information	Contains preliminary infrastructure layout and a declaration that the applicant/holder of the EA will comply with the pre-approved generic EMPr template contained in <u>Part B: Section 1</u> , and understands that the impact

Part	Section	Heading	Content
			management outcomes and actions are legally binding. The preliminary infrastructure layout must be finalized to inform final EMPr that is to be submitted with BAR or EIAR before commencement, ensuring that all impact management outcomes and actions have been either pre-approved or approved in terms of <u>Part C</u>. This section must be submitted to the CA as part of the BAR or EIAR, for consideration of, and decision on, the application for EA. The information submitted for EA will be considered to be incomplete should a signed copy of <u>Part B: section 2</u> not be submitted. Once approved, this Section forms part of the EMPr for the site and is legally binding.
C		Site specific sensitivities/ attributes	If any specific environmental sensitivities/ attributes are present on the site which require site specific impact management outcomes and actions not included in the pre-approved generic EMPr to manage impacts, these specific impact management outcomes and actions must be included in this section. These specific environmental attributes must be referenced spatially and impact management outcomes and actions must be provided. These specific impact management outcomes and actions must be presented in the format of the pre-approved EMPr template (<u>Part B: section 1</u>) If <u>Part C</u> is applicable to the site, it is required to be submitted as part of the BAR or EIAR, for consideration of, and decision on, the application for EA. The information in this section must be prepared by an EAP and the name and expertise of the EAP, including the curriculum vitae are to be included. Once approved, Part C forms part of the EMPr for the site and is legally binding. This section applies only to additional impact management outcomes and actions that are necessary for the avoidance, management and mitigation of impacts and risks associated

Part	Section	Heading	Content
			with the specific development and which are not already included or adequately addressed in <u>Part B: section 1</u>. This section will not be required should the site contain no specific environmental sensitivities or attributes.
Appendix 1			Contains the method statements to be prepared prior to commencement of the activity. The method statements are not required to be submitted to the competent authority.

6. Completion of part B – section 1: the pre-approved generic EMPr template

The template is to be completed prior to commencement of the activity, by providing the following information for each impact management action:

- For implementation
 - a 'responsible person',
 - a method for implementation,
 - a timeframe for implementation
- For monitoring
 - a responsible person
 - frequency
 - evidence of compliance.

The completed template must be signed and dated by the holder of the EA prior to commencement of the activity. The method statements prepared and agreed to by the holder of the EA must be appended to the template as Appendix 1. Each method statement must be signed and dated on each page by the holder of the EA. This template once signed and dated is legally binding. The holder of the EA will remain responsible for its implementation.

7. Amendments of the impact management outcomes and actions

Once the activity has commenced a holder of an EA may make amendments to the impact management outcome and actions in the following manner:

- Amendment of the impact management outcomes – in line with regulation 37 of the EIA Regulation, 2014
- Amendment of the impact management actions – in line with regulation 36 of the EIA Regulations, 2014

8. Documents to be submitted as part of part B – section 2: site specific information and declaration

Part B: Section 2 has three distinct sub-sections. The first and third sub-sections are in a template format. Sub-section 2 requires a map to be produced.

Sub-section 1 contains the project name, the applicants name and details, the site information which includes coordinates of the property or farm in which the proposed substation infrastructure for the transmission and distribution of electricity is proposed as well as the 21-digit Surveyor General code of each cadastral land parcel and where available the farm name.

Sub-section 2 is to be prepared by an EAP/ or an applicant in the case of exemption, and must contain his/her name and expertise including a curriculum vitae. This sub-section must include a map of the site sensitivity overlaid with the preliminary infrastructure layout. Once the web-based environmental screening tool identified in regulation 16(1)(v) of the EIA Regulations, 2014 is available, the sensitivity map must be prepared from this system. The map is to indicate areas/features of sensitivity based on the findings of the assessment and illustrated according to four tiers, Very High, High, Medium or Low. The sensitivity map shall also identify the nature of each sensitive feature e.g. raptor nest, threatened plant species, archaeological site, etc. Sensitivity maps shall identify features both within the planned working area and any known sensitive features in the surrounding landscape.

Sub-section 3 is the declaration that the applicant (s)/proponent(s) or holder of the EA in the case of a change of ownership must complete which confirms that the applicant/ or EA holder will comply with the 'pre-approved generic EMP template' in Section 1 and understands that the impact management outcomes and actions are legally binding.

(i) Amendments to Part B – Section 2: site specific information and declaration

Should the EA be transferred, Part B: Section 2 must be completed by the new applicant/proponent and submitted with the application for amendment of the EA in terms of regulations 29 or 31 of the EIA Regulations, 2014. The information submitted for an amendment to an EA will be considered to be incomplete should a signed copy of Part B: Section 2 not be submitted. Once approved, Part B: Section 2 forms part of the EMP for the site and the EMP becomes legally binding to the new EA holder once the amendment process has been concluded.

PART A – GENERAL INFORMATION**1. DEFINITIONS**

In these EMPr any word or expression to which a meaning has been assigned in the NEMA or EIA regulations has that meaning, and unless the context requires otherwise –

Clearing means the clearing and removal of vegetation, whether partially or in whole, including trees and shrubs, as specified;

Contractor - The Contractor has overall responsibility for ensuring that all work, activities, and actions linked to the delivery of the contract, are in line with the Environmental Management Programme and that Method Statements are implemented as described;

Construction camp is the area designated for key construction infrastructure and services, including but not limited to offices, overnight vehicle parking areas, stores, the workshop, stockpile and lay down areas, hazardous storage areas (including fuels), the batching plant (if one is located at the construction camp), designated access routes, equipment cleaning areas and the placement of staff accommodation, cooking and ablution facilities, waste and wastewater management;

Method Statement means a written submission by the Contractor to the Project Manager in response to this EMPr or a request by the Project Manager and ECO. The Method Statement must set out the equipment, materials, labour and method(s) the Contractor proposes using to carry out an activity identified by the Project Manager when requesting the Method Statement. This must be done in such detail that the Project Manager and ECO is able to assess whether the Contractor's proposal is in accordance with this specification and/or will produce results in accordance with this specification;

The Method Statement shall cover applicable details with regard to:

- (i) Construction procedures;
- (ii) Plant, materials and equipment to be used;
- (iii) Transporting the equipment to and from site;
- (iv) How the plant/ material/ equipment will be moved while on site;
- (v) How and where the plant/ material/ equipment will be stored;
- (vi) The containment (or action to be taken if containment is not possible) of leaks or spills of any liquid or material that may occur;
- (vii) Timing and location of activities;
- (viii) Compliance/ non-compliance; and
- (ix) Any other information deemed necessary by the Project Manager.

Hazardous Substances is a substance governed by the Hazardous Substances Act, 1973 (Act No. 15 of 1973) as well as the Hazardous Chemical and Substances Regulations, 1995;

Slope means the inclination of a surface expressed as one unit of rise or fall for so many horizontal units;

Solid waste means all solid waste, including construction debris, hazardous waste, excess cement/concrete, wrapping materials, timber, cans, drums, wire, nails, food and domestic waste (e.g. plastic packets and wrappers);

Spoil means excavated material which is unsuitable for use as material in the construction works or is material which is surplus to the requirements of the construction works;

Topsoil means a varying depth (up to 300 mm) of the soil profile irrespective of the fertility, appearance, structure, agricultural potential, fertility and composition of the soil;

Works means the Works to be executed in terms of the Contract

2. ACRONYMS and ABBREVIATIONS

CA	Competent Authority
cEO	Contractors Environmental Officer
dEO	Developer Environmental Officer
DPM	Developer Project Manager
DSS	Developer Site Supervisor
ECA	Environmental Conservation Act No. 73 of 1989
ECO	Environmental Control Officer
EA	Environmental Authorisation
EAR	Environmental Audit Report
EIA	Environmental Impact Assessment
ERAP	Emergency Response Action Plan
EMPr	Environmental Management Programme Report
EAP	Environmental Assessment Practitioner
FPA	Fire Protection Agency
HCS	Hazardous chemical Substance
NEMA	National Environmental Management Act, 1998 (Act No. 107 of 1998)
MSDS	Material Safety Data Sheet
RI&AP's	Registered Interested and affected parties

3. ROLES AND RESPONSIBILITIES FOR ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPr) IMPLEMENTATION

The effective implementation of this EMPr is dependent on established and clear roles, responsibilities and reporting lines within an institutional framework. This section of the EMPr gives guidance to the various environmental roles and reporting lines.

Table 1: Guide to roles and responsibilities for implementation of an EMPr

Function	Role and Responsibilities
Developer's Project Manager (DPM)	<u>Role</u> The Project Developer is accountable for ensuring compliance with the EMPr and any conditions of approval from the CA. An environmental control officer (ECO) must be contracted by the Project Developer to objectively monitor the implementation of the EMPr, and the conditions of EA. The Project Developer is further responsible for providing and giving mandate to enable the ECO to perform responsibilities, and he must ensure that the ECO is integrated as part of the project team while remaining independent. <u>Responsibilities</u> - Be fully conversant with the conditions of the EA; - Ensure that all stipulations within the EMPr are communicated and adhered to by the Developer and its Contractor(s); - Monitor the implementation of the EMPr throughout the project by means of site inspections and meetings. Overall management of the project and EMPr implementation; and - Ensure that periodic environmental performance audits are undertaken on the project implementation.
Developer Site Supervisor (DSS)	<u>Role</u> The DSS reports directly to the DPM, oversees site works, liaises with the contractor(s) and the ECO. The DSS is responsible for the day to day implementation of the EMPr and for ensuring the compliance of all contractors with the conditions and requirements stipulated in the EMPr. <u>Responsibilities</u> - Ensure that all contractors identify a contractor's Environmental Officer (cEO);

Function	Role and Responsibilities
	- Must be fully conversant with the conditions of the EA. Oversees site works, liaison with Contractor, DPM and ECO; - Must ensure that all landowners have the relevant contact details of the site staff, ECO and cEO; - Will issue all non-compliances to contractors; and - Ratify the Monthly Environmental Report.
Environmental Control Officer (ECO)	<u>Role</u> The ECO should be employed by the developer for the duration of the project. The ECO should have appropriate training and experience in the implementation of environmental management specifications. In this respect, the ECO is to conduct periodic site inspections, attend regular site meetings, pre-empt problems and suggest mitigation and be available to advise on incidental issues that arise. The ECO is also required to conduct compliance audits, verifying the monitoring reports submitted by the cEO. The ECO provides feedback to the DSS and Project Manager regarding all environmental matters. The Contractor, cEO and dEO are answerable to the ECO for non-compliance with the Performance Specifications as set out in the EA and EMPr. The ECO provides feedback to the DSS and Project Manager, who in turn reports back to the Implementing Agent and potential and Registered Interested & Affected Parties' (RI&AP's), as required. Issues of non-compliance raised by the ECO must be taken up by the Project Manager, and resolved with the Contractor as per the conditions of his contract. Decisions regarding environmental procedures, specifications and requirements which have a cost implication (i.e. those that are deemed to be a variation, not allowed for in the Performance Specification) must be endorsed by the Project Manager. The ECO must also, as specified by the EA, report to the relevant CA as and when required. <u>Responsibilities</u> The responsibilities of the ECO will include the following: - Be aware of the findings and conclusions of all EA related to the development; - Be familiar with the recommendations and mitigation measures of this EMPr;

Function	Role and Responsibilities
	- Be conversant with relevant environmental legislation, policies and procedures, and ensure compliance with them; - Undertake regular and comprehensive site inspections / audits of the construction site according to the EMPr and applicable licenses in order to monitor compliance as required; - Educate the construction team about the management measures contained in the EMPr and environmental licenses; - Compilation and administration of an environmental monitoring plan to ensure that the environmental management measures are implemented and are effective; - Monitoring the performance of the Contractors and ensuring compliance with the EMPr and associated Method Statements; - In consultation with the DSS order the removal of person(s) and/or equipment which are in contravention of the specifications of the EMPr and/or environmental licenses; - Liaison between the DPM, Contractors, authorities and other lead stakeholders on all environmental concerns; - Issuing of site instructions to the Contractor for corrective actions required; - Compile a regular environmental audit report highlighting any non-compliance issues as well as satisfactory or exceptional compliance with the EMPr; - Validating the regular site inspection reports, which are to be prepared by the CEO; - Checking the CEO's record of environmental incidents (spills, impacts, legal transgressions etc) as well as corrective and preventive actions taken; - Checking the CEO's public complaints register in which all complaints are recorded, as well as action taken; - Assisting in the resolution of conflicts; - Facilitate training for all personnel on the site – this may range from carrying out the training, to reviewing the training programmes of the Contractor and/or sub-contractors; - In case of non-compliances, the ECO must first communicate this to the Senior Site Supervisor, who has the power to ensure this matter is addressed. Should no action or insufficient action be taken, the ECO may report this matter to the authorities as non-compliance; - Maintenance, update and review of the EMPr;

Function	Role and Responsibilities
	- Communication of all modifications to the EMPr to the relevant stakeholders.
developer Environmental Officer (dEO)	<u>Role</u> The dEOs will report to the Project Manager and are responsible for implementation of the EMPr, environmental monitoring and reporting, providing environmental input to the Project Manager and Contractor's Manager, liaising with contractors and the landowners as well as a range of environmental coordination responsibilities. <u>Responsibilities</u> - Be fully conversant with the EMPr; - Be familiar with the recommendations and mitigation measures of this EMPr, and implement these measures; - Ensure that all stipulations within the EMPr are communicated and adhered to by the Employees, Contractor(s) and its sub-contractor(s); - Confine the development site to the demarcated area; - Conduct environmental internal audits with regards to EMPr and authorisation compliance (on cEO); - Assist the contractors in addressing environmental challenges on site; - Assist in incident management; - Reporting environmental incidents to developer and ensuring that corrective action is taken, and lessons learnt shared; - Assist the contractor in investigating environmental incidents and compile investigation reports; - Follow-up on pre-warnings, defects, non-conformance reports; - Measure and communicate environmental performance to the Contractor; - Conduct environmental awareness training on site together with ECO and cEO; - Ensure that the necessary legal permits and / or licenses are in place and up to date; - Acting as Developer's Environmental Representative on site and work together with the ECO and contractor; - Audit carried out by an independent auditor.

Function	Role and Responsibilities
Contractor	<u>Role</u> The Contractor appoints the cEO and has overall responsibility for ensuring that all work, activities, and actions linked to the delivery of the contract are in line with the EMPr and that Method Statements are implemented as described. External contractors must ensure compliance with this EMPr while performing the onsite activities as per their contract with the Project Developer. The contractors are required, where specified, to provide Method Statements setting out in detail how the management actions contained in the EMPr will be implemented during the development or expansion of substation infrastructure for the transmission and distribution of electricity activities. <u>Responsibilities</u> - project delivery and quality control for the development services as per appointment; - employ a suitably qualified person to monitor and report to the Project Developer's appointed person on the daily activities on-site during the development period; - ensure that safe, environmentally acceptable working methods and practices are implemented and that equipment is properly operated and maintained, to facilitate proper access and enable any procedure to be carried out safely; - attend on site meeting(s) prior to the commencement of activities to confirm the procedure and designated activity zones; - ensure that contractors' staff (or sub-contractors) repair, at their own cost, any environmental damage as a result of a contravention of the specifications contained in the EMPr, to the satisfaction of the ECO.
contractor Environmental Officer (cEO)	<u>Role</u> Each Contractor affected by the EMPr should appoint a cEO, who is responsible for the on-site implementation of the EMPr (or relevant sections of the EMPr). The Contractor's representative can be the site agent; site engineer; a dedicated environmental officer; or an independent consultant. The Contractor must ensure that the Contractor's representative is suitably qualified to perform the necessary tasks and is appointed at a level such that she/he can interact effectively with other site Contractors, labourers, the ECO and the public.

Function	Role and Responsibilities
	The cEO ensures that all Sub-contractors working under the Contractor abide by the requirements of the EMPr. The Contractor is answerable to the Project Manager for all environmental issues associated with the project. <u>Responsibilities</u> - Be on site throughout the duration of the project and be dedicated to the project; - Ensure all their staff are aware of the environmental requirements, conditions and constraints with respect to all of their activities on site; - Implementing the environmental conditions, guidelines and requirements as stipulated within the EA, EMPr and Method Statements; - Attend the Environmental Site Meeting; - Undertaking corrective actions where non-compliances are registered within the stipulated timeframes; - Report back formally on the completion of corrective actions; - Assist the ECO in maintaining all the site documentation; - Prepare the site inspection reports and corrective action reports for submission to the ECO; - Assist the ECO with the preparing of the monthly report; and - Where more than one Contractor is undertaking work on site, each company appointed as a Contractor will appoint a cEO representing that company.

4. ENVIRONMENTAL DOCUMENTATION REPORTING AND COMPLIANCE

To ensure accountable and demonstrated implementation of the EMPr, a number of reporting systems, documentation controls and compliance mechanisms must be in place for all substation infrastructure for the transmission and distribution of electricity projects as a minimum requirement.

4.1 Document control/Filing system

The holder of the EA is solely responsible for the upkeep and management of the EMPr file. At a minimum, all documentation detailed below will be stored in the EMPr file. A hard copy of all documentation must be filed, while an electronic copy may be kept where relevant. A duplicate file will be maintained in the office of the DSS (where applicable). This duplicate file will be the responsibility of the ECOs and must remain current and up-to-date. The filing system must be updated and relevant documents added as required. The EMPr file must be made available at all times on request by the CA (in terms of NEMA EIA regulation) or other relevant authorities. The EMPr file will form part of any environmental audits undertaken as prescribed in the EIA Regulations.

4.2 Documentation to be available

At the outset of the project the following documents shall be placed in the filing system and be accessible at all times:

- Full copy of the signed EA from the CA in terms of NEMA, granting approval for the development or expansion;
- Copy of the generic and site specific EMPr as well as any amendments thereof;
- Copy of declaration of implementing generic EMPr and subsequent approval of site specific EMPr and amendments thereof;
- All method statements;
- Completed environmental checklists;
- Minutes and attendance register of environmental site meetings;
- An up-to-date environmental incident log;
- A copy of all instructions or directives issued;
- A copy of all corrective actions signed off. The corrective actions must be filed in such a way that a clear reference is made to the non-compliance record;
- Complaints register.

4.3 Weekly Environmental Checklist

The ECOs are required to complete a Weekly Environmental Checklist. The ECOs are required to sign and date the checklist, retain a copy in the EMPr file and submit a copy of the completed checklist to the DSS on a weekly basis.

The checklists will form the basis for the Monthly Environmental Reports. Copies of all completed checklists will be attached as Annexures to the Environmental Audit Report (EAR) as required in terms of the EIA regulations, 2014.

4.4 Environmental site meetings

Minutes of the environmental site meetings must be taken. The minutes must include an attendance register and will be attached to the Monthly Report that is distributed to attendees. Each set of minutes must clearly record "Matters for Attention" that will be reviewed at the next meeting.

4.5 Required Method Statements

The method statement will be done in such detail that the ECOs are enabled to assess whether the contractor's proposal is in accordance with the EMPr.

The method statement shall cover applicable details with regard to:

- development procedures;
- materials and equipment to be used;
- getting the equipment to and from site;
- how the equipment/ material will be moved while on site;
- how and where material will be stored;
- the containment (or action to be taken if containment is not possible) of leaks or spills of any liquid or material that may occur;
- timing and location of activities;
- compliance/ non-compliance with the EMPr; and
- any other information deemed necessary by the ECOs.

Unless indicated otherwise by the Project Manager, the Contractor shall provide the following method statements to the Project Manager no less than 14 days prior to the commencement date of the activity:

- Site establishment – Camps, Lay-down or storage areas, satellite camps, infrastructure;
- Batch plants;
- Workshop or plant servicing;
- Handling, transport and storage of Hazardous Chemical Substance's;
- Vegetation management – Protected, clearing, aliens, felling;
- Access management – Roads, gates, crossings etc.;
- Fire plan;
- Waste management – transport, storage, segregation, classification, disposal (all waste streams);
- Social interaction – complaints management, compensation claims, access to properties etc.;
- Water – use (source, abstraction and disposal), access and all related information, crossings and mitigation;
- Emergency preparedness – Spills, training, other environmental emergencies;
- Dust and noise management methodologies;
- Fauna interaction and risk management – only if the risk was identified – wildlife interaction especially on game farms; and
- Heritage and palaeontology management.

The ECOs shall ensure that the contractors perform in accordance with these method statements. Completed method statements must be appended as Appendix 1.

4.6 Environmental Incident Log (Diary)

The ECOs are required to maintain an up-to-date and current Environmental Incident Log (environmental diary). The Environmental Incident Log is a record of all environmental incidents and/or all non-compliance notice that would not be issued. An environmental incident is defined as:

- Any deviation from the listed impact management actions (listed in this EMP) that may be addressed immediately by the ECOs. (For example a contractor's staff member littering or a drip tray that has not been emptied);
- Any environmental impact resulting from an action or activity by a contractor in contravention of the environmental stipulations and guidelines listed in the EMP which as a single event would have a minor impact but which if cumulative and continuous would have a significant effect (for example no toilet paper available in the ablutions for an afternoon); and
- General environmental information such as road kills or injured wildlife.

The ECOs are to record all environmental incidents in the Environmental Incident Log. All incidents regardless of severity must be reported to the Developer. The Log is to be kept in the EMP file and at a minimum the following will be recorded for each environmental incident:

- The date and time of the incident;
- Description of the incident;
- The name of the Contractor responsible;
- The incident must be listed as significant or minor;
- If the incident is listed as significant, a non-compliance notice must be issued, and recorded in the log;
- Remedial or corrective action taken to mitigate the incident; and
- Record of repeat minor offences by the same contractor or staff member.

The Environmental Incident Log will be captured in the EAR.

4.7 Non-compliance

A non-compliance notice will be issued to the responsible contractor by the ECOs via the DSS or Project Manager. The non-compliance notice will be issued in writing; a copy filed in the EMP file and will at a minimum include the following:

- Time and date of the non-compliance;
- Name of the contractor responsible;
- Nature and description of the non-compliance;
- Recommended / required corrective action; and
- Date by which the corrective action to be completed;
- The contractors shall act immediately when a notice of non-compliance is received and correct whatever is the cause for the issuing of the notice. Complaints received regarding activities on the development site pertaining to the environment shall be recorded in a dedicated register and the response noted with the date and action

taken. The ECO should be made aware of any complaints. Any non-compliance with the agreed procedures of the EMPr is a transgression of the various statutes and laws that define the manner by which the environment is managed. Failure to redress the cause shall be reported to the relevant CA for them to deal with the transgression, as it deems fit. The contractor is deemed not to have complied with the EMPr if, inter alia, there is a deviation from the environmental conditions, impact management outcomes and actions, as approved in generic and site specific EMPr as relevant as set out in the EMPr, which deviation has, or may cause, an environmental impact.

4.8 Corrective action records

For each non-compliance notice issued, a documented corrective action must be recorded. On receiving a non-compliance notice from the DSS, the contractor's CEO will ensure that the corrective actions required take place within the stipulated timeframe. On completion of the corrective action the CEO is to issue a Corrective Action Report in writing to the ECOs. If satisfied that the corrective action has been completed, the ECOs are to sign-off on the Corrective Action Report, and attach the report to the non-compliance notice in the EMPr file. A corrective action is considered complete once the report signed off by the ECOs.

4.9 Photographic record

A digital photographic record will be filed. The photographic record will be used to show before, during and post rehabilitation evidence of the project as well used in cases of damages claims if they arise. Each image must be dated and a brief description note attached.

The Contractor shall:

1. Allow the ECOs access to take photographs of all areas, activities and actions.

The ECOs shall keep an electronic database of photographic records which will include:

1. Pictures of all areas designated as work areas, camp areas, construction sites and storage areas taken before these areas are set up;
2. All bunding and fencing;
3. Road conditions and road verges;
4. Condition of all farm fences;
5. Topsoil storage areas;
6. All areas to be cordoned off during development;
7. Waste management sites;
8. Ablution facilities (inside and out);
9. Any non-conformances deemed to be "significant";
10. All completed corrective actions for non-compliances;
11. All required signage;
12. All areas before, during and post rehabilitation; and
13. Include relevant photographs in the final Environmental Audit Report.

4.10 Complaints register

The ECOs shall keep a current and up-to-date complaints register. The complaints register is to be a record of all complaints received from communities, stakeholders and individuals. The Complaints Record shall:

1. Record the name and contact details of the complainant;
2. Record the time and date of the complaint;
3. Contain a detailed description of the complaint;
4. Where relevant and appropriate, contain photographic evidence of the complaint or damage (ECOs to take relevant photographs); and
5. Contain a copy of the ECOs written response to each complaint received and keep a record of any further correspondence with the complainant. The ECO's written response will include a description of any corrective action to be taken and must be signed by the Contractor, ECO and affected party. Where a damage claim is issued by the complainant, the ECOs shall respond as described in **(section 4.11)** below.

4.11 Claims for damages

In the event that a Claim for Damages is submitted by a community, landowner or individual, the ECOs shall:

1. Record the full detail of the complaint as described in **(section 4.10)** above;
2. The ECOs will evaluate the claim and associated damage and submit the evaluation to the Senior Site Representative for approval;
3. Following consideration by the DPM, the claim is to be resolved and settled immediately, or the reason for not accepting the claim communicated in writing to the claimant. Should the claimant not accept this, the ECO shall, in writing report the incident to the Developer's negotiator and legal department; and
4. A formal record of the response by the ECOs to the claimant as well as the rectification of the method of making payments not amount will be recorded in the EMPr file.

4.12 Interactions with affected parties

Open, transparent and good relations with affected landowners, communities and regional staff are an essential aspect to the successful management and mitigation of environmental impacts.

The ECOs shall:

1. Ensure that all queries, complaints and claims are dealt within an agreed timeframe;
2. Ensure that any or all agreements are documented, signed by all parties and a record of the agreement kept in the EMPr file;
3. Ensure that a complaints telephone numbers are made available to all landowners and affected parties; and
4. Ensure that contact with affected parties is courteous at all times;

4.13 Environmental audits

Internal Environmental Audits of the activity and implementation of the EMPr will be undertaken by the ECO. The findings and outcomes of these audits will be recorded in the EMPr file. The environmental audits and associated reports must be conducted and submitted to the CA at intervals as indicated in the EA.

The ECOs must prepare a monthly EAR. The report will be tabled as the key point on the agenda of the Environmental Site Meeting. The Report is submitted for acceptance at the meeting and the final report will be circulated to the Project Manager and filed in the EMPr file. At a frequency determined by the EA, the holder of the EA must submit the monthly reports to the CA in terms of NEMA. At a minimum the monthly report is to cover the following:

- Weekly Environmental Checklists;
- Deviations and non-compliances with the checklists;
- Non-compliances issued;
- Completed and reported corrective actions;
- Environmental Monitoring;
- General environmental findings and actions; and
- Minutes of the Bi-monthly Environmental Site Meetings.

4.14 Final environmental audits

On final completion of the entire activity, the ECOs are required to prepare a final EAR. The report is to be submitted to the CA for acceptance and approval. The environmental report must comply with Appendix 7 of the EIA Regulations, 2014.

- Details of the independent person who prepared the report;
- Details of the expertise of independent person that compiled the report;
- A declaration that the independent auditor is independent in a form as may be specified by the CA;
- An indication of the scope of, and the purpose for which, the EAR was prepared;
- A description of the methodology adopted in preparing the EAR;
- An indication of the ability of the EMPr, and where applicable, the closure plan to-
 - Sufficiently provide for the avoidance, management and mitigation of environmental impacts associated with the undertaking of the activity on an on-going basis;
 - Sufficiently provide for the avoidance, management and mitigation of environmental impacts associated with the closure of the facility; and
 - Ensure compliance with the provisions of EA, EMPr, and where applicable, the closure plan;
- A description of any assumptions made, and any uncertainties or gaps in knowledge;
- A description of any consultation process that was undertaken during the course of carrying out the EAR;
- A summary and copies of any comments that were received during any consultation process; and
- Any other information requested by the CA.

Submission of the final EAR to the CA will indicate the end of the entire activity.

PART B: SECTION 1: Pre-approved generic EMPr template**5. IMPACT MANAGEMENT OUTCOMES AND ACTIONS**

This section provides a pre-approved generic EMPr template with activities that are common to the development or expansion of substation infrastructure for the transmission and distribution of electricity. There are 34 doings identified for the development or expansion of substation infrastructure for the transmission and distribution of electricity, and for each doing a set of prescribed impact management outcomes and associated management actions have been identified. Holders of EAs are responsible to ensure the implementation of these outcomes and actions for all projects as a minimum requirement for managing the impact of activities identified for the development or expansion of substation infrastructure for the transmission and distribution of electricity.

The template provided below is to be completed by providing the information under each headings for each impact management action.

The completed template must be signed and dated on each page by the holder of the EA prior to commencement of the activity. The method statements prepared and agreed to by the holder of the EA must be appended to the template as Appendix 1. Each method statement must also be duly signed and dated on each page by the holder of the EA.

5.1 Environmental awareness training

Impact management outcome: All onsite staff are aware and understands the individual responsibilities in terms of this EMPr.						
Impact management actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– All staff must receive environmental awareness training prior to commencement of the activities; – The Contractor must allow for sufficient sessions to train all personnel with no more than 20 personnel attending each course; – Refresher environmental awareness training is available as and when required; – All staff are aware of the conditions and controls linked to the EA and within the EMPr and made aware of their individual roles and responsibilities in achieving compliance with the EA and EMPr; – The Contractor must erect and maintain information posters at key locations on site; – Environmental awareness training should include as a minimum the following: a) Description of significant, actual or potential environmental impacts, related to their work activities; b) Impact management actions to be implemented when carrying out specific activities; c) Emergency preparedness and response procedures;						

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e) Procedures to be followed when working near or within sensitive areas; f) Wastewater management procedures; g) Water usage and conservation; h) Solid waste management procedures; i) Sanitation procedures; and j) Disease prevention; – A record of all environmental awareness training courses undertaken as part of the EMPr must be available; – Educate workers on the dangers of open and/or unattended fires; – A staff attendance register of all staff to have received environmental awareness training must be available; and – Course material must be available and presented in all appropriate languages.						
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5.2 Site Establishment development

Impact management outcome: Impacts on the environment are minimised when developing new infrastructure and the development footprint are kept to demarcated development area.						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– A Method Statement must be provided by the contractor prior to any onsite activity that includes the layout of the construction camp in the form of a plan showing the location						

of key infrastructure and services (where applicable), including but not limited to offices, overnight vehicle parking areas, stores, the workshop, stockpile and lay down areas, hazardous materials storage areas (including fuels), the batching plant (if one is located at the construction camp), designated access routes, equipment cleaning areas and the placement of staff accommodation, cooking and ablution facilities, waste and wastewater management;					
- Sites should be located where possible on previously disturbed areas; - The camp must be fenced in accordance with Section 5.5: Fencing and gate installation; and - The contractor staff will be encouraged to use existing accommodation, where possible.					

5.3 No-Go areas

Impact management outcome: Access to No go areas prevented.						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
- Identification of No-Go areas is to be informed by the environmental assessment, site walk through and any additional areas identified during development; - Erect, demarcate and maintain a temporary fence around the perimeter of any No-Go area;						

- Fencing of No-Go areas is to be undertaken in accordance with Section 5.5: Fencing and gate installation; and - Unauthorised access and development related activity inside No-Go areas is prohibited.							
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5.4 Access roads

Impact management outcome: Minimise impact to the environment through the planned and restricted movement of vehicles on site.							
Impact Management Actions	Implementation			Monitoring			
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance	
- Maximum use of existing roads must be utilised; - In circumstances where private roads must be used, the condition of the said roads must be recorded in accordance with section 4.9: photographic record; prior to use and the condition thereof agreed by the landowner, the DPM, landowner and the contractor; - All private roads used for access to the site must be maintained and upon completion of the works, be left in at least the original condition; and - As far as possible, access roads must follow the contours in hilly areas, as opposed to winding down steep slopes.							

5.5 Fencing and Gate installation

Impact management outcome: To minimise impact to the environment and ensure safe and controlled access to the site through the erection of fencing and gates where required.						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
- Use existing gates provided to gain access, where possible; - Existing and new gates to be recorded and documented in accordance with section 4.9: photographic record; - All gates must be fitted with locks and be kept locked at all times during the development phase, unless otherwise agreed with the landowner; - At points where the line crosses a fence in which there is no suitable gate within the extent of the line servitude, on the instruction of the DPM, a gate must be installed at the approval of the landowner; - Care must be taken that the gates must be so erected that there is a gap of no more than 100 mm between the bottom of the gate and the ground; - Where gates are installed in jackal proof fencing, a suitable reinforced concrete sill must be provided beneath the gate; - Original tension must be maintained in the fence wires; - All gates installed in electrified fencing must be re-electrified; - All demarcation fencing and barriers must be maintained in good working order for the duration of electricity substation infrastructure development activities;						

- Fencing must be erected around the camp, batching plants and hazardous storage areas; - All fencing must be developed of high quality material bearing the SABS mark; - The use of razor wire as fencing must be avoided; - Fenced areas with gate access will remain locked after hours, during weekends and on holidays if staff is away from site. Site security will be required at all times; - On completion of the project all temporary fences are to be removed and where possible re-used by the contractor at new projects; - The contractor will ensure that all fence uprights are appropriately removed, ensuring that no uprights are cut at ground level but rather removed completely.						
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5.6 Water Supply Management

Impact management outcome: Undertake responsible water usage.						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
- All abstraction points or bore holes must be registered with the DWS and suitable water meters installed to ensure that the abstracted volumes are measured on a daily basis; - Should water abstraction be required and the necessary authorisation from DWS and permission from the landowner has been received, the Contractor must ensure the following:						

a. The vehicle abstracting water from a river does not enter or cross it and does not operate from within the river; b. No damage occurs to the river bed or banks and that the abstraction of water does not entail stream diversion activities; and c. All reasonable measures to limit pollution or sedimentation of the downstream watercourse are implemented. – Ensure water conservation is being practiced by: a. Minimising water use during cleaning of equipment; b. Undertaking regular audits of water systems; and c. Including a discussion on water usage and conservation during environmental awareness training.						
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5.7 Storm and waste water management

Impact management outcome: Impacts to the environment caused by storm water and wastewater discharges during construction are avoided.						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– An effective system of storm water run-off control is implemented; – Appropriate pollution control facilities necessary to prevent discharge of water containing polluting matter or visible suspended; – Materials into watercourses or water bodies must be designed and implemented;						

- Runoff from the cement/ concrete batching areas must be strictly controlled, and contaminated water must be collected, stored and either treated or disposed of off-site, at a location approved by the Project Manager; - All spillage of oil onto concrete surfaces must be controlled by the use of an approved absorbent material and the used absorbent material disposed of at an appropriate waste disposal facility; - Natural storm water runoff not contaminated by development activities and clean water can be discharged directly to watercourses and water bodies, subject to the Project Manager's approval and support by the ECO; - Water that has been contaminated with suspended solids, such as soils and silt, may be released into watercourses or water bodies only once all suspended solids have been removed from the water by settling out these solids in settlement ponds. The release of settled water back into the environment must be subject to the Project Manager's approval and support by the ECO.						
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5.8 Solid waste management

Impact management outcome: Wastes are appropriately stored, handled and safely disposed of at a recognised waste facility.						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance

– All measures regarding waste management must be undertaken using an integrated waste management approach; – Sufficient, covered waste collection bins (scavenger and weatherproof) must be provided; – A suitably positioned and clearly demarcated waste collection site must be identified and provided; – The waste collection site must be maintained in a clean and orderly fashion; – Waste must be segregated into separate bins and clearly marked for each waste type; – Bins must be emptied regularly; – General waste produced onsite must be disposed of at recognised landfill waste disposal sites/ recycling company; – Hazardous waste must be disposed of at a registered waste disposal site; – Certificates of safe disposal for general, hazardous and recycled waste must be maintained.						
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5.9 Protection of watercourses

Impact management outcome: Pollution and contamination of the watercourse environment and erosion are prevented.						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– All watercourses must be protected from direct or indirect spills of pollutants such as solid waste, sewage, cement,						

oils, fuels, chemicals, aggregate tailings, wash and contaminated water or organic material resulting from the Contractor's activities;					
- In the event of a spill, prompt action must be taken to clear the polluted or affected areas; - When working in or near any watercourse or wetland, the following environmental controls and consideration must be taken: a) River levels during the period of construction; b) During the execution of the Works, appropriate measures to prevent pollution and contamination of the riverine environment must be implemented e.g. including ensuring that construction equipment is well maintained; c) Where earthwork is being undertaken in close proximity to any watercourse, slopes must be stabilised using suitable materials, i.e. sandbags or geotextile fabric, to prevent sand and rock from entering the channel; and d) Appropriate rehabilitation and re-vegetation measures for the river banks must be implemented timeously. In this regard, the banks should be appropriately and incrementally stabilised as soon as development allows.					

5.10 Vegetation clearing

Impact management outcome: Vegetation clearing is restricted to the authorised development footprint of the proposed infrastructure.		
Impact Management Actions	Implementation	Monitoring

Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
General: - Indigenous vegetation which does not interfere with the safe development of the substation must be left undisturbed; - Protected or endangered species may occur on or near the development site. Special care should be taken not to damage such species; - Search, rescue and replanting of all protected and endangered species likely to be damaged during project development must be identified by the Botanical Specialist and completed prior to any development or clearing; - Permits for removal must be obtained from the relevant CA prior to the removal of the affected species, and they must be filed; - The Environmental Audit Report must confirm whether identified species have been rescued and replanted; - Rivers, watercourses and other water bodies must be kept clear of felled trees, vegetation cuttings and debris. - Only a registered pest control operator may apply herbicides on a commercial basis and commercial application must be carried out under the supervision of a registered pest control operator, supervision of a registered pest control operator or is appropriately trained; - A daily register must be kept of all relevant details of herbicide usage as stipulated in Act 36 of 1947; - All protected species and sensitive vegetation not removed must be clearly marked and such areas fenced					

off if required in accordance with No-Go procedure in Section 5.3: No-Go areas.						
– Alien invasive vegetation should be removed and disposed of at a recognised waste disposal facility.						

5.11 Protection of fauna

Impact Management outcome: minimise disturbance to fauna.						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– No interference with livestock must occur without the landowner's written consent and with the landowner or a person representing the landowner being present; – The breeding sites of raptors and other wild birds species must be taken into consideration during the planning of the development; – Breeding sites must be kept intact and disturbance to breeding birds must be avoided. Special care must be taken where nestlings or fledglings are present; – Special recommendations of the avian specialist must be adhered to at all times to prevent unnecessary disturbance of birds; – No poaching must be tolerated under any circumstances. All animal dens in close proximity to the works areas must be marked as No-Go areas.						

5.12 Protection of heritage resources

Impact management outcome: impact to heritage resources is minimised.						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
- Identify, demarcate and prevent impact to all known sensitive heritage features on site in accordance with the No-Go procedure in Section 5.3: No-Go areas; - Carry out general monitoring of excavations for potential fossils, artefacts and material of heritage importance; - All work must cease immediately, if any human remains and/or other archaeological, palaeontological or historical material are uncovered. Such material, if exposed, must be reported to the nearest museum, archaeologist/palaeontologist (or the South African Police Services), so that a systematic and professional investigation can be undertaken. Sufficient time should be allowed to remove/collect such material before development recommences.						

5.13 Safety of the public

Impact management outcome: all precautions are taken to minimise the risk of injury, harm or complaints.		
Impact Management Actions	Implementation	Monitoring

	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
- Identify fire hazards, demarcate and restrict public access to these areas as well as notify the local authority of any potential threats e.g. large brush stockpiles, fuels etc.; - All unattended open excavations must be adequately fenced or demarcated; - Ensure structures vulnerable to high winds are secured; - Maintain an incidents and complaints register in which all incidents or complaints involving the public are logged.						

5.14 Sanitation

Impact management outcome: clean and well maintained toilet facilities are available to all staff in an effort to minimise the risk of disease and impact to the environment.						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
- Mobile chemical toilets are installed onsite if no other ablution facilities are available; - The use of ablution facilities and or mobile toilets must be used at all times and no indiscriminate use of the veld for the purposes of ablutions must be permitted under any circumstances; - Where mobile chemical toilets are required, the following must be ensured: a) Toilets are located no closer than 100 m to any watercourse or water body;						

b) Toilets are secured to the ground to prevent them from toppling due to wind or any other cause; c) No spillage occurs when the toilets are cleaned or emptied and the contents are managed in accordance with the EMP; d) Toilets have an external closing mechanism and are closed and secured from the outside when not in use to prevent toilet paper from being blown out; e) Toilets are emptied before long weekends and workers holidays, and must be locked after working hours; f) Toilets are serviced regularly and the ECO must inspect toilets to ensure compliance to health standards; – A copy of the waste disposal certificates must be maintained.						
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5.15 Prevention of disease

Impact management outcome: All necessary precautions linked to the spread of disease are taken.						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Undertake environmentally-friendly pest control in the camp area; – Ensure that the workforce is sensitised to the effects of sexually transmitted diseases, especially HIV AIDS; – Information posters on HIV AIDS are displayed in the Contractor Camp area;						

- Information and education relating to sexually transmitted diseases to be made available to both construction workers and local community, where applicable; - Free condoms will be made available to all staff on site at central points; - Medical support must be made available; - Provide access to Voluntary HIV Testing and Counselling Services.					
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5.16 Emergency procedures

Impact management outcome: emergency procedures are in place to enable a rapid and effective response to all types of environmental emergencies.						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
- Compile an Emergency Response Action Plan (ERAP) prior to the commencement of the proposed project; - The Emergency Plan must deal with accidents, potential spillages and fires in line with relevant legislation; - All staff must be made aware of emergency procedures as part of environmental awareness training; - The relevant local authority must be made aware of a fire as soon as it starts; - In the event of emergency necessary mitigation measures to contain the spill or leak must be implemented (see Hazardous Substances section 5.17).						

5.17 Hazardous substances

Impact management outcome: safe storage, handling, use and disposal of hazardous substances.						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
- The use and storage of hazardous substances to be minimised and non-hazardous and non-toxic alternatives substituted where possible; - All hazardous substances will be stored in suitable containers as defined in the Method Statement; - Containers will be clearly marked to indicate contents, quantities and safety requirements; - All storage areas will be bunded. The bunded area will be of sufficient capacity to contain a spill / leak from the stored containers; - An Alphabetical Hazardous Chemical Substance (HCS) control sheet will be drawn up and kept up to date on a continuous basis; - All hazardous chemicals that will be used on site will have Material Safety Data Sheets (MSDS); - All employees working with HCS will be trained in the safe use of the substance and according to the safety data sheet; - Employees handling hazardous substances / materials must be aware of the potential impacts and follow appropriate safety measures. Appropriate personal protective equipment must be made available;						

- The Contractor must ensure that diesel and other liquid fuel, oil and hydraulic fluid is stored in appropriate storage tanks or in bowsters; - The tanks/ bowsters must be situated on a smooth impermeable surface (concrete) with a permanent bund. The impermeable lining must extend to the crest of the bund and the volume inside the bund must be 130% of the total capacity of all the storage tanks/ bowsters (110% statutory requirement plus an allowance for rainfall); - The floor of the bund must be sloped, draining to an oil separator; - Provision must be made for refueling at the storage area by protecting the soil with an impermeable groundcover. Where dispensing equipment is used, a drip tray must be used to ensure small spills are contained; - All empty externally dirty drums must be stored on a drip tray or within a bunded area; - No unauthorised access into the hazardous substances storage areas must be permitted; - No smoking must be allowed within the vicinity of the hazardous storage areas; - Adequate fire-fighting equipment must be made available at all hazardous storage areas; - Where refueling away from the dedicated refueling station is required, a mobile refueling unit must be used. Appropriate ground protection such as drip trays must be used; - An appropriately sized spill kit kept onsite relevant to the scale of the activity/s involving the use of hazardous substance must be available at all times;					

- The responsible operator must have the required training to make use of the spill kit in emergency situations; - In the event of a spill, contaminated soil must be collected in containers and stored in a central location and disposed of according to the National Environmental Management Waste Act 59 of 2008. Refer to Section 5.7 for procedures concerning waste water management and 5.8 for solid waste management.						

5.18 Workshop, equipment maintenance and storage

Impact management outcome: Soil, surface water and groundwater contamination is minimized.						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
- Where possible and practical all maintenance of vehicles and equipment must take place in the workshop area; - During servicing of vehicles or equipment, especially where emergency repairs are effected outside the workshop area, a suitable drip tray must be used to prevent spills onto the soil. The relevant local authority must be made aware of a fire as soon as it starts; - Leaking equipment must be repaired immediately or be removed from site to facilitate repair; - The responsible operator of equipment must have the required training to make use of the spill kit in emergency situations - Workshop areas must be monitored for oil and fuel spills;						

– Appropriately sized spill kit kept onsite relevant to the scale of the activity taking place must be available; – The workshop area must have a bunded concrete slab that is sloped to facilitate runoff into a collection sump or suitable oil / water separator where maintenance work on vehicles and equipment can be performed; – Water drainage from the workshop must be contained and managed in accordance Section 5.7: Waste water management.						
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5.19 Batching plants

Impact management outcome: Minimise spillages and contamination of soil, surface water and groundwater						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Concrete mixing areas must be fitted with a sump facility for the collection of cement laden water. This facility must be impervious to prevent soil and groundwater contamination; – Bagged cement must be stored in an appropriate facility and at least 100 m away from any water courses, gullies and drains; – A washout facility must be provided for washing of concrete associated equipment. Water used for washing must be restricted;						

– Hardened concrete from the washout facility or concrete mixer can either be reused or disposed of at a recognised disposal facility; – Empty cement bags must be covered with adequate binding material if these will be temporarily stored on site; – Sand and aggregates containing cement must be kept damp to prevent the generation of dust (Refer to Section 5.20: Dust emissions) – Any excess sand, stone and cement must be removed from site and disposed at a registered disposal facility or reused on completion of construction period; – Temporary fencing must be erected around batching plants in accordance with Section 5.5: Fencing and gate installation.						
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5.20 Dust emissions

Impact management outcome: dust prevention measures are applied to minimise the generation of dust.						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Take all reasonable measures to minimise the generation of dust as a result of project development activities to the satisfaction of the ECO; – Removal of vegetation must be avoided until such time as soil stripping is required and similarly exposed surfaces must be re-vegetated or stabilised as soon as is practically possible;						

- Excavation, handling and transport of erodible materials must be avoided under high wind conditions or when a visible dust plume is present; - During high wind conditions, the ECO will evaluate the situation and make recommendations as to whether dust-damping measures are adequate, or whether working will cease altogether until the wind speed drops to an acceptable level; - Where possible, soil stockpiles must be located in sheltered areas where they are not exposed to the erosive effects of the wind; - Where erosion of stockpiles becomes a problem, erosion control measures must be implemented at the discretion of the ECO; - Vehicle speeds must not exceed 40km/h along dust roads or 20km/h when traversing unconsolidated and non-vegetated areas; - Appropriate dust suppression measures must be used when dust generation is unavoidable, e.g. dampening with water; particularly during prolonged periods of dry weather in summer. Such measures must also include the use of temporary stabilising measures (e.g. chemical soil binders, straw, brush packs, chipping); - Straw stabilisation must be applied at a rate of one bale/10m² and harrowed into the top 100 mm of top material, for all completed earthworks; - For significant areas of excavation or exposed ground, spray water or wet areas using trucks to minimise the spread of dust.					
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5.21 Blasting

Impact management outcome: impact to the environment is minimised through a safe blasting practice.						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
- Any blasting activity must be conducted by a suitably licensed blasting contractor; and - Notification of surrounding landowners, emergency services site personnel of blasting activity 24 hours prior to such activity taking place on Site.						

5.22 Noise

Impact management outcome: To prevent unnecessary noise to the environment by ensuring that noise from development activity is mitigated.						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
- Working hours as determined by the environmental authorisation are adhered to during the development phase. Where not defined, development must be limited to daylight hours.						

5.23 Fire prevention

Impact management outcome: Prevention of uncontrollable fires.						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
- Designate smoking areas where the fire hazard could be regarded as insignificant; - Firefighting equipment must be available on all vehicles located on site; - The local Fire Protection Agency (FPA) must be informed of construction activities; - Contact numbers for the FPA and emergency services must be communicated in environmental awareness training and displayed at a central location on site; and - Two way swop of contact details between ECO and FPA.						

5.24 Stockpiling and stockpile areas

Impact management outcome: To reduce erosion and sedimentation as a result of stockpiling.						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
- All material that is excavated during the project development phase (either during piling (if required) or earthworks) must be stored appropriately on site in order to minimise impacts to watercourses, wetlands and water bodies; - All stockpiled material must be maintained and kept clear of weeds and alien vegetation growth by undertaking regular weeding and control methods; - Stockpiles must not exceed 2 m in height; - During periods of strong winds and heavy rain, the stockpiles should be covered with appropriate material (e.g. cloth, tarpaulin etc.); and - Where possible, sandbags (or similar) should be placed at the bases of the stockpiled material in order to prevent erosion of the material.						

5.25 Civil works

Impact management outcome: Impact to the environment to be minimised during civil works to create the substation terrace.						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
- Where terracing is required, topsoil must be collected and retained for the purpose of re-use later to rehabilitate disturbed areas not covered by yard stone; - Areas to be rehabilitated include terrace embankments and areas outside the high voltage yards; - Where required, all sloped areas must be stabilised to ensure proper rehabilitation is effected and erosion is controlled; - These areas can be stabilised using design structures or vegetation as specified in the design to prevent erosion of embankments. The contract design specifications must be adhered to and implemented strictly; - Rehabilitation of the disturbed areas must be managed in accordance with Section 5B.34: Landscaping and rehabilitation; - All excess spoil generated during terracing activities must be disposed of in an appropriate manner and at a recognised landfill site; and - Spoil can however be used for landscaping purposes and must be covered with a layer of 150mm topsoil for rehabilitation purposes.						

5.26 Excavation of foundation, cable trenching and drainage systems

Impact management outcome: No environmental degradation occurs as a result of excavation of foundation, cable trenching and drainage systems.						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
- All excess spoil generated during foundation excavation must be disposed of in an appropriate manner and at a recognised landfill site, if not used for backfilling purposes; - Spoil can however be used for landscaping purposes and must be covered with a layer of 150mm topsoil for rehabilitation purposes; - Management of equipment for excavation purposes must be undertaken in accordance with Section 5.18: Workshop equipment maintenance and storage; and - Hazardous substances spills from equipment must be managed in accordance with Section 5.17: Hazardous substances.						

5.27 Installation of foundations, cable trenching and drainage systems

Impact management outcome: No environmental degradation occurs during the installation of foundation, cable trenching and drainage system.						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
- Batching of cement to be undertaken in accordance with Section 5.19 : Batchng; and - Residual solid waste must be disposed of in accordance with Section 5.8: Solid Waste Management.						

5.28 Steelwork Assembly and Erection

Impact management outcome: No environmental degradation occurs as a result of steelwork assembly and erection.						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
- During assembly, care must be taken to ensure that no wasted/unused materials are left on site e.g. bolts and nuts - Emergency repairs due to breakages of equipment must be managed in accordance with Section 5.18: Workshop equipment maintenance and storage and Section 5.16: Emergency procedures.						

5.29 Installation of equipment (circuit breakers, current Transformers, Isolators, surge arresters, voltage transformers, earth switches)

Impact management outcome: No environmental degradation occurs as a result of installation of equipment.						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
- Management of dust must be conducted in accordance with Section 5.20: Dust emissions; - Management of equipment used for installation must be conducted in accordance with Section 5.18: Workshop equipment maintenance and storage; - Management hazardous substances and any associated spills must be conducted in accordance with Section 5.17: Hazardous substances; and - Residual solid waste must be recycled or disposed of in accordance with Section 5.8: Solid Waste Management.						

5.30 Cabling and Stringing

Management outcome: No environmental degradation occurs as a result of cabling and stringing.						
Implementation				Monitoring		
Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance	
- Management of dust must be conducted in accordance with Section 5.20: Dust emissions; - Management of equipment used for installation must be conducted in accordance with Section 5.18: Workshop equipment maintenance and storage; - Management hazardous substances and any associated spills must be conducted in accordance with Section 5.17: Hazardous substances; and - Residual solid waste must be recycled or disposed of in accordance with Section 5.8: Solid Waste Management.						

5.31 Testing and Commissioning (all equipment testing, earthing system, system integration)

Management outcome: No environmental degradation occurs as a result of Testing and Commissioning.						
Implementation				Monitoring		
Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance	
Residual solid waste must be recycled or disposed of in accordance with Section 5.8: Solid Waste Management.						

5.32 Temporary closure of site

Impact management outcome: Minimise the risk of environmental impact during periods of site closure greater than five days.						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
– Bunds must be emptied (where applicable); – Hazardous storage areas must be well ventilated; – Fire extinguishers must be serviced and accessible. Service records to be filed and audited at last service; – Emergency and contact details displayed must be displayed; – Security personnel must be briefed and have the facilities to contact or be contacted by relevant management and emergency personnel; – Night hazards such as reflectors, lighting, traffic signage etc. must have been checked; – Fire hazards identified and the local authority must have been notified of any potential threats e.g. large brush stockpiles, fuels etc.; – Structures vulnerable to high winds must be secured; – Wind and dust mitigation must be implemented; – Cement and materials stores must have been secured; – Toilets must have been emptied and secured; – Refuse bins must have been emptied and secured; and – Drip trays must have been emptied and secured.						

5.33 Dismantling of old equipment

Impact management outcome: Impact to the environment to be minimised during the dismantling, storage and disposal of old equipment commissioning.						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
- All old equipment removed during the project must be stored in such a way as to prevent pollution of the environment; - Oil containing equipment must be stored to prevent leaking or be stored on drip trays; - All scrap steel must be stacked neatly and any disused and broken insulators must be stored in containers; - Once material has been scrapped and the contract has been placed for removal, the disposal Contractor must ensure that any equipment containing pollution causing substances is dismantled and transported in such a way as to prevent spillage and pollution of the environment; - The Contractor must also be equipped to contain and clean up any pollution causing spills; and - Disposal of unusable material must be at a recognised waste disposal site.						

5.34 Landscaping and rehabilitation

Impact management outcome: No environmental degradation occurs as a result of the survey and pegging.						
Impact Management Actions	Implementation			Monitoring		
	Responsible person	Method of implementation	Timeframe for implementation	Responsible person	Frequency	Evidence of compliance
- All areas disturbed by construction activities must be subject to landscaping and rehabilitation; - All spoil and waste will be disposed to a registered waste site and certificates of disposal provided; - All slopes in excess of 2% (1:50) must be contoured in accordance with the Conservation of Agricultural Resources Act, No 43 of 1983; - All slopes in excess of 12% (1:8.3) must be terraced in accordance with the Conservation of Agricultural Resources Act, No 43 of 1983; - Berms that have been created should have a slope of 1:4 and be replanted with indigenous species and grasses; - Where new access roads have crossed cultivated farmlands, that lands must be rehabilitated by ripping to a minimum depth of 600 mm; - Rehabilitation of access roads outside of farmland; - Indigenous species will be used for replanting; - Stockpiled topsoil must be used for rehabilitation (refer to Section 5.23: Stockpiling and stockpiled areas); - Stockpiled topsoil will be evenly spread so as to facilitate seeding and minimise loss of soil due to erosion; - Before placing topsoil, all visible weeds from the placement area and from the topsoil must be removed;						

- Subsoil must be ripped before topsoil is placed; - The project must be timed so that rehabilitation can take place at the optimal time for vegetation establishment; - Where impacted through construction related activity, all sloped areas must be stabilised to ensure proper rehabilitation is effected and erosion is controlled as per the instruction from the ECO; - Sloped areas stabilised using design structures or vegetation as specified in the design to prevent erosion of embankments. The contract design specifications must be adhered to and implemented strictly; and - Where required, re-vegetation can be enhanced using a vegetation seed mixture as described below. A mixture of seed can be used provided the mixture is carefully selected to ensure the following: a) Annual and perennial plants are chosen; b) Pioneer species are included; c) Species chosen must grow in the area feasible to grow; d) Root systems must have a binding effect on the soil; e) The final product should not cause an ecological imbalance in the area						
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6 ACCESS TO THE GENERIC EMPr

Once completed and signed, to allow the public access to the generic EMPr, the holder of the EA must make the EMPr available to the public in accordance with regulation 26 (h) of the Environmental Impact Assessment Regulations, 2014.

PART B: SECTION 2**7 SITE SPECIFIC INFORMATION AND DECLARATION****7.1 Sub-section 1: contact details and description of the project**

7.1.1 Details of the applicant:

Name of applicant:

Tel No:

Fax No:

Postal Address:

Physical Address:

7.1.2 Details and expertise of the EAP:

Name of applicant:

Tel No:

Fax No:

E-mail address:

Expertise of the EAP (Curriculum Vitae included):

7.1.3 Project name:

7.1.4 Description of the project:

7.1.5 Project location:

NO	FARM NAME(if applicable)	FARM NUMBER(if applicable)	PORTION NAME	PORTION NUMBER	LATITUDE	LONGITUDE

7.2 Sub-section 2: Development footprint site map

This sub-section must include a map of the site sensitivity overlaid with the preliminary infrastructure layout. Once the web-based environmental screening tool identified in regulation 16(1) (v) of the EIA Regulations, 2014 is available, the sensitivity map must be prepared from this system. The map is to indicate areas/features of sensitivity based on the findings of the assessment and illustrated according to four tiers, Very High, High, Medium or Low. The sensitivity map shall also identify the nature of each sensitive feature e.g. raptor nest, threatened plant species, archaeological site, etc. Sensitivity maps shall identify features both within the planned working area and any known sensitive features in the surrounding

landscape. Where considered appropriate, photographs of sensitive features in the context of the site must be used.

7.3 Sub-section 3: Declaration

The proponent or applicant or holder of EA affirms that they will abide and comply with the prescribed impact management outcomes and actions as stipulated in part B: section 1 of this generic EMPr and have the understanding that the impact management outcomes and actions are legally binding.

Signature Proponent/applicant/ holder of EA

Date:

7.4 Sub-section 4: amendments to site specific information (Part B; section 2)

Should the EA be transferred, Part B: Section 2 must be completed by the new applicant and submitted with the application for amendment of the EA in terms of regulations 29 of the EIA Regulations, 2014. The information submitted for an amendment to an EA will be considered to be incomplete should a signed copy of Part B: Section 2 not be submitted. Once approved, Part B: Section 2 forms part of the EMPr for the development or expansion and the EMPr becomes legally binding to the new EA holder once the amendment process has been concluded.

PART C**8 SITE SPECIFIC ENVIRONMENTAL ATTRIBUTES**

If any specific environmental sensitivities/attributes are present on the site which require more specific impact management outcomes and actions not included in the pre-approved generic EMPr template to manage impacts, those impact management outcomes and actions must be included in this section. These specific management controls must be referenced spatially, and must include impact management outcomes and actions. The management controls including impact management outcomes and actions must be presented in the format of the pre-approved generic EMPr template. This applies only to additional impact management outcomes and actions that are necessary.

If Part C is applicable to the site, it is required to be submitted to the CA for approval prior to commencement of the activity. The information in this section must be prepared by an EAP and the name and expertise of the EAP, including the curriculum vitae are to be included. Once approved, Part C forms part of the EMPr for the site and is legally binding.

This section will **not be required** should the site contain no specific environmental sensitivities or attributes.

APPENDIX 1: METHOD STATEMENTS

To be prepared by the contractor prior to commencement of the activity. The method statements are **not required** to be submitted to the CA.

DEPARTMENT OF ENVIRONMENTAL AFFAIRS

NO. 164

02 MARCH 2018

**NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998
(ACT NO. 107 OF 1998)****ADOPTION OF THE GAUTENG PROVINCIAL ENVIRONMENTAL MANAGEMENT FRAMEWORK STANDARD AND EXCLUSION OF ASSOCIATED ACTIVITIES FROM THE REQUIREMENT TO OBTAIN AN ENVIRONMENTAL AUTHORISATION IN TERMS OF SECTIONS 24(2)(d) AND 24(10)(a) READ WITH SECTION 24(10)(d) OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998, FOR THE IMPLEMENTATION OF THE GAUTENG PROVINCIAL ENVIRONMENTAL MANAGEMENT FRAMEWORK**

I, Bomo Edna Edith Molewa, Minister of Environmental Affairs, hereby adopt the Gauteng Provincial Environmental Management Framework Standard and exclude associated activities from the requirement to obtain environmental authorisation, in terms of sections 24(2)(d) and 24(10)(a) read with section 24(10)(d) of the National Environmental Management Act, 1998, as set out in the Schedule hereto.

An application for environmental authorisation submitted in terms of the Environmental Impact Assessment Regulations, promulgated in terms of the National Environmental Management Act, 1998, for an activity falling within the scope of the Standard contemplated in this Notice, which application is pending at the time of the publication of this Standard in the Government Gazette or at the coming into effect of this Standard may be withdrawn at any time prior to a decision being made on such application.

If any part of a facility contemplated in the Schedule hereto, falls outside the scope of the Standard contemplated in this Notice, the requirements of the Environmental Impact Assessment Regulations, promulgated in terms of the National Environmental Management Act, 1998, apply.

The provisions of the National Appeal Regulations, 2014 are applicable to an appeal against any decision taken in terms of the Standard contemplated in this Notice.

The Gauteng Provincial Environmental Management Framework Standard is also available from the Department of Environmental Affairs at <https://egis.environment.gov.za> and from the Gauteng Department of Agriculture and Rural Development at <http://www.gauteng.gov.za/government/departments/agriculture-and-rural-development/Pages/Documents.aspx>



BOMO EDNA EDITH MOLEWA
MINISTER OF ENVIRONMENTAL AFFAIRS

SCHEDULE

STANDARD AND ASSOCIATED EXCLUDED ACTIVITIES FOR THE IMPLEMENTATION OF THE GAUTENG PROVINCIAL ENVIRONMENTAL MANAGEMENT FRAMEWORK

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CHAPTER 1

INTERPRETATION, PURPOSE AND APPLICATION

Definitions

1. In this Standard, unless the context indicates otherwise, a word defined in the National Environmental Management Act, 1998 (Act No.107 of 1998) or the Environmental Impact Assessment Regulations has the same meaning, and—

“competent authority” means the organ of state that would have been designated by section 24C of the Act, in respect of a listed activity or specified activity;

“days” means calendar days, excluding public holidays and the period of 15 December to 5 January;

“Environmental Impact Assessment Regulations” means the Regulations published in terms of section 24(5) of the Act;

“excluded activity” means an activity identified within this schedule and as contemplated in Appendix 1, that is excluded from the requirement to obtain an environmental authorisation;

“Gauteng Provincial Environmental Management Framework (GPEMF)” means the Environmental Management Framework for the whole of Gauteng Province, consisting of zones 1 to 5; adopted by the MEC in terms of regulation 5(4) of the Environmental Management Framework Regulations, 2010 under Government Notice No.1655 of 22 May 2015;

“mitigation measure” refers to a set of actions undertaken as part of a commitment to reduce environmental impacts;

“National Appeal Regulations” means the regulations pertaining to the processing, consideration of and decisions on appeals, made under section 44(1)(a), read with section 43(3), of the National Environmental Management Act, 1998 (Act No. 107 of 1998);

“proponent” refers to the person that intends to undertake an excluded activity and is also responsible for ensuring compliance with the Standard;

“registered development” means a development that falls within the scope of the Standard and that has been registered;

“the Act” means the National Environmental Management Act, 1998 (Act No. 107 of 1998) as amended;

"Zone 1" means the geographical area depicted as the *Urban Development Zone* in the Gauteng Provincial Environmental Management Framework in which infill, densification and concentration of urban development is facilitated through the use of excluded activities of which a geographical representation can be found in Appendix 3; and

"Zone 5" means the geographical area depicted as the *Industrial and Commercial Focus Zone* in the Gauteng Provincial Environmental Management Framework in which non-polluting industrial and large-scale commercial developments are facilitated through the use of excluded activities, of which a geographical representation can be found in Appendix 3.

Purpose of the Standard

2. The purpose of the Standard is to provide rules which must be complied with, ensuring –
- (a) compliance to the principles contained in section 2 of the Act and the duty of care, in terms of section 28(1) of the Act;
 - (b) sustainable development within Gauteng Province; and
 - (c) compliance to management measures, based on which activities are excluded from the requirement to obtain an environmental authorisation.

Application of the Standard

3. (1) The provisions of the Standard are applicable to activities excluded from acquiring an environmental authorisation, when undertaken within Zone 1 or Zone 5 of the Gauteng Province, as contemplated in Appendix 1.
- (2) The provisions of the Standard are not applicable if—
- (a) any part of the footprint of an excluded activity extends outside the boundary of Zone 1 or Zone 5, as contemplated in Appendix 1; or
 - (b) such excluded activity is directly related to prospecting, exploration, including primary processing, of a mineral or petroleum resource.
- (3) The provisions of the Standard are not applicable if the development requires environmental authorisation for any activity not excluded in terms of the Standard, in which case environmental authorisation must be obtained for all applicable identified activities.

- (4) Compliance with the Standard does not negate the need for the proponent to comply with all other applicable legislation.

CHAPTER 2

PROCEDURAL REQUIREMENTS

Notification and Registration

4. (1) A proponent must submit to the competent authority the Registration Form as set out in Appendix 4, as well as a report from the web-based screening tool, as contemplated in the Environmental Impact Assessment Regulations.
- (2) The competent authority must, within 30 days, issue a registration number to the proponent, or, if not satisfied with the information provided, reject the request for registration.
- (3) The competent authority must, where applicable, draw the attention of the proponent to the fact that an appeal may be lodged against the decision in terms of section 43 of the Act and the National Appeal Regulations, if such appeal is available in the circumstances of the decision.
- (4) The proponent may commence with any excluded activity or activities within 10 years of receipt of the registration number contemplated in subsection (2), and must notify the competent authority, in writing, 14 days prior to such commencement and such notification must include a date on which it is anticipated that any activity will commence.
- (5) Registration lapses if commencement does not occur within 10 years of receipt of the registration number, and the process contemplated in subsections (1), (2), and (3) will apply afresh in such instances.
- (6) The competent authority must keep an inventory of all registered developments including as a minimum the —
- (a) name of the proponent;
 - (b) project name and description;
 - (c) registration number and applicable excluded activities;
 - (d) erf number, where development or expansion occurs;
 - (e) date on which the registration number was issued; and
 - (f) validity period of the registration.
- (7) Proof of registration must be made available—

- (a) on site at all times;
- (b) on request; and
- (c) where the proponent or owner has a website, on such publicly accessible website.

(8) Where change of ownership of a registered development in terms of subsection (2) occurs, the new owner must submit the relevant declaration and details contemplated in Appendix 5 within 30 days upon finalisation of such change.

CHAPTER 3

ENVIRONMENTAL MANAGEMENT SPECIFICATIONS

Environmental Management Specifications

5. The proponent must ensure compliance with the environmental management specifications as contemplated in Appendix 2 for an excluded activity.

CHAPTER 4

COMPLIANCE

Authority Inspections

6. The proponent must provide the competent authority and any authorised official with access to the facility where the excluded activity is undertaken without prior notification, for the purposes of monitoring compliance with the Standard.

CHAPTER 5

TRANSITIONAL ARRANGEMENTS

Transitional Arrangements

7. (1) An environmental authorisation issued prior to the coming into effect of this Standard remains valid.
- (2) Where an application for environmental authorisation for an activity falling within the scope of this Standard is pending at the time of publication of this Standard in the *Gazette* or at the time of the coming into effect of this Standard, such application must, despite the publication or coming into effect of this Standard be dispensed with in terms of the Environmental Impact Assessment Regulations and if an environmental authorisation is issued for such application, such environmental authorisation remains valid and this Standard does not apply.
- (3) An application for environmental authorisation contemplated in subsection (2) may be withdrawn at any time prior to a decision being made on such application.

Short Title and Commencement

8. This Standard is called the GPEMF Standard, 2018 and takes effect 60 days from date of publication in the *Gazette*.

APPENDIX 1: EXCLUDED ACTIVITIES**1. Environmental Impact Assessment Regulations: Listing Notice 1**

1.1 The activities listed are the identified activities for Listing Notice 1 that are excluded from the requirement to obtain an environmental authorisation, within Zone 1:

- a) Activity 6;
- b) Activity 9;
- c) Activity 10 (will only be permissible for developments relating to the bulk transportation of sewage in Zone 1);
- d) Activity 11;
- e) Activity 13;
- f) Activity 27;
- g) Activity 28 (i);
- h) Activity 44;
- i) Activity 45;
- j) Activity 46 (will only be permissible for expansions relating to the bulk transportation of sewage in Zone 1);
- k) Activity 47;
- l) Activity 50;
- m) Activity 56;
- n) Activity 57 (will only be permissible for expansions relating to the treatment of sewage in Zone 1);
- o) Activity 63;
- p) Activity 64; and
- q) Activity 66.

1.2 The activities listed are the identified activities for Listing Notice 1 that are excluded from the requirement to obtain an environmental authorisation, within Zone 5:

- a) Activity 6;
- b) Activity 9;
- c) Activity 10;
- d) Activity 11;
- e) Activity 13;
- f) Activity 14;

- g) Activity 25;
- h) Activity 27
- i) Activity 28(i)
- j) Activity 36;
- k) Activity 38;
- l) Activity 39;
- m) Activity 40;
- n) Activity 41;
- o) Activity 43;
- p) Activity 44;
- q) Activity 45;
- r) Activity 46;
- s) Activity 47;
- t) Activity 50;
- u) Activity 51;
- v) Activity 56;
- w) Activity 57;
- x) Activity 63;
- y) Activity 64; and
- z) Activity 66.

2. Environmental Impact Assessment Regulations: Listing Notice 2

2.1 The activities listed are the identified activities for Listing Notice 2 that are excluded from the requirement to obtain an environmental authorisation, within Zone 1:

- a) Activity 9; and
- b) Activity 11.

2.2 The activities listed are the identified activities for Listing Notice 2 that are excluded from the requirement to obtain an environmental authorisation, within Zone 5:

- a) Activity 4;
- b) Activity 7;
- c) Activity 9; and
- d) Activity 11.

APPENDIX 2

GPEMF EXCLUDED ACTIVITIES IN TERMS OF THE NEMA, ACT 107 OF 1998

GENERALLY APPLICABLE ENVIRONMENTAL MANAGEMENT SPECIFICATIONS (should be applied in conjunction with the Activity Specific Specifications)	
Generally Applicable Specifications (Development phase)	1) All working areas must be supplied with proper sanitation facilities (at least one for every twenty workers). 2) No uncontrolled fires are allowed on site for any purposes. 3) During development and operational phase, the proponent must ensure that there is firefighting equipment on site that is properly working and maintained with trained operators in the event of accidental fires. 4) Evidence of environmental awareness training for all employees must be kept on site. Employees must be fully inducted on activities impacting on the environment and mitigation thereof. 5) Site management must be done in a manner that prevent and minimise pollution.
Air Quality Specifications (Development phase)	1) The generation of pollutants such as particulate emissions must be prevented and minimised. 2) The proponent must prevent and minimise dust or offensive odours during development phase. 3) The design and construction of structures must implement energy savings to minimise Green House Gas emissions
Noise Specifications (Development phase)	1) The persons responsible for development activities must manage and mitigate the generation of noise, relating to – (a) vehicles and equipment used on site; and (b) development activities during night-time (from 5pm to 7am).
Storm Water Management Specifications (Development and Operational phase)	1) Management of storm water runoff must take place as close to the source as possible, according to the hierarchy listed below- 2.1) At source storm water management through inclusion of one or more of the following or similar into the development: a. green roofs; b. rainwater harvesting; c. permeable pavements and parking areas; and

d. soakaways.

2.2) Local control for storm water runoff management, typically within the road reserves through inclusion of the following or similar into the development where practically possible:

- a. bio-retention areas;
- b. filter strips;
- c. infiltration trenches;
- d. sand filters; and
- e. swales.

2.3) Regional controls to manage combined storm water runoff from several developments through inclusion of the following or similar into the development where practically possible:

- a. constructed wetlands;
- b. detention ponds; and
- c. retention ponds.

3) The management of storm water must ensure that additional runoff water is stored and released at a rate that will not impact negatively on the natural flow capacity of rivers, wetlands and streams.

4) Development and operational activities must not encroach onto the 32 meter buffer from a water course as per GDARD Requirements for Biodiversity Assessments V3, 2014.

Visual Specifications (Development phase)

1) The development activities must prevent, manage and mitigate visual impacts, including but not limited to –

- (a) Configuration of development sites to reduce visual intrusions i.e. –
 - i. Siting of waste storage facilities; and
 - ii. Change rooms and ablution facilities;
- (b) Siting of developments in relation to sensitive features.
- (c) Installation of screening material during development to reduce visual impacts.
- (d) Prevent use of highly reflective materials and paints, and where it cannot be prevented, it must be minimised.
- (e) Prevent lighting up biodiversity features i.e. wetlands, ridges etc. and where it cannot be prevented, it must be minimised.
- (f) To blend in with the surrounding landscapes, neutral colour pallets for structures must be used.

Hazardous Substances Specifications (Development phase)

- 1) The relevant Material Safety Data Sheets must be available on site.
- 2) The storage, use and disposal of hazardous substances, including containers, must be in accordance with the relevant Material Safety Data Sheets.
- 3) Hazardous substances must be stored such that the pollution of water, soil and air is prevented.

- 4) Storage areas containing hazardous substances / materials must be clearly marked.

Waste Specifications (Development phase)

- 1) Waste must be separated on site to support the waste management hierarchy – "Reduce, re-use, recover and only dispose safely as the last option."
- 2) No burning of waste on site and all waste must be disposed of at a licensed waste disposal facility or in line with the conditions of a valid waste licence.
- 3) Refuse bins must be placed at strategic positions to prevent littering and visual impact.
- 4) All recyclable waste generated on site must be separated into the main line recyclables i.e. paper, plastics, glass, tins and tyres (PPGTT) and building rubble.
- 5) Non-recyclable waste must be disposed of on a licensed waste disposal facility.
- 6) Skip waste containers must be maintained on site.
- 7) Waste stock piles stored in open areas must be covered with an impermeable cover.
- 8) Weatherproof, durable and legible waste disposal signs in at least 3 (three) official languages applicable in the area must be displayed at each entrance to the facility.
- 9) No waste must be buried on site.
- 10) Waste transporters must be registered on Gauteng Waste Information Systems (GWIS).

Water Resources Specifications (Development phase)

- 1) Mixing of concrete must be done on a lined surface to prevent contamination of surface and/or ground water.
- 2) Vehicles and equipment must be serviced in a manner that does not impact any sensitive features.
- 3) Contaminated material must be handled and disposed of at a licensed facility to prevent contamination of soil, surface and ground water resources.
- 4) The sewage management system must be designed and operated in a manner that protects the quality and quantity of environmental resources.
- 5) The positioning of the development activities must prevent pollution of watercourses.
- 6) If development takes place within the 32 metre buffer zone from the edge of the riparian zone for rivers or streams, it must comply with the GDARD Requirements for Biodiversity Assessments V3, March 2014.
- 7) If development takes place within the 30 metre buffer zone from the outer edge of the wetland temporary zone, it must comply with the GDARD Requirements for Biodiversity Assessments V3, March 2014.
- 8) For stormwater discharge, a buffer of 100 – 250 metres wide must be maintained between the stormwater outflow and the outer boundary of a wetland -
 - a) The buffer must have mechanisms for dissipating water energy, spreading and slowing water flow as well as preventing erosion.

- 9) Where a linear development will run alongside a wetland and intercept natural hill slope runoff into the wetland, the development must be set back from the boundary of the wetland by at least 30 metres.
- 10) The design and construction of structures must incorporate water savings.

Biodiversity Specifications (Development phase)

- 1) Perimeter fences must be erected prior to development activities to prevent access and negative impact to any sensitive areas.
- 2) The infestation of alien and invasive plant species must be controlled on site and indigenous species must be used for rehabilitation, during all phases of the development.
- 3) Clearing of indigenous vegetation must be limited to the development footprint during development activities.
- 4) Disturbance or mortality of indigenous fauna must be prevented, where it cannot be prevented, it must be minimised during the development.
- 5) No lethal forms of predator control must be used.
- 6) All development activities must not impact on the breeding of Red List bird species that could potentially occur on site.

Specifications for Pollution Buffers (Development phase)

- 1) Buffer zones for pollution sources from various industrial facilities, as indicated in point 2 and as per the **Gauteng Pollution Buffer Zones Guideline**, March 2017, below must be adhered to.
- 2) The specific sizes for the preferred pollution buffer or minimum pollution buffer must be complied with as follows:

Best case buffer of 1500m and worst case buffer of 750m must be maintained in Category 1 industries, such as Sasol, Arcelor Mittal, Scaw Metal, Eskom power stations etc. as per paragraph 6.2.1 of the Gauteng Pollution Buffer Zones Guideline, March 2017.

Best case buffer of 500m and worst case buffer of 250m must be maintained in Category 2 industries, such as container depot in City Deep, panel beater workshops, tanneries etc. as per paragraphs 6.2.2 and 7.1 of the Gauteng Pollution Buffer Zones Guideline, March 2017.

Best case buffer of 100m and worst case buffer of 50m must be maintained in Category 3 industries, such as warehousing and distribution operations as per paragraphs 6.2.3 and 7.1 of the Gauteng Pollution Buffer Zones Guideline, March 2017.

Best case buffer of 800m and worst case buffer of 500m must be maintained for Sewage treatment works as per paragraphs 6.2.4 and 7.1 of the Gauteng Pollution Buffer Zones Guideline, March 2017.

Best case buffer of 400m and worst case buffer of 200m must be maintained for general landfill sites (Communal, small, medium and large) as per paragraphs 6.2.5 and 7.1 of the Gauteng Pollution Buffer Zones Guideline, March 2017.

Best case buffer of 2000m and worst case buffer of 1000m must be maintained for Hazardous Landfill sites as per paragraphs 6.2.5 and 7.1 of the Gauteng Pollution Buffer Zones Guideline, March 2017.

Best case buffer of 100m and worst case buffer of 0m must be maintained for mine dumps (rock dumps or stockpiles) as per paragraphs 6.2.6 and 7.1 of the Gauteng Pollution Buffer Zones Guideline, March 2017.

Best case buffer of 1000m and worst case buffer of 500m must be maintained for mine slimes dams and ash dumps as per paragraphs 6.2.7 and 7.1 of the Gauteng Pollution Buffer Zones Guideline, March 2017.

Best case buffer of 5000m and worst case buffer of 2000m must be maintained for the Pelindaba nuclear facility complex as per paragraphs 6.2.8 and 7.1 of the Gauteng Pollution Buffer Zones Guideline, March 2017.

Minimum Ridge Specifications (Development phase)

1) The following ridge classes must be adhered to for all the Excluded Activities within Environmental Management Zone 1 and Zone 5.

Development activities will only be permitted if it falls within the following development classes as per paragraph 4(3) and 4(4) of the Gauteng Ridges Guideline (2001), as amended:

- (a) class 3 ridge (35 – 64 % transformed);
 - (i) class 3 (A) ridge Low impact development areas;
 - (ii) class 3 (B) ridge High impact development areas; and
- (b) class 4 ridge (65 - 100 % transformed)

2) Development activities that are not in contravention with the Gauteng Ridges Guideline must continue while taking the following into consideration:

- (a) No shining lights must be pointed towards the ridges to ensure minimal disturbance on the biodiversity;
- (b) No emission of effluents or waste dumping should be permitted on the ridges.

Specifications for Soil Conservation (Development phase)

- 1) Topsoil from development activities must be stockpiled and contained within a berm to prevent and minimise loss.
- 2) Compaction of topsoil must not inhibit vegetation growth.
- 3) Topsoil must be stockpiled in a designated area away from possible sources of contamination and must be used for re-vegetation/landscaping.

- 4) Overburden (soil/rocks) material must be disposed-of safely at a licensed facility, where it cannot be re-used.
- 5) Shaping of remaining profile must blend in with the gradients of the surrounding landscape.
- 6) Soil erosion must be controlled on site during all phases of the development.
- 7) All stockpiles must not cause visual impact in the area.

Heritage Specification (Development and Operational phase)

- 1) Should an object of archaeological importance be identified, work in that area must be stopped and the incident must immediately be reported to the nearest South African Heritage Resources Agency (SAHRA) offices in order to comply with the National Heritage Resources Act, 1999 (Act No. 25 of 1999).

ACTIVITY SPECIFIC ENVIRONMENTAL MANAGEMENT SPECIFICATIONS

LISTING NOTICE 1		
ACTIVITIES	ACTIVITY SPECIFIC ENVIRONMENTAL MANAGEMENT SPECIFICATIONS	ZONE 1 & / or ZONE 5
Activity 6	ALL GENERALLY APPLICABLE ENVIRONMENTAL MANAGEMENT SPECIFICATIONS APPLY plus the Activity Specific Specifications below Generally Applicable Management Specifications (Development and Operational phase) 1) Species must be separated to prevent interbreeding between the indigenous and exotic species within the controlled farming environment. 2) Species must be separated to prevent transmission of diseases and predatory species posing a threat to indigenous species must be controlled. 3) Disposal of carcasses must be done at a permitted landfill site. Waste Specification (Development and Operational phase) 1) Waste (solids and dissolved nutrients) must be disposed of at a licensed facility to prevent the development of algal blooms in natural environment.	1 & 5
Activity 9	ALL GENERALLY APPLICABLE ENVIRONMENTAL MANAGEMENT SPECIFICATIONS APPLY plus the Activity Specific Specifications below Noise Specification (Development and Operational phase) 1) Water pumps must be housed in a fully enclosed brick structure or other suitable building to reduce the impact of noise generated from the pumps. Storm Water Management Specification (Development and Operational phase) 1) Storm water transportation facilities must be developed in manner to prevent flooding in residential areas. Hazardous Substances Specification (Development and Operational phase) 1) Water pumps must be stored in a banded area to contain fuel (diesel or oil) in the event of leaks or spillages.	1 & 5

LISTING NOTICE 1		
ACTIVITIES	ACTIVITY SPECIFIC ENVIRONMENTAL MANAGEMENT SPECIFICATIONS	ZONE 1 & / or ZONE 5
Activity 10	ALL GENERALLY APPLICABLE ENVIRONMENTAL MANAGEMENT SPECIFICATIONS APPLY plus the Activity Specific Specifications below Noise Specification (Development and Operational phase) 1) Water pumps must be housed in a fully enclosed brick structure or other suitable building to reduce the impact of noise generated from the pumps. Storm Water Management Specification (Development phase) 1) Storm water transportation facilities must be kept free of litter to prevent flooding in residential areas. Hazardous Substances Specification (Development and Operational phase) 1) Water pumps must be stored in a bunded area to contain fuel (diesel or oil) should there be leaks or spillages. Water Resources Specification (Development and Operational phase) 1) Biannual monitoring of water transportation facilities for leakages must be undertaken during the operation to mitigate the associated risks. A report must be generated based on the monitoring results which should be kept on site and made available upon request.	1 & 5 (will only be permissible for developments relating to the bulk transportation of sewage in Zone 1)

LISTING NOTICE 1		
ACTIVITIES	ACTIVITY SPECIFIC ENVIRONMENTAL MANAGEMENT SPECIFICATIONS	ZONE 1 & / or ZONE 5
Activity 11	ALL GENERALLY APPLICABLE ENVIRONMENTAL MANAGEMENT SPECIFICATIONS APPLY plus the Activity Specific Specifications below Visual Specification (Development phase) 1) An existing utility corridor should be utilised (shared) to mitigate environmental and social impacts of a new transmission line. Biodiversity Specification (Development phase) 1) Anti-collision devices such as bird flappers must be installed where power lines cross corridors that are associated with flight pathways.	1 & 5
Activity 13	ALL GENERALLY APPLICABLE ENVIRONMENTAL MANAGEMENT SPECIFICATIONS APPLY plus the Activity Specific Specifications below Water Resources Specification (Development phase) 1) Construction of water storage facilities must not lead to the destruction of ecological functioning of the river downstream such as reduction of water flow, destruction of habitat and breeding grounds for aquatic species. Biodiversity Specification (Development phase) 1) Location of construction sites should facilitate habitat connectivity.	1 & 5
Activity 14	ALL GENERALLY APPLICABLE ENVIRONMENTAL MANAGEMENT SPECIFICATIONS APPLY plus the Activity Specific Specification below Generally Applicable Specifications (Development and Operational phase) 1) The area where dangerous goods are stored above ground must be banded to contain the quantities of goods stored on site during an incident. 2) The bund must be able to contain 110% of the total quantities of goods stored. 3) The bund must be fitted with a control valve.	5

LISTING NOTICE 1		
ACTIVITIES	ACTIVITY SPECIFIC ENVIRONMENTAL MANAGEMENT SPECIFICATIONS	ZONE 1 & / or ZONE 5
	4) Equipment and materials to deal with spills and leaks must be well maintained and stored in a clean, dry and readily accessible storage facility. 5) Ground water monitoring, which must include amongst others, hydrocarbon detection, must be conducted annually and the results made available to the competent authority. Hazardous Substances Specifications (Development and Operational phase) 1) Contaminated effluent from the bund and storm water run-off must be contained and disposed of in a licensed facility.	
Activity 25	ALL GENERALLY APPLICABLE ENVIRONMENTAL MANAGEMENT SPECIFICATIONS APPLY plus the Activity Specific Specifications below Visual Specification (Development and Operational phase) 1) The proponent must prevent the prevalence of conditions that are in contrast with the ambience of the area. Waste Specifications (Development and Operational phase) 1) The spread of diseases, odours, surface and ground water pollution as a result of sewage sludge from waste water treatment plants, must be prevented. 2) Treated effluent used for irrigation purposes must always be chlorinated. 3) No waste water must be discharged directly or otherwise into the boundary of a watercourse. Water Quality Specification (Development and Operational phase) 1) Pathogens and inherent risks in wastewater treatment plants must not negatively affect immediate communities and the environment.	5
Activity 27	ALL GENERALLY APPLICABLE ENVIRONMENTAL MANAGEMENT SPECIFICATIONS APPLY plus the Activity Specific Specification below	1 & 5

LISTING NOTICE 1		
ACTIVITIES	ACTIVITY SPECIFIC ENVIRONMENTAL MANAGEMENT SPECIFICATIONS	ZONE 1 & / or ZONE 5
	Air Quality Specifications (Development phase) 1) The generation of dust must be prevented or minimised during development activities. 2) Clearance of indigenous vegetation must be limited to development footprint.	
Activity 28(i)	ALL GENERALLY APPLICABLE ENVIRONMENTAL MANAGEMENT SPECIFICATIONS APPLY plus the Activity Specific Specifications below Waste Specification (Development and Operational phase) 1) Waste separation at source must be undertaken. Air Quality Specification (Development phase) 1) The generation of dust must be prevented or minimised during development activities.	1 & 5
Activity 36	ALL GENERALLY APPLICABLE ENVIRONMENTAL MANAGEMENT SPECIFICATIONS APPLY plus the Activity Specific Specification below Biodiversity Specification (Development phase) 1) The location of renewable resources including photovoltaic solar plants must minimise contribution to habitat loss, biodiversity and deterioration to the natural ecosystem and functioning in the province.	5
Activity 38	ALL GENERALLY APPLICABLE ENVIRONMENTAL MANAGEMENT SPECIFICATIONS APPLY plus the Activity Specific Specifications below Generally Applicable Specification (Operational phase) 1) The management of abattoirs or slaughterhouse activities must be in accordance with the GDARD's <i>Guideline Manual for The Management of Abattoirs and other waste of animal origin of 2009.</i> Water Resources Specification (Operational phase) 1) Water efficient approaches and technologies must be adopted to reduce water demand in the operational processes of abattoirs or slaughterhouses.	5

LISTING NOTICE 1		
ACTIVITIES	ACTIVITY SPECIFIC ENVIRONMENTAL MANAGEMENT SPECIFICATIONS	ZONE 1 & / or ZONE 5
	Waste Specifications (Operational phase) 1) The disposal of waste products from animal pens, offal processing, carcass processing, bleeding and by-products processing from slaughter houses must not adversely affect the water quality and the ecological functioning in the nearby water bodies. 2) In case of disease outbreaks and high mortalities of chicken, the nearest Local State Veterinary and Health Inspector must be contacted immediately, dead chicken must then be removed from the poultry house daily, or twice daily if mortality is high, once collected, they must be moved to an authorised and / or permitted waste treatment/processing facility preferably, off farm, for processing either to a rendering plant or suitable area for burial, or subsequent collection by a contractor. 3) If dead chickens are not disposed of daily; they must be stored in a designated freezer on the farm. The freezer should have sufficient capacity to adequately handle 1 (one) to 3 (three) days of normal breeder mortality, and should not be used for any other purpose. 4) A copy of an agreement letter with the nearest rendering plant and / or a contracted company contracted to remove, transport and dispose dead stock must be kept on site and made available to this Department upon request.	
Activity 39	ALL GENERALLY APPLICABLE ENVIRONMENTAL MANAGEMENT SPECIFICATIONS APPLY plus the Activity Specific Specifications below Air Quality Specifications (Operational phase) 1) Management practices in farming environment must manage manure in a manner that reduces nuisance as a result of extensive odour. 2) Generation of energy from methane should be explored to reduce dependence on fossil fuels and align to sustainable farming practises. 3) Grazing patterns must be managed to reduce soil erosion and generation of dust from animal trampling. 4) The operation of the facility must not lead to the generation of flies, rodents and other pests that carry diseases and nuisance.	5

LISTING NOTICE 1		
ACTIVITIES	ACTIVITY SPECIFIC ENVIRONMENTAL MANAGEMENT SPECIFICATIONS	ZONE 1 & / or ZONE 5
	Water Resource Specifications (Development and Operational phase) 1) Access to water bodies by animals, must be restricted to prevent water contamination for downstream users. 2) Pollution of adjacent water bodies as a result of run-off of animal waste, pesticides, chemicals, fertilizers must be prevented if not prevented, minimised.	
Activity 40	ALL GENERALLY APPLICABLE ENVIRONMENTAL MANAGEMENT SPECIFICATIONS APPLY plus the Activity Specific Specifications below Air Quality Specifications (Operational phase) 1) Manure must be stored in a manner that does not adversely affect the air quality of the area as a result of odour. 2) The operation of the poultry farm must not lead to the generation of flies, rodents and other pests that carry diseases and nuisance. Waste Specifications (Operational phase) 1) Burning and burying of carcasses is prohibited on site. All waste material generated on site must be stored in suitable containers which are intact and fit for storage of such waste and must be kept dry at all times. 2) The temporary storage area for mortalities must be in sealed bins prior to disposal. Water Resources Specifications (Operational phase) 1) Wastewater must be managed in a manner that prevents acidification and eutrophication of the local stream/rivers. 2) Contamination of surface and ground water through the use of pesticides on site must be prevented. ALL GENERALLY APPLICABLE ENVIRONMENTAL MANAGEMENT SPECIFICATIONS APPLY plus the Activity Specific Specifications below Generally Applicable Specifications (Operational phase) 1) Species must be separated to prevent interbreeding between the indigenous and exotic species within the controlled farming environment.	5
Activity 41		5

LISTING NOTICE 1		
ACTIVITIES	ACTIVITY SPECIFIC ENVIRONMENTAL MANAGEMENT SPECIFICATIONS	ZONE 1 & / or ZONE 5
	2) Species must be separated to prevent transmission of diseases and predatory species posing a threat to indigenous species must be controlled. 3) When the process failure occur leading to death of animals, disposal of carcasses must be done at a permitted landfill site to contain environmental and social impacts. Waste Specification (Operational phase) 1) Waste must be disposed of at a licensed facility to prevent the development of algal blooms in natural environment.	
Activity 43	ALL GENERALLY APPLICABLE ENVIRONMENTAL MANAGEMENT SPECIFICATIONS APPLY <i>plus the Activity Specific Specifications below</i> Generally Applicable Specifications (Operational phase) 1) Management practices should be designed to minimise, prevent or control: - the introduction of disease onto a farm; - spread of disease within the farm production operation; and - export of these diseases beyond the farm. 2) Management of biosecurity must address the following issues: - Control of animal disease at the borders of the country and the province; - Control of the spread of diseases within the province; - Control of the spread of diseases and resistant organisms from animals to humans. 3) Carcasses must be disposed of at a licensed disposal facility. 4) Alternative renewable sources of electricity must be explored to mitigate the greenhouse gas emission associated with the activity. Air Quality Specifications (Operational phase) - Management activities must control emission of odour from waste and effluents. - Operational activities must explore the use of alternative renewable electricity to mitigate the emission of greenhouse gas. Water Resources Specifications (Operational phase)	5

LISTING NOTICE 1		
ACTIVITIES	ACTIVITY SPECIFIC ENVIRONMENTAL MANAGEMENT SPECIFICATIONS	ZONE 1 & / or ZONE 5
	1) Effluent discharge from the facility processes must be done in a manner that does not result in reduction of surface water quality on the adjacent streams. 2) Water efficiency during operation must be implemented to reduce consumption and mitigate risks on business continuity. Waste Specifications (Operational phase) 1) Green waste generated from the agri-industrial complexes must be utilised to make compost or for any other related processes downstream. 2) Burning and burying of waste and carcasses is prohibited on site. All waste material generated on site must be stored in suitable containers which are intact and fit for storage of such waste and must be kept dry at all times. 3) The temporary storage area for carcasses must be in sealed bins prior to disposal.	
Activity 44	ALL GENERALLY APPLICABLE ENVIRONMENTAL MANAGEMENT SPECIFICATIONS APPLY <i>plus the Activity Specific Specifications below</i> Visual Specification (Development phase) 1) Cemeteries must have a perimeter wall to provide a buffer between the graveyard and adjacent communities. Water Resources Specification (Development phase) 1) Location of cemeteries must be carefully considered to prevent dolomitic ground.	1 & 5
Activity 45	ALL GENERALLY APPLICABLE ENVIRONMENTAL MANAGEMENT SPECIFICATIONS APPLY <i>plus the Activity Specific Specifications below</i> Generally Applicable Specifications (Development phase) 1) Access to the trenches/channels dug for the installation of transportation infrastructure must be limited to prevent animal and unsuspecting people from falling into the trenches. 2) Trenches/ channels must be demarcated to minimise the danger of falling into trenches.	1 & 5

LISTING NOTICE 1		
ACTIVITIES	ACTIVITY SPECIFIC ENVIRONMENTAL MANAGEMENT SPECIFICATIONS	ZONE 1 & / or ZONE 5
	Noise Specification (Development phase) 1) Water pumps must be housed in a fully enclosed brick structure or other suitable structure designed to reduce the impact of noise generated from the pumps. Waste Specification (Development phase) 1) Stormwater transportation facilities must be designed in manner to prevent flooding in residential areas. Hazardous Substances Specification (Development phase) 1) Water pumps must be stored in a bunded area to contain fuel should there be leaks or spillages.	
Activity 46	ALL GENERALLY APPLICABLE ENVIRONMENTAL MANAGEMENT SPECIFICATIONS APPLY plus the Activity Specific Specifications below Noise Specification (Development and Operational phase) 1) Water pumps must be housed in a fully enclosed brick structure or other suitable building to reduce the impact of noise generated from the pumps. Storm Water Management Specification (Operational phase) 1) Storm water transportation facilities must be kept free of litter to prevent flooding in residential areas. Hazardous Substances Specification (Development phase) 1) Water pumps must be stored in a bunded area to contain fuel in case of leaks or spillages. Water Resources Specification (Operational phase) 1) Monitoring of transportation facilities for leakages must be undertaken during the operation to prevent contamination.	1 & 5 (Will only be permissible for expansions relating to the bulk transportation of sewage in Zone 1)

LISTING NOTICE 1		
ACTIVITIES	ACTIVITY SPECIFIC ENVIRONMENTAL MANAGEMENT SPECIFICATIONS	ZONE 1 & / or ZONE 5
Activity 47	ALL GENERALLY APPLICABLE ENVIRONMENTAL MANAGEMENT SPECIFICATIONS APPLY plus the Activity Specific Specifications below Visual Specification (Development phase) 1) Existing utility corridors must be utilised (shared) to mitigate environmental and social impacts of a new transmission line. Biodiversity Specification (Development phase) 1) Anti-collision devices such as bird flappers must be installed where powerlines cross corridors that are associated with flight pathways.	1 & 5
Activity 50	ALL GENERALLY APPLICABLE ENVIRONMENTAL MANAGEMENT SPECIFICATIONS APPLY plus the Activity Specific Specifications below Water Resources Specification (Development phase) 1) Expansion of water storage facilities must not lead to the destruction of ecological functioning of the river downstream. Biodiversity Specification (Development phase) 1) Habitat connectivity and movement of aquatic species must be facilitated during the expansion of a dam.	1 & 5
Activity 51	ALL GENERALLY APPLICABLE ENVIRONMENTAL MANAGEMENT SPECIFICATIONS APPLY plus the Activity Specific Specifications below Generally Applicable Specification (Operational phase) 1) Above- ground dangerous goods storage areas must be banded to contain the quantities of goods stored on site in the event of an incident. Air Quality Specification (Development and Operational phase) 1) The proponent must ensure that people and the environment are protected from exposure to harmful gases.	5

LISTING NOTICE 1	
ACTIVITIES	ACTIVITY SPECIFIC ENVIRONMENTAL MANAGEMENT SPECIFICATIONS ZONE 1 & / or ZONE 5
	Hazardous Substances Specification (Development and Operational phase) 1) Contaminated effluent or storm water run-off must be contained and disposed of at a licensed facility. Waste Specification (Development and Operational phase) 1) Contaminated effluent channels must be separated from storm and surface water to prevent pollution.
Activity 56	ALL GENERALLY APPLICABLE ENVIRONMENTAL MANAGEMENT SPECIFICATIONS APPLY plus the Activity Specific Specifications below Storm Water Management Specifications (Development phase) 1) The infrastructure used must enable flow of water to prevent flooding of the road. 2) The storm water channels and culverts must be designed with silt litter traps to facilitate proper flow of water. Biodiversity Specification (Development phase) 1) The design of the road must cater for minimal habitat loss and fragmentation to reduce the impact on sustainability of local biodiversity and ecosystems. Specification for Soil Conservation (Development phase) 1) The design of the storm water channels must include soil erosion mitigation measures which result from increased velocity from hardened road surfaces.
Activity 57	ALL GENERALLY APPLICABLE ENVIRONMENTAL MANAGEMENT SPECIFICATIONS APPLY plus the Activity Specific Specifications below Air Quality Specification (Operational phase) 1) Measures to minimise offensive odours must be implemented at all times. Visual Specification (Operational phase) 1 & 5 (Will only be permissible for expansions relating to

LISTING NOTICE 1		
ACTIVITIES	ACTIVITY SPECIFIC ENVIRONMENTAL MANAGEMENT SPECIFICATIONS	ZONE 1 & / or ZONE 5
	1) The proponent must prevent the prevalence of conditions that are in contrast with the ambience of the area. Waste Specifications (Operational phase) 1) Prevent pollution of surface and ground water which could result from the waste water sludge. 2) Waste generated from the treatment facility must be disposed at a licensed landfill site.	the treatment of sewage in Zone 1)
Activity 63	ALL GENERALLY APPLICABLE ENVIRONMENTAL MANAGEMENT SPECIFICATIONS APPLY plus the Activity Specific Specifications below Noise Specification (Development and operational phase) 1) Water pumps must be housed in a fully enclosed brick structure or other suitable building designed to reduce the impact of noise generated from the pumps. Storm Water Management Specification (Development and operational phase) 1) Storm water transportation facilities must be designed to prevent clogging and flooding in residential areas. Hazardous Substances Specification (Construction phase) 1) Water pumps must be stored in a bunded area to contain fuel/oil in the event of leaks or spillages.	1 & 5
Activity 64	ALL GENERALLY APPLICABLE ENVIRONMENTAL MANAGEMENT SPECIFICATIONS APPLY plus the Activity Specific Specifications below Storm Water Management Specifications (Development phase) 1) Fuel, chemicals and other pollutant spillages must be stored on impermeable surfaces and within bunded areas to prevent water pollution. 2) The design of storm water culverts must enable flow of water to prevent flooding of the road. 3) Storm water channels and culverts must be designed to prevent clogging by litter that may block the flow of water. Biodiversity Specification (Development phase)	1 & 5

LISTING NOTICE 1		
ACTIVITIES	ACTIVITY SPECIFIC ENVIRONMENTAL MANAGEMENT SPECIFICATIONS	ZONE 1 & / or ZONE 5
	1) The design of the railway lines must cater for minimal habitat loss and fragmentation to reduce the impact on sustainability of local biodiversity and ecosystems. Noise Specification (Development phase) 1) The design of the railways lines must incorporate the installation of noise reduction equipment to minimise impact on the adjacent communities. Hazardous Substances Specifications (Development phase) 1) Fuel must be stored in a bunded area to prevent potential pollution. 2) Used oil must be disposed-off at an appropriately licensed facility.	
Activity 66	ALL GENERALLY APPLICABLE ENVIRONMENTAL MANAGEMENT SPECIFICATIONS APPLY plus the Activity Specific Specifications below Generally Applicable Specification (Development phase) 1) The opening of spillway must be designed to incorporate measures to prevent negative impacts of downstream flooding on users, habitat, nesting and breeding grounds. Water Resources Specification (Development phase) 1) Expansion of water storage facilities must not lead to disruption of ecological functioning of the river downstream. Biodiversity Specification (Development phase) 1) The expansion of the dam must facilitate habitat connectivity and movement of aquatic species.	1 & 5

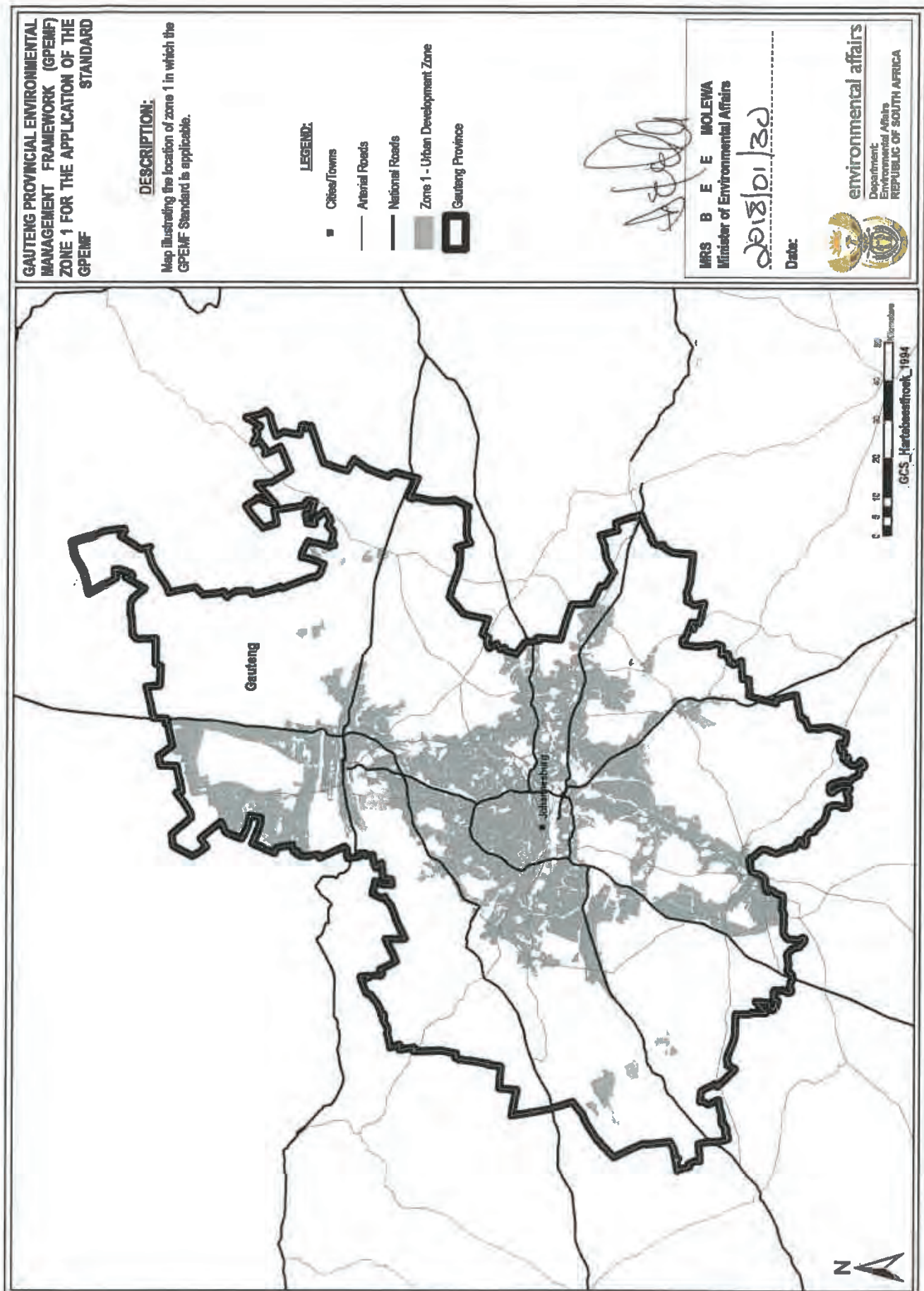
LISTING NOTICE 2		
ACTIVITIES	ACTIVITY SPECIFIC ENVIRONMENTAL MANAGEMENT SPECIFICATIONS	ZONE 1 & / or ZONE 5
Activity 4	ALL GENERALLY APPLICABLE ENVIRONMENTAL MANAGEMENT SPECIFICATIONS APPLY plus the Activity Specific Specifications below Generally Applicable Specification (Development phase) 1) Above- ground storage areas must be banded to contain the quantities of goods stored on site in the event of an incident. Air Quality Specification (Development phase) 1) Measures must be installed to minimise the emission of harmful gases to the environment. Hazardous Substances Specification (Operational phase) 1) Contaminated effluent or storm water run-off must be disposed at a licensed facility. Storm Water Management Specification (Operational phase) 1) Storm water from the facility must be discharged through the municipal sewer system. Specification for Soil Conservation (Operational phase) 1) Contaminated soil must be disposed of at a licensed hazardous material facility to prevent contaminating the soil and ground water.	5
Activity 7	ALL GENERALLY APPLICABLE ENVIRONMENTAL MANAGEMENT SPECIFICATIONS APPLY plus the Activity Specific Specifications below Generally Applicable Specification (Operational phase) 1) A document clearly stating the hazardous properties of products or chemicals must be carried at all stages of the transport chain so that people are aware of them. This information must always follow the goods so that people can recognize the risks and prevent accidental mishandling and use the suitable personal protection at their disposal in case of leakage. Air Quality Specification (Operational phase)	5

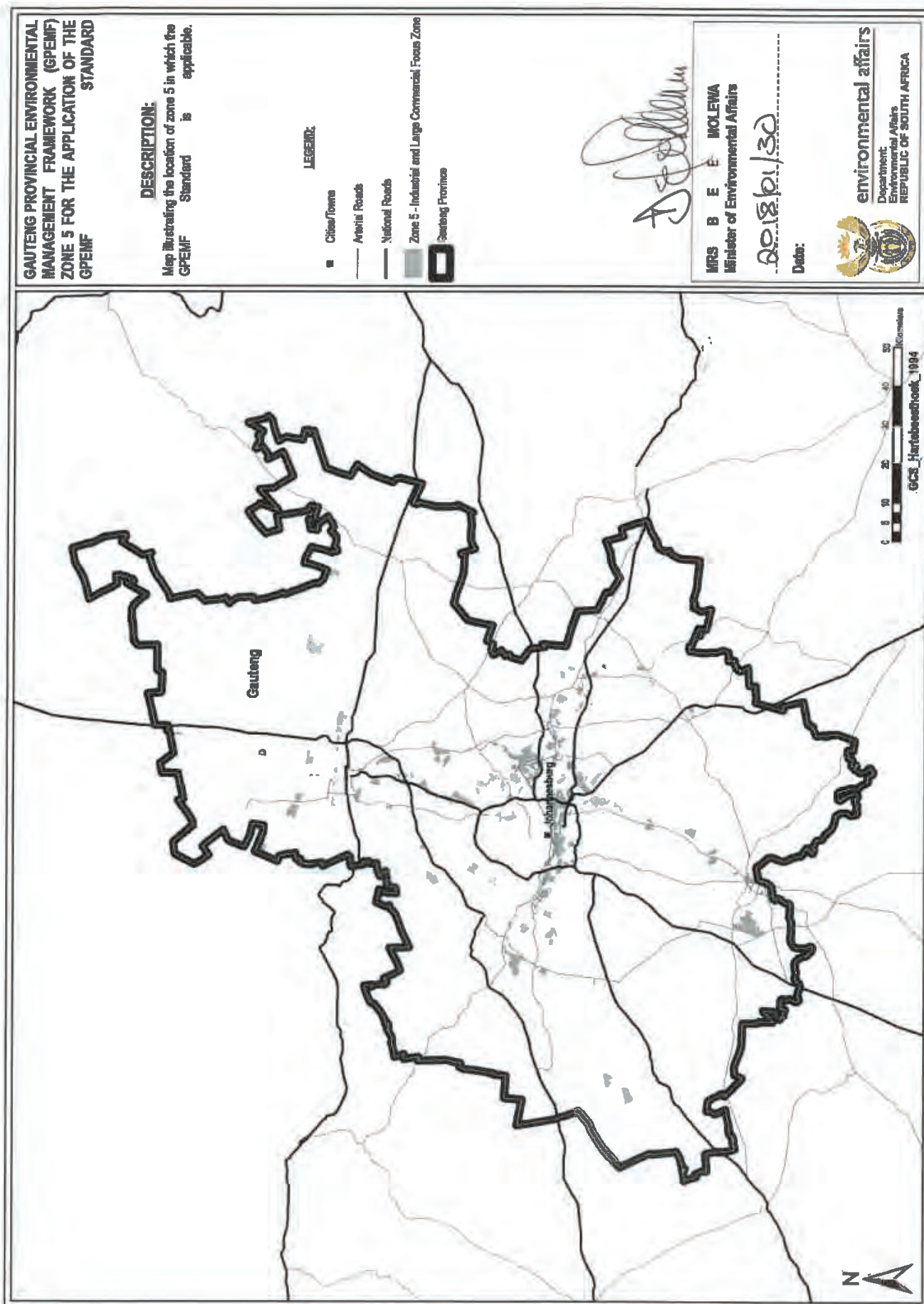
LISTING NOTICE 2	
ACTIVITIES	ACTIVITY SPECIFIC ENVIRONMENTAL MANAGEMENT SPECIFICATIONS ZONE 1 & / or ZONE 5
	1) The proponent must install measures to prevent exposure of harmful gases to people and the environments. Hazardous Substances Specification (Operational phase) 1) Contaminated effluent or storm water run-off must be contained and disposed-of at a licensed facility. Waste Specification (Development and Operational phase) 1) Effluents should be managed in a manner that does not contaminate storm water and adjacent rivers. Specification for Soil Conservation (Operational phase) 1) Contaminated soil must be disposed of at a licensed hazardous material facility to prevent contaminating the soil and ground water.
Activity 9	ALL GENERALLY APPLICABLE ENVIRONMENTAL MANAGEMENT SPECIFICATIONS APPLY <i>plus the Activity Specific Specifications below</i> Visual Specification (Development phase) 1) An existing transmission line servitude must be utilised (shared) to mitigate environmental and social impacts of a new transmission line. Biodiversity Specification (Operational phase) 1) Anti-collision devices such as bird flappers must be installed where powerlines cross corridors that are associated with flight pathways.
Activity 11	ALL GENERALLY APPLICABLE ENVIRONMENTAL MANAGEMENT SPECIFICATIONS APPLY <i>plus the Activity Specific Specifications below</i> Noise Specification (Development phase) 1) Water pumps must be housed in a fully enclosed brick structure or other suitable building designed to reduce the impact of noise generated from the pumps.

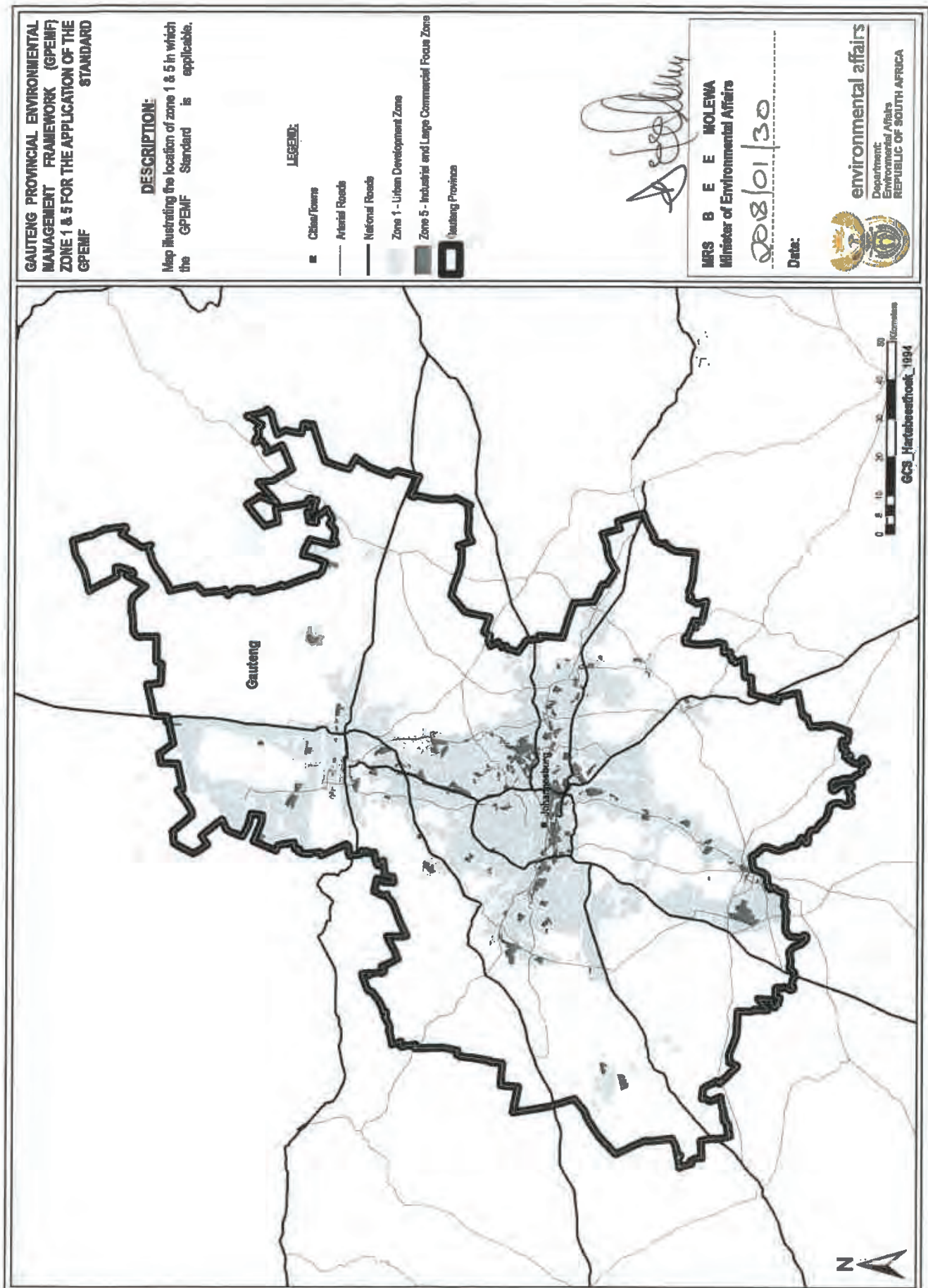
LISTING NOTICE 2		
ACTIVITIES	ACTIVITY SPECIFIC ENVIRONMENTAL MANAGEMENT SPECIFICATIONS	ZONE 1 & / or ZONE 5
	Waste Specification (Development phase) 1) Storm water transportation facilities must be designed to prevent clogging and flooding in residential areas. Hazardous Substances Specification (Development phase) 1) Water pumps must be stored in a bunded area to contain fuel in the event of leaks or spillages.	

APPENDIX 3

GPEMF ZONES







APPENDIX 4

REGISTRATION FORM A REQUEST TO BE REGISTERED AND INTENT TO COMPLY WITH THE GPEMF STANDARD	
FOR OFFICE USE ONLY	
Date Received Registration Form Outcome of Evaluation of the Registration Form	☐ Accepted ☐ Rejected If rejected, provide reasons:
Registration Number	

Kindly note that:

1. All fields must be completed in full; submission of incomplete information will result in automatic rejection.
2. Declaration of whether the registration is a first or a re-submission.
3. This form must be used in all instances for request for registrations that must be subjected to an excluded activity related to the GPEMF Standard in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA) as amended.
4. This form is current as of the date of commencement of the Standard, as indicated in the Government Gazette. It is the responsibility of the proponent to ascertain whether subsequent versions of the form have been published or produced by the competent authority.
5. The required information must be typed within the spaces provided in the form. The size of the space provided is not necessarily indicative of the amount of information to be provided. It is in the form of a table that will expand itself as each space is filled with typing.
6. Incomplete documentation will be rejected.
7. The use of "not applicable" in the form must be done with circumspection. Where it is used in respect of material information that is required by the competent authority for assessing the registration, this will result in the rejection of the registration as provided for in the regulations.
8. Unless protected by law, all information contained in, and attached to this registration, will become public information on receipt by the competent authority. Upon request, any interested and affected party should be provided with the information contained in and attached to this registration.
9. An original hard copy (1) of this form must be submitted to the Department at the Registry Office. The competent authority will also accept online submissions as and when the system comes into effect. All information submitted on the hard copy must be duplicated on the soft copy as a PDF document on the CD. The electronic copy on a CD must be accompanied with a shapefile (WGS84).
10. No faxed or e-mailed registration form will be accepted. Only hand delivered or posted registration forms will be accepted.
11. The relevant guidelines as quoted in the GPEMF Standard, can be obtained from the departmental website: www.gdard.gov.za or www.environment.gov.za or the relevant departmental Registration Unit.

INCORRECTLY COMPLETED AND INCOMPLETE REGISTRATION FORMS WILL NOT BE CONSIDERED

SECTION A: DETAILS OF THE PROPONENT OF THE DEVELOPMENT	
All notifications pertaining to the request for registration project will be sent using the information provided in this section of the form.	
Company (Include Trading Name)	
First Name	
Surname	
Email	
Telephone Number	
Cell phone Number	

SECTION A: DETAILS OF THE PROPONENT OF THE DEVELOPMENT		
Fax Number		
Postal Address		
Registration Status	First submission	YES / NO
	Resubmission	YES / NO
	If Resubmission, then provide the previous Reference number	

SECTION B: SITE INFORMATION	
Site Name	
Site Telephone Number (if any)	
Owner Name	
Owner VAT Registration Number (if applicable)	
Public or Commercial	
Please provide the Geographic Co-ordinates of all external corner points of the site	
Degrees Latitude Degrees Longitude	
Physical Address/Property Description ¹	
Size of the Property	

SECTION C: MUNICIPALITY INFORMATION	
Municipality/ municipalities	
Contact Person (from Environment Management or Town Planning)	
Email	

¹ (Farm name, portion etc.) Where a large number of properties (including alternatives) are involved (e.g. linear activities), please attach a list of the property descriptions to this registration form.

SECTION C: MUNICIPALITY INFORMATION

Telephone Number	
Fax Number	
Postal address	
Physical address	

SECTION D: PROJECT DESCRIPTION

Project Title	
Project Description	
GPEMF Zones in which the proposed development is situated	

SECTION E: EXCLUDED ACTIVITIES

Only excluded listed activities will apply here. All 'excluded' listed activities for Listing Notice 1 and Listing Notice 2 associated with the development project must be indicated below:

Zone 1 and/or Zone 5	Listing Notice 1 Activity No(s):	Describe the relevant activity/ activities in writing as per Listing Notice 1	Describe the portion of the development as per the project description that relates to the applicable listed activity

SECTION E: EXCLUDED ACTIVITIES			
Zone 1 and/or Zone 5	Listing Notice 2 Activity No(s):	Describe the relevant activity/ activities in writing as per Listing Notice 2	Describe the portion of the development as per the project description that relates to the applicable listed activity

Please note:
Only those activities for which the Proponent applies will be considered for registration. The onus is on the Proponent to ensure that all the excluded listed activities are included in the registration. Failure to do so may invalidate the request for registration.

SECTION F: DECLARATION BY THE PROPONENT OF THE DEVELOPMENT/FACILITY

I, _____ hereby declare that I have read the completed registration form and hereby confirm that the information provided is to the best of my knowledge true and correct.

I declare that I have not commenced with the project as described in Section D of this form and will not commence until a registration number has been received as contemplated in the GPEMF Standard.

Furthermore, I declare that I am fully aware of my responsibilities in terms of the GPEMF Standard in terms of the NEMA, as amended and failure to comply with these requirements may constitute an offence.

Owner of the Facility (Name and Surname) _____

Designation _____

Signature _____ (duly authorised to sign on behalf of Owner of the Facility)

Date _____ **Place** _____

Commissioner of Oaths _____

Designation _____

Signature _____

Date _____ **Place** _____

~

Commissioner of Oaths Stamp

SECTION G: DECLARATION BY THE LAND OWNER²**NB:(Only if the landowner is different from the Owner of the Facility)**

I, _____ declare that I -

- Am, aware of the development activity/ activities to take place or taking place in my property
- Consented to this/ these activity/activities taking / to take place in my property hereby indemnify, the government of the Republic, the competent authority and all its officers, agents and employees, from any liability arising out of the content of any report, any procedure or any action for which the Proponent is responsible in terms of the GPEMF Standard in terms of the NEMA, 1998 as amended.

Owner of the Facility (Name and Surname) _____**Designation** _____**Signature** _____**Date** _____ **Place** _____**Commissioner of Oaths** _____**Designation** _____**Signature** _____**Date** _____ **Place** _____**Commissioner of Oaths Stamp** _____

² In the event of more than one landowner, each landowner must sign the declaration.

GPEMF Standard Registration Number	
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DECLARATION OF THE CHANGE OF OWNERSHIP

I, _____ (full names of proponent) an adult male/female with identification number _____ residing at _____ (physical address), declare under oath that, I -

1. am the new owner of the facility with details as indicated in table below. I fully understand that I am responsible for the development in the location;
2. am responsible for ensuring compliance with the GPEMF Standard in terms of Section 24(2)(c) of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA) as amended and can be subjected to enforcement action on my failure to comply with the GPEMF Standard;
3. am aware of my responsibility to exercise an environmental duty of care in terms of section 28 of the NEMA to take reasonable measures to prevent environmental pollution or degradation from occurring, continuing or recurring, or, in so far as such harm to the environment is authorised by law or cannot reasonably be avoided or stopped, to minimise and rectify such pollution or degradation of the environment;
4. confirm that I have personally read all the generally applicable and activity specific Environmental Management Specifications for the GPEMF Standard, understand it and am familiar with the information submitted in this document and all attachments and that, based on my enquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete;
5. am aware of my responsibility to make available the proof of registration letter as contemplated in section 4(7) the GPEMF Standard; and

6. am aware that there are significant penalties for submitting false information, including the possibility of a fine and imprisonment.

Signature of Proponent: _____

Date: _____

Signature of Owner: _____

Name of Company: _____

Date: _____

Signature of the Commissioner of Oaths: _____

Date: _____

Designation: _____

Official stamp:

1. NEW OWNER DETAILS	
Name of Individual / company	
Contact Person	
Passport/ Identity Document (ID) Number	
Company Registration Number	
Physical Address	
Postal address	
Email Address	
Phone No.	
Fax No.	

DEPARTMENT OF HIGHER EDUCATION AND TRAINING

NO. 165

02 MARCH 2018

HIGHER EDUCATION ACT, 1997 (ACT No.101 OF 1997)**MINIMUM ADMISSION REQUIREMENTS FOR HIGHER CERTIFICATE, DIPLOMA AND BACHELOR'S DEGREE PROGRAMMES FOR HOLDERS OF THE SENIOR CERTIFICATE (AMENDED) AND THE REVOCATION OF DESIGNATED LIST OF SUBJECTS**

I, Hlengiwe Buhle Mkhize, Minister of Higher Education and Training, in terms of section 3 of the Higher Education Act, 1997 (Act No.101 of 1997), as amended, hereby promulgate an amendment to the policy for the *Minimum Admission requirements for Higher Certificate, Diploma and Bachelor's Degree programmes requiring a Senior Certificate* so as to accommodate candidate awarded a Senior Certificate (amended) issued in terms of the policy, A Résumé of Subjects for the Senior Certificate, Report 550 (2017/07) published in Government Gazette Notice No. 612 and 613 in Government Gazette, No. 37902 dated 11 August 2014.

I am also revoking the designated list of subjects with immediate effect.

This policy will be applicable to all higher education institutions and will be effective immediately.

In that this policy enables Umalusi, the Quality Council for General and Further Education, acting in terms of its mandate and applicable law, to endorse the certificates of qualifying candidates, and in that qualifying candidates in 2015 and 2016 were disadvantaged by the policy vacuum, this policy will be retrospective to January 2015 in order to allow Umalusi to endorse the certificates of qualifying candidates.


Prof HB Mkhize, MP

Minister of Higher Education and Training

Date: 13/12/2017

SCHEDULE

MINIMUM ADMISSION REQUIREMENTS FOR HIGHER CERTIFICATE, DIPLOMA AND DEGREE PROGRAMMES REQUIRING A SENIOR CERTIFICATE (AMENDED)

1. Policy considerations

The Higher Education Act, 1997, ensures that policies for higher education institutions, including admission policies, must be formulated with due regards for its relationship to and influence on education and training in other sectors. In particular such policies are expected to advance the objectives of redress, equity and quality in higher education. This policy provides the statutory minimum or threshold norms for admission to undergraduate Higher Certificate, Diploma and Bachelor's Degree programmes for holders of the Senior Certificate (amended) (SC(a)). This is a qualification for adult learners, and as such the policy fills an important policy vacuum.

The SC(a) will thus provide a gateway into higher education. Where the minimum requirements set out in this policy have been met, a qualifying candidate is not guaranteed admission to any programme of study in higher education. Public higher education institutions have, within the context of this policy, the right to set specific admission requirements to particular programmes in terms of section 37 of the Act. Private higher education institutions may also set additional admission requirements for entry into accredited programmes.

The SC(a) is a qualification aimed at adult learners. However, there will be adult learners who do not achieve a National Senior Certificate (NSC), a National Certificate Vocational (NC(V)) or an SC(a) or equivalent qualification, who can benefit from higher education. Alternative access routes are

available through Universities South Africa and its Matriculation Board, and institutional admissions policies of public and private HEIs.

2. Minimum requirements for admission to Higher Certificate, Diploma and Bachelor's Degree programmes in public and private higher education institutions in South Africa

2.1 Higher Certificate

The minimum admission requirement is a Senior Certificate issued under the August 2014 regulations for the Senior Certificate published under Government Notices 612 and 613 of August 2014 for the SC(a) with a minimum of 30% in the language of learning and teaching in the case of NSC/SC(a) and with a minimum of 33.3% in the case of SC (Report 550) of the higher education institution as certified by the Quality Council for General and Further Education and Training (Umalusi).

Institutional and programme needs may require appropriate combinations of subjects and levels of achievement

2.2 Diploma

The minimum admission requirement is a Senior Certificate issued under the August 2014 regulations for the Senior Certificate published under Government Notices 612 and 613 of August 2014 for the SC(a) with a minimum of 30% in the language of learning and teaching in the case of NSC/SC(a) and with a minimum of 33.3% in the case of SC (Report 550) of the higher education institution as certified by the Quality Council for General and Further Education and Training (Umalusi) coupled with:

- (a) If the candidate offered six NSC/SC(a) 20-credit subjects, an achievement rating of 3 (40%) or better in four NSC/SC(a) subjects; or
- (b) If the candidate offered a mix of SC (Report 550), NSC and SC(a) 20-credit subjects, and passes an achievement rating of 3 (40%) or better in at least four subjects, which must be Higher Grade SC and/or NSC and/or

SC(a) subjects, provided that a candidate may complete one Standard Grade SC subject at 50% or better in place of one Higher Grade SC subject at 40% or better.

Institutional and programme needs may require appropriate combinations of subjects and levels of achievement.

2.3 Bachelor's Degree

The minimum admission requirement is a Senior Certificate issued under the August 2014 regulations for the Senior Certificate published under Government Notices 612 and 613 of August 2014 for the SC(a) with a minimum of 30% in the language of learning and teaching in the case of NSC/SC(a) and with a minimum of 33.3% in the case of SC (Report 550) of the higher education institution as certified by the Quality Council for General and Further Education and Training (Umalusi) coupled with:

- (a) If the candidate offered six NSC/SC(a) 20-credit subjects, an achievement rating of 4 (50%) or better in four NSC/SC(a) subjects; or
- (b) If the candidate offered a mix of SC (Report 550), NSC and SC(a) 20-credit subjects, and passes an achievement rating of 4 (50%) or better in at least four subjects, which must be Higher Grade SC and/or NSC and/or SC(a) subjects.

Institutional and programme needs may require appropriate combinations of subjects and levels of achievement

DEPARTMENT OF HIGHER EDUCATION AND TRAINING

NO. 166

02 MARCH 2018

NATIONAL QUALIFICATIONS FRAMEWORK ACT, 2008 (ACT NO. 67 OF 2008)

CALL FOR NOMINATIONS OF A MEMBER FROM THE ORGANISED LABOUR FOR
APPOINTMENT TO THE BOARD OF THE SOUTH AFRICAN QUALIFICATIONS
AUTHORITY

I, Hlengiwe Buhle Mkhize, Minister of Higher Education and Training, in terms of section 14(3)(a) and (4)(d) read with section 15(3) of the National Qualifications Framework Act No. 67 of 2008, hereby invite nominations for the appointment to the South African Qualifications Authority (SAQA) Board of a member from organised labour.

All nominations must be submitted by completing the Nomination Form attached hereto as **Schedule 1** which must be accompanied by the following documents:

- A comprehensive *curriculum vitae* of the nominee;
 - Full names of the individual or organisation making the nomination;
 - The nominee's signed written acceptance of the nomination; and
- Certified copies of all qualifications of the nominee.

The closing date for the receipt of nominations is **21 working days** from the date of publication of this Notice.

Please address all correspondence and any related enquiries to:

The Director-General

Department of Higher Education and Training

Attention: Dr Shirley Lloyd

Private Bag X174

PRETORIA

0001

Tel: 012 312 5081/5178

Email: Lloyd.s@dhet.gov.za



Prof HB Mkhize, MP

Minister of Higher Education and Training

Date: 13/12/2017

SCHEDULE 1**APPOINTMENT OF A MEMBER FROM THE ORGANISED LABOUR ON THE BOARD OF
THE SOUTH AFRICAN QUALIFICATIONS AUTHORITY****NOMINATION FORM****A The Nominee**

I, _____ hereby nominate
_____ whose
curriculum vitae is attached for membership to the South African Qualifications Authority (SAQA) Board.

**B In terms of Section 14(3b)(i-vi), in order to ensure that the functions of the SAQA are
performed according to the highest professional standards, the person I am nominating:**

1. Is broadly representative of the education and training sectors and related interests

Motivation/Detail: _____

2. Has thorough knowledge and understanding of education and training

Motivation/Detail: _____

3. Appreciates the role of education and training in the reconstruction and transformation of the South African economy and society

Motivation/Detail: _____

4. Has known and attested commitment to the interests of education and training

Motivation/Detail: _____

5. Has knowledge and understanding of qualifications matters and quality assurance in education and training

Motivation/Detail: _____

6. Is competent to undertake the governance and oversee the financial affairs of the SAQA

Motivation/Detail: _____

C In terms of Section 14(3)(c) the Minister is required to give due attention to the representivity of the Board in terms of such factors as race, gender and disability.

1. The nominee considers himself/herself to be representative of which **race**: _____

2. **Gender** ☐ Male ☐ Female

3. **Disability:** ☐ Yes ☐ No

If Yes to 3, describe: _____

Acceptance of the nomination by nominee:

I, _____ hereby accept the
above nomination.

Contact Details (Email, Tel No, Cell No.): _____

Signature: _____

Date: _____

Please complete:

1. Name of organisation: _____
2. Name of mandated official making the nomination: _____
3. Designation/Position of the mandated official: _____
4. Contact Details of mandated official: _____

DEPARTMENT OF RURAL DEVELOPMENT AND LAND REFORM

NO. 167

02 MARCH 2018

GENERAL NOTICE IN TERMS OF THE RESTITUTION OF LAND RIGHTS ACT, 1994 (ACT NO. 22 OF 1994), AS AMENDED

Notice is hereby given in terms of Section 11 (1) of the Restitution of Land Rights Act, (Act No. 22 of 1994), as amended, that a claim for restitution of land rights has been lodged on portion 17 of the farm Belvedere 362 KT and Portions 9, 12, 15, 19, 22, 25, 28, 29 and 30 of farm Kennedy's Vale 361 KT. These properties are situated within the Greater Tzanebe Local Municipality in Sekhukhune District Municipality of Limpopo Province in the Republic of South Africa.

The properties are claimed by Mosehla Makola Isaac on behalf of Bakgatla Ba Mosehla Community under reference number KRP 805.

The Table below indicates the current description of the properties after the dispossession of Bakgatla Ba Ga Mosehla

BELVEDERE 362 KT

FARM NAME	TITLE DEED	EXTENT	OWNER	BONDS/ ENDORSEMENTS	HOLDER
Portion 17 (Remaining Extent) of the farm Belvedere 362 KT	T5293/2016PTA	86.7792 Ha	Bakoni Ba Maimela Communal Association	1-8140/2006CPTA KT 362, 17PTA K135/1987PCPTA K3005/1996RMPTA K3345/2003 RMPTA K3345/1990 RMPTA K3542/1988 RMPTA K6237/1993 RMPTA K632/2000RMPTA	- - - GENCOR LTD SAMANCOR LTD - - - BHP BILLITON SA LTD

KENNEDY'S VALE 361 KT

FARM NAME	TITLE DEED	EXTENT	OWNER	BONDS/ ENDORSEMENTS	HOLDER
Portion 9 Kennedy's Vale 361 KT	T87757/1988PTA	1.7131 ha	Rhodium Reefs Ltd	K3024/1981SPTA K4069/1988MPPTA K4094/1986SPTA VA697/2015 1-8140/2006CPTA	Language Johanna Marthina - - Rhodium Reefs LTD -
Portion 12 Kennedy's					

This gazette is also available free online at www.gpwnonline.co.za

Portion 29 (Remaining Extent) Kennedy's Vale 361 KT	T114225/992PTA	421.4917ha	Rhodium Reefs Ltd	K1871/1985RMPTA	-
				K1991/1981RMPTA	-
				K3024/1981SPTA	Language Johanna Marthina Ltd
				K4094/1986SPTA	-
				K4284/1986RMPTA	-
				K7015/1992RM	Vanadium Technologies Pty
				VA1610/2015	Rhodium Reef LTD
				VA333/2017	Rhodium Reef LTD
				K1588/2004SPTA	-
				K189/2017SPTA	-
				K3188/1974SPTA	Louw Hugo Lourens
				K344/1976SPTA	-
				K547/2002SPTA	-
				K546/2002SPTA	-
				K55/1990SPTA	-
				K6117/2000SPTA	-
				K7013/1992SPTA	-
				K7014/1992SPTA	-
Portion 30 Kennedy's Vale 361 KT	T68437/2016	158.3189ha	BCR Minerals Pty Ltd	T24342/1988PTA	-
				VA1177/2015SPTA	Rhodium Reef LTD
				VA680/2017PTA	Rhodium Reef LTD
				VA962/2002PTA	-
				T68437/2016PTA	Rhodium Reef LTD

Therefore, the Office of the Regional Land Claims Commissioner: Limpopo wishes to make it known to the public that the farm mentioned above is affected by the land claim. Any party that has an interest in the above-mentioned property is hereby invited to submit in writing within 30 days of publication of this notice, any comment, and/or objection to this land claim to the Office of the Regional Land Claims Commissioner: Limpopo at the addresses set out below.

The Office of the Regional Land Claims Commissioner
Private Bag X 9552
Polokwane
0700

or

Submissions may also be delivered to:
First Floor, 96 Kagiso House
Corner Rissik & Schoeman Streets
Polokwane


MR. LEBYANE MAPHUTHA

REGIONAL LAND CLAIMS COMMISSIONER
DATE:

SOUTH AFRICAN REVENUE SERVICE

NO. 168

02 MARCH 2018

NOTICE ISSUED IN TERMS OF PARAGRAPH 14(3)(a) OF THE FOURTH SCHEDULE TO THE INCOME TAX ACT, 1962 (ACT NO. 58 OF 1962), SECTION 8(2A) OF THE UNEMPLOYMENT INSURANCE CONTRIBUTIONS ACT, 2002 (ACT NO. 4 OF 2002), AND SECTION 6(2A) OF THE SKILLS DEVELOPMENT LEVIES ACT, 1999 (ACT NO. 9 OF 1999), PRESCRIBING THE DATE BY WHICH AN EMPLOYER MUST RENDER A RETURN AS PRESCRIBED IN THAT PARAGRAPH AND THOSE SECTIONS

By the power vested in me by paragraph 14(3)(a) of the Fourth Schedule to the Income Tax Act, 1962 (Act No. 58 of 1962), section 8(2A) of the Unemployment Insurance Contributions Act, 2002 (Act No. 4 of 2002), and section 6(2A) of the Skills Development Levies Act, 1999 (Act No. 9 of 1999), I, Thomas Swabihi Moyane, Commissioner for the South African Revenue Service, hereby determine that an employer's return (EMP 501) for the period—

- (a) 1 March 2017 to 28 February 2018, must be rendered on or before 31 May 2018; and
- (b) 1 March 2018 to 31 August 2018, must be rendered on or before 31 October 2018.


T S MOYANE
COMMISSIONER FOR THE SOUTH AFRICAN REVENUE SERVICE

SUID-AFRIKAANSE INKOMSTEDIENS

NO. 168

02 MAART 2018

KENNISGEWING UITGEVAARDIG INGEVOLGE PARAGRAAF 14(3)(a) VAN DIE VIERDE BYLAE BY DIE INKOMSTEBELASTINGWET, 1962 (WET NO. 58 VAN 1962), ARTIKEL 8(2A) VAN DIE “UNEMPLOYMENT INSURANCE CONTRIBUTIONS ACT, 2002” (WET NO. 4 VAN 2002), EN ARTIKEL 6(2A) VAN DIE “SKILLS DEVELOPMENT LEVIES ACT, 1999” (WET NO. 9 VAN 1999), WAT DIE DATUM VOORSKRYF WAARTEEN 'N WERKGEWER 'N OPGAWE SOOS VOORGESKRYF IN DAARDIE PARAGRAAF EN ARTIKELS MOET INDIEN

Kragtens die bevoegdheid aan my verleen ingevolge paragraaf 14(3)(a) van die Vierde Bylae by die Inkomstebelastingwet, 1962 (Wet No. 58 van 1962), artikel 8(2A) van die “Unemployment Insurance Contributions Act, 2002” (Wet No. 4 van 2002), en artikel 6(2A) van die “Skills Development Levies Act, 1999” (Wet No. 9 van 1999), bepaal, ek, Thomas Swabihi Moyane, Kommissaris vir die Suid-Afrikaanse Inkomstediens, hiermee, dat die opgawe vir werkgewers (EMP 501) vir die tydperk—

- (a) 1 Maart 2017 tot 28 Februarie 2018, voor of op 31 Mei 2018 ingedien moet word; en
- (b) 1 Maart 2018 tot 31 Augustus 2018, voor of op 31 Oktober 2018 ingedien moet word.



T S MOYANE
KOMMISSARIS VIR DIE SUID-AFRIKAANSE INKOMSTEDIENS

ISAZISO ESIKHISHWA NGOKWENDIMA 14(3)(a) YESHEDULI YESINE YOMTHETHO WEZENTELA YENGENISOMALI KA-1962 (UMTHETHO NO. 58 KA-1962), NGOKWESIGABA 8(2) SOMTHETHO WEZEZIMALI ZOMSHUWALENSE WOKUPHELELWA UMSEBENZI KA-2002 (UMTHETHO NO. 4 KA-2002), NANGOKWESIGABA 6(2A) SOMTHETHO WEZINTELA EZIBANJELWA UKUTHUTHUKISWA KWAMAKHONO KA-1999 (UMTHETHO NO. 9 KA-1999), ESINQUMA USUKU OKUMELE UMQASHI ABE ESELETHE NGALO IZINCWADI ZENTELA NJENGOBA KUNQUNYWE KULEYO NDIMA NAKULEZO ZIGABA

Ngokwamandla engiwanikezwe yindima 14(3)(a) yeSheduli Yesine yoMthetho Wezentela Yengenisomali ka-1962 (uMthetho No. 58 ka-1962), isigaba 8(2A) soMthetho Wezezimali Zomshuwalense Wokuphelelwa Umsebenzi ka-2002 (uMthetho No. 4 ka-2002) nesigaba 6(2A) soMthetho Wezintela Ezibanjelwa Ukuthuthukiswa Kwamakhono ka-1999 (uMthetho No. 9 ka-1999), mina, Thomas Swabihi Moyane, uKhomishana woPhiko Lwezokuqoqwa Kwentela eNingizimu Afrika, nginquma ukuthi izincwadi zentela zomqashi (EMP-501) zesikhathi —

- a) esiqala mhla ka 1 kuNdasa 2017 kuya ku 28 kuNhlolanja 2018 kumele zilethwe engakedluli umhla ka 31 kuNhlabathi 2018; futhi
- b) ezesiqala mhla ka 1 kuNdasa 2018 kuya ku 31 kuNcwaba 2018 kumele zilethwe engakedluli umhla ka 31 kuMfumu 2018.


T.S. MOYANE
UKHOMISHANA WOPHIKO
ENINGIZIMU AFRIKA

LWEZOKUQOQWA KWENTELA

TSEBISO E NEHETSWE HO LATELA TEMANA 14(3)(a) YA SHEJULE SA BONE SA *INCOME TAX ACT*, 1962 (ACT NO. 58 OF 1962), KAROLO 8(2A) YA *UNEMPLOYMENT INSURANCE CONTRIBUTIONS ACT*, 2002 (ACT NO. 4 OF 2002), LE KAROLO 6(2A) YA *SKILLS DEVELOPMENT LEVIES ACT*, 1999 (ACT NO. 9 OF 1999), TSE HLALOSANG LETSATSI LEO MOHIRI A TSHWANETSENG HO NEHELANA KA LESEDI JWALO KA HA HO HLALOSITSWE TEMANENG EO LE DIKAROLONG TSEO

Ka matla ao ke a nehetsweng ke temana 14(3)(a) ya Sejule sa Bone sa *Income Tax Act*, 1962 (Act No. 58 of 1962), karolo 8(2A) ya *Unemployment Insurance Contributions Act*, 2002 (Act No. 4 of 2002), le karolo 6(2A) ya *Skills Development Levies Act*, 1999 (Act No. 9 of 1999), Nna, Thomas Swabihi Moyane, Mokhomishenara wa Tshebeletso ya Lekeno Afrika Borwa, ke hlwaya hore mohiri a nehelane ka lesedi (EMP 501) bakeng la nako ya—

- a) 1 Hlakubele 2017 ho ya ho 29 Hlakola 2018 le tshwanetse ho nehelwa ka la kapa pele ho 31 Motsheanong 2018; le
- b) 1 Hlakubele 2018 ho ya ho 31 Phato 2018 le tshwanetse ho nehelwa ka la kapa pele ho 31 Mphalane 2018.


T.S. MOYANE
MOKHOMISHENARA, TSHEBELETSO YA LEKENO AFRIKA BORWA

SOUTH AFRICAN REVENUE SERVICE

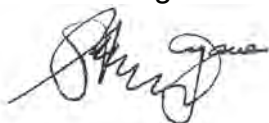
NO. 169

02 MARCH 2018

DETERMINATION OF THE DAILY AMOUNT IN RESPECT OF MEALS AND INCIDENTAL COSTS FOR PURPOSES OF SECTION 8(1) OF THE INCOME TAX ACT, 1962 (ACT NO. 58 OF 1962)

By virtue of the powers vested in me by section 8(1)(c)(ii) of the Income Tax Act, 1962 (Act No. 58 of 1962), I, Thomas Swabihi Moyane, Commissioner for the South African Revenue Service, hereby determine in the Schedule hereto the amounts which shall be deemed to have been actually expended by a person in respect of meals and incidental costs for the purposes of section 8(1)(a)(i)(bb) of that Act.

The amounts determined in this notice apply in respect of the year of assessment commencing 1 March 2018.



TS MOYANE
COMMISSIONER FOR THE SOUTH AFRICAN REVENUE SERVICE

SCHEDULE

1. Unless the context otherwise indicates, any word or expression to which a meaning has been assigned in the Income Tax Act, 1962, bears the meaning so assigned.
2. The following amounts will be deemed to have been actually expended by a recipient to whom an allowance or advance has been granted or paid—
 - (a) where the accommodation, to which that allowance or advance relates, is in the Republic and that allowance or advance is paid or granted to defray—
 - (i) incidental costs only, an amount equal to R128.00 per day; or
 - (ii) the cost of meals and incidental costs, an amount equal to R416.00 per day; or
 - (b) where the accommodation, to which that allowance or advance relates, is outside the Republic and that allowance or advance is paid or granted to defray the cost of meals and incidental costs, an amount per day determined in accordance with the following table for the country in which that accommodation is located—

Table: Daily Amount for Travel Outside the Republic

Country	Currency	Amount
Albania	Euro	97
Algeria	Euro	110
Angola	US \$	303
Antigua and Barbuda	US \$	220
Argentina	US \$	133
Armenia	US \$	220
Austria	Euro	131
Australia	A \$	230
Azerbaijani	US \$	145
Bahamas	US \$	191
Bahrain	B Dinars	36
Bangladesh	US \$	79

Barbados	US \$	202
Belarus	Euro	62
Belgium	Euro	146
Belize	US \$	152
Benin	Euro	111
Bolivia	US \$	78
Bosnia-Herzegovina	Euro	75
Botswana	Pula	826
Brazil	Reals	409
Brunei	US \$	88
Bulgaria	Euro	91
Burkina Faso	CFA Francs	58,790
Burundi	Euro	73
Cambodia	US \$	99
Cameroon	Euro	120
Canada	C \$	177
Cape Verde Islands	Euro	65
Central African Republic	Euro	94
Chad	Euro	121
Chile	US \$	106
China (People's Republic)	US \$	127
Colombia	US \$	94
Comoros Island	Euro	122
Cook Islands	NZ \$	211
Cote D'Ivoire	Euro	119
Costa Rica	US \$	116
Croatia	Euro	99
Cuba	US \$	114
Cyprus	Euro	117
Czech Republic	Euro	90
Democratic Republic of Congo	US \$	164
Denmark	Danish Kroner	2,328
Djibouti	US \$	99
Dominican Republic	US \$	99
Ecuador	US \$	163
Egypt	Egyptian Pounds	873
El Salvador	US \$	98
Equatorial Guinea	Euro	166

Eritrea	US \$	109
Estonia	Euro	92
Ethiopia	US \$	95
Fiji	US \$	102
Finland	Euro	171
France	Euro	129
Gabon	Euro	160
Gambia	Euro	74
Georgia	US \$	95
Germany	Euro	125
Ghana	US \$	130
Greece	Euro	138
Grenada	US \$	151
Guatemala	US \$	114
Guinea	Euro	78
Guinea Bissau	Euro	59
Guyana	US \$	118
Haiti	US \$	109
Honduras	US \$	186
Hong Kong	Hong Kong \$	1,395
Hungary	Euro	92
Iceland	ISK	25,466
India	Indian Rupee	5,932
Indonesia	US \$	86
Iran	US \$	120
Iraq	US \$	125
Ireland	Euro	139
Israel	US \$	209
Italy	Euro	125
Jamaica	US \$	151
Japan	Yen	16,424
Jordan	US \$	201
Kazakhstan	US \$	100
Kenya	US \$	138
Kiribati	Australian \$	233
Korea Republic	Korean Won	184,642
Kuwait (State of)	Kuwait Dinars	51
Kyrgyzstan	US \$	172
Laos	US \$	92

Latvia	US \$	150
Lebanon	US \$	158
Lesotho	RSA Rand	750
Liberia	US \$	112
Libya	US \$	120
Lithuania	Euro	154
Macao	Hong Kong \$	1,196
Macedonia (Former Yugoslav)	Euro	100
Madagascar	Euro	58
Madeira	Euro	290
Malawi	Malawi Kwacha	31,254
Malaysia	Ringgit	382
Maldives	US \$	202
Mali	Euro	178
Malta	Euro	132
Marshall Islands	US \$	255
Mauritania	Euro	97
Mauritius	US \$	114
Mexico	Mexican Pesos	1,313
Moldova	US \$	117
Mongolia	US \$	69
Montenegro	Euro	94
Morocco	Dirhams	1,081
Mozambique	US \$	101
Myanmar	US \$	123
Namibia	RSA Rands	950
Nauru	Australian \$	278
Nepal	US \$	64
Netherlands	Euro	122
New Zealand	NZ \$	206
Nicaragua	US \$	90
Niger	Euro	75
Nigeria	US \$	242
Niue	New Zealand \$	252
Norway	NOK	1,753
Oman	Rials Omani	77
Pakistan	Pakistani Rupees	6,235
Palau	US \$	252

Palestine	US \$	147
Panama	US \$	105
Papua New Guinea	Kina	285
Paraguay	US \$	76
Peru	US \$	139
Philippines	US \$	122
Poland	Euro	88
Portugal	Euro	87
Qatar	Qatar Riyals	715
Republic of Congo	Euro	149
Reunion	Euro	164
Romania	Euro	83
Russia	Euro	330
Rwanda	US \$	102
Samoa	Tala	193
Sao Tome & Principe	Euro	160
Saudi Arabia	Saudi Riyals	512
Senegal	Euro	113
Serbia	Euro	83
Seychelles	Euro	132
Sierra Leone	US \$	90
Singapore	Singapore \$	232
Slovakia	Euro	102
Slovenia	Euro	106
Solomon Islands	Sol Islands \$	1,107
South Sudan	US \$	146
Spain	Euro	112
Sri Lanka	US \$	100
St. Kitts & Nevis	US \$	227
St. Lucia	US \$	215
St. Vincent & The Grenadines	US \$	187
Sudan	US \$	200
Suriname	US \$	107
Swaziland	RSA Rand	1,367
Sweden	Swedish Kronor	1,317
Switzerland	S Franc	201
Syria	US \$	185
Taiwan	New Taiwan \$	4,015
Tajikistan	US \$	97

Tanzania	US \$	129
Thailand	Thai Baht	4,956
Togo	CFA Francs	64,214
Tonga	Pa'anga	251
Trinidad & Tobago	US \$	213
Tunisia	Tunisian Dinar	198
Turkey	Euro	101
Turkmenistan	US \$	125
Tuvalu	Australian \$	339
Uganda	US \$	111
Ukraine	Euro	131
United Arab Emirates	UAE Dirhams	699
United Kingdom	British Pounds	102
Uruguay	US \$	133
USA	US \$	155
Uzbekistan	Euro	80
Vanuatu	US \$	166
Venezuela	US \$	294
Vietnam	US \$	91
Yemen	US \$	94
Zambia	US \$	119
Zimbabwe	US \$	123
Other countries not listed	US \$	215

SUID-AFRIKAANSE INKOMSTEDIENS

NO. 169

02 MAART 2018

**BEPALING VAN DAGTOELAE TEN OPSIGTE VAN ETES EN TOEVALLIGE
UITGAWES VIR DOELEINDES VAN ARTIKEL 8(1) VAN DIE
INKOMSTEBELASTINGWET, 1962 (WET NO. 58 VAN 1962)**

Kragtens die bevoegdheid aan my verleen deur artikel 8(1)(c)(ii) van die Inkomstebelastingwet, 1962 (Wet No. 58 van 1962), bepaal ek, Thomas Swabihi Moyane, Kommissaris van die Suid-Afrikaanse Inkomstediens, hiermee in die Bylae hierby die bedrae wat geag word werklik deur 'n persoon aangegaan te gewees het ten opsigte van etes en toevallige uitgawes by die toepassing van artikel 8(1)(a)(i)(bb) van daardie Wet.

Die bedrag in hierdie kennisgewing bepaal is van toepassing ten opsigte van die jaar van aanslag wat op 1 Maart 2018 begin.



TS MOYANE
KOMMISSARIS VAN DIE SUID-AFRIKAANSE INKOMSTEDIENS

BYLAE

1. Tensy uit die samehang anders blyk, dra enige woord of uitdrukking waaraan 'n betekenis in die Inkomstebelastingwet, 1962, toegeskryf is die betekenis aldus daaraan toegeskryf.

2. Die volgende bedrae word geag werklik deur 'n ontvanger aan wie 'n toelae of voorskot toegestaan of betaal is, aangegaan te wees—

- (a) waar die verblyf waarop die toelae of voorskot betrekking het in die Republiek is en daardie toelae of voorskot betaal of toegestaan is —
- (i) om slegs toevallige uitgawes te bestry, 'n bedrag gelyk aan R128.00 per dag; of
 - (ii) om die koste van etes en toevallige uitgawes te delg, 'n bedrag gelyk aan R416.00 per dag; of
- (b) waar die huisvesting waarop daardie toelae of voorskot betrekking het, buite die Republiek is en daardie toelae of voorskot betaal of toegestaan word om die koste van etes en toevallige uitgawes te bestry, 'n bedrag per dag bepaal ooreenkomstig die volgende tabel vir die land waarbinne daardie akkommodasie geleë is—

Tabel A: Daaglikse bedrag vir reise buite die Republiek

Land	Geldeenheid	Bedrag
Albania	Euro	97
Algeria	Euro	110
Angola	US \$	303
Antigua and Barbuda	US \$	220
Argentina	US \$	133
Armenia	US \$	220
Austria	Euro	131
Australia	A \$	230
Azarbaijani	US \$	145
Bahamas	US \$	191
Bahrain	B Dinars	36
Bangladesh	US \$	79
Barbados	US \$	202

Belarus	Euro	62
Belgium	Euro	146
Belize	US \$	152
Benin	Euro	111
Bolivia	US \$	78
Bosnia-Herzegovina	Euro	75
Botswana	Pula	826
Brazil	Reals	409
Brunei	US \$	88
Bulgaria	Euro	91
Burkina Faso	CFA Francs	58,790
Burundi	Euro	73
Cambodia	US \$	99
Cameroon	Euro	120
Canada	C \$	177
Cape Verde Islands	Euro	65
Central African Republic	Euro	94
Chad	Euro	121
Chile	US \$	106
China (People's Republic)	US \$	127
Colombia	US \$	94
Comoros Island	Euro	122
Cook Islands	NZ \$	211
Cote D'Ivoire	Euro	119
Costa Rica	US \$	116
Croatia	Euro	99
Cuba	US \$	114
Cyprus	Euro	117
Czech Republic	Euro	90
Democratic Republic of Congo	US \$	164
Denmark	Danish Kroner	2,328
Djibouti	US \$	99
Dominican Republic	US \$	99
Ecuador	US \$	163
Egypt	Egyptian Pounds	873
El Salvador	US \$	98
Equatorial Guinea	Euro	166
Eritrea	US \$	109

Estonia	Euro	92
Ethiopia	US \$	95
Fiji	US \$	102
Finland	Euro	171
France	Euro	129
Gabon	Euro	160
Gambia	Euro	74
Georgia	US \$	95
Germany	Euro	125
Ghana	US \$	130
Greece	Euro	138
Grenada	US \$	151
Guatemala	US \$	114
Guinea	Euro	78
Guinea Bissau	Euro	59
Guyana	US \$	118
Haiti	US \$	109
Honduras	US \$	186
Hong Kong	Hong Kong \$	1,395
Hungary	Euro	92
Iceland	ISK	25,466
India	Indian Rupee	5,932
Indonesia	US \$	86
Iran	US \$	120
Iraq	US \$	125
Ireland	Euro	139
Israel	US \$	209
Italy	Euro	125
Jamaica	US \$	151
Japan	Yen	16,424
Jordan	US \$	201
Kazakhstan	US \$	100
Kenya	US \$	138
Kiribati	Australian \$	233
Korea Republic	Korean Won	184,642
Kuwait (State of)	Kuwait Dinars	51
Kyrgyzstan	US \$	172
Laos	US \$	92
Latvia	US \$	150

Lebanon	US \$	158
Lesotho	RSA Rand	750
Liberia	US \$	112
Libya	US \$	120
Lithuania	Euro	154
Macao	Hong Kong \$	1,196
Macedonia (Former Yugoslav)	Euro	100
Madagascar	Euro	58
Madeira	Euro	290
Malawi	Malawi Kwacha	31,254
Malaysia	Ringgit	382
Maldives	US \$	202
Mali	Euro	178
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Marshall Islands	US \$	255
Mauritania	Euro	97
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Moldova	US \$	117
Mongolia	US \$	69
Montenegro	Euro	94
Morocco	Dirhams	1,081
Mozambique	US \$	101
Myanmar	US \$	123
Namibia	RSA Rands	950
Nauru	Australian \$	278
Nepal	US \$	64
Netherlands	Euro	122
New Zealand	NZ \$	206
Nicaragua	US \$	90
Niger	Euro	75
Nigeria	US \$	242
Niue	New Zealand \$	252
Norway	NOK	1,753
Oman	Rials Omani	77
Pakistan	Pakistani Rupees	6,235
Palau	US \$	252
Palestine	US \$	147

Panama	US \$	105
Papua New Guinea	Kina	285
Paraguay	US \$	76
Peru	US \$	139
Philippines	US \$	122
Poland	Euro	88
Portugal	Euro	87
Qatar	Qatar Riyals	715
Republic of Congo	Euro	149
Reunion	Euro	164
Romania	Euro	83
Russia	Euro	330
Rwanda	US \$	102
Samoa	Tala	193
Sao Tome & Principe	Euro	160
Saudi Arabia	Saudi Riyals	512
Senegal	Euro	113
Serbia	Euro	83
Seychelles	Euro	132
Sierra Leone	US \$	90
Singapore	Singapore \$	232
Slovakia	Euro	102
Slovenia	Euro	106
Solomon Islands	Sol Islands \$	1,107
South Sudan	US \$	146
Spain	Euro	112
Sri Lanka	US \$	100
St. Kitts & Nevis	US \$	227
St. Lucia	US \$	215
St. Vincent & The Grenadines	US \$	187
Sudan	US \$	200
Suriname	US \$	107
Swaziland	RSA Rand	1,367
Sweden	Swedish Kronor	1,317
Switzerland	S Franc	201
Syria	US \$	185
Taiwan	New Taiwan \$	4,015
Tajikistan	US \$	97
Tanzania	US \$	129

Thailand	Thai Baht	4,956
Togo	CFA Francs	64,214
Tonga	Pa'anga	251
Trinidad & Tobago	US \$	213
Tunisia	Tunisian Dinar	198
Turkey	Euro	101
Turkmenistan	US \$	125
Tuvalu	Australian \$	339
Uganda	US \$	111
Ukraine	Euro	131
United Arab Emirates	UAE Dirhams	699
United Kingdom	British Pounds	102
Uruguay	US \$	133
USA	US \$	155
Uzbekistan	Euro	80
Vanuatu	US \$	166
Venezuela	US \$	294
Vietnam	US \$	91
Yemen	US \$	94
Zambia	US \$	119
Zimbabwe	US \$	123
Ander lande nie gelys nie	US \$	215

UPHIKO LWEZIMALI EZINGENAYO ENINGIZIMU AFRIKA**Nomb.****NDASA 2018**

**UKUBEKWA KWAMANANI OSUKU MAYELANA NOKUDLA NEZINDLEKO
EZIVELAYO NGENHLOSO YESIGABA 8(1) SOMTHETHO WENTELA
YEMIVUZO, KA-1962 (UMTHETHO ONGUNOMB. 58 KA-1962)**

Ngokwamandla engiwanikiwe ngokwesigaba 8(1)(c)(ii) soMthetho WeNtela YemiVuzo ka-1962 (UMthetho onguNomb. 58 ka-1962), Mina, Thomas Swabihi Moyane, uKhomishana Wophiko Lwezimali Ezingenayo Eningizimu Afrika, ngibeka kwiSheduli elapha amanani okuzothiwa asetshenziswe ngumuntu mayelana nokudla nezindleko ezivelayo ngenhloso yesigaba 8(1) (a)(i)(bb) somthetho.

Amanani abekiwe lapha kulesi saziso aqala ukusebenza ngokonyaka wokukalelwa intela oqala ngomhlaka-1 kuNdasa 2018.

**TS MOYANE****UKHOMISHANA WOPHIKO LWEZIMALI EZINGENAYO ENINGIZIMU AFRIKA**

ISHEDULI

1. Ngaphandle uma isimo sichaza, noma yiliphi igama noma isisho esinikezwe incazelo kuMthetho WeNtela YemiVuzo, ka-1962, siqukethe leyo ncazelo esiyinikiwe.
2. Lawa manani alandelayo azothathwa njengalawo asetshenziswe owamukeliswayo lowo imali noma isamba esithile osinikwe noma esikhokhwe kuye—
 - (a) uma indawo yokuhlala, lapho leyo mali noma isamba sibhekiswe khona, ikwiRiphabhulikhi noma leyo mali noma isamba sikhokhwe khona noma sinikelwe ukukhokhwa—
 - (i) izindleko ezivelayo kuphela, inani elilingana no-R128.00 ngosuku; noma
 - (ii) izindleko zokudla nezindleko zokungalindelekile, inani elilingana no-R416.00 ngosuku; noma
 - (b) uma indawo yokuhlala, lapho imali noma isamba sibhekiswe khona, ingaphandle kweRiphabhulikhi, inani ngosuku elibekwe ngokwaleli tafula elilandelayo lezwe lapho leyo ndawo yokuhlala ikhona—

ITafula: Inani Losuku Lokuhambela Ngaphandle KweRiphabhulikhi

Izwe	Uhlobo lwemali	Inani
Albania	Euro	97
Algeria	Euro	110
Angola	US \$	303
Antigua and Barbuda	US \$	220
Argentina	US \$	133
Armenia	US \$	220
Austria	Euro	131
Australia	A \$	230
Azerbaijani	US \$	145
Bahamas	US \$	191
Bahrain	B Dinars	36

Bangladesh	US \$	79
Barbados	US \$	202
Belarus	Euro	62
Belgium	Euro	146
Belize	US \$	152
Benin	Euro	111
Bolivia	US \$	78
Bosnia-Herzegovina	Euro	75
Botswana	Pula	826
Brazil	Reals	409
Brunei	US \$	88
Bulgaria	Euro	91
Burkina Faso	CFA Francs	58,790
Burundi	Euro	73
Cambodia	US \$	99
Cameroon	Euro	120
Canada	C \$	177
Cape Verde Islands	Euro	65
Central African Republic	Euro	94
Chad	Euro	121
Chile	US \$	106
China (People's Republic)	US \$	127
Colombia	US \$	94
Comoros Island	Euro	122
Cook Islands	NZ \$	211
Cote D'Ivoire	Euro	119
Costa Rica	US \$	116
Croatia	Euro	99
Cuba	US \$	114
Cyprus	Euro	117
Czech Republic	Euro	90
Democratic Republic of Congo	US \$	164
Denmark	Danish Kroner	2,328
Djibouti	US \$	99
Dominican Republic	US \$	99
Ecuador	US \$	163
Egypt	Egyptian Pounds	873
El Salvador	US \$	98

Equatorial Guinea	Euro	166
Eritrea	US \$	109
Estonia	Euro	92
Ethiopia	US \$	95
Fiji	US \$	102
Finland	Euro	171
France	Euro	129
Gabon	Euro	160
Gambia	Euro	74
Georgia	US \$	95
Germany	Euro	125
Ghana	US \$	130
Greece	Euro	138
Grenada	US \$	151
Guatemala	US \$	114
Guinea	Euro	78
Guinea Bissau	Euro	59
Guyana	US \$	118
Haiti	US \$	109
Honduras	US \$	186
Hong Kong	Hong Kong \$	1,395
Hungary	Euro	92
Iceland	ISK	25,466
India	Indian Rupee	5,932
Indonesia	US \$	86
Iran	US \$	120
Iraq	US \$	125
Ireland	Euro	139
Israel	US \$	209
Italy	Euro	125
Jamaica	US \$	151
Japan	Yen	16,424
Jordan	US \$	201
Kazakhstan	US \$	100
Kenya	US \$	138
Kiribati	Australian \$	233
Korea Republic	Korean Won	184,642
Kuwait (State of)	Kuwait Dinars	51
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Madagascar	Euro	58
Madeira	Euro	290
Malawi	Malawi Kwacha	31,254
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Samoa	Tala	193
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Spain	Euro	112
Sri Lanka	US \$	100
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St. Lucia	US \$	215
St. Vincent & The Grenadines	US \$	187
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Swaziland	RSA Rand	1,367
Sweden	Swedish Kronor	1,317
Switzerland	S Franc	201
Syria	US \$	185
Taiwan	New Taiwan \$	4,015

Tajikistan	US \$	97
Tanzania	US \$	129
Thailand	Thai Baht	4,956
Togo	CFA Francs	64,214
Tonga	Pa'anga	251
Trinidad & Tobago	US \$	213
Tunisia	Tunisian Dinar	198
Turkey	Euro	101
Turkmenistan	US \$	125
Tuvalu	Australian \$	339
Uganda	US \$	111
Ukraine	Euro	131
United Arab Emirates	UAE Dirhams	699
United Kingdom	British Pounds	102
Uruguay	US \$	133
USA	US \$	155
Uzbekistan	Euro	80
Vanuatu	US \$	166
Venezuela	US \$	294
Vietnam	US \$	91
Yemen	US \$	94
Zambia	US \$	119
Zimbabwe	US \$	123
Amazwe angekho ohlwini	US \$	215

TSHUMELO YA MBUELO DZA AFRIKA TSHIPEMBE**Nomboro****THAFAMUHWE 2018**

**U TA MUTENGO WA DUVHA NGA DUVHA ZWI TSHI ELANA NA ZWIŁIWA
NA MITENGO YA NDEME HU TSHI ITELWA KHETHEKANYO 8(1) YA
MULAYO WA MUTHILO WA MBUELO WA, 1962 (MULAYO WA NOMBORO
58 WA 1962)**

U ya nga maanda e nda hwedzwa kha khethekanyo 8(1)(c)(ii) ya Mulayo wa Muthelo wa Mbuelo wa, 1962 (Mulayo wa Nomboro. 58 wa 1962), Nge, Thomas Swabihi Moyane, Mukhomishinari wa Tshumelo ya Mbuelo ya Afrika Tshipembe, ndi fhanu u ta kha Shedułu ya heli lınwalo mitengo ine ya do vha yo tea u shumiswa nga muthu zwi tshi elana na zwiliwa na mitengo ya ndeme hu tshi itelwa khethekanyo 8 (1)(a)(i)(bb) ya wonoyo mulayo.

Mitengo ye ya tiwa kha iyi ndivhadzo i shuma zwi tshi elana na nwaha wa asesimennde une wa do thoma nga la 1 Thafamuhwe 2018.

**TS MOYANE****MUKHOMISHINARI WA TSHUMELO YA MBUELO YA AFRIKA TSHIPEMBE**

SHEDULU

1. Nga nnda ha musu zwo sumbedzwa nga inwe ndila ipfi linwe na linwe lo netshedzwaho thalutshedzo kha Mulayo wa Muthelo wa Mbuelo wa, 1962, lo hwala thalutshedzo yo netshedzwaho.
2. Mitengo i tevhelaho i do dzhiwa sa yo shumiswaho nga mutanganedzi we a netshedzwa gavhelo kana tshelede ine ya netshedzwa kana u badelwa phanda ha u bva lwendo —
 - (a) he vhudzulo, hune gavhelo kana tshelede ine ya badelelwa phanda ya elana naho, ndi kha Riphabuliki hune gavhelo kana tshelede ine ya badelelwa phanda ya badelwa kana u netshedzwa tshelede kha—
 - (i) mitengo ya ndeme fhedzi, mutengo une wa lingana R128.00 nga duvha; kana
 - (ii) mutengo wa zwiliwa na mitengo ya ndeme, mutengo une wa lingana R416.00 nga duvha, kana
 - (b) he vhudzulo, hune gavhelo kana tshelede ine ya badelelwa phanda ya vha i tshi elana na zwenezwo, ndi nga nnda ha Riphabulikina, mutengo nga duvha, wo tiwaho u ya nga thebu lu i tevhelaho ya shango line vhudzulo havha khalo—

Thebu lu: Mutengo wa duvha nga duvha wa uya nnda ha Riphabuliki

Shango	Tshelede	Gemo
Albania	Euro	97
Algeria	Euro	110
Angola	US \$	303
Antigua and Barbuda	US \$	220
Argentina	US \$	133
Armenia	US \$	220
Austria	Euro	131

Australia	A \$	230
Azarbaijani	US \$	145
Bahamas	US \$	191
Bahrain	B Dinars	36
Bangladesh	US \$	79
Barbados	US \$	202
Belarus	Euro	62
Belgium	Euro	146
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Benin	Euro	111
Bolivia	US \$	78
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Botswana	Pula	826
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Canada	C \$	177
Cape Verde Islands	Euro	65
Central African Republic	Euro	94
Chad	Euro	121
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Colombia	US \$	94
Comoros Island	Euro	122
Cook Islands	NZ \$	211
Cote D'Ivoire	Euro	119
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Cuba	US \$	114
Cyprus	Euro	117
Czech Republic	Euro	90
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Denmark	Danish Kroner	2,328
Djibouti	US \$	99
Dominican Republic	US \$	99

Ecuador	US \$	163
Egypt	Egyptian Pounds	873
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Eritrea	US \$	109
Estonia	Euro	92
Ethiopia	US \$	95
Fiji	US \$	102
Finland	Euro	171
France	Euro	129
Gabon	Euro	160
Gambia	Euro	74
Georgia	US \$	95
Germany	Euro	125
Ghana	US \$	130
Greece	Euro	138
Grenada	US \$	151
Guatemala	US \$	114
Guinea	Euro	78
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Guyana	US \$	118
Haiti	US \$	109
Honduras	US \$	186
Hong Kong	Hong Kong \$	1,395
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India	Indian Rupee	5,932
Indonesia	US \$	86
Iran	US \$	120
Iraq	US \$	125
Ireland	Euro	139
Israel	US \$	209
Italy	Euro	125
Jamaica	US \$	151
Japan	Yen	16,424
Jordan	US \$	201
Kazakhstan	US \$	100
Kenya	US \$	138
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Korea Republic	Korean Won	184,642
Kuwait (State of)	Kuwait Dinars	51

Kyrgyzstan	US \$	172
Laos	US \$	92
Latvia	US \$	150
Lebanon	US \$	158
Lesotho	RSA Rand	750
Liberia	US \$	112
Libya	US \$	120
Lithuania	Euro	154
Macao	Hong Kong \$	1,196
Macedonia (Former Yugoslav)	Euro	100
Madagascar	Euro	58
Madeira	Euro	290
Malawi	Malawi Kwacha	31,254
Malaysia	Ringgit	382
Maldives	US \$	202
Mali	Euro	178
Malta	Euro	132
Marshall Islands	US \$	255
Mauritania	Euro	97
Mauritius	US \$	114
Mexico	Mexican Pesos	1,313
Moldova	US \$	117
Mongolia	US \$	69
Montenegro	Euro	94
Morocco	Dirhams	1,081
Mozambique	US \$	101
Myanmar	US \$	123
Namibia	RSA Rands	950
Nauru	Australian \$	278
Nepal	US \$	64
Netherlands	Euro	122
New Zealand	NZ \$	206
Nicaragua	US \$	90
Niger	Euro	75
Nigeria	US \$	242
Niue	New Zealand \$	252
Norway	NOK	1,753
Oman	Rials Omani	77
Pakistan	Pakistani Rupees	6,235
Palau	US \$	252

Palestine	US \$	147
Panama	US \$	105
Papua New Guinea	Kina	285
Paraguay	US \$	76
Peru	US \$	139
Philippines	US \$	122
Poland	Euro	88
Portugal	Euro	87
Qatar	Qatar Riyals	715
Republic of Congo	Euro	149
Reunion	Euro	164
Romania	Euro	83
Russia	Euro	330
Rwanda	US \$	102
Samoa	Tala	193
Sao Tome & Principe	Euro	160
Saudi Arabia	Saudi Riyals	512
Senegal	Euro	113
Serbia	Euro	83
Seychelles	Euro	132
Sierra Leone	US \$	90
Singapore	Singapore \$	232
Slovakia	Euro	102
Slovenia	Euro	106
Solomon Islands	Sol Islands \$	1,107
South Sudan	US \$	146
Spain	Euro	112
Sri Lanka	US \$	100
St. Kitts & Nevis	US \$	227
St. Lucia	US \$	215
St. Vincent & The Grenadines	US \$	187
Sudan	US \$	200
Suriname	US \$	107
Swaziland	RSA Rand	1,367
Sweden	Swedish Kronor	1,317
Switzerland	S Franc	201
Syria	US \$	185
Taiwan	New Taiwan \$	4,015
Tajikistan	US \$	97
Tanzania	US \$	129

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Thailand	Thai Baht	4,956
Togo	CFA Francs	64,214
Tonga	Pa'anga	251
Trinidad & Tobago	US \$	213
Tunisia	Tunisian Dinar	198
Turkey	Euro	101
Turkmenistan	US \$	125
Tuvalu	Australian \$	339
Uganda	US \$	111
Ukraine	Euro	131
United Arab Emirates	UAE Dirhams	699
United Kingdom	British Pounds	102
Uruguay	US \$	133
USA	US \$	155
Uzbekistan	Euro	80
Vanuatu	US \$	166
Venezuela	US \$	294
Vietnam	US \$	91
Yemen	US \$	94
Zambia	US \$	119
Zimbabwe	US \$	123
Manwe mashango e a sibuliwe	US \$	215

SOUTH AFRICAN REVENUE SERVICE

NO. 170

02 MARCH 2018

RATE PER KILOMETRE FIXED UNDER SECTION 8(1)(b)(ii) AND (iii) OF THE INCOME TAX ACT, 1962

Under section 8(1)(b)(ii) and (iii) of the Income Tax Act, 1962 (Act No. 58 of 1962), I, Knowledge Malusi Nkanyezi Gigaba, Minister of Finance, hereby determine that the rate per kilometre referred to in that section must be an amount determined in accordance with the Schedule hereto.


KMN-GIGABA**Minister of Finance**

SCHEDULE

1. Definition

In this Schedule, “**value**” in relation to a motor vehicle used by the recipient of an allowance as contemplated in section 8(1)(b)(ii) and (iii) of the Income Tax Act, 1962, means—

- (a) where that motor vehicle (not being a motor vehicle in respect of which paragraph (b)(ii) of this definition applies) was acquired by that recipient under a *bona fide* agreement of sale or exchange concluded by parties dealing at arm’s length, the original cost thereof to him/her, including any value-added tax but excluding any finance charge or interest payable by him/her in respect of the acquisition thereof;
- (b) where that motor vehicle—
 - (i) is held by that recipient under a lease contemplated in paragraph (b) of the definition of “instalment credit agreement” in section 1 of the Value-Added Tax Act, 1991; or
 - (ii) was held by him/her under such a lease and the ownership thereof was acquired by him/her on the termination of the lease,
the cash value thereof as contemplated in the definition of “cash value” in section 1 of the Value-Added Tax Act; or
- (c) in any other case, the market value of that motor vehicle at the time when that recipient first obtained the vehicle or the right of use thereof, plus an amount equal to value added tax which would have been payable in respect of the purchase of the vehicle had it been purchased by the recipient at that time at a price equal to that market value.

2. Determination of rate per kilometre

The rate per kilometre referred to in section 8(1)(b)(ii) and (iii) must, subject to the provisions of paragraph 4, be determined in accordance with the cost scale set out in paragraph 3, and must be the sum of—

- (a) the fixed cost divided by the total distance in kilometres (for both private and business purposes) shown to have been travelled in the vehicle during the year of assessment: Provided that where the vehicle has been used for business purposes during a period in that year which is less than the full period of that year, the fixed cost must be an amount which bears to the fixed cost the same ratio as the period of use for business purposes bears to 365 days;
- (b) where the recipient of the allowance has borne the full cost of the fuel used in the vehicle, the fuel cost; and
- (c) where that recipient has borne the full cost of maintaining the vehicle (including the cost of repairs, servicing, lubrication and tyres), the maintenance cost.

3. Cost scale

Where the value of the vehicle—	Fixed Cost R	Fuel Cost c/km	Mainte- nance Cost c/km
does not exceed R85 000	28 352	95.7	34.4
exceeds R85 000 but does not exceed R170 000	50 631	106.8	43.1
exceeds R170 000 but does not exceed R255 000	72 983	116.0	47.5
exceeds R255 000 but does not exceed R340 000	92 683	124.8	51.9
exceeds R340 000 but does not exceed R425 000	112 443	133.5	60.9
exceeds R425 000 but does not exceed R510 000	133 147	153.2	71.6
exceeds R510 000 but does not exceed R595 000	153 850	158.4	88.9
exceeds R595 000	153 850	158.4	88.9

4. Simplified method

Where—

- (a) the provisions of section 8(1)(b)(iii) are applicable in respect of the recipient of an allowance or advance; and
- (b) no other compensation in the form of a further allowance or reimbursement (other than for parking or toll fees) is payable by the employer to that recipient,

that rate per kilometre is, at the option of the recipient, equal to 361 cents per kilometre.

5. Effective date

The rate per kilometre determined in terms of this Schedule applies in respect of years of assessment commencing on or after 1 March 2018.

SUID-AFRIKAANSE INKOMSTEDIENS

NO. 170

02 MAART 2018

SKAAL PER KILOMETER VASGESTEL INGEVOLGE ARTIKEL 8(1)(b)(ii) EN (iii) VAN DIE INKOMSTEBELASTINGWET, 1962

Kragtens artikel 8(1)(b)(ii) en (iii) van die Inkomstebelastingwet, 1962 (Wet No. 58 van 1962), bepaal ek, Knowledge Malusi Nkanyezi Gigaba, Minister van Finansies, hierby dat die skaal per kilometer in daardie artikel bedoel 'n bedrag is wat ooreenkomstig die Bylae hierby vasgestel word.



KMN GIGABA

Minister van Finansies

BYLAE

1. Omskrywing

In hierdie Bylae beteken “**waarde**”, met betrekking tot ’n motorvoertuig deur die ontvanger van ’n toelae gebruik soos in artikel 8(1)(b)(ii) en (iii) van die Inkomstebelastingwet, 1962, beoog—

- (a) waar daardie motorvoertuig (synde nie ’n motorvoertuig ten opsigte waarvan paragraaf (b)(ii) van hierdie omskrywing van toepassing is nie) deur daardie ontvanger verkry is ingevolge ’n *bona fide* verkoop- of ruiloorreenskoms gesluit tussen partye wat onder uiterste voorwaardes beding is, die oorspronklike koste daarvan vir hom/haar, met inbegrip van enige belasting op toegevoegde waarde maar uitgesluit enige finansieringskoste of rente deur hom/haar betaalbaar ten opsigte van die verkryging daarvan;
- (b) waar daardie motorvoertuig—
 - (i) ingevolge ’n verhuringsooreenskoms soos beoog in paragraaf (b) van die omskrywing van “paaient-kredietooreenskoms” in artikel 1 van die Wet op Belasting op Toegevoegde Waarde, 1991, deur daardie ontvanger gehou is; of
 - (ii) ingevolge so ’n verhuringsooreenskoms deur hom/haar gehou was en eiendomsreg daarvan na afloop van die verhuringsooreenskoms deur hom/haar verkry is, die kontantwaarde daarvan soos beoog in die omskrywing van “kontantwaarde” in artikel 1 van die Wet op Belasting op Toegevoegde Waarde; of
- (c) in enige ander geval, die markwaarde van daardie motorvoertuig op die tydstip toe daardie ontvanger vir die eerste maal die voertuig of die reg van gebruik daarvan verkry het, tesame met ’n bedrag gelykstaande aan belasting op toegevoegde waarde wat ten opsigte van die aankoop van die voertuig betaalbaar sou gewees het indien dit op daardie tydstip teen ’n prys gelykstaande aan daardie markwaarde deur die ontvanger aangekoop sou gewees het.

2. Vasstelling van skaal per kilometer

Die skaal per kilometer in artikel 8(1)(b)(ii) en (iii) bedoel, word, behoudens die bepalinge van paragraaf 4, bepaal ooreenkomstig die kosteskaal in paragraaf 3 vervat, en is die som van—

- (a) die vaste koste gedeel deur die totale afstand in kilometers (vir beide private en besigheidsdoeleindes) wat bewys word gedurende die jaar van aanslag in die voertuig afgelê te gewees het: Met dien verstande dat waar die voertuig gedurende ’n tydperk in daardie jaar vir besigheidsdoeleindes gebruik is wat minder is as die volle tydperk van daardie jaar, sal die vaste koste ’n bedrag wees wat in dieselfde verhouding tot die vaste koste staan as die verhouding waarin die tydperk van gebruik vir besigheidsdoeleindes tot 365 dae staan;
- (b) waar die ontvanger van die toelae die volle koste gedra het van die brandstof wat in die voertuig gebruik is, die brandstofkoste; en

- (c) waar daardie ontvanger die volle koste gedra het van die instandhouding van die voertuig (met inbegrip van herstelwerk, diens, smering en bande), die instandhoudingskoste.

3. *Kosteskaal*

Waar die waarde van die voertuig—	Vaste koste R	Brandstof koste c/km	Instandhoudingskoste c/km
R85 000 nie te bowe gaan nie	28 352	95.7	34.4
R85 000 te bowe gaan, maar nie R170 000 nie	50 631	106.8	43.1
R170 000 te bowe gaan, maar nie R255 000 nie	72 983	116.0	47.5
R255 000 te bowe gaan, maar nie R340 000 nie	92 683	124.8	51.9
R340 000 te bowe gaan, maar nie R425 000 nie	112 443	133.5	60.9
R425 000 te bowe gaan, maar nie R510 000 nie	133 147	153.2	71.6
R510 000 te bowe gaan, maar nie R595 000 nie	153 850	158.4	88.9
R595 000 te bowe gaan	153 850	158.4	88.9

4. *Vereenvoudigde metode*

Waar—

- (a) die bepalings van artikel 8(1)(b)(iii) ten opsigte van 'n ontvanger van 'n toelae of voorskot van toepassing is; en
- (b) geen ander vergoeding in die vorm van 'n verdere toelae of terugbetaling (behalwe vir parkering of tolgeld) deur die werkgewer aan die ontvanger betaalbaar is nie,
- is die tarief per kilometer, na keuse van die ontvanger, gelykstaande aan 361 sent per kilometer.

5. *Effektiewe datum*

Die tarief per kilometer kragtens hierdie Bylae bepaal, is van toepassing ten opsigte van jare van aanslag wat op of na 1 Maart 2018 begin.

UPHIKO LWEZOKUQOQWA KWENTELA ENINGIZIMU AFRIKA**No.****Ndasa 2018****INANI ELIBEKIWE NGEKHILOMITHA NGAPHANSI KWESIGABA 8(1)(b)(ii) NO (iii) SOMTHETHO WENTELA YENGENISO WONYAKA WE-1962**

Ngaphansi kwesigaba 8(1)(b)(ii) no (iii) soMthetho Wentela Yengeniso Wonyaka, we-1962 (uMthetho No. 58 ka-1962), mina, Knowledge Malusi Nkanyezi Gigaba, uNgqongqoshe Wezezimali, ngalokhu nginquma ukuthi indlelakubala ezosetshenziwa maqondana nekhilomitha ngalinye okukhulunywa ngalo kulesi sigaba kumele ibe yisibalo esinqunywe ngokuhambisana nale Sheduli elandelayo.


KMN GIGABA**UNgqongqoshe Wezezimali**

ISHEDULI

1. Izincazelo zamagama asetshenzisiwe

Kule Sheduli, “inani” uma kukhulunywa ngemoto esetshenziswa umuntu othola isibonelelo njengoba kuhlinzekelwe esigabeni 8(1)(b)(ii) kanye no-(iii) soMthetho Wentela Yengeniso ka-1962, kushiwo—

- (a) uma leyo moto (okungeyona imoto okukhulunywe ngayo endimeni (b)(ii) yalezi zincazelo) itholwe yilowo muntu ngaphansi kwesivumelwano esisemthethweni sokudayiselana noma sokunikana esisayinwe yizinhlangothi zombili ngokunikana inani layo, kubandakanya yonke intela eyengeziwe yentengo kodwa kungabandakanyi izindleko ze-akhawunti noma inzalo okufanele ikhokhwe uyena mayelana nokuthengwa kwaleyo moto;
- (b) lapho leyo moto—
 - (i) isetshenziswa yilowo muntu ngaphansi kwesivumelwano sokuqashiselana okukhulunywe ngaso endimeni (b) yencazelo ye“sivumelwano sesikweletu esikhokhwa ngamancozuncozu” esigabeni 1 soMthetho Wentela Yentengo Eyengeziwe, ka-1991; noma
 - (iii) yayigcinwe uyena ngaphansi kwesivumelwano sokuqashiselana futhi ethole ubunikazi bayo uma sekuphele isivumelwano sokuqashiselana, inani layo lemali njengoba kuhlinzekelwe encazelweni ye“inani lemali” esigabeni 1 soMthetho Wentela Yentengo Eyengeziwe; noma
- (c) kunoma isiphi esinye isimo, inani lasemakethe laleyo moto ngesikhathi itholwa yilowo muntu okokuqala noma ethola ilungelo lokuyisebenzisa, nemali elingana nentela eyengeziwe yentengo ebizokhokhwa ngesikhathi kuthengwa leyo moto ukube leyo moto ithengwe yilowo muntu ngesikhathi nangemali elingana nentengo ebingathengwa ngayo endaweni okudayiswa kuyna izimoto.

2. Ukunqunywa kwendlelakubala ngekhilomitha ngalinye

Indlelakubala ezosetshenziswa maqondana nekhilomitha ngalinye okukhulunywe ngayo esigabeni 8(1)(b)(ii) no (iii), kuncike kokuhlinzekelwe endimeni 4, kufanele inqunywe ngokwezibalo ezinikezwe endimeni 3, futhi kumele ibe—

- (a) imali yezindleko ezimile ehlukaniwa ngokwebanga elihanjiwe libalwa ngamakhilomitha (ngezinhloso zomsebenzi noma zangasese) okuvela ukuthi ahanjiwe ngemoto ngalowo nyaka wentela: Kuncike ekutheni uma imoto ibisetshenziselwa izinhloso zebhizinisi ngesikhathi esithile ngalowo nyaka kodwa kungewona wonke unyaka, izindleko ezimile kumele kube yisamba esiveza ezindlekweni ezimile izilinganiso ezifanayo nezangesikhathi imoto ebisetshenziselwa ngaso ibhizinisi esikhathini esiyizinsuku ezingu-365;
- (b) lapho othola isibonelelo ethwale zonke izindleko zikaphethiloli/udizili osetshenziswe emotweni, izindleko zalowo phethiloli/udizili; futhi

- (c) uma lowo muntu ethwale zonke izindleko zokunakekela imoto (kubandakanya izindleko zokuyikhanda, ukuyisevisa, ukuyifaka uwoyela namathayi), izindleko zokuyinakekela.

3. Izilinganiso zezindleko

Uma inani lemoto —	Izindleko ezimile R	Izindleko zikaphe-thiloli / zikadizili c/km	Izindleko zokuyinakekela c/km
linge qile ku R85 000	28 352	95.7	34.4
leqe ku R85 000 kodwa linge qile ku R170 000	50 631	106.8	43.1
leqe ku R170 000 kodwa linge qile ku R255 000	72 983	116.0	47.5
leqe ku R255 000 kodwa linge qile ku R340 000	92 683	124.8	51.9
leqe ku R340 000 kodwa linge qile ku R425 000	112 443	133.5	60.9
leqe ku R425 000 kodwa linge qile ku R510 000	133 147	153.2	71.6
leqe ku R510 000 kodwa linge qile ku R595 000	153 850	158.4	88.9
leqe ku R595 000	153 850	158.4	88.9

4. Indlela elula

Lapho —

- (a) okuhlinzekelwe esigabeni 8(1)(b)(iii) kusebenza mayelana nomuntu othola isibonelelo noma ukukhokhelwa okuthile; futhi
- (b) singekho esinye isinxephezelo esiyisibonelelo noma ukubuyiselwa imali ethile (ngaphandle kwezimali zokupaka nezikhokhelwa imigwaqo engothelawayeka) okukhokhwa umqashi ekhokhela lowo muntu,

Isibalo ngekhilomitha ngalinye, ngokukhetha kwalowo muntu, singamasenti angu-361 ngekhilomitha.

5. Ukuqala ukusebenza kwalezi zibalo

Indlelakubala esetshenziswa maqondana nekhilomitha ngalinye enqunywe ngolwale Sheduli isebenza mayelana neminyaka ebalelwa intela kusukela noma ngemuva komhla ka 1 Mashi 2018.

TSHEBELETSO YA LEKENO YA AFRIKA BORWA**Palo****Hlakubele 2018****SEKGAHLA SA KILOMITARA KA NNGWE SE TSEPAMISITSWENG
KAROLONG YA 8(1)(b)(ii) LE (iii) YA MOLAO WA LEKGETHO LA
LEKENO, WA 1962**

Ka tlasa karolo 8(1)(b)(ii) le (iii) ya *Income Tax Act, 1962 (Act No. 58 of 1962)*, Nna, Knowledge Malusi Nkanyezi Gigaba, Letona la Ditjhelete, ke hlwaya hore tjeho ya kilomitara ka nngwe e hlalositsweng karolong eo e tshwanetse e be palo e hlwauweng ho latela Shejule se mona.



KMN GIGABA

Letona la Ditjhelete

SHEJULE

1. Tlhaloso

Sejuleng sena, “**boleng**” mabapi le sepalangwang se sebediswang ke moamohedi wa kuno e hlaloswang karolong 8(1)(b)(ii) le (iii) ya *Income Tax Act, 1962*, e hlalosa—

- (a) moo sepalangwang seo (e se sepalangwang ho latela tlhaloso ya serapa (b)(ii) e sebetsang ka teng) se fumanwe ke moamohedi eo ka tlasa tumellano e lokileng ya thekiso kapa kgwebisano e phetetswang ke mekga e mmedi e ikemetseng, tjeho ya mantlha ya sona ho yena, ho kenyeletsa lekgetho le leng le le leng la keketseho ya boleng empa ho sa kenyeletsa tjeho e nngwe le e nngwe kapa tswala e lefellowang ke yena mabapi le phumaneho ya sona;
- (b) moo sepalangwang seo—
 - (i) se nkuwe ke moamohedi ka tlasa tumellano e hlalositswang serapeng (b) ka tlhaloso ya “tumellano ya tefello ya mokitlane” e karolong 1 ya *Value-Added Tax Act, 1991*; kapa
 - (iv) se ne se nkuwe ke yena ka tlasa tumellano e jwalo ya kadimo le ho ba monga sona, se nkuwe ke yena ha tumellano ya kadimo e feela, boleng ba tjehele ba teng jwalo ka ha ho totobaditswe tlhalosong ya “boleng ba tjehele” karolong 1 ya Molao wa Lekgetho la Keketseho ya Boleng; kapa
- (c) ntlheng e nngwe, boleng ba mmaraaka ba sepalangwang seo ka nako eo moamohedi a fumanang sepalangwang kapa tokelo ya ho ka se sebedisa le palo e lekanang le lekgetho la keketseho ya boleng se ne se tla lefellowa ho latela theko ya sepalangwang ha e ne e ba se rekuwe ke moamohedi ka nako eo ka theko e lekanang le boleng ba mmaraaka.

2. Ho hlwaya tjeho ya kilomitara ka nngwe

Ho ipapisitswe le nehelano ya serapa 4, tjeho ya kilomitara ka nngwe e hlalositswang karolong 8(1)(b)(ii) le (iii) e tshwanetse ho hlwaya ho latela sekala sa tjeho se hlalositswang serapeng 3, mme e tshwanetse e be palong ya—

- (a) tjeho e sa fetoheng e arotsweng ka bohole ba dikilomitara tse bontshitswang di tsamauwe ke sepalangwang (bakeng la poraevete le mabaka a kgwebo) selemong sa hlahlobo: Ntle le moo sepalangwang se sebedisitswe mabakeng a kgwebo nakong ya selemo seo e le ka tlase ho nako e felletseng ya selemo seo, tjeho e sa fetoheng e tshwanetse e be palo e tsamaisanang le tjeho e sa fetoheng le palo e tshwanang le ya nako ya tshebediso ya mabaka a kgwebo a tsamaisanang le matsatsi a 365;
- (b) moo moamohedi wa kuno a nkile tjeho yohle ya dibeso tse sebedisitswang sepalangwang, tjeho ya dibeso; le
- (c) moo moamohedi eo a nkileng tjeho yohle ya ho hlokomela sepalangwang (ho kenyeletsa tjeho ya tokiso tsamaiso ya

3. Sekala sa tjeho

Moo boleng ba sepalangwang-	Tjeho e sa fetoheng R	Tjeho ya Dibeso c/km	Tjeho ya Tlhoko -melo c/km
bo sa fete R85 000	28 352	95.7	34.4
bo feta R85 000 empa bo sa fete R170 000	50 631	106.8	43.1
bo feta R170 000 empa bo sa fete R255 000	72 983	116.0	47.5
bo feta R255 000 empa bo sa fete R340 000	92 683	124.8	51.9
bo feta R340 000 empa bo sa fete R425 000	112 443	133.5	60.9
bo feta R425 000 empa bo sa fete R510 000	133 147	153.2	71.6
bo feta R510 000 empa bo sa fete R595 000	153 850	158.4	88.9
bo feta R595 000	153 850	158.4	88.9

4. Mokgwa o bebofaditsweng

Moo—

- (a) nehelano ya karolo 8(1)(b)(iii) e sebetsang ho latela moamohedi wa kuno kapa tjhelete e nehelwang pele ho tshebetso; mme
- (b) ho senang moputso o mong o tla nehelwa ka mokgwa wa kuno kapa tlhapiso (ntle le bakeng la kemong ya dipalangwang le ditsela tse lefellwang) e lefellwang ke ramosebetsi ho moamohedi eo, tjeho eo ya kilomitara ka nngwe e lekana le 361 sente kilomitara ka nngwe, ka kgetho ya moamohedi.

5. Letsatsi la qaleho

Tjheho ya kilomitara ka nngwe e hlauweng ho latela Shejule sena e sebetsa ho latela hlahlobo ya dilemo e qalang ka la kapa ka mora 1 Hlakubele 2018.

DEPARTMENT OF TRADE AND INDUSTRY

NO. 171

02 MARCH 2018

THE SUGAR INDUSTRY AGREEMENT, 2000

NOTICE UNDER CLAUSE 82 OF THE SUGAR INDUSTRY AGREEMENT, 2000

The South African Sugar Association hereby publishes under clause 82 of the Sugar Industry Agreement, 2000, the varieties of sugarcane, which varieties have been duly approved by the South African Sugar Association for planting during the year commencing 1 April 2018 exclusively in the control areas or part of a control area specified.

COUNCIL OF THE SOUTH AFRICAN SUGAR ASSOCIATION

PEST, DISEASE AND VARIETY CONTROL: 2018/2019 SUGARCANE VARIETIES

CONTROL AREAS	VARIETIES OF SUGARCANE FOR PLANTING EXCLUSIVELY WITHIN EACH CONTROL AREA
Lowveld	N14, N17, N19, N22, N23, N24, CP66/1043, N25, N26, N28, N30, N36, N40, N41, N43, N46, N49, N53 and N57
Pongola	N14, N17, N19, N22, N23, N24, CP66/1043, N25, N26, N28, N30, N36, N40, N41, N43, N46, N49, N53 and N57
Mkuze/Makhatini	N17, N19, N23, N25, N36, N40, N41, N43, N46, N49, N53, N57 and N67
Umfolozi	NCo376, N12, N14, N17, N19, N21, N22, N23, N24, N25, N26, N27, N28, N30, N33, N35, N36, N40, N41, N42, N43, N45, N46, N47, N49, N51, N53, N55, N57, N58, N59, N60, N64, N65 and N67
Felixton	NCo376, N12, N14, N17, N19, N21, N23, N25, N27, N35, N36, N39, N40, N41, N42, N45, N47, N49, N51, N53, N55, N57, N58, N59, N60, N63, N64, N65, N67 and N68
Entumeni	NCo376, N12, N16, N17, N21, N25, N27, N31, N35, N36, N37, N39, N40, N41, N42, N45, N47, N48, N50, N51, N52, N54, N55, N56, N58, N59, N61, N62, N63, N66 and N68
Amatikulu	NCo376, N12, N17, N19, N21, N25, N27, N31, N35, N36, N39, N40, N41, N42, N45, N47, N51, N52, N53, N55, N56, N57, N58, N59, N60, N63, N64, N65, N67 and N68
North Coast	N12, N14, N16, N17, N19, N21, N22, N25, N26, N27, N31, N35, N36, N37, N39, N40, N41, N42, N45, N47, N48, N49, N50, N51, N52, N53, N54, N55, N56, N57, N58, N59, N60, N61, N62, N63, N64, N65, N66, N67 and N68

Midlands North	N12, N16, N21, N23, N25, N26, N27, N31, N35, N36, N37, N39, N40, N41, N42, N43, N45, N47, N48, N49, N50, N51, N52, N53, N54, N55, N60, N61, N62 and N66
Midlands South	N12, N16, N21, N23, N25, N26, N27, N28, N30, N31, N35, N36, N37, N39, N40, N41, N42, N43, N45, N47, N48, N49, N50, N51, N52, N53, N54, N55, N58, N59, N60, N61, N62 and N66
Sezela	NCo376, N12, N16, N21, N27, N31, N36, N37, N39, N40, N41, N42, N45, N47, N48, N50, N51, N52, N53, N54, N55, N56, N58, N59, N60, N61, N62, N63, N64, N65, N66, N67 and N68
Umzimkulu	NCo376, N12, N14, N16, N17, N21, N27, N31, N36, N37, N39, N40, N41, N42, N45, N47, N48, N50, N51, N52, N54, N55, N56, N58, N59, N61, N62, N63, N64, N65, N66, N67 and N68
Du Roi Agritech (Pty) Ltd	N14, N19, N23, N25, N36, N40, N41, N46, N49, N50, N53 and N57

**SUGAR INDUSTRY AGREEMENT, 2000
CONTROL AREAS
AREAS OF JURISDICTION BY LOCAL MUNICIPALITIES**

Lowveld	Mbombela (MP 322) Nkomazi (MP 324) and Umjindi (MP 323).
Pongola	uPhongolo (KZN 262), Umhlabuyalingana (KZN 271); Nongoma (KZN 265) and Jozini (KZN 272), north of the Mduna River.
Mkuze/Makhatini	Umhlabuyalingana (KZN 271), Jozini (KZN 272), uPhongolo (KZN 262), Nongoma (KZN 265) and the Big Five False Bay (KZN 273) the northern boundary being the Mozambique and Swaziland borders, the Jozini dam and south of a line along 31°28'19.8"S up to 27°28'19.8"E. The western boundary being the eastern and southern shores of Jozini dam and the western shore of Jozini dam up to Candover (at the crossing of the R69 - 31°28'19.8"S) then in line with Candover south along 27°28'19.8"E up to the Mduna River. The southern boundary being the Mduna River and along the Mzunduzi River up to 27°47'52.3"S and from there eastwards to the Indian Ocean.
Umfolozu	Hlabisa (KZN 274), The Big Five False Bay (KZN 273), Mtubatuba (KZN 275), Mfolozi (KZN 281), the northern boundary being the Mduna River and along the Mzunduzi River up to 27°47'52.3"S and from there eastwards to the Indian Ocean. The southern boundary is Teza Lake.
Felixton	uMlalazi (KZN 284) north of the Bhadi River and east of the road linking the R102 with the town of Mtunzini, uMhlathuze (KZN 282), Mfolozi (KZN 281) south of Kwambonambi, and Ntambanana (KZN 283).
Amatikulu	uMlalazi (KZN 284), south of the uMlalazi river and Mandeni (KZN 291) north of the Tugela and Nyoni Rivers and west of the R102.
Entumeni	uMlalazi (KZN 284) and Mthonjaneni (KZN 284), including the Eshowe, Entumeni and Melmoth cane supply areas.
North Coast	Mandeni (KZN 291), south of the Tugela and Nyoni Rivers and east of the R102; KwaDukuza (KZN 292), Maphumulo (KZN 294), Umvoti (KZN 245), Ndwedwe (KZN 293) and eThekweni (ETH), east of the N3.
Midlands North	East of the N3 and within the boundaries of Umvoti (KZN 245), Msinga (KZN 244), uMshwathi (KZN 221), Maphumulo (KZN 294), Mkhombathini (KZN 226), the Msunduzi (KZN 225) and uMngeni (KZN 222).

Midlands South	West of the N3 and within the boundaries of Richmond (KZN 227), Mkhombathini (KZN 226), the Msunduzi (KZN 225) and eThekweni (ETH).
Sezela	Ubuhlebezwe (KZN 434), Ingwe (KZN 431), Vulamehlo (KZN 211), eThekweni (ETH) south of the R603, Umdoni (KZN 212), Umzumbe (KZN 213) and Hibiscus Coast (KZN 216) north of the Mzumbe River.
Umzimkulu	Mbizana (EC 443), uMuziwabantu (KZN 214), Ezingoleni (KZN 215) and Hibiscus Coast (KZN 216), south of the Mzumbe River.
Du Roi Agritech (Pty) Ltd	Greater Tzaneen (LIM 333). Sugarcane used for the purposes of propagating NovaCane® tissue culture plant material, single-budded transplant seedcane material or whole-stick seedcane.

DEPARTMENT OF TRADE AND INDUSTRY

NO. 172

02 MARCH 2018

**NATIONAL REGULATOR FOR COMPULSORY SPECIFICATIONS ACT
(Act No 5 of 2008), AS AMENDED THROUGH THE LEGAL METROLOGY
ACT (Act No 9 of 2014)**

**THE PROPOSED COMPULSORY SPECIFICATION FOR POLYMER FILM
FOR DAMP-PROOFING AND WATERPROOFING IN BUILDINGS**

It is hereby made known under section 13(4) of the National Regulator for Compulsory Specifications Act, (Act 5 of 2008), that the Minister of Trade and Industry, intends to promulgate a compulsory specification for Polymer film for damp-proofing and waterproofing in buildings (VC 9106), as set out in the attached Schedule.

Any person who wishes to comment on the intention to promulgate the compulsory specification concerned, may submit their comments in writing, to the Chief Executive Officer, National Regulator for Compulsory Specifications, Private Bag X25, Brooklyn, 0075, on or before the date two (2) months after the publication of this notice.

A handwritten signature in black ink, appearing to read 'Rob Davies', with a large, stylized initial 'R'.

Dr Rob Davies, MP

Minister of Trade and Industry

SCHEDULE

VC 9106

THE COMPULSORY SPECIFICATION FOR POLYMER FILM FOR DAMP-PROOFING AND WATERPROOFING IN BUILDINGS

1. Scope

This compulsory specification specifies requirements for Polymer film for damp-proofing and waterproofing in buildings (herein after referred to as Polymer film) in accordance with the scopes of **SANS 952 parts 1 and 2**, *Polymer film for damp-proofing and waterproofing in buildings*.

2. Normative references

The following documents are mandatory for the application of this compulsory specification:-

2.1 National Regulator for Compulsory Specifications Act, 2008 (Act No. 5 of 2008), as amended as amended through the Legal Metrology Act (Act no. 9 of 2014);

2.2 Regulations in terms of section 36 of the National Regulator for Compulsory Specifications Act, 2008 published in Government Notice No. R. 924 (Government Gazette No. 33615) of 15 October 2010;

2.3 The NRCS's Conformity Assessment Policy (NRCS- CPO 112);

2.4 **SANS 952-1**, *Polymer film for damp proofing and waterproofing in buildings, Part 1: Monofilament and co-extruded products*; and

2.5 **SANS 952-2**, *Polymer film for damp proofing and waterproofing in buildings, Part 2: Laminated (non-woven) products, as applicable to the type of the Polymer film*.

3. Definitions

3.1 The definitions in **SANS 952 parts 1 and 2**, *Polymer film for damp-proofing and waterproofing in buildings* apply for the purposes of this compulsory specification.

3.2 In addition, the following definitions apply:-

3.2.1 Approval: confirmation by the NRCS that a particular supplier (manufacturer/importer) of a type of Polymer film satisfies the requirements of this compulsory specification;

3.2.2 Applicant: a manufacturer or importer of a type of Polymer film who must be an established legal business entity within the Republic of South Africa;

3.2.3 Conformity Assessment Body: An accredited body that performs conformity assessment services such as testing, inspection and certification against the requirements of SANS 952 parts 1 and 2;

3.2.4 Conformity of Production: measures put in place by an Applicant to ensure that subsequent products continue to meet and conform to the approved type and to monitor that these arrangements continue to be effective during the life of the approval;

3.2.5 A Letter of Authority certificate: as defined in section 1 of the National Regulator for Compulsory specifications Act of 2008 (Act No. 5 of 2008) as amended through the Legal Metrology Act (Act no. 9 of 2014); and issued in accordance with Annexure A of this compulsory specification.

3.2.6 NRCS: the National Regulator for Compulsory specifications as established by the NRCS Act, 2008 (Act No. 5 of 2008) as amended through the Legal Metrology Act (Act no. 9 of 2014);and

3.2.7 Type of film: Polymer film of the same construction materials, dimensions and type designation.

4. Specific requirements

4.1 Polymer film for damp-proofing and waterproofing in buildings must comply with the latest editions of **SANS 952-1**, *Polymer film for damp proofing and waterproofing in buildings, Part 1: Monofilament and co-extruded products*; and **SANS 952-2**, *Polymer film for damp proofing and waterproofing in buildings, Part 2: Laminated (non-woven) products, as applicable to the type of the Polymer film*.

4.2 Annexures A in **SANS 952 -1** and **SANS 952 -2** are excluded for the purposes of this compulsory specification.

4.3 Each type of Polymer film must be approved in accordance with the requirements of Annexure A of this compulsory specification before it is imported, sold, or supplied in the Republic of South Africa.

4.4 Polymer film must be manufactured to conform to the type approved under this Compulsory specification. A manufacturer or importer must control production and conduct routine testing in accordance with Annexure B of this compulsory specification to continuously verify that this condition is met.

4.5 In addition to the markings required on the label of each packaged roll of Polymer film in **SANS 952-1** and **SANS 952-2** as applicable, the label must also be marked prominently and legibly with the NRCS approval number in the following format:

“NRCS/9106/NRCS CUSTOMER NUMBER/SEQUENTIAL NUMBER”

4.6 An applicant must inform the NRCS of any change(s) in the constructional changes affecting any mandatory requirement of this compulsory specification and/or the conditions of approval. In the event of such change(s), the NRCS may at its discretion, demand the submission of new evidence of conformity or a new application for approval.

5. Transitional arrangements regarding conformity to referenced South African National Standards (SANS)

5.1 For the purposes of this compulsory specification, a new edition of a referenced SANS shall become effective six months from the date of publication.

5.2 When a new edition of a referenced SANS is published, products originally approved in accordance with the previous edition of that standard may have their approval extended for up to a year from the effective date of the new standard, subject to the requirements of Annexure A of this compulsory specification, unless declared otherwise by the Minister.

ANNEXURE A
(Normative)

**THE APPROVAL OF POLYMER FILM FOR DAMP PROOFING AND WATERPROOF-
ING IN BUILDINGS**

A1. Application for approval

A1.1 An applicant must apply to the NRCS for approval of a type of Polymer film by completing and submitting a prescribed application form that shall be obtained from the NRCS.

A1.2 The application form referred to in A1.1 shall be accompanied by the following:-

A1.2.1 details of the manufacturing plant(s) where the Polymer film is produced stored and distributed from; or the physical address where the imported products are received, stored and distributed from;

A1.2.2 information on the composition, type designation and usage of the Polymer film;

A1.2.3 evidence of conformity, including a test report issued not more than 12 months before the date of submission to the NRCS, by a testing laboratory recognised in by NRCS in terms of the NRCS's Conformity Assessment Policy;

A1.2.4 information to the satisfaction of the NRCS regarding the implementation of Conformity of Production and routine testing including a sampling plan according to Clause C.2 of Annexure C of SANS 952 -1 and SANS 952-2; as applicable to the type of Polymer film;

A1.2.5 a sample of the type of Polymer film together with the packaging and label in which it is to be supplied, including an indication on the label of the intended position of the Approval Number referred to in clause 4.5 of this compulsory specification.

A1.2.5 proof of payment of fees that are applicable for this compulsory specification; and

A1.2.6 any additional information relevant to the application for clarification purposes, as may be requested by the NRCS.

A2. The issuance of approval

A2.1 The NRCS shall grant approval for application submitted in accordance with A1 when satisfied that:-

A2.1.1 the type of type of Polymer film meets the requirements of this compulsory specification;

A2.1.2 there are satisfactory arrangements for the effective control of the conformity of production in accordance with the provisions of Annexure B of Compulsory specification; and

A2.1.2 all applicable fees have been paid in full.

A2.2 The NRCS shall assign a unique Approval Number to each approved type of Polymer film to be marked on the label of the related type of Polymer film in accordance with clause 4.5 of this compulsory specification.

A2.3 The NRCS shall confirm approval against the requirements of this VC by issuing to the applicant, a Letter of Authority certificate bearing the unique Approval Number referred to in A2.2 of this compulsory specification.

A2.4 The NRCS may withdraw the approval granted to the applicant for a type of Polymer film granted in accordance with this compulsory specification, by notifying the applicant in writing, if the requirements have not been met or the approval conditions have not been maintained.

ANNEXURE B:
(Normative)

CONFORMITY OF PRODUCTION AND ROUTINE TESTS

B1. The responsibilities of the applicant specific to the assessment of Conformity of Production (COP):

In agreement with the NRCS, the applicant or an appointed Conformity Assessment Body (CAB) shall carry out conformity control on a statistical sampling on basis:

B1.1 the applicant must conduct routine tests for each type Polymer Film determined in accordance with clause C.2 of Annexure C of **SANS 952 -1** or **SANS 952-2**, as applicable to the type of film, and record the results of the tests to demonstrate continued conformity with specified requirements of this compulsory specification;

B1.2 analyse the routine test results of each type of test in order to verify and ensure the conformity of production of each type of Polymer film, making allowances for the variations experienced industrial production; and

B1.3 take and test further samples in the event where test results show non-conformity with to the tests concerned and take necessary steps to restore conformity of the corresponding production and prevent the sale of non-compliant products.

B2. The duties of the NRCS specific to the assessment of COP:

B2.1 The NRCS may at any time assess the effectiveness of the conformity of production arrangements.

B2.2 An inspector may select samples for laboratory testing upon suspicion of non-conformance of the control of production.

B2.3 For the production to be considered to conform, tests carried out at a random basis must meet the sampling requirements in table 1 below:

Table 1: Sampling requirements and type of tests:

Tests to be conducted	Sample size	Non-compliance criteria
Determination of measurement and dimensions (thickness, width and length)	As required in Regulations under the Legal Metrology Act of 2014 (Act No. 9 of 2014).	As required in Regulations under the Legal Metrology Act of 2014 (Act No. 9 of 2014).
Determination of compositional, mechanical, and physical properties of the Polymer film.	Randomly determined based on lot sizes using appropriately defined criteria to ensure that they are representative of the lot, i.e. taken at random, evenly and throughout.	One non-compliant item.
Marking and packaging requirements	As required in Regulations under the Legal Metrology Act of 2014 (Act No 9 of 2014).	One non-compliant item.
	Randomly determined based on lot sizes using appropriately defined criteria to ensure that they are representative of the lot, i.e. taken at random, evenly and throughout.	

DEPARTMENT OF TRADE AND INDUSTRY

NO. 173

02 MARCH 2018

**NATIONAL REGULATOR FOR COMPULSORY SPECIFICATIONS ACT
(ACT 5 OF 2008) AS AMENDED THROUGH THE LEGAL METROLOGY ACT
(ACT 9 OF 2014)**

**AMENDMENT TO THE COMPULSORY SPECIFICATION FOR HYDRAULIC
BRAKE AND CLUTCH FLUID (VC 8013)**

I, Dr Rob Davies, Minister of Trade and Industry, under Section 13(1)(a) of the National Regulator for Compulsory Specifications Act (Act 5 of 2008) hereby declare the amendment of the Compulsory Specification for Hydraulic Brake and Clutch Fluid-VC 8013, as set out in the attached schedule, with effect six (6) months from the date of publication of this notice.

A handwritten signature in blue ink, appearing to read 'Rob Davies', with a stylized flourish at the end.

**Dr Rob Davies, MP
Minister of Trade and Industry**

SCHEDULE

VC 8013

COMPULSORY SPECIFICATION FOR HYDRAULIC BRAKE AND CLUTCH FLUID

1 Scope

- 1.1 This specification covers the requirements for fluid of the non-petroleum and the non-silicone types suitable for use in automotive hydraulic brake and clutch systems.
- 1.2 Packaging and markings requirements for consumer and non-consumer brake and clutch fluid.

2 Definitions

- 2.1 For the purposes of this specification, the definitions given below and those given in South African National Standard (**SANS**) 1905, *Hydraulic brake and clutch fluid*, shall apply.

2.1.1 applicant: a manufacturer including a bottler or packager as defined in 2.1.3 below or importer of hydraulic brake and clutch fluid who is an established legal business entity within the Republic of South Africa.

2.1.2 packaged (product): a commodity that is packed in a container, made up as a unit, for which the quantity has been determined and indicated on the package before being offered for sale.

2.1.3 bottler/packager: a person who fills containers and/or packs the brake fluid under their own or client brand name or trademark.

2.1.4 consumer package: package that is customarily produced for sale to final purchasers through retail sale.

2.1.5 non-consumer package: any package, i.e. drums, intermediate bulk containers, intended solely for transportation and/or wholesale distribution to packager/bottler or anyone whom the manufacturer or the importer supplies except retail.

3 Specific requirements

- 3.1 Hydraulic brake and clutch fluid shall comply with the requirements of **SANS 1905:2007** *Hydraulic brake and clutch fluid*, except for the packing and marking and administrative requirements.

4 Packaging and marking requirements

4.1 General requirements

4.1.1 The markings shall be in one of the official South African languages.

4.1.2 The manufacture, importer and packager/bottler shall be responsible for ensuring that packages comply with the requirements of this clause at all times and shall put in place the necessary control measures to ensure effective control of the packing process.

4.2 Requirements for manufacturers and importers

4.2.1 General requirements

4.2.1.1 The manufacturer or importer shall ensure that the non-consumer package shall be in such a condition as to not be detrimental to the quality of the brake fluid during transportation and storage.

4.2.1.2 The manufacturer or the importer shall furnish the bottlers/packager or anyone to whom they supply the non-consumer packaged brake fluid with their name, batch identification number and certificate of analysis.

4.2.1.3 The manufacturer or the importer shall ensure that the bottler/packager brand name or trade mark is registered with the Regulatory Authority.

4.2.1.4 The manufacturer's or importer's name may be supplied in a code format that will be allocated by the Regulatory Authority, e.g. "NRCS XXXX".

4.2.1.5 If the commodity is imported using the importer's name instead of the manufacture's, the name shall be qualified by a phrase that reveals the connection with the product, for example "manufactured for ...", "distributed by ...", "imported by ...".

4.2.2 Marking for non-consumer package

4.2.2.1 Package shall be marked as follows:

- a) commodity's proper name: "HYDRAULIC BRAKE AND CLUTCH FLUID;
- b) manufacturer name or trademark; and
- c) batch identification number.

4.3 Requirements for bottlers/packager

4.3.1 General requirements

4.3.1.1 The identity and description of the product shall be of a conspicuous feature, be in such type size and so positioned as to make it easy to read, understood and identified.

4.3.2 Marking for consumer package

4.3.2.1 Package shall be marked as follows:

- a) description of the product, "HYDRAULIC BRAKE AND CLUTCH FLUID", or in cases where it is only used for one application, it should be clearly stated, i.e. "HYDRAULIC CLUTCH FLUID ONLY";
- b) bottlers/packager brand name or trade mark;
- c) name of the manufacturer or importer in code allocated;
- d) place of business of the packer/bottler, either physical address or postal address or both;
- e) batch number, with traceability to source;
- f) grade of the hydraulic and clutch fluid.
- g) boiling points of equilibrium reflux and wet equilibrium reflux;
- h) standard(s) to which brake fluid complies with;
- i) expiry date, which shall be not more than three (3) years after the date of manufacture unless evidence has been provided supporting a longer time period; and
- j) with the following safety warnings:
 - i) *"Keep brake and clutch fluid clean as contamination with dirt, water, petroleum products or other materials may result in brake and clutch failure", or words to that effect; and*
 - ii) *"Keep container clean and tightly closed to prevent absorption of moisture".*
 - iii) *The bold inscription of the word "**CAUTION**" followed by at least the following warnings for safe handling:*

1. The bold inscription of the statement “**KEEP OUT OF REACH OF CHILDREN**”;
2. The fluid is not suitable for internal use or ingestion, in case of ingestion obtain medical attention;
3. To avoid eye contact, in case of eye contact to flush with running water and get medical attention;
4. Wear Personal Protective Equipment (PPE) where there is a risk of exposure to the fluid, i.e. inhalation, skin contact, eye contact and ingestion;
5. Use in well ventilated areas; and
6. Any other warnings as may be necessary.

4.3.3 The consumer packaging for the hydraulic and clutch fluid shall:

- 4.3.3.1** be impervious to and incapable of reacting with its content.
- 4.3.3.2** be sufficiently strong to prevent leakages arising from ordinary risks of handling, storage or transport.
- 4.3.3.3** have sufficient excess capacity to prevent breakage of the container or leakage of the contents if contents are likely to expand during handling, storage or transport.

5 Equivalent requirements

5.1 The requirements of the national standard stated in the appropriate table 1 shall be deemed to have been met if compliance with the equivalent standard given in column 4 of the same table, or to any of their later amendment levels is achieved, providing that the requirements of clauses 5.2.2, *Equilibrium reflux boiling point at a pressure of 101,325 kPa*, and 5.2.3, *Wet equilibrium reflux boiling point at a pressure of 101,325 kPa*, of SANS 1905, *Hydraulic brake and clutch fluid*, are complied with.

TABLE 1:
Equivalent standards that shall be deemed to comply with SANS 1905

1	2	3	4
Item	SANS No.	Dated	UN ECE
Hydraulic brake and clutch fluid	1905	2007	SAE J1703/4
			ISO 4925
			FVMSS 116

Annexure A

(Normative)

A.1 Administrative Process - Hydraulic Brake and Clutch Fluid

- A.1.1** The Applicant shall formally submit a request for approval for hydraulic brake and clutch fluid intended to be manufactured, imported or packaged, in writing to the Regulatory Authority, providing information of his/her intention to request approval for hydraulic brake and clutch fluid.
- A.1.2** The Regulatory Authority shall forward to the Applicant the relevant approval application documents for hydraulic brake and clutch fluid, requested in 1 above. The application documents shall stipulate the information to be submitted to the Regulatory Authority, and these shall accompany the submitted application.
- A.1.3** The Applicant shall complete the application and provide the necessary requested supporting documentation, and forward it to the Regulatory Authority. The appropriate fee for the approval, as determined by the Minister by Notice in the Government Gazette, shall be paid to the Regulatory Authority.
- A.1.4** Upon receipt of the completed application and the required documents, the Regulatory Authority shall review the documents for correctness, completeness, and authenticity. Incorrect documentation, or insufficient documentation, will be reported to the applicant, for his/her correction.
- A.1.5** The Regulatory Authority shall inspect the sample of hydraulic brake and clutch fluid and verify it against all mandatory requirements and the submitted evidence of conformity in the application documents, to these requirements.
- A.1.6** Any non-compliances identified in 5 above, shall be resolved by the Applicant, to the satisfaction of the Regulatory Authority.

A.1.7 Once the approval process establishes that the hydraulic brake and clutch fluid complies with all the relevant mandatory requirements, the Regulatory Authority shall issue a formal Letter of Compliance (Approval Letter), to the applicant.

A.1.8 The original application documents, and copies of supporting evidence of compliance documents, as necessary, shall be taken, and maintained as Approval Records, by the Regulatory Authority.

A.2 Source of evidence

A.2.1 The evidence of compliance with any of the requirements of any referred-to standard in this compulsory specification, which requires testing to establish compliance, and a test report issued, will only be recognized by the Regulatory

Authority, from the following sources:

- a)** A laboratory that is part of an international or regional mutual acceptance scheme, or
- b)** A laboratory that is accredited to ISO/IEC 17025 by SANAS or an ILAC affiliated accreditation body, or
- c)** The laboratory has been successfully assessed against the requirements of ISO/IEC 17025 to the satisfaction of the Regulatory Authority.

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CO-OPERATIVES THAT HAVE BEEN REMOVED FROM THE REGISTER

1. SILVER SOLUTION CO-OP LTD
2. PHAHAMANG CLEANERS CO-OP LTD
3. UQABANGO CO-OP LTD
4. UKUVUKA KWESIZWE CO-OP LTD
5. SAKHA IMPILO CO-OP LTD
6. INHLANHLAYETHU CO-OP LTD
7. SIZAKANCANE CRECHE CO-OP LTD
8. VELUTHULE CO-OP LTD
9. SIYANJENJEMUKA CO-OP LTD
10. SIYALULEKA CO-OP LTD
11. SIVUSIWE SEWING CO-OP LTD
12. SINOBUHLE NGQUNGE CO-OP LTD
13. SIVUKEZALENI CO-OP LTD
14. SEFALAOLO AGRICULTURAL CO-OP LTD
15. SEKUSILE FARMERS CO-OP LTD
16. SIZONQOBA CLEANING SERVICES CO-OP LTD
17. SICELUKUTHULA WOMEN'S CO-OP LTD
18. STELLA SGCAWU HOUSING CO-OP LTD
19. LANGALIBELE ARTS AND CULTURE TRAINING TRADING CO-OP LTD
20. MAYIBUYE I-AFRIKA CO-OP LTD
21. MANKANKA CO-OP LTD
22. ENTOKOZWENI BAKERY CO-OP LTD
23. MASEMOLA AGRICULTURAL CO-OP LTD
24. OVERFLOW AGRICULTURAL CO-OP LTD
25. MBALI ENTLE AGRICULTURAL CO-OP LTD
26. PROSPERITY AGRICULTURAL CO-OP LTD
27. EXCLUSIVE FUNCTION HIRE CO-OP LTD
28. EZIBELENI BRICK MAKERS AND CONSTRUCTORS CO-OP LTD
29. E JANG MMOGO LEPHELE CO-OP LTD
30. MOILETSWANE SMALL CHICKENS FARM CO-OP LTD
31. BAOBAB DEVELOPMENT CO-OP LTD
32. CORK CO-OP LTD
33. BOKAMOSO YOUTH CO-OP LTD
34. DINGISWAYO CO-OP LTD
35. DI SHUMELE U LITSHE U SEZA VHANGWE TRANSPORT,
CONSTRUCTION AND HOUSING CO-OP LTD

Notice is hereby given that the names of the abovementioned co-operatives have been removed from the register in terms of the provisions of section 73(1) of the Co-operatives Act, 2005.

REGISTRAR OF CO-OPERATIVES

Office of the Registrar of Co-operatives
Dti Campus
77 Meintjies Street
Pretoria
0002

Private Bag X237
Pretoria
0002

DEPARTMENT OF TRADE AND INDUSTRY

NO. 175

02 MARCH 2018

CO-OPERATIVES THAT HAVE BEEN REMOVED FROM THE REGISTER

1. INGCEBO AGRICULTURAL CO-OP LTD
2. ZAKHE CONSTRUCTION CO-OP LTD
3. THALENI EGG PRODUCTION CO-OP LTD
4. THANDULWAZI POULTRY CO-OP LTD
5. SIYAKHULA (WE ARE GROWING AND ONS GROEI) CO-OP LTD
6. READIRA CO-OP LTD
7. READIRA CO-OP LTD
8. SAVELANATHI CO-OP LTD
9. IQHAWE LESIZWE CO-OP LTD
10. GUGULETHU CO-OP LTD
11. IKUSASALENTSHA EVENTS MANAGERS CO-OP LTD
12. PICKARDY FARMER TRADING CO-OP LTD
13. SESIYABONA CO-OP LTD
14. SEHUIJWANE AGRICULTURAL CO-OP LTD
15. INKULULEKO BLOCK-MAKING CO-OP LTD
16. INJONGOYAMI CO-OP LTD
17. IMBAMBISA AGRICULTURAL CO-OP LTD
18. IZIGI CO-OP LTD
19. ZAMOKUHLE GROUP CO-OP LTD
20. ITHEMBA LEMPELA CO-OP LTD
21. MALELANE CANE FARMERS CO-OP LTD
22. TSEBO POULTRY CO-OP LTD
23. VUKAMAWULELE SHOE REPAIR CO-OP LTD
24. VULINDLELA AGRICULTURAL CO-OP LTD
25. LESEDI TOURISM CO-OP LTD
26. UKUVUKAKWETHU BLOCKS MAKERS CO-OP LTD
27. SENAMILE POULTRY PROJECT CO-OP LTD
28. MOLOI'S FARMING CO-OP LTD
29. MASINTINGE AGRICULTURAL CO-OP LTD
30. ZIZAMELENI POULTRY CO-OP LTD
31. LETHUKUKHANYA AGRICULTURAL CO-OP LTD
32. FIKANOMUSA CO-OP LTD
33. RIXILE COMMUNITY CO-OP LTD
34. NGUGA CO-OP LTD
35. MASIME PIGGERY CO-OP LTD
36. MARANG CAKE AND BREAD CO-OP LTD

Notice is hereby given that the names of the abovementioned co-operatives have been removed from the register in terms of the provisions of section 73(1) of the Co-operatives Act, 2005.

REGISTRAR OF CO-OPERATIVES

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DEPARTMENT OF TRADE AND INDUSTRY

NO. 176

02 MARCH 2018

CO-OPERATIVES THAT HAVE BEEN REMOVED FROM THE REGISTER

1. NONTOMBI SLATE 'N TILE CO-OP LTD
2. MVELOYESIZWE PRIMARY AGRICULTURAL CO-OP LTD
3. MALIHAMBE POULTRY CO-OP LTD
4. MASIZENZELE CO-OP LTD
5. MASISUKUME CO-OP LTD
6. NATAL PEACEFUL TRAINING CO-OP LTD
7. MASIKHULE CENGANE MAIZE PROJECT CO-OP LTD
8. MASINCEDANE LWALWENI POULTRY CO-OP LTD
9. NANDI'S VILLAGE CO-OP LTD
10. MEN OF LOVE CO-OPERATIVE BURIAL SOCIETY CO-OP LTD
11. MOKOLOBE PRIMARY TRADING CO-OP LTD
12. MPEKO FRESH VEGETABLE CO-OP LTD
13. NZIMAKWE YOUTH CO-OP LTD
14. MASIMANYANE MAIZE CO-OP LTD
15. MACMO CO-OP LTD
16. MOONLIGHT TRADING ENTERPRISE CO-OP LTD
17. IMVUSELELO CO-OP LTD
18. ILITHA SHEEP AND WOOL PRODUCTION CO-OP LTD
19. LOVING GRACE CO-OP LTD
20. KHAYA LETHU AGRICULTURAL CO-OP LTD
21. IMIZAMO YAMAHLEBI PIG FARMING CO-OP LTD
22. INGQUZA CO-OP LTD
23. THARI ETSHEANE AGRICULTURAL CO-OP LTD
24. IMFULAZANA CO-OP LTD
25. MONTLE TRADING CO-OP LTD
26. VUSUZULU CO-OP LTD
27. KHULULEKA CO-OP LTD
28. KANCANE-KANCANE CO-OP LTD
29. PHUZEMTHONJENI CO-OP LTD
30. TRIPPLE MD'S CO-OP LTD
31. DGRV MULTI-PURPOSE CO-OP LTD
32. MOEPA-THUTSE YOUTH CO-OP LTD
33. SONDONZIMA ARTS AND CULTURE TRAINING TRADING CONSTRUCTION CO-OP LTD
34. ELOK'SHINI CO-OP LTD
35. LETLHABILE MULTIPURPOSE CO-OP LTD
36. NALEDI PROJECT CO-OP LTD

Notice is hereby given that the names of the abovementioned co-operatives have been removed from the register in terms of the provisions of section 73(1) of the Co-operatives Act, 2005.

REGISTRAR OF CO-OPERATIVES

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DEPARTMENT OF TRADE AND INDUSTRY

NO. 177

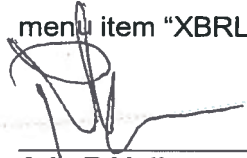
02 MARCH 2018

**NOTICE TO CUSTOMERS****REPORTING OF ANNUAL FINANCIAL STATEMENTS (AFS) TO BE LODGED
USING EXTENSIBLE BUSINESS REPORTING LANGUAGE (XBRL) AS FROM
01 JULY 2018, ANNUAL FINANCIAL STATEMENTS IN PDF ARE
DISCONTINUED**

As from 1 July 2018 all qualifying entities required to submit Annual Financial Statements according to Section 30 and Regulation 30 of the Companies Act, No. 71 of 2008, as amended by Companies Act 3 of 2011, will be required to do so through the digital financial reporting mechanism of eXtensible Business Reporting Language (XBRL) as the only mechanism of submission. This will replace the current mechanism of reporting Annual Financial Statements through the submission of PDF documents.

Section 30 and Regulation 30 of the Companies Act, No. 71 of 2008, as amended by Companies Act 3 of 2011, prescribes requirements for Annual Financial Statement submissions to the Companies and Intellectual Property Commission of South Africa (CIPC). Regulation 30 (5) (a) prescribes the Commission must establish a system to review Annual Financial Statements with the objective of monitoring compliance with the Act. According to Section 6 (13) (a) (iii) the system to be established by the Commission may use any means of electronic communication to facilitate the automated filing of any information contemplated by the Act.

On the CIPC website (www.cipc.co.za) relevant information about mandating of XBRL under the menu item "XBRL Programme" is published.



Ady R Voller
Commissioner: CIPC

30/1/2018

DEPARTMENT OF TRADE AND INDUSTRY

NO. 178

02 MARCH 2018



Companies and Intellectual
Property Commission
a member of the dti group

PRACTICE NOTE 6 OF 2011 (revised)
COMPANIES ACT, 2008
DETAIL REQUIRED FOR REGISTRATION OF EXTERNAL COMPANIES

The original practice note 6 of 2011 issued in terms of Regulation 4 of the Companies Regulation, 2011 during May 2011 is hereby revised. The content of the original practice note incorrectly referred to CoR21.1 in paragraph 3, instead of CoR21.2.

In order to ensure that the CIPC has relevant and usable information relating to external companies additional information as per CoR20.1, CoR20.1 Annexure A and CoR21.2 is required.

On the CoR20.1, the CIPC requires both the physical and postal address of the principal office of the external company both within and outside of the Republic.

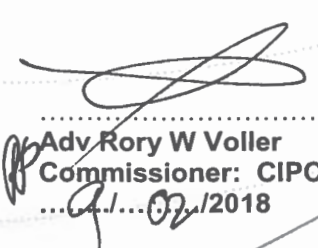
The person who is authorised to accept service of documents on behalf of the external company may only be a natural person and the physical and postal address must be within the Republic. The following additional information of such person, on both the CoR20.1 and CoR21.2 is required:

- Name and surname
- If South African his/her identity number
- If foreign national his/her passport, date of birth and country of origin
- Postal address within the Republic
- Physical address within the Republic
- E-mail or cell phone number

CoR20.1 Annexure A reflects that only natural persons may be directors of an external company which is erroneous. In instances where a director is a juristic person the reference to full name/former name will refer to the name of the juristic person and identity number and passport number refer to its registration number. The e-mail address and/or cell phone number of the director (regardless whether juristic or natural) must be provided. Lastly, reference to occupation may be ignored.

It should be noted that the indicated additional information is mandatory and forms will be rejected if they do not comply.

Yours faithfully,


.....
Adv Rory W Voller
Commissioner: CIPC
...../2018

DEPARTMENT OF TRADE AND INDUSTRY

NO. 179

02 MARCH 2018

MERCHANDISE MARKS ACT, 1941 (ACT 17 1941)**INVITATION FOR THE PUBLIC TO COMMENT ON THE PROHIBITION ON THE USE OF
THE ZA CAP LOGO**

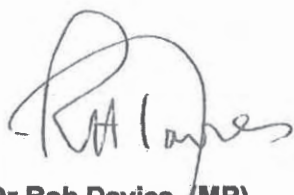
I, Dr Rob Davies, Minister of Trade and Industry, hereby advertise for public comment in terms of section 15(1) of the Merchandise Marks Act 1941 the use of the logo as depicted in Annexure 1 or similar drawings which might cause confusion with any trade, business, profession or occupation or event, or in connection with any trade mark, mark or trade description applied to goods, save where the use thereof is by the authority of Mr John Gwetsa. Proprietors of identical or similar marks already in use will not be affected by this prohibition. The prohibition of this logo / mark will be perpetual and absolute in nature.

Interested persons may submit written comments on the proposed ZA Cap logo within 30 calendar days from the date of publication of this Notice to:

Director-General, Department of Trade and Industry
For Attention: Meshendri Padayachy
Private Bag X84
Pretoria
0001

Or hand deliver to:

77 Meintjies street
Block B, 1st Floor
Sunnyside, Pretoria
Email: MPadayachy@thedti.gov.za



Dr Rob Davies, (MP)
Minister of Trade and Industry
15 December 2017



DEPARTMENT OF TRADE AND INDUSTRY

NO. 180

02 MARCH 2018

MERCHANDISE MARKS ACT, 1941 (ACT 17 1941)

INVITATION FOR THE PUBLIC TO COMMENT ON THE PROHIBITION ON THE USE OF
THE SOUTH AFRICAN AIRWAYS LOGO

I, Dr Rob Davies, Minister of Trade and Industry, hereby advertise for public comment in terms of section 15(1) of the Merchandise Marks Act 1941 the use of the logo as depicted in Annexure 1 or similar drawings which might cause confusion with any trade, business, profession or occupation or event, or in connection with any trade mark, mark or trade description applied to goods, save where the use thereof is by the authority of South African Airways SOC Limited. Proprietors of identical or similar marks already in use will not be affected by this prohibition. The prohibition of this logo / mark will be perpetual and absolute in nature.

Interested persons may submit written comments on the proposed South African Airways logo within 30 calendar days from the date of publication of this Notice to:

Director-General, Department of Trade and Industry
For Attention: Meshendri Padayachy
Private Bag X84
Pretoria
0001

Or hand deliver to:

77 Meintjies street
Block B, 1st Floor
Sunnyside, Pretoria
Email: MPadayachy@thedti.gov.za



Dr Rob Davies, (MP)
Minister of Trade and Industry
15 December 2017



DEPARTMENT OF TRADE AND INDUSTRY

NO. 181

02 MARCH 2018

**NOTICE OF INTRODUCTION OF NEW ONLINE FILING METHOD FOR CHANGES OF
AUTHORISED SHARES AS PER FORM COR15.2**

I, Adv Rory Wayne Voller, Commissioner of the Companies and Intellectual Property Commission (CIPC) hereby designate additional electronic methods for the filing of changes to authorised shares as per form COR15.2, pursuant to section 6(13) of the Companies Act, 2008 (Act 17 of 2008).

The date of the introduction of the additional electronic methods for the filing for changes to authorised shares, will be communicated via the CIPC website www.cipc.co.za.


Adv Rory W Voller
COMMISSIONER: CIPC
... February 2018

DEPARTMENT OF TRADE AND INDUSTRY

NO. 182

02 MARCH 2018

CO-OPERATIVES THAT HAVE BEEN REMOVED FROM THE REGISTER

1. LUNCEDULWETU FARMERS CO-OP LTD
2. THULA UZOBONA FRUIT AND VEGETABLE CO-OP LTD
3. UMUZI CULTURAL VILLAGE CO-OP LTD
4. UMUNTU UMUNTU NGABANTU CAR WASH CO-OP LTD
5. LIBUYILE WOMEN DEVELOPMENT CO-OP LTD
6. HITEKANI CO-OP LTD
7. UKUDLA-KWEMVELO CO-OP LTD
8. INDALO OILS AND FIBRE INDUSTRIES CO-OP LTD
9. ITSOSENG HOUSING DEVELOPMENT CO-OP LTD
10. FUTURE VISION COMMUNITY DEVELOPMENT CO-OP LTD
11. ZAMUKUVELA SEWING DESIGNING CO-OP LTD
12. ISIPHIKELELI TRADING CO-OP LTD
13. INJOLI BRICK MAKERS CO-OP LTD
14. FOLWENI QONDOKUHLE SECURITY CO-OP LTD
15. IFALETHU CO-OP LTD
16. ISIDINGO SETHU FARMING CO-OP LTD
17. IKAGENG WOMENS CLUB CO-OP LTD
18. ITEKE WASTE RECYCLING CO-OP LTD
19. ZANOKHANYO CO-OP LTD
20. ZAMUKUVUKA FARMING AND INDUSTRIAL CO-OP LTD
21. GILIKINGQI MAIZE COMMUNITY PROJECT CO-OP LTD
22. EMBALENHLE GLASSWORK CO-OP LTD
23. ITIRELENG YOUTH CO-OP LTD
24. THABA-NCHU FINANCIAL SERVICES CO-OP LTD
25. TSELA YA BOPHELO CATERING CO-OP LTD
26. DITSHEGOFATSO AGRICULTURAL CO-OP LTD
27. DIVHATENI AGRICULTURAL CO-OP LTD
28. CAMPBELL AGRICULTURAL CO-OP LTD
29. ACHIB GAUTENG CENTRAL CO-OP LTD
30. QOPHINDLELA CO-OP LTD
31. QALAKAHLE TOYISA CO-OP LTD
32. REFENTSE BUSINESS CO-OP LTD
33. DIBA-SA-BOTSHELO AGRICULTURAL CO-OP LTD
34. TAKUWA CO-OP LTD
35. REATSWELELA CO-OP LTD
36. SIYASEBENZA COMMUNITY CO-OP LTD
37. DENIM UNLIMITED CO-OP LTD
38. THUSANO MOLAPONG CO-OP LTD

Notice is hereby given that the names of the abovementioned co-operatives have been removed from the register in terms of the provisions of section 73(1) of the Co-operatives Act, 2005.

REGISTRAR OF CO-OPERATIVES

Office of the Registrar of Co-operatives
Dti Campus
77 Meintjies Street
Pretoria
0002
Private Bag X237
Pretoria
0001

DEPARTMENT OF TRADE AND INDUSTRY

NO. 183

02 MARCH 2018

CO-OPERATIVES TO BE STRUCK FROM THE REGISTER

1. LOSILUSIA CO-OP LTD
2. ZAIDA CO-OP LTD
3. UNKULUNKULU UYABONELELA CO-OP LTD
4. MIZAMO CO-OP LTD
5. SINESIPHELO CO-OP LTD
6. KWATSHO KWAKHANYA MULTI-PURPOSE CO-OP LTD
7. NCAMSILE CO-OP LTD
8. PHILA NATURALS WOMEN DEVELOPMENT CO-OP LTD
9. S'PHELELE CO-OP LTD
10. INQOLOBANE YAMAQADI NAMANYUSWA CO-OP LTD
11. SESIFIKILE CO-OP LTD
12. INTATHAKUSA CATERING CO-OP TD
13. DALINDYEBO MULTI-PURPOSE CO-OP LTD
14. PIESANG TAXI CO-OP LTD
15. TSOGA-O-DIRE PODI CO-OPERATIVE ENTERPRISE LTD
16. UMZAM'OMHLE LEATHER CRAFTING CO-OP LTD
17. BATHO LE MATLA A BONA CO-OP LTD
18. PEOPLES CO-OP LTD
19. INCEBA CATERING AND SUPPLY PRIMARY CO-OP LTD
20. ALUNCEDO CO-OP LTD
21. EBERNHEZER 01 AGRICULTURAL CO-OP LTD
22. LIMBO GENERAL TRADING CO-OP LTD
23. ICAMAGU MAKHOS'KAZI CO-OP LTD
24. UBUNTU DISTRIBUTORS AND CO-OPERATIVE SERVICES CO-OP LTD

Notice is hereby given that the names of the abovementioned co-operatives will, after the expiration of sixty days from the date of this notice, be struck off the register in terms of the provisions of section 73(1) of the Co-operatives Act, 2005, and the co-operatives will be dissolved unless proof is furnished to the effect that the co-operatives are carrying on business or are in operation.

Any objections to this procedure, which interested persons may wish to raise, must together with the reasons therefore, be lodged with this office before the expiration of the period of sixty days.

REGISTRAR OF CO-OPERATIVES

Office of the Registrar of Co-operatives
Dti Campus
77 Meintjies Street
Pretoria
0002

Private Bag X237
Pretoria
0001

DEPARTMENT OF TRADE AND INDUSTRY

NO. 184

02 MARCH 2018

CO-OPERATIVES THAT HAVE BEEN REMOVED FROM THE REGISTER

1. TSHEBEDISANO CLEANING SERVICES CO-OP LTD
2. ZIZANDLA ZETHU AGRICULTURAL CO-OP LTD
3. ZOAR AGRICULTURAL CO-OP LTD
4. USINETHEMBA POULTRY CLUB CO-OP LTD
5. RISE AND SHINE BLOCK MAKING CONSTRUCTORS CO-OP LTD
6. SITHI PHILANI TRADING AND FARMING CO-OP LTD
7. SETHEMBENE HOUSING AND COMMUNITY DEVELOPMENT CO-OP LTD
8. SINAMUVA SEWING CO-OP LTD
9. NDUM-MANYANO MULTI-PURPOSE CO-OP LTD
10. UNGCEDO CO-OP LTD
11. SIYAPHUTHUMA PIGGERY CO-OP LTD
12. USIZOLWETHU CO-OP LTD
13. SIYAKHANGELA CO-OP LTD
14. MASIBAMBISANENI TRADING AND SERVICES CO-OP LTD
15. MALLE FRESH PRODUCE CO-OP LTD
16. DISCOVERY GARDEN AGRICULTURAL CO-OP LTD
17. DORDRECHT BRICK MAKER'S ASSOCIATION CO-OP LTD
18. LEFTY'S SPORTS BAR CO-OP LTD
19. KHOLWENI TRADING CO-OP LTD
20. MASIBAMBANE AFRICAN ACTION GROUP CO-OP LTD
21. ISIBANI SETHU YOUTH DEVELOPMENT CO-OP LTD
22. TSHEPANANG CO-OP LTD
23. MAPHUNHLA CO-OP LTD
24. SONWABILE FENCING CO-OP LTD
25. SEJAKHULA VARKBOEDERY CO-OP LTD
26. TOGETHER TRANSPORT CO-OP LTD
27. MFUNDENI COMMERCIAL FARMERS CO-OP LTD
28. MPUNZI TRADING SERVICES AND INDUSTRIAL CO-OP LTD
29. MASIQHUBEKE VEGETABLE PROJECT CO-OP LTD
30. MONGOWEMPILO CO-OP LTD
31. MASITHEMBANE CO-OP LTD
32. ZAMUKUZAKHA CO-OP LTD
33. KAYELITSHA BRICKFIELD CO-OP LTD
34. SIYAQINGQA CO-OP LTD
35. MMAKGABETLWANE BROILER PROJECT CO-OP LTD
36. SIZANANI WOMEN'S CO-OP LTD

Notice is hereby given that the names of the abovementioned co-operatives have been removed from the register in terms of the provisions of section 73(1) of the Co-operatives Act, 2005.

REGISTRAR OF CO-OPERATIVES

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DEPARTMENT OF TRADE AND INDUSTRY

NO. 185

02 MARCH 2018

CO-OPERATIVES TO BE STRUCK FROM THE REGISTER

1. SIMANYENE CO-OP LTD
2. IMPENDULO FLOWER CO-OP LTD
3. NEMBENI FARMING CO-OP LTD
4. SIZANECEBO CO-OP LTD
5. KHUTHALANE PRIMARY ORGANIC FARMING CO-OP LTD
6. SINOLWAZI CO-OP LTD
7. FUZISWA CO-OP LTD
8. ILIMA LAMAKHOSIKAZI LUKHANJI CO-OP LTD
9. SIYAZANA CO-OP LTD
10. MOHAU CO-OP LTD
11. CEBOLIHLE CO-OP LTD
12. JOZI CO-OP LTD
13. SINEZANDLA MULTY-PURPOSE CO-OP LTD
14. GUDANI PIGGERY CO-OP LTD
15. MNDENI BLOCK MAKING CO-OP LTD
16. KHULUGQAME TRADING CO-OP LTD
17. SOBANE CLEANING CO-OP LTD
18. UNDOQO CO-OP LTD
19. LUBUMBANO CO-OP LTD
20. LUYOLO FARMERS CO-OP LTD
21. AFRICAN UNITED EMPOWERMENT CO-OP LTD
22. SIZAMA UKUKHANYA CO-OP LTD

Notice is hereby given that the names of the abovementioned co-operatives will, after the expiration of sixty days from the date of this notice, be struck off the register in terms of the provisions of section 73(1) of the Co-operatives Act, 2005, and the co-operatives will be dissolved unless proof is furnished to the effect that the co-operatives are carrying on business or are in operation.

Any objections to this procedure, which interested persons may wish to raise, must together with the reasons therefore, be lodged with this office before the expiration of the period of sixty days.

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DEPARTMENT OF TRADE AND INDUSTRY

NO. 186

02 MARCH 2018

CO-OPERATIVES THAT HAVE BEEN REMOVED FROM THE REGISTER

1. MVUTSHINI YOUTH DEVELOPMENT CO-OP LTD
2. MASIBEMOYAMNYE CO-OP LTD
3. PEARSTON FINANCIAL SERVICES CO-OP LTD
4. NONKUTULO POULTRY PROJECT CO-OP LTD
5. MANSOMINI IRRIGATION SCHEME CO-OP LTD
6. MABHELENI-GUBHUZA CO-OP LTD
7. MASIPHUMENDLALANI FARMERS CO-OP LTD
8. MOYENI POULTRY PROJECT CO-OP LTD
9. MOROKE TRADING CO-OP LTD
10. PUDINTLE CO-OP ENTERPRISE LTD
11. OR TAMBO DISTRICT CLOTHING CO-OP LTD
12. MOKGABO MARKETING AND SUPPLY CO-OP LTD
13. MAMATHEKA CO-OP LTD
14. MASONWABE BAKING CO-OP LTD
15. KUYASA TRANSPORT CO-OP LTD
16. ITIRELENG BAKUBUNG CO-OP LTD
17. ARGENTEUM AGRICULTURAL CO-OP LTD
18. UMTI BRICKS AND BLOCKS CONSTRUCTORS CO-OP LTD
19. VUNDISA CO-OP LTD
20. VUKUZELA CO-OP LTD
21. AGANANG CO-OP ENTERPRISE LTD
22. ISIFISO SETHU CO-OP LTD
23. ANCHOR/TSHIYA SAVINGS AND CREDIT CO-OP LTD
24. ITAZA CO-OP LTD
25. KHINDLIMUKA AGRICULTURAL CO-OP LTD
26. KUNGWINI COMMUNITY DEVELOPMENT CO-OP LTD
27. UTHANDO FINANCIAL SERVICES CO-OP LTD
28. LUBISI FINANCIAL SERVICES CO-OP LTD
29. TIRISANO CO-OP LTD
30. QHURU FARMERS TRADING CO-OP LTD
31. SIHLOMILE CO-OP LTD
32. SILINDOKUHLE MULTI PURPOSE CO-OP LTD
33. UKUSEBENZA OKUHLE CO-OP LTD
34. UMLAZI SOAP MAKERS CO-OP LTD
35. UMSUNDUZI COMMUNITY GARDEN CO-OP LTD
36. UBUHLE BEMVELO CATTLE FARMERS CO-OP LTD

Notice is hereby given that the names of the abovementioned co-operatives have been removed from the register in terms of the provisions of section 73(1) of the Co-operatives Act, 2005.

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DEPARTMENT OF TRADE AND INDUSTRY

NO. 187

02 MARCH 2018

MERCHANDISE MARKS ACT, 1941 (ACT 17 1941)

INVITATION FOR THE PUBLIC TO COMMENT ON THE PROHIBITION ON THE USE OF
THE EKURHULENI METROPOLITAN MUNICIPALITY LOGO

I, Dr Rob Davies, Minister of Trade and Industry, hereby advertise for public comment in terms of section 15(1) of the Merchandise Marks Act 1941 the use of the logo as depicted in Annexure 1 or similar drawings which might cause confusion with any trade, business, profession or occupation or event, or in connection with any trade mark, mark or trade description applied to goods, save where the use thereof is by the authority of Ekurhuleni Metropolitan Municipality. Proprietors of identical or similar marks already in use will not be affected by this prohibition. The prohibition of this logo / mark will be perpetual and absolute in nature.

Interested persons may submit written comments on the proposed Ekurhuleni Metropolitan Municipality logo within 30 calendar days from the date of publication of this Notice to:

Director-General, Department of Trade and Industry
For Attention: Meshendri Padayachy
Private Bag X84
Pretoria
0001

Or hand deliver to:

77 Meintjies street
Block B, 1st Floor
Sunnyside
Pretoria
Email: MPadayachy@thedti.gov.za



Dr Rob Davies, (MP)
Minister of Trade and Industry
15 December 2017



DEPARTMENT OF TRADE AND INDUSTRY

NO. 188

02 MARCH 2018

CO-OPERATIVES THAT HAVE BEEN REMOVED FROM THE REGISTER

- 1. SIZAKANCANE NGWELEZANE DEVELOPMENT CO-OP LTD**
- 2. TSHWANE LAND DEALERS HOUSING MANAGEMENT CO-OP LTD**
- 3. THE ERMEGING FARMERS CO-OP LTD**
- 4. ESIBAYENI VILLAGE AND CONFERENCING CO-OP LTD**
- 5. HLALUKHO CO-OP LTD**
- 6. SIYAVUKA CO-OP LTD**
- 7. SSS AGRICULTURAL CO-OP LTD**
- 8. NINAWABANTU WOMEN MANUFACTURING CO-OP LTD**

Notice is hereby given that the names of the abovementioned co-operatives have been removed from the register in terms of the provisions of section 73(1) of the Co-operatives Act, 2005.

REGISTRAR OF CO-OPERATIVES

Office of the Registrar of Co-operatives
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Pretoria
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Private Bag X237
Pretoria
0001

DEPARTMENT OF WATER AND SANITATION

NO. 189

02 MARCH 2018

**NATIONAL WATER ACT, 1998
(ACT NO.36 OF 1998)****RESERVE DETERMINATION OF WATER RESOURCES FOR THE OLIFANTS-DOORN
CATCHMENTS**

I, Sifiso Mkhize, in my capacity as the Acting Director-General of the Department of Water and Sanitation, having complied with section 13 of the National Water Act, (Act No. 36 of 1998) ("the Act") and Regulation 3 of the Regulations for the establishment of Water Resource Classification System (No. R. 810 Government Gazette No. 33541, 17 September 2010), and duly authorised in terms of sections 16(1) and 63(1)(a) of the Act, after having complied with section 16(2) and (3) of the Act, hereby publish the Reserve Determination of water resources for the Olifants-Doorn catchments.

Director: Reserve Determination
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MR. SIFISO MKHIZE
DIRECTOR-GENERAL (ACTING)
DATE: 13/12/2017

RESERVE DETERMINATION OF WATER RESOURCES FOR THE CATCHMENTS OF THE OLIFANTS-DOORN IN TERMS OF SECTION 16(1) AND (2) OF THE NATIONAL WATER ACT, 1998 (ACT NO. 36 OF 1998)

SCHEDULE

1. DESCRIPTION OF WATER RESOURCE

- 1.1 The Reserve is determined for all or part of every significant water resource within the catchments of the Olifants-Doorn as set out below:

Water Management Area:	Berg-Olifants
Catchment:	Olifants-Doorn
Drainage Regions:	E Primary Drainage Region
Rivers:	Olifants-Doorn River System
Estuary:	Olifants
Catchments excluded:	Entire Berg catchment and parts of Olifants catchment (i.e. G30 catchment and F60 catchment)

- 1.2 The Minister has in terms of section 16 of the National Water Act, 1998 (Act No.36 of 1998) ("the Act"), prescribed a system for classifying water resources by issuing Government Notice No. R. 810, published in Government Gazette No. 33541 dated 17 September 2010. In terms of section 16(1) of the Act, the Minister must, as soon as reasonably practicable after the class of all or part of a water resource has been determined, by Notice in the *Gazette*, determine the Reserve for all or part of that water resource.
- 1.3 The Minister, in terms of section 16(1) and (2) of the Act, declares, the following Reserve for the catchments of the Olifants-Doorn.

2. RESERVE DETERMINATION AS REQUIRED IN TERMS OF SECTION 16(1) AND (2) ACT

- 2.1 A selected list of Acronyms and definitions in Item 3.
- 2.2 A summary of the quantity component for the Rivers which include the EWR and the BHN in terms of section 16(1) of the Act for the Olifants-Doorn catchments is set out in Table 4.1.
- 2.3 A summary of the quality component for the Rivers at EWR sites in terms of section 16(1) of the Act for the Olifants-Doorn catchments is set out in Table 5.1 - 5.6.
- 2.4 A summary of the EWR based on the natural flow contribution of the catchments upstream Olifants River Estuary in terms of section 16(1) of the Act for the Olifants-Doorn catchments is set out in Table 6.1 - 6.3.
- 2.5 A summary of the groundwater contribution to the Reserve for Water Quantity & Quality in terms of section 16(1) of the Act for the Olifants-Doorn is set out in Table 7.1 - 8.3.
- 2.6 The Reserve will apply from the date signed off as determined in terms of Section 16(1) of the Act, unless otherwise specified by the Minister.

3. ACRONYMS AND DEFINITIONS

3.1 Acronyms

BHN	Basic Human Needs
EcoSpecs	Ecological Specifications
EIS	Estuarine Importance Score
EWR	Ecological Water Requirement
GRA II	Groundwater Resource Assessment Phase II
GRDM	Groundwater Reserve Determination Methodology
GRUs	Groundwater Resource Units
MAR	Mean Annual Runoff
MCM	Million Cubic Metres
MAR	Mean Annual Runoff
PES	Present Ecological Status
REC	Recommended Ecological Category
TEC	Target Ecological Category
TPCs	Thresholds of Potential Concern

3.2 Definitions

- Baseflow** is a sustained low flow in rivers during dry or fair weather conditions, but not necessarily all contributed by groundwater; includes contribution from delayed interflow and groundwater discharge.
- EWR** refers to the flow patterns (magnitude, timing and duration) and water quality needed to maintain a riverine ecosystem in a particular condition.
- Recharge** is the addition of water to the zone of saturation, either by downward percolation of precipitation or surface water and/ or the lateral migration of groundwater from adjacent aquifers.
- Reserve** is the quantity and quality of the water required to satisfy the basic human needs by securing a basic water supply and to protect the aquatic ecosystem in order to secure ecologically sustainable development and use of the relevant water resource.

4. SURFACE-WATER - QUANTITY COMPONENT FOR RIVERS

The results for the Reserve determination and ecological categorisation for the Olifants/Doring River System, where the Reserve amounts are expressed as a percentage of the MAR for the respective catchments (cumulative) in terms of section 16(1) of the Act.

Table 4.1: Summary of the quantity component for the Rivers which include the EWR & BHN.

Quaternary catchment	Water Resource	PES	EIS	REC	Ecological reserve (Cumulative) (% MAR)	Basic human needs Reserve (% MAR)	MAR (MCM)	Total Reserve (%MAR)
E10A	Olifants	C	High	C	43.58	0.00	60.475	43.58
E10B	Olifants	C	High	C	44.26	0.01	129.003	44.27
E10C	Olifants	B	Very high	B	51.09	0.00	182.405	51.09
E10D	Olifants	C	Moderate	D	52.38	0.00	233.767	52.38
E10E	Olifants	C	Moderate	D	37.77	0.4	293.467	38.17
E10F (EWR 1)	Olifants	D	Moderate	D	37.77	0.03	355.557	37.8
E10G	Olifants	C	Moderate	D	26.59	0.03	437.273	26.62
E10G (EWR 3)	Rondegat	B	Moderate	B	42.75	0.03	7.411	42.78
E10H	Jan Dissels	D	Moderate	C	19.70	0.00	44.686	19.70
E10J & E10J (Q7)	Olifants	D	Moderate	D	14.90*	0.154	46.205*	15.054
E10K (EWR 2)**	Olifants	E	Moderate	E	9.32	0.00	505.716	9.32
E21A	Kruis	E	Low	C	41.98	0.07	39.425	42.05
E21B	Welgemoed	D	Low	D	23.56	0.161	1.230	23.72
E21C	Winkelhaak	D	Low	C	19.48	0.00	41.939	19.48
E21D	Houdenbeks	D	Low	D	27.72	0.092	50.217	27.81
E21E	Riet	B	Low	B	29.13	0.008	93.772	29.14
E21F	Riet	A/B	Low	B	21.72	0.00	95.862	21.72
E21G	Groot/ Leeu	D	Low	D	38.55	0.04	55.220	38.59
E21H	Twee	A/B	Low	B	70.21*	0.00	55.055*	70.21
E21H	Leeu	A/B	Low	B	64.3	0.00	138.715	64.3
E21J (EWR 6)	Groot	B	Low	B	50.65	0.00	140.463	50.65
E21K	Maatjies	B	Low	B	62.86	0.00	1.819	68.86
E21L	Groot	B	Low	B	50.02	0.00	239.220	50.02
E22A	Doring	A/B	Low	B	47.5	0.012	4.138	47.512
E22B	Doring	B	Low	B	43.1	0.002	7.66	43.10
E22C	Tankwa	C	Low	A/B	47.47	0.984	2.704	48.45
E22D	Tankwa	A/B	Low	A/B	31.93	0.027	5.44	31.957
E22E	Doring	B	Low	B	43.11	0.0004	18.688	43.11
E22F	Doring	B	Low	B	43.11	0.00	20.894	43.11
E22G	Doring	B	Very high	B	50.42	0.00	266.606	50.42
E23A	Tankwa	A/B	Low	A/B	32.42	0.00	8.001	32.42
E23B	Tankwa	A/B	Low	A/B	32.42	0.00	15.403	32.42
E23C	Tankwa	A/B	Low	A/B	32.42	0.00	3.339	32.42
E23D	Tankwa	A/B	Low	A/B	32.42	0.00	26.617	32.24
E23E	Tankwa	A/B	Low	A/B	32.42	0.00	5.922	32.24

Quaternary catchment	Water Resource	PES	EIS	REC	Ecological reserve (Cumulative) (% MAR)	Basic human needs Reserve (% MAR)	MAR (MCM)	Total Reserve (%MAR)
E23F	Tankwa	C	Low	B	26.38	0.00	37.503	26.38
E23G	Ongeluks	A/B	Low	A/B	32.42	0.018	7.844	32.44
E23H	Ongeluks	A/B	Low	A/B	32.42	0.00	69.30	32.42
E23J	Ongeluks	A/B	Low	A/B	32.42	0.00	61.673	32.42
E23K	Tankwa	B	Low	B	26.38	0.00	105.182	26.38
E24A	Tra-tra	B	Low	B	73.6	0.316	4.523	73.92
E24B	Tra-tra	B	Low	B	63.19	0.0324	12.803	63.22
E24C	Bos	B	Low	C	32.55	0.00	13.855	32.55
E24D	Bos	C	Low	C	17.71	0.00	31.475	17.71
E24E	Wolf	A/B	Low	A/B	32.54	0.00	11.855	32.54
E24F	Wolf	A/B	Low	A/B	32.54	0.00	22.140	32.54
E24G	Wolf	A/B	Low	A/B	32.54	0.00	33.327	32.54
E24H (EWR 4)	Doring	A/B	High	B	44.99	0.0098	420.425	44.99
E24J	Doring	B	High	B	48.47	0.00	439.475	48.47
E24K(EWR 5)	Doring	A/B	High	B	48.47	0.00	450.996	48.47
E24L	Brandewyn (Doringmain stem)	B	High	B	50.29	0.00	508.227	50.29
E24M	Doring	B	High	B	50.33	0.00	517.577	50.33
E31A-Q2	Sa raip se Laagte	B	Moderate	B	26.12	0.00	3.091	26.12
E31B	Kromme	B	Moderate	B	25.66	0.00	0.978	25.66
E31C	Kromme	B	Moderate	B	25.66	0.00	2.012	25.66
E31D	Kromme	B	Moderate	B	25.66	0.00	2.556	25.66
E31E	Kromme	B	Moderate	B	25.66	0.00	2.880	25.66
E31F	Hantams	B	Moderate	B	25.62	7.654	0.324	33.27
E31G	Kromme	B	Moderate	B	25.65	0.00	0.814	25.65
E31H	Hantams	B	Moderate	B	25.65	0.00	4.506	25.65
E32A	Kromme	B	Moderate	B	17.30	0.00	0.681	17.30
E32B	Hantams	B	Moderate	B	26.23	0.00	7.018	26.23
E32C	Hantams	B	Moderate	B	26.23	0.00	9.320	26.23
E32D	Hantams	B	Moderate	B	26.22	0.00	11.544	26.22
E32E	Hantams	B	Moderate	B	26.22	0.00	15.148	26.22
E33A	Sout	B	Moderate	C	26.03	0.017	20.579	26.05
E33B	Sout	C	Moderate	C	17.40	0.00	21.273	17.40
E33C	Vars	D	Moderate	C	17.04	0.327	1.009	17.37
E33D	Geelbek	C	Moderate	C	17.09	0.00	1.590	17.09
E33E	Sout	C	Moderate	C	17.39	0.023	25.197	17.413
E33F-Q1	Troe-troe	D	Moderate	D	11.22	1.366	4.530	12.586
E33G	Olifants	D	Moderate	D	12.14	0.032	1028.771	12.172
E33H	Olifants	D	Moderate	D	12.97	0.0102	1054.724	12.98

Quaternary catchment	Water Resource	PES	EIS	REC	Ecological reserve (Cumulative) (% MAR)	Basic human needs Reserve (% MAR)	MAR (MCM)	Total Reserve (%MAR)
E40A	Oorlogskloof	C	Moderate	C	41.51	0.00	16.631	41.51
E40B	Oorlogskloof	C	Moderate	C	41.53	0.387	29.125	41.92
E40C	Oorlogskloof	C	High	C	51.84	0.042	38.491	51.882
E40D	Koebee	C	High	B	56.69	0.00	48.104	56.69

Where: MAR is the Mean Annual Runoff

MCM is million cubic metres

*incremental ecological requirement

**In terms of the RDM guidelines the Ecstatus Category should not be less than D (DWAF 1999)

5. SURFACE-WATER - QUALITY COMPONENT FOR RIVERS

Summary of the Quality component at EWR sites

Table 5.1. Ecospecs and TPCs for RU4-Olifants, as represented by **EWR Site 1** (RU 4: CITRUSDAL TO CLANWILLIAM DAM)

DESCRIPTORS USED FOR ECOSPECS	TPCs
Water Quality	
<i>Salts</i>	
MgSO ₄ (mg/l)	>37
Na ₂ SO ₄ (mg/l)	>51
MgCl ₂ (mg/l)	>51
CaCl ₂	>105
NaCl (mg/l)	>389
Water temperature	Not specified.
pH	<6.5 – >9.0
EC (mS/m)	>15
DO (mg/l)	< 6.0
<i>Toxics</i>	
Ammonia as NH ₃ (mg/l)	>0.007
<i>Nutrients</i>	
Nitrates as N (mg/l)	>0.100
Phosphorous as PO ₄ -P(mg/l)	>0.020
Aquatic Invertebrates	
SASS5 Score	<100
ASPT	<7.5
Ephemeroptera: Baetidae	Fewer than 4 species present overall at site
Ephemeroptera: Leptophlebiidae	Absent from > 50% of samples
Ephemeroptera: Heptageniidae	Absent from SIC/SOC biotope in summer
Coleoptera and Trichoptera	Fewer than 3 families present
Odonata	Fewer than 1 family present in any sample
Plecoptera: Notonemouridae	Absent from > 50% of samples in SIC
Aquatic vegetation and SIC	Absent

Table 5.2. Ecospecs and TPCs for RU6-Olifants, as represented by **EWR Site 2** (RU 6: BULSHOEK BARRAGE TO THE CONFLUENCE WITH THE DORING RIVER)

DESCRIPTORS USED FOR ECOSPECS	TPCs
Water Quality	
<i>Salts</i>	
MgSO ₄ (mg/l)	>37
Na ₂ SO ₄ (mg/l)	>51
MgCl ₂ (mg/l)	>51
CaCl ₂	>105
NaCl (mg/l)	>389
Water temperature	Not specified
pH	<6.5 – >9.0
EC (mS/m)	>25
DO (mg/l)	< 6.0
<i>Toxics</i>	
Ammonia as NH ₃ (mg/l)	>0.007
<i>Nutrients</i>	
Nitrates as N (mg/l)	>0.100
Phosphorous as PO ₄ -P (mg/l)	>0.015
Aquatic Invertebrates	
SASS5 Score	< 30
ASPT	< 4.5
Ephemeroptera: Baetidae	Absent from > 50% of samples
Hemiptera and Odonata	Fewer than two families from each order

Table 5.3. RONDEGAT RIVER - EWR SITE 3.

DESCRIPTORS USED FOR ECOSPECS	TPCs
Water Quality	
<i>Salts</i>	
MgSO ₄ (mg/l)	>23
Na ₂ SO ₄ (mg/l)	>33
MgCl ₂ (mg/l)	>30
CaCl ₂	>57
NaCl (mg/l)	>191
Water temperature	Not specified (no identified temperature dependencies for biota in this reach)
pH	<5.2 or >7.0
EC (mS/m)	>10
DO (mg/l)	< 6.0
<i>Toxics</i>	
Ammonia as NH ₃ (mg/l)	>0.007
<i>Nutrients</i>	
Nitrates as N (mg/l)	>0.020
Phosphorous as PO ₄ -P (mg/l)	>0.010
Aquatic Invertebrates	
SASS5 Score	< 170
ASPT	< 7.5
Ephemeroptera: Baetidae	Fewer than 7 species present overall at site (all biotopes combined)
<i>Demoreptus capensis</i>	Absent in summer
Trichoptera	Fewer than 5 species present overall at site, representing at least two of the following families: Barbarochthonidae, Leptoceridae, Petrothrincidae, Sericostomatidae
Ephemeroptera: Leptophlebiidae	Present in less than 80% of samples (cumulative for site, taken over time)
Ephemeroptera: Heptageniidae	Fewer than Baetidae in summer samples
Coleoptera	Fewer than 3 families present
Blephariceridae and Notonemouridae	Absent in winter
Aquatic Vegetation (in and out of current); Submerged Vegetation; SIC	Habitats absent

Table 5.4. Ecospecs and TPCs for the RU4-Doring River, as represented by **EWR Site 4.** (RU 4: TANKWA/DORING RIVER CONFLUENCE TO DORINGBOS)

DESCRIPTORS USED FOR ECOSPECS	TPCs
Water Quality	
<i>Salts</i>	
MgSO ₄ (mg/l)	<23
Na ₂ SO ₄ (mg/l)	<33
MgCl ₂ (mg/l)	<30
CaCl ₂	<57
NaCl (mg/l)	<191
Water temperature	Adult fish: maximum daily mean = 40 °C (all year). Spawning: Minimum = 19 °C, ideal = 25-28 °C (November to January).
pH	6.5 – 8.5
EC (mS/m)	<20
DO (mg/l)	> 6.0
<i>Toxics</i>	
Ammonia as NH ₃ (mg/l)	<0.007
<i>Nutrients</i>	
Nitrates as N (mg/l)	<0.020
Phosphorous as PO ₄ -P (mg/l)	<0.020
Aquatic Invertebrates	
SASS5 Score	< 125
ASPT	< 6
Trichoptera: Ecnomidae, Philopotamidae (winter), Hydropsychidae, Hydroptilidae	Fewer than two taxa present
Ephemeroptera: Leptophlebiidae	Absent from > 20% of samples
Diptera: Simuliidae	Absent from > 50% of SIC samples
Aquatic Vegetation (out of current); Submerged Vegetation; SIC	Absent

Table 5.5. Ecospecs and TPCs for the RU5-Doring River, as represented by **EWR Site 5.** (RU 5: DORINGBOS TO OLIFANTS/DORING CONFLUENCE)

DESCRIPTORS USED FOR ECOSPECS	TPCs
Water Quality	
<i>Salts</i>	
MgSO ₄ (mg/l)	> 23
Na ₂ SO ₄ (mg/l)	> 33
MgCl ₂ (mg/l)	> 30
CaCl ₂	> 57
NaCl (mg/l)	> 191
Water temperature	Adult fish: maximum daily mean = 40 °C (all year). Spawning: Minimum = 19 °C, ideal = 25-28 °C (November to January).
pH	< 6.5 or > 8.5
EC (mS/m)	> 50
DO (mg/l)	< 6.0
<i>Toxics</i>	
Ammonia as NH ₃ (mg/l)	> 0.007
<i>Nutrients</i>	
Nitrates as N (mg/l)	> 0.020
Phosphorous as PO ₄ -P (mg/l)	> 0.020
Aquatic Invertebrates	
SASS5 Score	< 125
ASPT	< 6
Trichoptera: Ecnomidae, Philopotamidae (winter), Hydropsychidae, Hydroptilidae	Fewer than two taxa present
Ephemeroptera: Leptophlebiidae	Absent from > 20% of samples (cumulative for site, taken over time)
Diptera: Simuliidae	Absent from > 50% of SIC samples
Aquatic Vegetation (out of current); Submerged Vegetation; SIC	Habitats absent

Table 5.6. Ecospecs and TPCs for the RU2-Groot River, as represented by **EW R Site 6.** (RU 2: GROOT RIVER GORGE)

DESCRIPTORS USED FOR ECOSPECS	TPCs
Water Quality	
<i>Salts</i>	
MgSO ₄ (mg/l)	> 23
Na ₂ SO ₄ (mg/l)	> 33
MgCl ₂ (mg/l)	> 30
CaCl ₂	> 57
NaCl (mg/l)	> 191
Water temperature	Adult fish: maximum daily mean = 40 °C (all year). Spawning: Minimum = 19 °C, ideal = 25-28 °C (November to January).
pH	< 6.5 OR > 8.5
EC (mg/l)	> 20
DO (mg/l)	< 6.0
<i>Toxics</i>	
Ammonia as NH ₃ (mg/l)	> 0.007
<i>Nutrients</i>	
Nitrates as N (mg/l)	> 0.020
Phosphorous as PO ₄ -P (mg/l)	> 0.020
Aquatic Invertebrates	
SASS5 Score	< 170
ASPT	< 7.5
Trichoptera: Ecnomidae, Philopotamidae (winter), Hydropsychidae, Hydroptilidae	At least 3 families of cased caddis present overall at site, with at least two of the following families: - Ecnomidae - Leptoceridae - Philopotamidae - Sericostomatidae
Ephemeroptera: Leptophlebiidae	Absent from > 10% of samples
Ephemeroptera: Heptageniidae	Absent from > 20% of samples
Megaloptera: Corydalidae	Absent from > 40% of samples
Coleoptera	< 3 families
Stones-in-current, including fast-flowing, turbulent riffle and run	Absent

6. Estuary component

Geographical boundaries of the Olifants Estuary

Downstream boundary: Estuary mouth (31° 42.00'S; 18°11.34'E).

Upstream boundary: Extent of tidal influence, i.e. the causeway at Lutzville - about 36 km from the mouth (31°33.80'S; 18°19.78'E).

Lateral boundaries: 5 m contour above Mean Sea Level (MSL) along each bank.

Table 6.1. The ecological water requirements of the Olifants Estuary.

Quaternary catchment	Water Resource	PES	EIS	REC	Ecological reserve (% MAR)	MAR (MCM)	Total Reserve (%MAR)
E33H Estuary	Olifants	C	Very high	B	56	1055	56

QUANTIFICATION OF ESTUARINE ECOLOGICAL RESERVE

RECOMMENDED ECOLOGICAL FLOW REQUIREMENT

The Olifants Estuary has been targeted as a Desired Protected Area (DWAF, 2004). According to the guidelines for assigning a recommended REC the estuary, therefore needs to be in a Category A or the Best Attainable State (BAS). However, with large dam developments already existing in the catchment (e.g. Clanwilliam Dam) it will be difficult to improve the Olifants Estuary to a Category of A. It is therefore recommended that the Olifants Estuary be improved to the minimum REC for a 'Highly Important estuary', namely a **Category B. Scenario 2**, i.e. the Present inflow scenario plus the Ecological Water Requirement releases of the River (MAR = $800.3 \times 10^6 \text{ m}^3$) is selected as the recommended Ecological Flow Requirement Scenario for the Olifants Estuary. The flow distributions are summarised below:

Table 6.2. Flow distribution for Scenario 2.

Percentiles	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
99%ile	48.13	32.08	21.50	37.21	24.46	7.77	96.73	194.20	550.92	472.06	230.02	153.70
90%ile	28.90	9.60	7.24	3.64	3.76	3.85	9.62	80.90	151.71	159.08	126.25	65.58
80%ile	16.05	4.30	2.06	1.75	1.68	2.21	4.85	22.01	93.83	104.19	79.44	48.08
70%ile	12.84	2.93	1.68	1.55	1.38	1.81	3.07	11.18	57.99	78.10	66.22	34.22
60%ile	11.49	2.93	1.51	1.51	1.37	1.46	2.88	8.24	42.45	58.26	50.45	25.66
50%ile	10.11	2.93	1.50	1.51	1.34	1.42	2.84	6.19	37.99	51.82	47.54	22.18
40%ile	9.01	2.49	1.50	1.51	1.34	1.42	2.49	3.57	36.22	39.92	44.77	16.34
30%ile	8.32	1.51	1.50	1.51	1.34	1.42	1.76	3.42	24.20	30.79	33.23	14.73
20%ile	6.36	1.43	1.18	1.51	0.91	1.11	1.41	2.05	15.78	21.17	28.07	11.21
10%ile	4.02	0.83	0.58	0.99	0.85	1.00	1.28	1.15	7.44	9.49	17.41	9.66
1%ile	1.01	0.15	0.00	0.99	0.34	0.00	0.04	0.29	0.82	2.07	5.35	4.04

ECOLOGICAL SPECIFICATIONS

Ecological Specifications are clear and measurable specifications of ecological attributes (in the case of estuaries - hydrodynamics, sediment dynamics, water quality and different biotic components) that define a specific ecological reserve category, in the case of the Olifants Estuary for a **Category B**. Thresholds of potential concern (TPC) are defined as measurable end points related to specific abiotic or biotic indicators that if reached (or when modelling predicts that such points will be reached) prompts management action.

Table 6.3. The ecological specifications and associated TPCs

COMPONENT	ECOLOGICAL SPECIFICATION/	THRESHOLD OF POTENTIAL CONCERN
Birds	Retain the species richness, abundance and diversity of the bird community, representative of resident and migrant waders, wading birds and water fowl as under the Present State, except for that there would be an higher abundance of water fowl (increasing by about 10% from Present State numbers)	1.1 Community composition or bird numbers deviates by more than 50% of average seasonal baseline counts for two consecutive summer or winter seasons, focusing on waders, wading birds, terns & water fowl (summer and winter), and specifically red data species which are supported by the system (e.g. Pelican, Oyster catchers, Chestnut banded plover) 1.2 In the case of water fowl densities decline by 20% of average seasonal baseline counts for two consecutive summer or winter seasons
Fish	Retain the following fish assemblages in the estuary: estuarine species (35%), partially estuarine dependent species (50-60%), obligate estuarine dependent (e.g. white steenbras) (>1%) and indigenous freshwater species (>1%). Exotic freshwater species (<0.5%) Maintain recruitment of adult and juvenile fish at Reference Condition levels. This requires maintaining sufficient flow for freshwater plume (temperature, salinity and olfactory gradient) entering the sea. This implies that there should be a significant number of 0 -1 year old fish and no missing year classes.	2.1 Level of estuarine species drop below 30% of total abundance 2.2 Levels of obligate estuarine dependent species drop below 1% of total abundance 2.3 Levels of partially estuarine dependent species drop below 50% or above 60% of total abundance 2.4 Levels of exotic freshwater species above 0.5% (e.g. Mozambique tilapia out-competing resident species) 2.5 Benthic dwellers species drop below 2% of total abundance in estuary above 18 km from the mouth 2.6 There are a missing year class within a species

COMPONENT	ECOLOGICAL SPECIFICATION/	THRESHOLD OF POTENTIAL CONCERN
Invertebrates	Retain Present State species richness and mix (low species abundance, high dominance). However, under the present state one or two species are always present at high densities compared to others (e.g. <i>Pseudodiaptomus hessei</i> & <i>Ceratonereis keiskama</i>). For a B Category the higher densities need to be more variable in abundance during the year.	3.1 Species richness is greater than 30 for zooplankton and macroinvertebrates respectively (50% increase)
	Indicator species such as <i>Capitella capitata</i> , should not dominate benthic species at any site	3.2 <i>Capitella capitata</i> exceeds 50% abundance of benthic species at any site
	<i>Calianassa</i> and <i>Upogebia</i> distribution patterns as under Present State	3.3 Abundance levels or areas of distribution decreases by more than 50% (mainly lower sandy reaches)
Macrophytes	Maintain the present distribution (summer 2004) and abundance of the different plant community types (<i>Zostera capensis</i> (48 ha), intertidal salt marsh (92 ha), supratidal salt marsh (143 ha), floodplain salt marsh (797 ha), reeds and sedges (60 ha)	4.1 Greater than 20% change in the area covered by different plant community types
	Reduce the areas covered by water weeds in the upper reaches by 50% compared to the Present State (summer 2004). Therefore area covered by invasive waterweeds (<i>Azolla filiculoides</i>), nuisance filamentous algae (e.g. <i>Enteromorpha</i> , <i>Ulva</i> , <i>Cladophora</i>) and pondweed (<i>Potamogeton pectinatus</i>) should be 30 ha (half of channel)	4.2 Upper 15 km of estuary with greater than 50% of estuary water channel covered by invasive waterweeds (<i>Azolla filiculoides</i>), nuisance filamentous algae (e.g. <i>Enteromorpha</i> , <i>Ulva</i> , <i>Cladophora</i>) and pondweed (<i>Potamogeton pectinatus</i>).
	Control the spread of invasive aliens in the riparian zone (e.g. <i>Sesbania punicea</i> and <i>Eucalyptus</i> spp.).	4.3 Greater than 20 % increase in area covered by invasive plants.
	Maintain reed and sedge areas (60 ha) and brackish salt marsh (~10 ha) as for the Present State (summer 2004) (by preventing salinity of 20 ppt to move further upstream than 8.5 km and remain there for greater than 3 months).	4.4 Dieback of reeds and brackish salt marsh at 8.5 km and further upstream from the mouth.
	Prevent an increase in bareground in the floodplain salt marsh by maintaining groundwater salinity at <70 ppt and depth to the water table at < 1.5 m	4.5 Greater than 20% increase in bare ground in salt marsh.

COMPONENT	ECOLOGICAL SPECIFICATION/	THRESHOLD OF POTENTIAL CONCERN
Microalgae	Maintain a low phytoplankton biomass with a small REI (i.e. 10 ppt to river +1 ppt) zone	5.1 Phytoplankton biomass exceeds 15 µg/l chlorophyll a in summer and 10 µg/l chlorophyll a in winter 5.2 Blue-green algae exceeds 10% of phytoplankton cell counts
	Maintain microalgal group diversity as measured under Present State (2004)	5.3 Flagellates cease to be the dominant group and diatoms become less diverse (<10 taxa per site)
	Maintain intertidal and subtidal microphytobenthic biomass as measured under Present State (2004).	5.4 Benthic microphytobenthic biomass exceeds 40 mg/m ² chlorophyll a
	Maintain a low frequency of dinoflagellates	5.5 The frequency of dinoflagellates exceeds 5% of the total phytoplankton counts
Water quality	Salinity intrusion should not to cause exceedence of TPCs for fish, invertebrates, macrophytes and microalgae (see above)	6.1 Salinity greater than 20 ppt for greater than 3 months at 7 km upstream from the mouth (brackish saltmarsh, reeds and sedges & invertebrates)
		6.2 Salinity of groundwater increases to 50 ppt and depth to water table to 1 m. (flood plain salt marsh)
		6.3 Total dissolved solids (measure of 'salinity') of river inflow exceeds 3500 mg/l (phytoplankton)
		6.4 Salinity in estuary exceeds 35 ppt (prevent hypersalinity) (for phytoplankton)
		6.5 Salinity greater than 10 ppt occurs above 16 km upstream of the mouth (for fish)
	System variables (Temperature, pH, turbidity, dissolved oxygen, and suspended solids) not to cause exceedence of TPCs for biota (see above)	6.6 River inflow: Summer temp < 20°C pH < 6.5 'Turbid' river inflow (to be determined) Dissolved oxygen < 4 mg/l
		6.7 Secchi disc reading above 8 km from the mouth is greater than 1 m (used as a proxy for turbidity concentrations in estuary)
		6.8 pH > 8.5 or < 6.5 in river inflow or in estuary 6.9 Water column DO drops below 4 mg/l (1 m above bottom except in deep holes) (need to investigate DO level at night in dense macrophyte beds)

COMPONENT	ECOLOGICAL SPECIFICATION/	THRESHOLD OF POTENTIAL CONCERN
	Inorganic nutrient concentrations not to cause exceedance of TPCs for macrophytes and microalgae (see above).	6.10 When average river inflow is less than 5 m³/s and average DIN concentrations exceed 100 µg/l in river inflow and average DIN concentrations in the upper reaches of the estuary (above 16 km from mouth) exceed 100 µg/l. 6.11 During high flow season (flows > 20 m³/s) average DIN concentrations exceed 500 µg/l in river inflow and average DIN concentrations in the upper reaches of the estuary (above 16 km from mouth) exceed 500 µg/l 6.12 Average DRP concentrations exceed 100 µg/l in river inflow and average DRP concentrations in the upper reaches of the estuary (above 16 km from mouth) exceed 100 µg/l.
	Presence of toxic substances not to cause exceedance of TPCs for biota (see above).	6.13 For pesticides/herbicides baseline studies still need to be undertaken before TPCs can be set (special concern in upper reaches with extensive agricultural activities along banks of estuary)
Hydrodynamics	Maintain a flow regime to create the required habitat for birds, fish, macrophytes, microalgae and water quality	7.1 River inflow distribution patterns differ by more than 5% from that of Scenario 2 (i.e. recommended flow scenario for the Olifants) 7.2 River inflow decreases to below 1.5 m³/s at any time 7.3 River inflow below 2 m³/s persists for longer than 4 months
Sediment dynamics	Flood regime to maintain the sediment distribution patterns and aquatic habitat (instream physical habitat) so as not to exceed TPCs for biota (see above)	8.1 River inflow distribution patterns (flood components) differ by more than 10% (in terms of magnitude, timing and variability) from that of the Present State (2004) 8.2 Suspended sediment concentration from river inflow deviates by more than 10% of the sediment load discharge relationship to be determined as part of baseline studies (Present State 2004)
	Changes in sediment grain size distribution patterns not to cause exceedance of TPCs in benthic invertebrates (see above).	8.3 The median bed sediment diameter deviates by more than a factor of two from levels to be determined as part of baseline studies (Present State). 8.4 Sand/mud distribution in middle reaches (8-20 km) change by more than 20% from Present State (2004) 8.5 Changes in the channel bathymetry in the upper reaches (above 20 km upstream of the mouth) change by more than 20% from Present State (2004) 8.6 Changes in tidal amplitude below the Lutzville causeway of more than 20% from Present State (2004)

7. GROUNDWATER - QUANTITY COMPONENT

Groundwater recharge is an important component of hydrogeological characterisation as it has a major influence on groundwater quantity (especially if aquifer transmissivity and storage is favourable) and groundwater quality. Across the Olifants-Doorn WMA groundwater recharge ranges from 0 mm/a to 245 mm/a. The highest groundwater recharge occurs in the Upper Olifants sub-area, especially in the Winterhoek mountain area. Significant recharge also occurs in the Koue Bokkeveld, eastern Doring, and eastern Sandveld sub-areas. For the remaining areas groundwater recharge is quite limited.

The basic human needs Reserve provides for the essential needs of individuals served by the water resource in question and includes water for drinking, food preparation and for personal hygiene. A life-line amount of 25 litres per person per day was used. A summary of the groundwater quantity aspects in terms of BHN and EWR per quaternary is provided in **Table 7.1**.

Table 7.1: Groundwater Reserve Determination Results – Quantity Component.

Quat. catchment	Area (km ²)	Recharge (Mm ³ /a) ¹⁾	Population ²⁾	EWR (Mm ³ /a)	BHN (Mm ³ /a)	Total Reserve (Mm ³ /a)
E10A	134	30.12	0	5.44	0	5.44
E10B	202	37.17	1523	6.78	0.013	6.79
E10C	192	24.79	0	5.66	0	5.66
E10D	235	24.35	0	5.74	0	5.74
E10E	366	30.67	15 627	7.35	0.143	7.49
E10F	386	28.28	1184	5.13	0.011	5.14
E10G	508	26.88	1799	4.21	0.016	4.23
E10H	162	9.62	0	1.51	0	1.51
E10J	468	19.32	7797	1.63	0.071	1.70
E10K	235	6.67	0	0.36	0.0	0.36
E21A	190	14.14	2818	1.48	0.026	1.51
E21B	223	8.87	217	0.01	0.002	0.01
E21C	233	8.7	0	0.07	0	0.07
E21D	242	18.21	5024	1.88	0.046	1.93
E21E	293	8.44	797	0.09	0.007	0.10
E21F	379	8.76	0	0.15	0	0.15
E21G	266	18.95	2458	2.07	0.022	2.09
E21H	404	31.2	0	16.66	0	16.66
E21J	317	16.07	0	0.32	0	0.32
E21K	330	11.62	0	0.18	0	0.18
E21L	195	2.53	0	0.14	0	0.14
E22A	750	7.53	553	0.39	0.005	0.40
E22B	638	6.33	86	0.43	0.001	0.43
E22C	490	4.43	2919	0.33	0.027	0.36
E22D	496	4.21	16	0.26	0	0.26
E22E	1013	9.85	8	1.78	0	1.78
E22F	400	1.3	0	0.21	0	0.21
E22G	367	1.27	0	0.43	0	0.43
E23A	762	5.81	0	1.05	0	1.05
E23B	705	5.08	0	0.97	0	0.97
E23C	318	2.03	0	0.44	0	0.44
E23D	750	3.29	0	1.03	0	1.03

Quat. catchment	Area (km ²)	Recharge (Mm ³ /a) ¹⁾	Population ²⁾	EWR (Mm ³ /a)	BHN (Mm ³ /a)	Total Reserve (Mm ³ /a)
E23E	564	2.99	0	0.6	0	0.60
E23F	473	0.95	0	0.51	0	0.51
E23G	747	2.84	152	0.8	0.001	0.80
E23H	660	2.71	0	0.91	0	0.91
E23J	895	1.87	0	0.96	0	0.96
E23K	572	1.08	0	0.61	0	0.61
E24A	255	6.01	1568	0.47	0.014	0.48
E24B	468	5.09	455	0.86	0.004	0.86
E24C	784	3.68	0	0.75	0	0.75
E24D	997	1.77	0	0.96	0	0.96
E24E	671	2.74	0	1.58	0	1.58
E24F	582	2.23	0	1.07	0	1.07
E24G	633	2.2	0	1.16	0	1.16
E24H	483	0.92	0	0.56	0.004	0.56
E24J	1078	5.13	0	1.24	0	1.24
E24K	652	3.22	0	0.75	0	0.75
E24L	516	9.01	0	1.01	0	1.01
E24M	529	8.41	0	0.71	0	0.71
E31A	2865	1.2	0	0.02	0	0.02
E31B	1476	2.23	0	0.09	0	0.09
E31C	1572	0.89	0	0.09	0	0.09
E31D	839	0.48	0	0.05	0	0.05
E31E	478	0.38	0	0.03	0	0.03
E31F	525	0.92	2716	0.03	0.025	0.05
E31G	1238	0.68	0	0.07	0	0.07
E31H	726	1.09	0	0.04	0	0.04
E32A	1118	4.63	0	0.4	0	0.40
E32B	828	1.52	0	0.3	0	0.30
E32C	638	2.9	0	0.23	0	0.23
E32D	616	1.08	0	0.22	0	0.22
E32E	1001	3.86	0	0.36	0	0.36
E33A	1355	1.84	394	0.08	0.004	0.08
E33B	702	0.8	0	0.06	0.0	0.06
E33C	980	1.37	366	0	0.003	0.00
E33D	1559	2.04	0	0.14	0	0.14
E33E	1282	1.59	632	0.06	0.006	0.07
E33F	725	15.87	7573	0.05	0.069	0.12
E33G	894	7.19	35 929	0	0.328	0.33
E33H	719	3.05	11 768	0.01	0.107	0.12
E40A	941	4.44	0	0.9	0	0.90
E40B	707	3.41	12 350	0.68	0.113	0.79
E40C	530	3.02	1771	0.11	0.016	0.13
E40D	544	3.09	0	1	0	1.00

1) Recharge is extracted from The Classification of Significant Water Resources in the Olifants-Doorn Water Management Area Final Technical Report.

2) Population data estimated from 2011 Census.

8. GROUNDWATER - QUALITY COMPONENT

The ambient groundwater quality was compared to the Class 1 recommended value (DWAF, 1996). The lowest or more conservative value of the two is selected. In instances where the ambient value is selected, it is increased by 10 per cent. In instances where the ambient quality, of geological origin exceeds the recommended value, the ambient water quality is used. These poor water quality areas will become exclusion zones in determining the Basic Human Needs Reserve Requirement. The groundwater quality must comply with the target water quality ranges as shown in **Table 8.1**. **Table 8.2** shows a summary of the results for the quality aspects at quaternary level in terms of the BHN. **Table 8.3** illustrates the groundwater quality class and parameters of concern for each quaternary catchment. Parameters of concern in this case refer to those with elevated concentrations when compared to the drinking water quality standards.

Table 8.1: Classification for the assessment of the suitability of borehole water for potable use.

Constituent/Parameter	Target Water Quality Ranges ¹				
	Units	Class 0	Class I	Class II	Class III
Calcium as Ca	mg/l	0 - 80	80 - 150	150 - 300	> 300
Magnesium as Mg	mg/l	0 - 30	30 - 70	70 - 100	> 100
Sodium as Na	mg/l	0 - 100	100 - 200	200 - 400	> 400
Chloride as Cl	mg/l	0 - 100	100 - 200	200 - 600	> 600
Sulphate as SO ₄	mg/l	0 - 200	200 - 400	400 - 600	> 600
Nitrate as NO ₃ -N	mg/l	0 - 6	6 - 10	10 - 20	> 20
Fluoride as F	mg/l	0 - 1	1 - 1.5	1.5 - 3.5	> 3.5
Faecal coliforms	counts/100ml	0	0 - 1	1 - 10	> 10
pH (pH Units)		6 - 9	5 - 6 & 9 - 9.5	4 - 5 & 9.5 - 10	< 4 or > 10
Total Dissolved Solids	mg/l	0 - 450	450 - 1000	1000 - 2450	> 2450
Electrical Conductivity	mS/m	0 - 70	70 - 150	150 - 300	> 370

1) Ref: South African Water Quality Guidelines, Volume 1: Domestic Water Use, 2nd Ed. 1996. Department of Water Affairs and Forestry. Pretoria, South Africa.

NOTE:

- Class 0** This is ideal water quality, suitable for lifetime use, with no adverse health effects on the user. This class is essentially the same as the target water quality range in the 2nd edition of the *South African Water Quality Guidelines for Domestic Use* (DWAF, 1996).
- Class I** Water in this class is safe for lifetime use, but falls short of the ideal water quality in that there may be instances of adverse health effects, but these are usually mild, and overt health effects are almost sub-clinical and difficult to demonstrate. Water in Class I does not cause health effects under normal circumstances. Aesthetic effects may, however, be apparent.
- Class II** Water in this class is defined as that where adverse health effects are unusual for limited short-term use. Adverse health effects may become more common particularly with prolonged use over many years, or with lifetime use. This class represents water suitable for short-term or emergency use only, but not necessarily suitable for continuous use over a lifetime.
- Class III** This water has constituents in a concentration range where serious health effects might be anticipated, particularly in infants or elderly people with short-term use, and even more so with longer term use. The water in this class is not suitable for use as drinking water without adequate treatment to shift the water into a lower and safer class.

Table 8.2: The results of the Groundwater Component – Quality Aspects

Chemical Parameter	Unit	Quaternary Catchments E10A and E10B			
		No. of Samples	Ambient GW quality or median	BHN Reserve	Groundwater Quality Reserve
pH		8	7.57	5.0 – 9.5	8.33
Electrical Conductivity	mS/m	8	20.2	<150	22.22
Calcium as Ca	mg/l	8	13.15	<150	14.47
Magnesium as Mg	mg/l	8	4.7	<100	5.17
Sodium as Na	mg/l	8	10.55	<200	11.61
Total Alkalinity as CaCO ₃	mg/l	8	33.65	N/A	37
Chloride as Cl	mg/l	8	17.8	<200	19.58
Sulphate as SO ₄	mg/l	8	6.55	<400	7.21
Nitrate as NO _x -N	mg/l	8	0.04	<10	0.04
Fluoride as F	Mg/l	8	0.14	<1.0	0.15
Chemical Parameter	Unit	Quaternary Catchment E10C			
		No. of Samples	Ambient GW quality or median	BHN Reserve	Groundwater Quality Reserve
pH		8	5.16	5.0 – 9.5	5.68
Electrical Conductivity	mS/m	8	7.15	<150	7.87
Calcium as Ca	mg/l	8	1.25	<150	1.38
Magnesium as Mg	mg/l	8	1.24	<100	1.36
Sodium as Na	mg/l	8	5.97	<200	6.57
Total Alkalinity as CaCO ₃	mg/l	8	4	N/A	4.4
Chloride as Cl	mg/l	8	14.5	<200	15.95
Sulphate as SO ₄	mg/l	8	3.25	<400	3.58
Nitrate as NO _x -N	mg/l	8	0.7	<10	0.77
Fluoride as F	Mg/l	8	0.05	<1.0	0.05

Chemical Parameter	Unit	Quaternary Catchment E10D			
		No. of Samples	Ambient GW quality or median	BHN Reserve	Groundwater Quality Reserve
pH		100	6.87	5.0 – 9.5	7.56
Electrical Conductivity	mS/m	100	9	<150	9.9
Calcium as Ca	mg/l	97	2.4	<150	2.64
Magnesium as Mg	mg/l	97	1.96	<100	2.16
Sodium as Na	mg/l	95	8.22	<200	9.04
Total Alkalinity as CaCO ₃	mg/l	97	10.55	N/A	11.61
Chloride as Cl	mg/l	96	16.44	<200	18.08
Sulphate as SO ₄	mg/l	97	2	<400	2.2
Nitrate as NO _x -N	mg/l	96	0.24	<10	0.26
Fluoride as F	Mg/l	94	0.11	<1.0	0.12
Chemical Parameter	Unit	Quaternary Catchment E10E			
		No. of Samples	Ambient GW quality or median	BHN Reserve	Groundwater Quality Reserve
pH		153	6.23	5.0 – 9.5	6.85
Electrical Conductivity	mS/m	152	11.32	<150	12.45
Calcium as Ca	mg/l	153	1.41	<150	1.55
Magnesium as Mg	mg/l	153	1.9	<100	2.09
Sodium as Na	mg/l	146	12.35	<200	13.58
Total Alkalinity as CaCO ₃	mg/l	153	5	N/A	5.5
Chloride as Cl	mg/l	153	23.7	<200	26.07
Sulphate as SO ₄	mg/l	153	2	<400	2.2
Nitrate as NO _x -N	mg/l	153	0.34	<10	0.37
Fluoride as F	Mg/l	148	0.05	<1.0	0.05

Chemical Parameter	Unit	Quaternary Catchment E10F			
		No. of Samples	Ambient GW quality or median	BHN Reserve	Groundwater Quality Reserve
pH		92	6.73	5.0 – 9.5	7.4
Electrical Conductivity	mS/m	92	16.01	<150	17.61
Calcium as Ca	mg/l	92	4.76	<150	5.24
Magnesium as Mg	mg/l	92	2.85	<100	3.14
Sodium as Na	mg/l	88	14	<200	15.4
Total Alkalinity as CaCO ₃	mg/l	92	15.58	N/A	17.14
Chloride as Cl	mg/l	92	27.31	<200	30.04
Sulphate as SO ₄	mg/l	92	4.31	<400	4.74
Nitrate as NO _x -N	mg/l	92	0.41	<10	0.45
Fluoride as F	Mg/l	90	0.1	<1.0	0.11
Chemical Parameter	Unit	Quaternary Catchment E10G			
		No. of Samples	Ambient GW quality or median	BHN Reserve	Groundwater Quality Reserve
pH		107	6.27	5.0 – 9.5	6.9
Electrical Conductivity	mS/m	105	16.9	<150	18.59
Calcium as Ca	mg/l	102	1.68	<150	1.85
Magnesium as Mg	mg/l	103	2.87	<100	3.16
Sodium as Na	mg/l	100	16.2	<200	17.82
Total Alkalinity as CaCO ₃	mg/l	103	4	N/A	4.4
Chloride as Cl	mg/l	104	28.95	<200	31.85
Sulphate as SO ₄	mg/l	104	2	<400	2.2
Nitrate as NO _x -N	mg/l	102	0.88	<10	0.97
Fluoride as F	Mg/l	99	0.05	<1.0	0.05

Chemical Parameter	Unit	Quaternary Catchment E10H			
		No. of Samples	Ambient GW quality or median	BHN Reserve	Groundwater Quality Reserve
pH		7	6.56	5.0 – 9.5	7.22
Electrical Conductivity	mS/m	7	19.6	<150	21.56
Calcium as Ca	mg/l	7	2.79	<150	3.07
Magnesium as Mg	mg/l	7	3.73	<100	4.1
Sodium as Na	mg/l	7	11.6	<200	12.76
Total Alkalinity as CaCO ₃	mg/l	7	4	N/A	4.4
Chloride as Cl	mg/l	7	47.22	<200	51.94
Sulphate as SO ₄	mg/l	7	2	<400	2.2
Nitrate as NO _x -N	mg/l	7	0.04	<10	0.04
Fluoride as F	Mg/l	7	0.05	<1.0	0.05
Chemical Parameter	Unit	Quaternary Catchment E10J			
		No. of Samples	Ambient GW quality or median	BHN Reserve	Groundwater Quality Reserve
pH		71	6.4	5.0 – 9.5	7.04
Electrical Conductivity	mS/m	71	50.4	<150	55.44
Calcium as Ca	mg/l	65	6.49	<150	7.14
Magnesium as Mg	mg/l	65	8.85	<100	9.74
Sodium as Na	mg/l	65	63	<200	69.3
Total Alkalinity as CaCO ₃	mg/l	67	6.2	N/A	6.82
Chloride as Cl	mg/l	66	112.96	<200	124.26
Sulphate as SO ₄	mg/l	66	13.95	<400	15.95
Nitrate as NO _x -N	mg/l	68	2.6	<10	2.86
Fluoride as F	Mg/l	64	0.15	<1.0	0.17

Chemical Parameter	Unit	Quaternary Catchment E10K			
		No. of Samples	Ambient GW quality or median	BHN Reserve	Groundwater Quality Reserve
pH		5	6.74	5.0 – 9.5	7.41
Electrical Conductivity	mS/m	5	175	<150	175
Calcium as Ca	mg/l	5	13.9	<150	15.29
Magnesium as Mg	mg/l	5	55.6	<100	61.16
Sodium as Na	mg/l	5	207	<200	207
Total Alkalinity as CaCO ₃	mg/l	5	2	N/A	2.2
Chloride as Cl	mg/l	5	471	<200	471
Sulphate as SO ₄	mg/l	5	30.3	<400	33.33
Nitrate as NO _x -N	mg/l	5	2.4	<10	2.64
Fluoride as F	Mg/l	5	0.14	<1.0	0.15
Chemical Parameter	Unit	Quaternary Catchment E21A			
		No. of Samples	Ambient GW quality or median	BHN Reserve	Groundwater Quality Reserve
pH		50	7.63	5.0 – 9.5	8.39
Electrical Conductivity	mS/m	50	24.1	<150	26.51
Calcium as Ca	mg/l	50	13.3	<150	14.63
Magnesium as Mg	mg/l	50	5.65	<100	6.22
Sodium as Na	mg/l	50	18.2	<200	20.02
Total Alkalinity as CaCO ₃	mg/l	50	35.6	N/A	39.16
Chloride as Cl	mg/l	50	37.25	<200	41
Sulphate as SO ₄	mg/l	50	12.25	<400	13.48
Nitrate as NO _x -N	mg/l	50	0.02	<10	0.02
Fluoride as F	Mg/l	50	0.11	<1.0	0.12

Chemical Parameter	Unit	Quaternary Catchment E21B			
		No. of Samples	Ambient GW quality or median	BHN Reserve	Groundwater Quality Reserve
pH		17	7.5	5.0 – 9.5	8.25
Electrical Conductivity	mS/m	17	89.2	<150	98.12
Calcium as Ca	mg/l	17	65.6	<150	72.16
Magnesium as Mg	mg/l	17	27	<100	29.7
Sodium as Na	mg/l	17	64.6	<200	71.06
Total Alkalinity as CaCO ₃	mg/l	17	76	N/A	83.6
Chloride as Cl	mg/l	17	150.3	<200	165.33
Sulphate as SO ₄	mg/l	17	99.1	<400	109.01
Nitrate as NO _x -N	mg/l	17	0.11	<10	0.12
Fluoride as F	Mg/l	17	0.22	<1.0	0.24
Chemical Parameter	Unit	Quaternary Catchment E21C			
		No. of Samples	Ambient GW quality or median	BHN Reserve	Groundwater Quality Reserve
pH		9	7.45	5.0 – 9.5	8.19
Electrical Conductivity	mS/m	9	13.7	<150	15.07
Calcium as Ca	mg/l	9	4.9	<150	5.39
Magnesium as Mg	mg/l	9	5	<100	5.5
Sodium as Na	mg/l	9	10	<200	11
Total Alkalinity as CaCO ₃	mg/l	9	15.3	N/A	16.83
Chloride as Cl	mg/l	9	23.3	<200	25.63
Sulphate as SO ₄	mg/l	9	6.7	<400	7.37
Nitrate as NO _x -N	mg/l	9	0.02	<10	0.02
Fluoride as F	Mg/l	9	0.1	<1.0	0.11

Chemical Parameter	Unit	Quaternary Catchment E21D			
		No. of Samples	Ambient GW quality or median	BHN Reserve	Groundwater Quality Reserve
pH		38	7.53	5.0 – 9.5	8.28
Electrical Conductivity	mS/m	38	21.85	<150	24.04
Calcium as Ca	mg/l	38	11.75	<150	12.93
Magnesium as Mg	mg/l	38	4.05	<100	4.46
Sodium as Na	mg/l	38	15.28	<200	16.08
Total Alkalinity as CaCO ₃	mg/l	38	31.75	N/A	34.93
Chloride as Cl	mg/l	38	26.08	<200	28.69
Sulphate as SO ₄	mg/l	38	5.8	<400	6.38
Nitrate as NO _x -N	mg/l	38	0.1	<10	0.11
Fluoride as F	Mg/l	38	0.05	<1.0	0.05
Chemical Parameter	Unit	Quaternary Catchments E21E,E21F,E21L & E22F			
		No. of Samples	Ambient GW quality or median	BHN Reserve	Groundwater Quality Reserve
pH		10	6.93	5.0 – 9.5	7.62
Electrical Conductivity	mS/m	10	12.5	<150	13.75
Calcium as Ca	mg/l	10	2.35	<150	2.59
Magnesium as Mg	mg/l	10	2.8	<100	3.08
Sodium as Na	mg/l	10	10.5	<200	11.55
Total Alkalinity as CaCO ₃	mg/l	10	7.55	N/A	8.31
Chloride as Cl	mg/l	10	16.95	<200	18.65
Sulphate as SO ₄	mg/l	10	6.3	<400	6.93
Nitrate as NO _x -N	mg/l	9	0.07	<10	0.07
Fluoride as F	Mg/l	10	0.15	<1.0	0.16

Chemical Parameter	Unit	Quaternary Catchment E21G			
		No. of Samples	Ambient GW quality or median	BHN Reserve	Groundwater Quality Reserve
pH		44	6.59	5.0 – 9.5	7.25
Electrical Conductivity	mS/m	43	104	<150	114.4
Calcium as Ca	mg/l	44	2.76	<150	3.04
Magnesium as Mg	mg/l	44	2.39	<100	2.63
Sodium as Na	mg/l	42	8.76	<200	9.64
Total Alkalinity as CaCO ₃	mg/l	44	8.64	N/A	9.5
Chloride as Cl	mg/l	44	14.64	<200	16.11
Sulphate as SO ₄	mg/l	44	6.06	<400	6.67
Nitrate as NO _x -N	mg/l	44	0.6	<10	0.66
Fluoride as F	Mg/l	42	0.1	<1.0	0.11
Chemical Parameter	Unit	Quaternary Catchment E21H			
		No. of Samples	Ambient GW quality or median	BHN Reserve	Groundwater Quality Reserve
pH		29	5.82	5.0 – 9.5	6.4
Electrical Conductivity	mS/m	29	3.1	<150	3.41
Calcium as Ca	mg/l	29	0.5	<150	0.55
Magnesium as Mg	mg/l	29	0.75	<100	0.83
Sodium as Na	mg/l	27	2.72	<200	3
Total Alkalinity as CaCO ₃	mg/l	29	4	N/A	4.4
Chloride as Cl	mg/l	27	5	<200	5.5
Sulphate as SO ₄	mg/l	29	2	<400	2.2
Nitrate as NO _x -N	mg/l	29	0.1	<10	0.11
Fluoride as F	Mg/l	27	0.05	<1.0	0.05

Chemical Parameter	Unit	Quaternary Catchment E21J			
		No. of Samples	Ambient GW quality or median	BHN Reserve	Groundwater Quality Reserve
pH		22	7.47	5.0 – 9.5	8.22
Electrical Conductivity	mS/m	22	18.19	<150	20
Calcium as Ca	mg/l	22	8.99	<150	9.9
Magnesium as Mg	mg/l	22	3.6	<100	3.96
Sodium as Na	mg/l	22	16.8	<200	17.93
Total Alkalinity as CaCO ₃	mg/l	22	26.86	N/A	29.55
Chloride as Cl	mg/l	22	30.59	<200	33.65
Sulphate as SO ₄	mg/l	22	9.78	<400	10.76
Nitrate as NO _x -N	mg/l	22	0.25	<10	0.28
Fluoride as F	Mg/l	21	0.12	<1.0	0.13
Chemical Parameter	Unit	Quaternary Catchment E21K			
		No. of Samples	Ambient GW quality or median	BHN Reserve	Groundwater Quality Reserve
pH		10	7.6	5.0 – 9.5	8.36
Electrical Conductivity	mS/m	10	20.15	<150	22.17
Calcium as Ca	mg/l	10	20.22	<150	22.24
Magnesium as Mg	mg/l	10	1.3	<100	1.43
Sodium as Na	mg/l	10	11.91	<200	13.1
Total Alkalinity as CaCO ₃	mg/l	10	80.86	N/A	88.95
Chloride as Cl	mg/l	10	6.5	<200	7.15
Sulphate as SO ₄	mg/l	10	4.7	<400	5.17
Nitrate as NO _x -N	mg/l	10	0.05	<10	0.05
Fluoride as F	Mg/l	10	0.17	<1.0	0.18

Chemical Parameter	Unit	Quaternary Catchment E22A			
		No. of Samples	Ambient GW quality or median	BHN Reserve	Groundwater Quality Reserve
pH		13	8.12	5.0 – 9.5	8.93
Electrical Conductivity	mS/m	13	171	<150	171
Calcium as Ca	mg/l	13	78.4	<150	86.24
Magnesium as Mg	mg/l	13	46.8	<100	51.48
Sodium as Na	mg/l	13	198.1	<200	198.1
Total Alkalinity as CaCO ₃	mg/l	13	271.4	N/A	271.4
Chloride as Cl	mg/l	13	345.1	<200	345.1
Sulphate as SO ₄	mg/l	13	109.5	<400	120.45
Nitrate as NO _x -N	mg/l	13	0.29	<10	0.32
Fluoride as F	Mg/l	13	0.98	<1.0	0.98
Chemical Parameter	Unit	Quaternary Catchment E22B			
		No. of Samples	Ambient GW quality or median	BHN Reserve	Groundwater Quality Reserve
pH		10	7.82	5.0 – 9.5	8.6
Electrical Conductivity	mS/m	10	278.7	<150	278.7
Calcium as Ca	mg/l	10	127	<150	136.7
Magnesium as Mg	mg/l	10	67.9	<100	74.69
Sodium as Na	mg/l	10	271.8	<200	271.8
Total Alkalinity as CaCO ₃	mg/l	10	225.35	N/A	225.35
Chloride as Cl	mg/l	10	614.55	<200	614.55
Sulphate as SO ₄	mg/l	10	197.75	<400	217.53
Nitrate as NO _x -N	mg/l	10	0.6	<10	0.66
Fluoride as F	Mg/l	10	0.9	<1.0	0.9

Chemical Parameter	Unit	Quaternary Catchment E22C			
		No. of Samples	Ambient GW quality or median	BHN Reserve	Groundwater Quality Reserve
pH		13	7.69	5.0 – 9.5	8.46
Electrical Conductivity	mS/m	13	64.9	<150	71.39
Calcium as Ca	mg/l	13	39	<150	42.9
Magnesium as Mg	mg/l	13	15	<100	16.5
Sodium as Na	mg/l	13	50.3	<200	55.33
Total Alkalinity as CaCO ₃	mg/l	13	93.6	N/A	102.96
Chloride as Cl	mg/l	13	77.2	<200	84.92
Sulphate as SO ₄	mg/l	13	42.1	<400	46.31
Nitrate as NO _x -N	mg/l	13	0.08	<10	0.08
Fluoride as F	Mg/l	13	0.2	<1.0	0.22
Chemical Parameter	Unit	Quaternary Catchment E22D			
		No. of Samples	Ambient GW quality or median	BHN Reserve	Groundwater Quality Reserve
pH		6	7.97	5.0 – 9.5	8.77
Electrical Conductivity	mS/m	6	548	<150	548
Calcium as Ca	mg/l	6	161.05	<150	161.05
Magnesium as Mg	mg/l	6	203.55	<100	203.55
Sodium as Na	mg/l	6	634.9	<200	634.9
Total Alkalinity as CaCO ₃	mg/l	6	186.3	N/A	186.3
Chloride as Cl	mg/l	6	1624.45	<200	1624.45
Sulphate as SO ₄	mg/l	6	437.9	<400	437.9
Nitrate as NO _x -N	mg/l	6	1.13	<10	1.24
Fluoride as F	Mg/l	6	1	<1.0	1

Chemical Parameter	Unit	Quaternary Catchments E22E, E22G & E23A-E23D			
		No. of Samples	Ambient GW quality or median	BHN Reserve	Groundwater Quality Reserve
pH		12	7.92	5.0 – 9.5	8.71
Electrical Conductivity	mS/m	12	129.15	<150	142.07
Calcium as Ca	mg/l	12	61.8	<150	67.98
Magnesium as Mg	mg/l	12	23.65	<100	26.02
Sodium as Na	mg/l	12	186.53	<200	186.53
Total Alkalinity as CaCO ₃	mg/l	12	170	N/A	187
Chloride as Cl	mg/l	12	299.95	<200	299.95
Sulphate as SO ₄	mg/l	12	49.1	<400	54.01
Nitrate as NO _x -N	mg/l	12	0.05	<10	0.05
Fluoride as F	Mg/l	12	0.63	<1.0	0.69
Chemical Parameter	Unit	Quaternary Catchment E23E-E23H, E23J			
		No. of Samples	Ambient GW quality or median	BHN Reserve	Groundwater Quality Reserve
pH		3	8.37	5.0 – 9.5	9.21
Electrical Conductivity	mS/m	3	185.00	<150	185.00
Calcium as Ca	mg/l	3	25.90	<150	28.49
Magnesium as Mg	mg/l	3	4.80	<100	5.28
Sodium as Na	mg/l	3	414.10	<200	414.10
Total Alkalinity as CaCO ₃	mg/l	3	285.60	N/A	314.16
Chloride as Cl	mg/l	3	344.70	<200	344.70
Sulphate as SO ₄	mg/l	3	88.80	<400	97.68
Nitrate as NO _x -N	mg/l	3	0.02	<10	0.02
Fluoride as F	mg/l	3	2.77	<1.0	3.05

Chemical Parameter	Unit	Quaternary Catchment E23K			
		No. of Samples	Ambient GW quality or median	BHN Reserve	Groundwater Quality Reserve
pH		14	8.55	5.0 – 9.5	9.40
Electrical Conductivity	mS/m	14	177.50	<150	177.50
Calcium as Ca	mg/l	14	9.70	<150	10.67
Magnesium as Mg	mg/l	14	4.75	<100	5.23
Sodium as Na	mg/l	14	357.00	<200	357.00
Total Alkalinity as CaCO ₃	mg/l	14	220.35	N/A	242.39
Chloride as Cl	mg/l	14	416.75	<200	416.75
Sulphate as SO ₄	mg/l	14	28.80	<400	31.68
Nitrate as NO _x -N	mg/l	14	0.11	<10	0.12
Fluoride as F	mg/l	14	1.04	<1.0	1.04
Chemical Parameter	Unit	Quaternary Catchments E24C-E24D			
		No. of Samples	Ambient GW quality or median	BHN Reserve	Groundwater Quality Reserve
pH		7	8.19	5.0 – 9.5	9.01
Electrical Conductivity	mS/m	7	96.00	<150	105.60
Calcium as Ca	mg/l	7	7.00	<150	7.70
Magnesium as Mg	mg/l	7	2.00	<100	2.20
Sodium as Na	mg/l	7	240.30	<200	240.30
Total Alkalinity as CaCO ₃	mg/l	7	331.60	N/A	364.76
Chloride as Cl	mg/l	7	129.00	<200	141.90
Sulphate as SO ₄	mg/l	7	11.97	<400	13.17
Nitrate as NO _x -N	mg/l	7	0.04	<10	0.04
Fluoride as F	mg/l	7	2.98	<1.0	2.98

Chemical Parameter	Unit	Quaternary Catchment E24E			
		No. of Samples	Ambient GW quality or median	BHN Reserve	Groundwater Quality Reserve
pH		8	7.99	5.0 – 9.5	8.78
Electrical Conductivity	mS/m	8	227.65	<150	227.65
Calcium as Ca	mg/l	8	143.25	<150	157.58
Magnesium as Mg	mg/l	8	106.05	<100	106.05
Sodium as Na	mg/l	8	201.55	<200	201.55
Total Alkalinity as CaCO ₃	mg/l	8	191.65	N/A	210.82
Chloride as Cl	mg/l	8	268.40	<200	268.40
Sulphate as SO ₄	mg/l	8	554.50	<400	554.50
Nitrate as NO _x -N	mg/l	8	3.22	<10	3.54
Fluoride as F	mg/l	8	0.85	<1.0	0.94
Chemical Parameter	Unit	Quaternary Catchment E24F			
		No. of Samples	Ambient GW quality or median	BHN Reserve	Groundwater Quality Reserve
pH		3	7.90	5.0 – 9.5	8.69
Electrical Conductivity	mS/m	3	275.20	<150	275.20
Calcium as Ca	mg/l	3	110.80	<150	121.88
Magnesium as Mg	mg/l	3	94.40	<100	103.84
Sodium as Na	mg/l	3	361.40	<200	361.40
Total Alkalinity as CaCO ₃	mg/l	3	213.90	N/A	235.29
Chloride as Cl	mg/l	3	543.90	<200	543.90
Sulphate as SO ₄	mg/l	3	378.40	<400	416.24
Nitrate as NO _x -N	mg/l	3	3.28	<10	3.61
Fluoride as F	mg/l	3	0.92	<1.0	1.01

Chemical Parameter	Unit	Quaternary Catchments E24G-E24H			
		No. of Samples	Ambient GW quality or median	BHN Reserve	Groundwater Quality Reserve
pH		6	7.95	5.0 – 9.5	8.75
Electrical Conductivity	mS/m	6	320.00	<150	320.00
Calcium as Ca	mg/l	6	116.00	<150	127.60
Magnesium as Mg	mg/l	6	84.25	<100	92.68
Sodium as Na	mg/l	6	446.00	<200	446.00
Total Alkalinity as CaCO ₃	mg/l	6	213.55	N/A	234.91
Chloride as Cl	mg/l	6	795.40	<200	795.40
Sulphate as SO ₄	mg/l	6	174.10	<400	191.51
Nitrate as NO _x -N	mg/l	6	1.11	<10	1.22
Fluoride as F	mg/l	6	0.82	<1.0	0.90
Chemical Parameter	Unit	Quaternary Catchments E24J			
		No. of Samples	Ambient GW quality or median	BHN Reserve	Groundwater Quality Reserve
pH		56	7.31	5.0 – 9.5	8.04
Electrical Conductivity	mS/m	56	138.50	<150	152.35
Calcium as Ca	mg/l	56	46.30	<150	50.93
Magnesium as Mg	mg/l	56	30.50	<100	33.55
Sodium as Na	mg/l	54	166.55	<200	183.21
Total Alkalinity as CaCO ₃	mg/l	56	92.05	N/A	101.26
Chloride as Cl	mg/l	56	311.85	<200	311.85
Sulphate as SO ₄	mg/l	56	63.60	<400	69.96
Nitrate as NO _x -N	mg/l	56	0.06	<10	0.06
Fluoride as F	mg/l	54	0.23	<1.0	0.26

Chemical Parameter	Unit	Quaternary Catchment E24K			
		No. of Samples	Ambient GW quality or median	BHN Reserve	Groundwater Quality Reserve
pH		6	7.85	5.0 – 9.5	8.64
Electrical Conductivity	mS/m	6	324.50	<150	356.95
Calcium as Ca	mg/l	6	172.25	<150	189.48
Magnesium as Mg	mg/l	6	110.75	<100	121.83
Sodium as Na	mg/l	6	269.35	<200	296.29
Total Alkalinity as CaCO ₃	mg/l	6	188.55	N/A	207.41
Chloride as Cl	mg/l	6	801.65	<200	881.82
Sulphate as SO ₄	mg/l	6	206.95	<400	227.65
Nitrate as NO _x -N	mg/l	6	5.54	<10	6.09
Fluoride as F	mg/l	6	0.52	<1.0	0.57
Chemical Parameter	Unit	Quaternary Catchments E24L			
		No. of Samples	Ambient GW quality or median	BHN Reserve	Groundwater Quality Reserve
pH		40	5.52	5.0 – 9.5	6.07
Electrical Conductivity	mS/m	40	14.55	<150	16.01
Calcium as Ca	mg/l	40	3.35	<150	3.69
Magnesium as Mg	mg/l	40	2.80	<100	3.08
Sodium as Na	mg/l	40	16.00	<200	17.60
Total Alkalinity as CaCO ₃	mg/l	40	3.00	N/A	3.30
Chloride as Cl	mg/l	40	29.60	<200	32.56
Sulphate as SO ₄	mg/l	40	6.45	<400	7.10
Nitrate as NO _x -N	mg/l	40	1.20	<10	1.32
Fluoride as F	mg/l	40	0.11	<1.0	0.12

Chemical Parameter	Unit	Quaternary Catchment E24M			
		No. of Samples	Ambient GW quality or median	BHN Reserve	Groundwater Quality Reserve
pH		25	6.67	5.0 – 9.5	7.34
Electrical Conductivity	mS/m	25	165.00	<150	165.00
Calcium as Ca	mg/l	22	19.65	<150	21.62
Magnesium as Mg	mg/l	22	44.15	<100	48.57
Sodium as Na	mg/l	22	207.70	<200	207.70
Total Alkalinity as CaCO ₃	mg/l	25	9.50	N/A	10.45
Chloride as Cl	mg/l	22	436.60	<200	436.60
Sulphate as SO ₄	mg/l	22	50.25	<400	55.28
Nitrate as NO _x -N	mg/l	25	3.61	<10	3.97
Fluoride as F	mg/l	22	0.17	<1.0	0.19
Chemical Parameter	Unit	Quaternary Catchments E31E			
		No. of Samples	Ambient GW quality or median	BHN Reserve	Groundwater Quality Reserve
pH		6	8.16	5.0 – 9.5	8.98
Electrical Conductivity	mS/m	6	430.50	<150	430.50
Calcium as Ca	mg/l	6	148.12	<150	162.93
Magnesium as Mg	mg/l	6	95.09	<100	104.59
Sodium as Na	mg/l	6	605.64	<200	605.64
Total Alkalinity as CaCO ₃	mg/l	6	301.77	N/A	331.94
Chloride as Cl	mg/l	6	1124.69	<200	1124.69
Sulphate as SO ₄	mg/l	6	329.66	<400	362.62
Nitrate as NO _x -N	mg/l	6	2.55	<10	2.80
Fluoride as F	mg/l	6	1.47	<1.0	1.62

Chemical Parameter	Unit	Quaternary Catchment E31F			
		No. of Samples	Ambient GW quality or median	BHN Reserve	Groundwater Quality Reserve
pH		67	8.05	5.0 – 9.5	8.86
Electrical Conductivity	mS/m	67	190.00	<150	190.00
Calcium as Ca	mg/l	64	84.20	<150	92.62
Magnesium as Mg	mg/l	64	61.67	<100	67.83
Sodium as Na	mg/l	63	209.10	<200	209.10
Total Alkalinity as CaCO ₃	mg/l	64	250.25	N/A	275.28
Chloride as Cl	mg/l	65	295.30	<200	295.30
Sulphate as SO ₄	mg/l	65	221.90	<400	244.09
Nitrate as NO _x -N	mg/l	65	0.15	<10	0.16
Fluoride as F	mg/l	62	1.29	<1.0	1.29
Chemical Parameter	Unit	Quaternary Catchments E31G			
		No. of Samples	Ambient GW quality or median	BHN Reserve	Groundwater Quality Reserve
pH		12	8.10	5.0 – 9.5	8.91
Electrical Conductivity	mS/m	12	436.45	<150	436.45
Calcium as Ca	mg/l	11	163.80	<150	163.80
Magnesium as Mg	mg/l	11	147.20	<100	147.20
Sodium as Na	mg/l	11	584.30	<200	584.30
Total Alkalinity as CaCO ₃	mg/l	12	211.75	N/A	232.93
Chloride as Cl	mg/l	11	1161.90	<200	1161.90
Sulphate as SO ₄	mg/l	11	364.50	<400	364.50
Nitrate as NO _x -N	mg/l	12	4.46	<10	4.91
Fluoride as F	Mg/l	11	1.92	<1.0	1.92

Chemical Parameter	Unit	Quaternary Catchment E31H			
		No. of Samples	Ambient GW quality or median	BHN Reserve	Groundwater Quality Reserve
pH		8	7.98	5.0 – 9.5	8.77
Electrical Conductivity	mS/m	8	438.00	<150	438.00
Calcium as Ca	mg/l	8	87.55	<150	96.31
Magnesium as Mg	mg/l	8	107.10	<100	107.10
Sodium as Na	mg/l	8	611.10	<200	611.10
Total Alkalinity as CaCO ₃	mg/l	8	198.55	N/A	218.41
Chloride as Cl	mg/l	8	1159.35	<200	1159.35
Sulphate as SO ₄	mg/l	8	349.00	<400	383.90
Nitrate as NO _x -N	mg/l	8	6.09	<10	6.69
Fluoride as F	Mg/l	8	2.10	<1.0	2.10
Chemical Parameter	Unit	Quaternary Catchment E32A			
		No. of Samples	Ambient GW quality or median	BHN Reserve	Groundwater Quality Reserve
pH		6	7.88	5.0 – 9.5	8.67
Electrical Conductivity	mS/m	6	77.40	<150	85.14
Calcium as Ca	mg/l	6	50.50	<150	55.55
Magnesium as Mg	mg/l	6	26.20	<100	28.82
Sodium as Na	mg/l	6	83.85	<200	92.24
Total Alkalinity as CaCO ₃	mg/l	6	204.65	N/A	225.12
Chloride as Cl	mg/l	6	83.15	<200	91.47
Sulphate as SO ₄	mg/l	6	44.20	<400	48.62
Nitrate as NO _x -N	mg/l	6	0.22	<10	0.24
Fluoride as F	Mg/l	6	0.74	<1.0	0.81

Chemical Parameter	Unit	Quaternary Catchment E32B			
		No. of Samples	Ambient GW quality or median	BHN Reserve	Groundwater Quality Reserve
pH		14	7.74	5.0 – 9.5	8.51
Electrical Conductivity	mS/m	14	181.60	<150	181.60
Calcium as Ca	mg/l	14	109.95	<150	120.95
Magnesium as Mg	mg/l	14	74.95	<100	82.45
Sodium as Na	mg/l	14	150.65	<200	165.72
Total Alkalinity as CaCO ₃	mg/l	14	192.10	N/A	211.31
Chloride as Cl	mg/l	14	295.15	<200	295.15
Sulphate as SO ₄	mg/l	14	278.75	<400	306.63
Nitrate as NO _x -N	mg/l	14	1.76	<10	1.93
Fluoride as F	Mg/l	14	0.84	<1.0	0.92
Chemical Parameter	Unit	Quaternary Catchment E32C			
		No. of Samples	Ambient GW quality or median	BHN Reserve	Groundwater Quality Reserve
pH		15	7.75	5.0 – 9.5	8.53
Electrical Conductivity	mS/m	15	162.70	<150	162.70
Calcium as Ca	mg/l	15	80.20	<150	88.22
Magnesium as Mg	mg/l	15	60.80	<100	66.88
Sodium as Na	mg/l	15	185.10	<200	185.10
Total Alkalinity as CaCO ₃	mg/l	15	211.40	N/A	232.54
Chloride as Cl	mg/l	15	203.00	<200	203.00
Sulphate as SO ₄	mg/l	15	303.30	<400	333.63
Nitrate as NO _x -N	mg/l	15	2.32	<10	2.55
Fluoride as F	Mg/l	15	0.96	<1.0	0.96

Chemical Parameter	Unit	Quaternary Catchment E32D			
		No. of Samples	Ambient GW quality or median	BHN Reserve	Groundwater Quality Reserve
pH		25	7.75	5.0 – 9.5	8.53
Electrical Conductivity	mS/m	25	170.80	<150	170.80
Calcium as Ca	mg/l	25	101.90	<150	112.09
Magnesium as Mg	mg/l	25	57.30	<100	63.03
Sodium as Na	mg/l	25	201.40	<200	201.40
Total Alkalinity as CaCO ₃	mg/l	25	192.90	N/A	212.19
Chloride as Cl	mg/l	25	239.40	<200	239.40
Sulphate as SO ₄	mg/l	25	256.30	<400	281.93
Nitrate as NO _x -N	mg/l	25	0.49	<10	0.54
Fluoride as F	Mg/l	25	1.33	<1.0	1.33
Chemical Parameter	Unit	Quaternary Catchment E32E			
		No. of Samples	Ambient GW quality or median	BHN Reserve	Groundwater Quality Reserve
pH		15	7.80	5.0 – 9.5	8.58
Electrical Conductivity	mS/m	15	273.00	<150	273.00
Calcium as Ca	mg/l	15	106.30	<150	116.93
Magnesium as Mg	mg/l	15	88.50	<100	97.35
Sodium as Na	mg/l	15	303.10	<200	303.10
Total Alkalinity as CaCO ₃	mg/l	15	188.00	N/A	206.80
Chloride as Cl	mg/l	15	748.30	<200	748.30
Sulphate as SO ₄	mg/l	15	137.20	<400	150.92
Nitrate as NO _x -N	mg/l	15	2.23	<10	2.45
Fluoride as F	Mg/l	15	0.82	<1.0	0.90

Chemical Parameter	Unit	Quaternary Catchment E33A			
		No. of Samples	Ambient GW quality or median	BHN Reserve	Groundwater Quality Reserve
pH		10	8.10	5.0 – 9.5	8.90
Electrical Conductivity	mS/m	10	433.00	<150	433.00
Calcium as Ca	mg/l	10	155.85	<150	155.85
Magnesium as Mg	mg/l	10	118.55	<100	118.55
Sodium as Na	mg/l	10	659.45	<200	659.45
Total Alkalinity as CaCO ₃	mg/l	10	178.25	N/A	196.08
Chloride as Cl	mg/l	10	1327.85	<200	1327.85
Sulphate as SO ₄	mg/l	10	305.25	<400	335.78
Nitrate as NO _x -N	mg/l	10	5.42	<10	5.96
Fluoride as F	Mg/l	10	2.14	<1.0	2.14
Chemical Parameter	Unit	Quaternary Catchment E33B			
		No. of Samples	Ambient GW quality or median	BHN Reserve	Groundwater Quality Reserve
pH		6	8.18	5.0 – 9.5	8.99
Electrical Conductivity	mS/m	6	998.20	<150	998.20
Calcium as Ca	mg/l	6	232.15	<150	232.15
Magnesium as Mg	mg/l	6	240.60	<100	240.60
Sodium as Na	mg/l	6	1780.80	<200	1780.80
Total Alkalinity as CaCO ₃	mg/l	6	250.95	N/A	276.05
Chloride as Cl	mg/l	6	3063.90	<200	3063.90
Sulphate as SO ₄	mg/l	6	717.85	<400	717.85
Nitrate as NO _x -N	mg/l	6	4.51	<10	4.96
Fluoride as F	Mg/l	6	1.77	<1.0	1.77

Chemical Parameter	Unit	Quaternary Catchment E33C			
		No. of Samples	Ambient GW quality or median	BHN Reserve	Groundwater Quality Reserve
pH		11	8.23	5.0 – 9.5	9.05
Electrical Conductivity	mS/m	11	482.00	<150	482.00
Calcium as Ca	mg/l	11	76.10	<150	83.71
Magnesium as Mg	mg/l	11	131.70	<100	131.70
Sodium as Na	mg/l	11	674.60	<200	674.60
Total Alkalinity as CaCO ₃	mg/l	11	260.80	N/A	286.88
Chloride as Cl	mg/l	11	1472.40	<200	1472.40
Sulphate as SO ₄	mg/l	11	215.50	<400	237.05
Nitrate as NO _x -N	mg/l	11	1.76	<10	1.94
Fluoride as F	Mg/l	11	1.49	<1.0	1.49
Chemical Parameter	Unit	Quaternary Catchment E33D			
		No. of Samples	Ambient GW quality or median	BHN Reserve	Groundwater Quality Reserve
pH		149	7.79	5.0 – 9.5	8.57
Electrical Conductivity	mS/m	149	636.10	<150	636.10
Calcium as Ca	mg/l	143	111.54	<150	122.69
Magnesium as Mg	mg/l	143	121.40	<100	121.40
Sodium as Na	mg/l	143	1055.72	<200	1055.72
Total Alkalinity as CaCO ₃	mg/l	144	180.56	N/A	198.62
Chloride as Cl	mg/l	144	1799.25	<200	1799.25
Sulphate as SO ₄	mg/l	144	357.20	<400	392.92
Nitrate as NO _x -N	mg/l	143	0.24	<10	0.26
Fluoride as F	Mg/l	143	1.84	<1.0	1.84

Chemical Parameter	Unit	Quaternary Catchment E33E			
		No. of Samples	Ambient GW quality or median	BHN Reserve	Groundwater Quality Reserve
pH		32	7.65	5.0 – 9.5	8.41
Electrical Conductivity	mS/m	32	585.60	<150	585.60
Calcium as Ca	mg/l	32	142.45	<150	142.45
Magnesium as Mg	mg/l	32	168.40	<100	168.40
Sodium as Na	mg/l	32	857.70	<200	857.70
Total Alkalinity as CaCO ₃	mg/l	32	155.10	N/A	170.61
Chloride as Cl	mg/l	32	1712.00	<200	1712.00
Sulphate as SO ₄	mg/l	32	301.65	<400	331.82
Nitrate as NO _x -N	mg/l	32	1.50	<10	1.64
Fluoride as F	Mg/l	32	2.18	<1.0	2.18
Chemical Parameter	Unit	Quaternary Catchment E33F			
		No. of Samples	Ambient GW quality or median	BHN Reserve	Groundwater Quality Reserve
pH		672	8.00	5.0 – 9.5	8.80
Electrical Conductivity	mS/m	672	185.80	<150	185.80
Calcium as Ca	mg/l	667	102.50	<150	112.75
Magnesium as Mg	mg/l	666	45.27	<100	49.80
Sodium as Na	mg/l	627	183.38	<200	183.38
Total Alkalinity as CaCO ₃	mg/l	669	165.69	N/A	182.26
Chloride as Cl	mg/l	665	402.61	<200	402.61
Sulphate as SO ₄	mg/l	647	96.46	<400	106.10
Nitrate as NO _x -N	mg/l	671	1.06	<10	1.17
Fluoride as F	Mg/l	626	0.27	<1.0	0.30

Chemical Parameter	Unit	Quaternary Catchment E33G			
		No. of Samples	Ambient GW quality or median	BHN Reserve	Groundwater Quality Reserve
pH		75	8.13	5.0 – 9.5	8.95
Electrical Conductivity	mS/m	75	160.00	<150	160.00
Calcium as Ca	mg/l	74	87.31	<150	96.04
Magnesium as Mg	mg/l	74	40.51	<100	44.56
Sodium as Na	mg/l	69	170.39	<200	187.43
Total Alkalinity as CaCO ₃	mg/l	75	226.57	N/A	249.22
Chloride as Cl	mg/l	74	323.58	<200	323.58
Sulphate as SO ₄	mg/l	70	101.70	<400	111.87
Nitrate as NO _x -N	mg/l	75	0.63	<10	0.69
Fluoride as F	Mg/l	68	0.45	<1.0	0.49
Chemical Parameter	Unit	Quaternary Catchment E33H			
		No. of Samples	Ambient GW quality or median	BHN Reserve	Groundwater Quality Reserve
pH		10	7.78	5.0 – 9.5	8.55
Electrical Conductivity	mS/m	10	372.80	<150	372.80
Calcium as Ca	mg/l	10	51.85	<150	57.04
Magnesium as Mg	mg/l	10	80.00	<100	88.00
Sodium as Na	mg/l	10	551.25	<200	551.25
Total Alkalinity as CaCO ₃	mg/l	10	150.50	N/A	165.55
Chloride as Cl	mg/l	10	1015.30	<200	1015.30
Sulphate as SO ₄	mg/l	10	133.65	<400	147.02
Nitrate as NO _x -N	mg/l	10	0.67	<10	0.74
Fluoride as F	Mg/l	10	0.72	<1.0	0.79

Chemical Parameter	Unit	Quaternary Catchment E40A			
		No. of Samples	Ambient GW quality or median	BHN Reserve	Groundwater Quality Reserve
pH		132	7.99	5.0 – 9.5	8.79
Electrical Conductivity	mS/m	132	183.10	<150	183.10
Calcium as Ca	mg/l	132	91.90	<150	101.09
Magnesium as Mg	mg/l	132	68.60	<100	75.46
Sodium as Na	mg/l	132	235.60	<200	235.60
Total Alkalinity as CaCO ₃	mg/l	132	219.90	N/A	241.89
Chloride as Cl	mg/l	132	333.30	<200	333.30
Sulphate as SO ₄	mg/l	132	165.25	<400	181.78
Nitrate as NO _x -N	mg/l	132	0.34	<10	0.38
Fluoride as F	Mg/l	132	1.10	<1.0	1.10
Chemical Parameter	Unit	Quaternary Catchment E40B			
		No. of Samples	Ambient GW quality or median	BHN Reserve	Groundwater Quality Reserve
pH		123	7.87	5.0 – 9.5	8.66
Electrical Conductivity	mS/m	123	200.50	<150	200.50
Calcium as Ca	mg/l	120	100.30	<150	110.33
Magnesium as Mg	mg/l	119	58.40	<100	64.24
Sodium as Na	mg/l	119	181.60	<200	199.76
Total Alkalinity as CaCO ₃	mg/l	120	208.25	N/A	229.08
Chloride as Cl	mg/l	122	358.00	<200	358.00
Sulphate as SO ₄	mg/l	122	141.86	<400	156.04
Nitrate as NO _x -N	mg/l	122	0.70	<10	0.77
Fluoride as F	Mg/l	119	0.64	<1.0	0.70

Chemical Parameter	Unit	Quaternary Catchment E40C			
		No. of Samples	Ambient GW quality or median	BHN Reserve	Groundwater Quality Reserve
pH		6	7.57	5.0 – 9.5	8.32
Electrical Conductivity	mS/m	6	91.05	<150	100.16
Calcium as Ca	mg/l	6	24.35	<150	26.79
Magnesium as Mg	mg/l	6	8.55	<100	9.41
Sodium as Na	mg/l	6	112.20	<200	123.42
Total Alkalinity as CaCO ₃	mg/l	6	110.60	N/A	121.66
Chloride as Cl	mg/l	6	193.30	<200	193.30
Sulphate as SO ₄	mg/l	6	11.30	<400	12.43
Nitrate as NO _x -N	mg/l	6	0.34	<10	0.38
Fluoride as F	Mg/l	6	0.28	<1.0	0.31
Chemical Parameter	Unit	Quaternary Catchment E40D			
		No. of Samples	Ambient GW quality or median	BHN Reserve	Groundwater Quality Reserve
pH		8	7.23	5.0 – 9.5	7.95
Electrical Conductivity	mS/m	8	17.60	<150	19.36
Calcium as Ca	mg/l	8	3.35	<150	3.69
Magnesium as Mg	mg/l	8	4.10	<100	4.51
Sodium as Na	mg/l	8	28.45	<200	31.30
Total Alkalinity as CaCO ₃	mg/l	8	17.85	N/A	19.64
Chloride as Cl	mg/l	8	40.40	<200	44.44
Sulphate as SO ₄	mg/l	8	7.75	<400	8.53
Nitrate as NO _x -N	mg/l	8	1.55	<10	1.70
Fluoride as F	Mg/l	8	0.23	<1.0	0.25

Table 8.3: A summary of the groundwater quality class and parameters of concern

Catchment	Area (km ²)	Water Quality Class (DWAf, 1996)	Water Quality parameters of concern
E10A	134	0	
E10B	202	0	
E10C	192	I	pH
E10D	235	0	
E10E	366	0	
E10F	386	0	
E10G	508	0	
E10H	162	0	
E10J	468	0	
E10K	235	II	Cl, Na, EC
E21A	190	0	
E21B	223	I	EC
E21C	233	0	
E21D	242	0	
E21E	293	0	
E21F	379	0	
E21G	266	I	EC
E21H	404	I	pH
E21J	317	0	
E21K	330	0	
E21L	195	0	
E22A	750	II	EC, Cl
E22B	638	III	Cl
E22C	490	0	
E22D	496	III	Cl, Na, Mg
E22E	1013	II	Cl
E22F	400	0	
E22G	367	II	Cl
E23A	762	II	Cl
E23B	705	II	Cl
E23C	318	II	Cl
E23D	750	II	Cl
E23E	564	III	Na
E23F	473	III	Na
E23G	747	III	Na
E23H	660	III	Na
E23J	895	III	Na
E23K	572	II	F, Na

Catchment	Area (km ²)	Water Quality Class (DWAF, 1996)	Water Quality parameters of concern
E24A	255	III	Cl, Na
E24B	468	III	Cl, Na
E24C	784	II	F, Na
E24D	997	II	F, Na
E24E	671	III	Mg
E24F	582	II	Cl, Na, EC
E24G	633	III	Cl, Na
E24H	483	III	Cl, Na
E24J	1078	II	Cl
E24K	652	III	Cl, Mg
E24L	516	I	pH
E24M	529	II	Cl, Na, EC
E31A	2865	III	Ca, Cl, Na, EC, NO ₃ , Mg
E31B	1476	III	Cl, Na, EC, SO ₄
E31C	1572	III	Cl, Na, EC, Mg
E31D	839	III	Cl, Na, EC, Mg
E31E	478	III	Cl, Na, EC
E31F	525	II	Cl, Na, EC
E31G	1238	III	Cl, Na, EC
E31H	726	III	Cl, Na, EC
E32A	1118	I	EC, F
E32B	828	II	Cl, EC
E32C	638	II	Cl, EC
E32D	616	II	Cl, EC, Na, F
E32E	1001	III	Cl
E33A	1355	III	Cl, EC, Na
E33B	702	III	Cl, EC, Na, Mg, SO ₄
E33C	980	III	Cl, EC, Na
E33D	1559	III	Cl, EC
E33E	1282	III	Cl, EC, Na
E33F	725	III	Cl
E33G	894	II	Cl, EC
E33H	719	III	Cl, EC, Na
E40A	941	II	Cl, EC, Na, F
E40B	707	II	Cl, EC
E40C	530	I	Cl, EC, Na
E40D	544	0	

DEPARTEMENT VAN WATER EN SANITASIE

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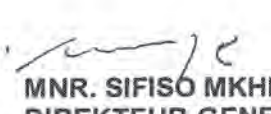
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**NASIONALE WATERWET, 1998
(WET NO. 36 VAN 1998)****BEPALING VAN RESERWE VAN WATERHULPBRONNE VIR DIE OLIFANTS-DOORN-
OPVANGGEBIEDE**

Ek, Sifiso Mkhize, in my hoedanigheid as die Waarnemende Direkteur-Generaal van die Departement van Water en Sanitasie, publiseer hierby, ná nakoming van artikel 13 en 16(2) en (3) van die Nasionale Waterwet, 1998 (Wet No. 36 van 1998) ("die Wet"), en Regulasie 3 van die "Regulations for the Establishment of the Classification System" (Goewermmentskennisgewing No. R. 810 in *Staatskoerant* No. 33541 van 17 September 2010), en behoorlik daartoe gemagtig ingevolge artikel 16(1) van die Wet, die bepaling van die Reserwe van die waterhulpbronne vir die Olifants-Doorn-opvanggebiede.

Direkteur: Bepaling van Reserwe
Aandag: Mnr. Yakeen Atwaru
Departement van Water en Sanitasie
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MNR. SIFISO MKHIZE
DIREKTEUR-GENERAAL (WAARNEMEND)
DATUM: 13/12/2017

BEPALING VAN RESERWE VAN WATERHULPBRONNE VIR DIE OLIFANTS-DOORN-OPVANGGEBIEDE INGEVOLGE ARTIKEL 16(1) EN (2) VAN DIE NASIONALE WATERWET, 1998 (WET NO. 36 OF 1998)

BYLAE

1. BESKRYWING VAN WATERHULPBRON

- 1.1 Die Reserve vir die geheel of 'n gedeelte van elke betekenisvolle waterhulpbron binne die Olifants-Doorn-opvanggebiede word bepaal soos hieronder uiteengesit:

Waterbestuursgebied:	Berg-Olifants
Opvanggebiede:	Olifants-Doorn
Dreineringsstreek:	Primêre dreineringsstreek E
Riviere:	Olifants-Doorn-riviersisteem
Riviermonding:	Olifants
Opvanggebiede uitgesluit:	Die geheel van die Berg-opvanggebied en gedeeltes van die Olifants-opvanggebied (d.i. die opvanggebiede G30 en F60)

- 1.2 Die Minister het ingevolge artikel 16 van die Nasionale Waterwet, 1998 (Wet No. 36 van 1998) ("die Wet"), 'n stelsel bepaal vir die klassifisering van waterhulpbronne deur Goewermentskennisgewing No. R. 810, gepubliseer in *Staatskoerant* No. 33541 gedateer 17 September 2010, uit te reik. Ingevolge artikel 16(1) van die Wet moet die Minister so spoedig redelik doenlik nadat die klas van die geheel of 'n gedeelte van 'n waterhulpbron bepaal is, by kennisgewing in die *Staatskoerant*, die Reserve vir die geheel of 'n gedeelte van daardie waterhulpbron bepaal.

- 1.3 Die Minister verklaar, ingevolge artikel 16(1) en (2) van die Wet, die volgende as Reserve vir die Olifants-Doorn-opvanggebiede.

2. BEPALING VAN RESERWE SOOS VEREIS BY ARTIKEL 16(1) EN (2) VAN DIE WET

- 2.1 Geselekteerde afkortings en akronieme en die woordskrywing word in paragraaf 3 gemeld.
- 2.2 'n Opsomming van die hoeveelheidskomponent vir die riviere wat, ingevolge artikel 16(1) van die Wet, die ekologiese watereise (EWV) en die basiese menslike behoeftes (BMB) vir die Olifants-Doorn-opvanggebiede insluit, word in Tabel 4.1 uiteengesit.
- 2.3 'n Opsomming van die gehaltekomponent vir die riviere by die EWV-terreine vir die Olifants-Doorn-opvanggebiede word, ingevolge artikel 16(1) van die Wet, in Tabel 5.1 tot 5.6 uiteengesit.
- 2.4 'n Opsomming van die EWV op grond van die natuurlike vloei bydrae stroomop van die Olifantsriviermonding vir die Olifants-Doorn-opvanggebiede word, ingevolge artikel 16(1) van die Wet, in Tabel 6.1 tot 6.3 uiteengesit.

- 2.5 'n Opsomming van die grondwaterbydrae tot die Reserwe, ten opsigte van die hoeveelheid en die gehalte van die water vir die Olifants-Doorn-opvanggebiede, word, ingevolge artikel 16(1) van die Wet, in Tabel 7.1 tot 8.3 uiteengesit.
- 2.6 Die Reserwe is van toepassing vanaf die datum gepubliseer in die *Staatskoerant*, ingevolge artikel 16(1) van die Wet, tensy anders deur die Minister bepaal.

3. AFKORTINGS EN WOORDOMSKRYWING

3.1 Afkortings

AEK	Aanbevole Ekologiese Kategorie
BMB	Basiese Menslike Behoeftes
DPB	Drempel van Potensiële Besorgdheid
ERK	Ekologiese Reserwe (Kumulatief)
ETB	Estuariese Telling van Betekenisvolheid
EWV	Ekologiese Watervereiste
GJA	Gemiddelde Jaarlikse Afloop
HE	Hulpbroneenheid
HES	Huidige Ekologiese Status
MKM	Miljoen Kubieke Meter

3.2 Woordomscriwing

- Aanvulling** is die toevoeging van water tot die versadigingsone deur afwaartse deursyfering van óf neerslag óf oppervlakwater en/of die sywaartse migrasie van grondwater uit aanliggende waterdraers.
- EWV** behels die vloeioptrone (omvang, tydbepaling en duur) en watergehalte wat nodig is om 'n rivier-en-oewer-ekosisteem in 'n besondere toestand te hou.
- Reserwe** is die hoeveelheid en gehalte van water wat nodig is om aan die BMB te voldoen deur die versekering van 'n basiese watervoorsiening en die beskerming van die water-ekosisteem ten einde ekologies volhoubare ontwikkeling en die gebruik van die betrokke waterhulpbron te verseker.

4. OPPERVLAKWATER - HOEVEELHEIDSKOMPONENT VIR RIVIERE

Die resultate vir die bepaling van die Reserwe en die ekologiese kategorisering vir die Olifants/Doorn-riviersisteem, waar die Reserwehoeveelhede uitgedruk word as 'n persentasie van die gemiddelde jaarlikse afloop (GJA) vir die onderskeie opvanggebiede (kumulatief), ingevolge artikel 16(1) van die Wet:

Tabel 4.1: Opsomming van die hoeveelheidskomponent vir die riviëre, wat die EWV en die BMB insluit

Kwaternêre opvanggebied	Waterhulpbron	Huidige Ekologiese Status (HES)	Estuariese Telling van Betekenisvolheid (ETB)	Aanbevole Ekologiese Kategorie (AEK)	Ekologiese Reserve (Kumulatief) (% ERK)	BMB-reserwe (% GJA)	GJA (MKM)	Totale Reserve (% GJA)
E10A	Olifants	C	Hoog	C	43.58	0.00	60.475	43.58
E10B	Olifants	C	Hoog	C	44.26	0.01	129.003	44.27
E10C	Olifants	B	Baie Hoog	B	51.09	0.00	182.405	51.09
E10D	Olifants	C	Gemiddeld	D	52.38	0.00	233.767	52.38
E10E	Olifants	C	Gemiddeld	D	37.77	0.4	293.467	38.17
E10F (EWV 1)	Olifants	D	Gemiddeld	D	37.77	0.03	355.557	37.8
E10G	Olifants	C	Gemiddeld	D	26.59	0.03	437.273	26.62
E10G (EWV 3)	Rondegat	B	Gemiddeld	B	42.75	0.03	7.411	42.78
E10H	Jan Dissels	D	Gemiddeld	C	19.70	0.00	44.686	19.70
E10J & E10J (Q7)	Olifants	D	Gemiddeld	D	14.90*	0.154	46.205*	15.054
E10K (EWV 2)**	Olifants	E	Gemiddeld	E	9.32	0.00	505.716	9.32
E21A	Kruis	E	Laag	C	41.98	0.07	39.425	42.05
E21B	Welgemoed	D	Laag	D	23.56	0.161	1.230	23.72
E21C	Winkelhaak	D	Laag	C	19.48	0.00	41.939	19.48
E21D	Houdenbek	D	Laag	D	27.72	0.092	50.217	27.81
E21E	Riet	B	Laag	B	29.13	0.008	93.772	29.14
E21F	Riet	A/B	Laag	B	21.72	0.00	95.862	21.72
E21G	Groot/Leeu	D	Laag	D	38.55	0.04	55.220	38.59
E21H	Twee	A/B	Laag	B	70.21*	0.00	55.055*	70.21
E21H	Leeu	A/B	Laag	B	64.3	0.00	138.715	64.3
E21J (EWV 6)	Groot	B	Laag	B	50.65	0.00	140.463	50.65
E21K	Matjies	B	Laag	B	62.86	0.00	1.819	68.86
E21L	Groot	B	Laag	B	50.02	0.00	239.220	50.02
E22A	Doring	A/B	Laag	B	47.5	0.012	4.138	47.512
E22B	Doring	B	Laag	B	43.1	0.002	7.66	43.10
E22C	Tankwa	C	Laag	A/B	47.47	0.984	2.704	48.45
E22D	Tankwa	A/B	Laag	A/B	31.93	0.027	5.44	31.957
E22E	Doring	B	Laag	B	43.11	0.0004	18.688	43.11
E22F	Doring	B	Laag	B	43.11	0.00	20.894	43.11
E22G	Doring	B	Baie Hoog	B	50.42	0.00	266.606	50.42
E23A	Tankwa	A/B	Laag	A/B	32.42	0.00	8.001	32.42
E23B	Tankwa	A/B	Laag	A/B	32.42	0.00	15.403	32.42
E23C	Tankwa	A/B	Laag	A/B	32.42	0.00	3.339	32.42
E23D	Tankwa	A/B	Laag	A/B	32.42	0.00	26.617	32.24
E23E	Tankwa	A/B	Laag	A/B	32.42	0.00	5.922	32.24
E23F	Tankwa	C	Laag	B	26.38	0.00	37.503	26.38
E23G	Ongeluks	A/B	Laag	A/B	32.42	0.018	7.844	32.44

Kwaternêre opvanggebied	Waterhulpbron	Huidige Ekologiese Status (HES)	Estuariese Telling van Betekenisvolheid (ETB)	Aanbevole Ekologiese Kategorie (AEK)	Ekologiese Reserve (Kumulatief) (% ERK)	BMB-reserwe (% GJA)	GJA (MKM)	Totale Reserwe (% GJA)
E23H	Ongeluks	A/B	Laag	A/B	32.42	0.00	69.30	32.42
E23J	Ongeluks	A/B	Laag	A/B	32.42	0.00	61.673	32.42
E23K	Tankwa	B	Laag	B	26.38	0.00	105.182	26.38
E24A	Tra-Tra	B	Laag	B	73.60	0.316	4.523	73.92
E24B	Tra-Tra	B	Laag	B	63.19	0.0324	12.803	63.22
E24C	Bos	B	Laag	C	32.55	0.00	13.855	32.55
E24D	Bos	C	Laag	C	17.71	0.00	31.475	17.71
E24E	Wolf	A/B	Laag	A/B	32.54	0.00	11.855	32.54
E24F	Wolf	A/B	Laag	A/B	32.54	0.00	22.140	32.54
E24G	Wolf	A/B	Laag	A/B	32.54	0.00	33.327	32.54
E24H (EWV 4)	Doring	A/B	Hoog	B	44.99	0.0098	420.425	44.99
E24J	Doring	B	Hoog	B	48.47	0.00	439.475	48.47
E24K(EWV 5)	Doring	A/B	Hoog	B	48.47	0.00	450.996	48.47
E24L	Brandewyn (sytak van Doring)	B	Hoog	B	50.29	0.00	508.227	50.29
E24M	Doring	B	Hoog	B	50.33	0.00	517.577	50.33
E31A-Q2	Saraip se Laagte	B	Gemiddeld	B	26.12	0.00	3.091	26.12
E31B	Kromme	B	Gemiddeld	B	25.66	0.00	0.978	25.66
E31C	Kromme	B	Gemiddeld	B	25.66	0.00	2.012	25.66
E31D	Kromme	B	Gemiddeld	B	25.66	0.00	2.556	25.66
E31E	Kromme	B	Gemiddeld	B	25.66	0.00	2.880	25.66
E31F	Hantams	B	Gemiddeld	B	25.62	7.654	0.324	33.27
E31G	Kromme	B	Gemiddeld	B	25.65	0.00	0.814	25.65
E31H	Hantams	B	Gemiddeld	B	25.65	0.00	4.506	25.65
E32A	Kromme	B	Gemiddeld	B	17.30	0.00	0.681	17.30
E32B	Hantams	B	Gemiddeld	B	26.23	0.00	7.018	26.23
E32C	Hantams	B	Gemiddeld	B	26.23	0.00	9.320	26.23
E32D	Hantams	B	Gemiddeld	B	26.22	0.00	11.544	26.22
E32E	Hantams	B	Gemiddeld	B	26.22	0.00	15.148	26.22
E33A	Sout	B	Gemiddeld	C	26.03	0.017	20.579	26.05
E33B	Sout	C	Gemiddeld	C	17.40	0.00	21.273	17.40
E33C	Vars	D	Gemiddeld	C	17.04	0.327	1.009	17.37
E33D	Geelbek	C	Gemiddeld	C	17.09	0.00	1.590	17.09
E33E	Sout	C	Gemiddeld	C	17.39	0.023	25.197	17.413
E33F-Q1	Troe-Troe	D	Gemiddeld	D	11.22	1.366	4.530	12.586
E33G	Olifants	D	Gemiddeld	D	12.14	0.032	1028.771	12.172

Kwaternêre opvanggebied	Waterhulpbron	Huidige Ekologiese Status (HES)	Estuariese Telling van Betekenisvolheid (ETB)	Aanbevole Ekologiese Kategorie (AEK)	Ekologiese Reserve (Kumulatief) (% ERK)	BMB-reserwe (% GJA)	GJA (MKM)	Totale Reserwe (% GJA)
E33H	Olifants	D	Gemiddeld	D	12.97	0.0102	1054.724	12.98
E40A	Oorlogskloof	C	Gemiddeld	C	41.51	0.00	16.631	41.51
E40B	Oorlogskloof	C	Gemiddeld	C	41.53	0.387	29.125	41.92
E40C	Oorlogskloof	C	Hoog	C	51.84	0.042	38.491	51.882
E40D	Koebee	C	Hoog	B	56.69	0.00	48.104	56.69

Waar: GJA die gemiddelde jaarlikse afloop is, is MKM miljoen kubieke meter.

*Inkrementele ekologiese vereiste

**Ingevolge die riglyne vir hulpbrongerigte metings (HGM-riglyne), moet die EkoStatus-kategorie nie minder wees as D nie (DWAf 1999)

5. OPPERVLAKWATER - GEHALTEKOMPONENT VIR RIVIERE

Opsomming van die gehaltekomponent by EWV-terreine

Tabel 5.1: Ekologiese spesifikasies en drempels van potensiële besorgdheid (DPB's) vir Hulpbroneenheid 4 (HE4): Olifants, soos verteenwoordig op **EWV-terrein 1** (HE 4: Citrusdal tot Clanwilliamdam)

BESKRYWERS GEBRUIK VIR EKOLOGIESE SPESIFIKASIES	DPB's
Watergehalte	
<i>Soute</i>	
MgSO ₄ (mg/L)	> 37
Na ₂ SO ₄ (mg/L)	> 51
MgCl ₂ (mg/L)	> 51
CaCl ₂	> 105
NaCl (mg/L)	> 389
Watertemperatuur	Nie vermeld nie
pH	< 6.5 – >9.0
EG (mS/m)	> 15
OS (mg/L)	< 6.0
<i>Gifstowwe</i>	
Ammoniak as NH ₃ (mg/L)	> 0.007
<i>Voedingstowwe</i>	
Nitrate as N (mg/L)	> 0.100
Fosfor as PO ₄ -P(mg/L)	> 0.020
Akwatiese invertebrate (ongewerwde diere)	
SASS5-telling	< 100
ASPT	< 7.5
Ephemeroptera: Baetidae	Minder as 4 spesies aanwesig op hele terrein
Ephemeroptera: Leptophlebiidae	Afwesig in > 50% van monsters
Ephemeroptera: Heptageniidae	Afwesig in klippe-in- en klippe-buite-stroom-biotope in somer
Coleoptera en Trichoptera	Minder as 3 families aanwesig
Odonata	Minder as 1 familie aanwesig in 'n monster
Plecoptera: Notonemouridae	Afwesig in > 50% van monsters van klippe-in-stroom-biotop
Akwatiese plantegroei en klippe-in-stroom	Afwesig

ASPT = Gemiddelde Waarde per Takson ("Average Score per Taxon")

EG = elektriese geleiding

mS/m = milliSiemens/meter
 OS = opgeloste suurstof
 SASS5 = "South African Scoring System" – Weergawe 5
 SIC = klippe-in-stroom-biotoop
 SOC = klippe-buite-stroom-biotoop

Tabel 5.2: Ekologiese spesifikasies en DPB's vir HE6: Olifants, soos verteenwoordig op **EWV-terrein 2** (HE 6: Bulhoekstuwal tot by samevloeiing met die Doringrivier)

BESKRYWERS GEBRUIK VIR EKOLOGIESE SPESIFIKASIES	DPB's
Watergehalte	
<i>Soute</i>	
MgSO ₄ (mg/L)	> 37
Na ₂ SO ₄ (mg/L)	> 51
MgCl ₂ (mg/L)	> 51
CaCl ₂	> 105
NaCl (mg/L)	> 389
Watertemperatuur	Nie vermeld nie
pH	< 6.5 – > 9.0
EG (mS/m)	> 25
OS (mg/L)	< 6.0
<i>Gifstowwe</i>	
Ammoniak as NH ₃ (mg/L)	> 0.007
<i>Voedingstowwe</i>	
Nitrate as N (mg/L)	> 0.100
Fosfor as PO ₄ -P (mg/L)	> 0.015
Akwatiese invertebrate	
SASS5-telling	< 30
ASPT	< 4.5
Ephemeroptera: Baetidae	Afwesig in > 50% van monsters
Hemiptera en Odonata	Minder as twee families van elke orde

Tabel 5.3: Rondegatrivier – **EWV-terrein 3**

BESKRYWERS GEBRUIK VIR EKOLOGIESE SPESIFIKASIES	DPB's
Watergehalte	
<i>Soute</i>	
MgSO ₄ (mg/L)	> 23
Na ₂ SO ₄ (mg/L)	> 33
MgCl ₂ (mg/L)	> 30
CaCl ₂	> 57
NaCl (mg/L)	> 191
Watertemperatuur	Nie vermeld nie (geen geïdentifiseerde temperatuur-afhanklikhede vir biota in hierdie loop)
pH	< 5.2 of > 7.0
EG (mS/m)	> 10
OS (mg/L)	< 6.0
<i>Gifstowwe</i>	
Ammoniak as NH ₃ (mg/L)	> 0.007
<i>Voedingstowwe</i>	
Nitrate as N (mg/L)	> 0.020
Fosfor as PO ₄ -P (mg/L)	> 0.010

Akwatiese invertebrate	
SASS5-telling	< 170
ASPT	< 7.5
Ephemeroptera: Baetidae	Minder as 7 spesies aanwesig op hele terrein (alle biotopie gekombineer)
Demoreptus capensis	Afwesig in somer
Trichoptera	Minder as 5 spesies aanwesig op hele terrein; verteenwoordig minstens twee van die volgende families: Barbarochthonidae, Leptoceridae, Petrothrincidae, Sericostomatidae
Ephemeroptera: Leptophlebiidae	Aanwesig in minder as 80% van monsters (kumulatief vir terrein, geneem oor 'n tydperk)
Ephemeroptera: Heptageniidae	Minder as Baetidae in somermonsters
Coleoptera	Minder as 3 families aanwesig
Blephariceridae en Notonemouridae	Afwesig in winter
Akwatiese plantegroei (in en buite stroom); onderwaterplante; klippe-in-stroom	Habitatte afwesig

Tabel 5.4: Ekologiese spesifikasies en DPB's vir HE4: Doringrivier, soos verteenwoordig op **EWV-terrein 4** (HE4: Tankwa/Doringriviersamevloeiing tot by Doringbos)

BESKRYWERS GEBRUIK VIR EKOLOGIESE SPESIFIKASIES	DPB's
Watergehalte	
<i>Soute</i>	
MgSO ₄ (mg/L)	< 23
Na ₂ SO ₄ (mg/L)	< 33
MgCl ₂ (mg/L)	< 30
CaCl ₂	< 57
NaCl (mg/L)	< 191
Watertemperatuur	Volwasse vis: maksimum daaglikse gemiddelde = 40°C (heeljaar) Broeityd: Minimum = 19°C, ideaal = 25-28°C (November tot Januarie)
pH	6.5 – 8.5
EG (mS/m)	< 20
OS (mg/L)	> 6.0
<i>Gifstowwe</i>	
Ammoniak as NH ₃ (mg/L)	< 0.007
<i>Voedingstowwe</i>	
Nitrate as N (mg/L)	< 0.020
Fosfor as PO ₄ -P (mg/L)	< 0.020
Akwatiese invertebrate	
SASS5-telling	< 125
ASPT	< 6
Trichoptera: Ecnomidae, Philopotamidae (winter), Hydropsychidae, Hydroptilidae	Minder as twee taksa aanwesig
Ephemeroptera: Leptophlebiidae	Afwesig in > 20% van monsters
Diptera: Simuliidae	Afwesig in > 50% van klippe-in-stroom-monsters
Akwatiese plantegroei (buite stroom); onderwaterplante; klippe-in-stroom	Afwesig

Tabel 5.5: Ekologiese spesifikasies en DPB's vir HE5: Doringrivier, soos verteenwoordig op **EWV-terrein 5** (HE5: Doringbos tot die Olifants/Doring-samevloeiing)

BESKRYWERS GEBRUIK VIR EKOLOGIESE SPESIFIKASIES	DPB's
Watergehalte	
<i>Soute</i>	
MgSO ₄ (mg/L)	> 23
Na ₂ SO ₄ (mg/L)	> 33
MgCl ₂ (mg/L)	> 30
CaCl ₂	> 57
NaCl (mg/L)	> 191
Watertemperatuur	Volwasse vis: maksimum daaglikse gemiddelde = 40°C (heeljaar) Broeityd: Minimum = 19°C, ideaal = 25-28°C (November tot Januarie)
pH	< 6.5 of > 8.5
EG (mS/m)	> 50
OS (mg/L)	< 6.0
<i>Gifstowwe</i>	
Ammoniak as NH ₃ (mg/L)	> 0.007
<i>Voedingstowwe</i>	
Nitrate as N (mg/L)	> 0.020
Fosfor as PO ₄ -P (mg/L)	> 0.020
Akwatiese invertebrate	
SASS5-telling	< 125
ASPT	< 6
Trichoptera: Ecnomidae, Philopotamidae (winter), Hydropsychidae, Hydroptilidae	Minder as twee taksa aanwesig
Ephemeroptera: Leptophlebiidae	Afwesig in > 20% van monsters (kumulatief vir terrein, oor 'n tydperk geneem)
Diptera: Simuliidae	Afwesig in > 50% van klippe-in-stroom-monsters
Akwatiese plantegroei (buite stroom); onderwaterplante; klippe-in-stroom	Habitat afwesig

Tabel 5.6: Ekologiese spesifikasies en DPB's vir HE2: Grootrivier, soos verteenwoordig op **EWV-terrein 6** (HE2: Grootrivierkloof)

BESKRYWERS GEBRUIK VIR EKOLOGIESE SPESIFIKASIES	DPB's
Watergehalte	
<i>Soute</i>	
MgSO ₄ (mg/L)	> 23
Na ₂ SO ₄ (mg/L)	> 33
MgCl ₂ (mg/L)	> 30
CaCl ₂	> 57
NaCl (mg/L)	> 191
Watertemperatuur	Volwasse vis: maksimum daaglikse gemiddelde = 40°C (heeljaar) Broeityd: Minimum = 19°C, ideaal = 25-28°C (November tot Januarie)
pH	< 6.5 of > 8.5
EG (mS/m)	> 20
OS (mg/L)	< 6.0
<i>Gifstowwe</i>	
Ammoniak as NH ₃ (mg/L)	> 0.007

BESKRYWERS GEBRUIK VIR EKOLOGIESE SPESIFIKASIES	DPB's
<i>Voedingstowwe</i>	
Nitrate as N (mg/L)	> 0.020
Fosfor as PO ₄ -P (mg/L)	> 0.020
Akwatiese invertebrate	
SASS5-telling	< 170
ASPT	< 7.5
Trichoptera: Ecnomidae, Philopotamidae (winter), Hydropsychidae, Hydroptilidae	Minstens 3 families van kokerjuffers (Caddis) is aanwesig op die hele terrein, met minstens twee van die volgende families: - Ecnomidae - Leptoceridae - Philopotamidae - Sericostomatidae
Ephemeroptera: Leptophlebiidae	Afwesig in > 10% van monsters
Ephemeroptera: Heptageniidae	Afwesig in > 20% van monsters
Megaloptera: Corydalidae	Afwesig in > 40% van monsters
Coleoptera	< 3 families
Klippe-in-stroom: in beide vinnig vloeiende, onstuimige stroomversnellings en strome	Afwesig

6. Estuariese komponent

Geografiese grense van die Olifantsriviermonding:

Grens stroomafwaarts: Riviermonding (31° 42.00'S; 18°11.34'E).
 Grens stroomopwaarts: Reikwydte van getyinvloed, d.i. die laagwaterbrug by Lutzville - ongeveer 36 km van die mond (31°33.80'S; 18°19.78'E).
 Laterale grense: 5 m kontoer bo gemiddelde seevlak met elke oewer langs.

Tabel 6.1: EWV van die Olifantsriviermonding

Kwaterneë opvang-gebied	Water-hulpbron	Huidige ekologiese status (HES)	Estuariese telling van betekenisvolheid (ETB)	Aanbevole ekologiese kategorie (AEK)	Ekologiese Reserwe (% GJA)	GJA (MKM)	Totale Reserwe (% GJA)
E33H Riviermonding	Olifants	C	Baie Hoog	B	56	1055	56

KWANTIFISERING VAN EKOLOGIESE RESERWE VIR RIVIERMONDING

AANBEVOLE EKOLOGIESE VLOEIVEREISTE

Die Olifantsriviermonding is aangewys as 'n gewenste beskermde gebied (DWAF, 2004). Die riviermonding moet, ooreenkomstig die riglyne vir die aanwysing van 'n AEK, in Kategorie A of die bereikbare toestand wees. Weens groot damontwikkelings wat reeds in die opvanggebied bestaan (bv. die Clanwilliamdam), is dit moeilik om die Olifantsriviermonding tot 'n Kategorie A te verbeter. Daar word dus aanbeveel dat die Olifantsriviermonding verbeter word tot die minimum AEK vir 'n "hoogs betekenisvolle riviermonding", naamlik 'n **Kategorie B. Scenario 2**, d.i. die huidige invloeienscenario plus die EWV-uitvloeiings van die rivier ($GJA = 800.3 \times 10^6 m^3$) word gekies as die aanbevole ekologiese vloei vereiste-scenario vir die Olifantsriviermonding. Die vloei verspreidings word hieronder opgesom:

Tabel 6.2: Vloeiverspreiding vir Scenario 2

Persentiele	OKT	NOV	DES	JAN	FEB	MRT	APR	MEI	JUN	JUL	AUG	SEP
99%iel	48.13	32.08	21.50	37.21	24.46	7.77	96.73	194.20	550.92	472.06	230.02	153.70
90%iel	28.90	9.60	7.24	3.64	3.76	3.85	9.62	80.90	151.71	159.08	126.25	65.58
80%iel	16.05	4.30	2.06	1.75	1.68	2.21	4.85	22.01	93.83	104.19	79.44	48.08
70%iel	12.84	2.93	1.68	1.55	1.38	1.81	3.07	11.18	57.99	78.10	66.22	34.22
60%iel	11.49	2.93	1.51	1.51	1.37	1.46	2.88	8.24	42.45	58.26	50.45	25.66
50%iel	10.11	2.93	1.50	1.51	1.34	1.42	2.84	6.19	37.99	51.82	47.54	22.18
40%iel	9.01	2.49	1.50	1.51	1.34	1.42	2.49	3.57	36.22	39.92	44.77	16.34
30%iel	8.32	1.51	1.50	1.51	1.34	1.42	1.76	3.42	24.20	30.79	33.23	14.73
20%iel	6.36	1.43	1.18	1.51	0.91	1.11	1.41	2.05	15.78	21.17	28.07	11.21
10%iel	4.02	0.83	0.58	0.99	0.85	1.00	1.28	1.15	7.44	9.49	17.41	9.66
1%iel	1.01	0.15	0.00	0.99	0.34	0.00	0.04	0.29	0.82	2.07	5.35	4.04

EKOLOGIESE SPESIFIKASIES

Ekologiese spesifikasies is duidelike en meetbare spesifikasies van ekologiese attribute (in die geval van riviermondings – hidrodinamika, sedimentdinamika, watergehalte en verskillende biotiese komponente) wat 'n besondere ekologiese Reserwekategorie omskryf – in die geval van die Olifantsriviermonding, 'n **Kategorie B**. Drempels van potensiële besorgdheid (DPB's) word omskryf as meetbare eindpunte wat betrekking het op besondere abiotiese of biotiese aanwysers wat, indien bereik (of wanneer modellering voorspel dat sodanige punte bereik sal word), bestuursoptrede vereis.

Tabel 6.3: Ekologiese spesifikasies en geassosieerde DPB's

KOMPONENT	EKOLOGIESE SPESIFIKASIE	DREMPEL VAN POTENSIËLE BESORGDHEID (DPB)
Voëls	Behou die spesierikheid, volopheid en verskeidenheid van die voëlgemeenskap, verteenwoordigend van stand- en trekvoëls (waad-, moeras- en watervoëls), soos in die huidige situasie, behalwe dat daar meer watervoëls sal wees (10%-toename in huidige getalle).	1.1 Die voëlgemeenskapsamestelling of voëlgetalle wyk af met meer as 50% van die gemiddelde seisoenale basislyntellings vir twee opeenvolgende somer- of winterseisoene, met toespitsing op waad- en moerasvoëls, sterretjies en watervoëls (somer en winter), en in die besonder rooilysspesies wat deur die sisteem ondersteun word (bv. pelikane, swartobies en die rooibandstrandkiewiet). 1.2 Watervoëldigtheid neem af met 20% van die gemiddelde seisoenale basislyntellings vir twee opeenvolgende somer- of winterseisoene.

KOMPONENT	EKOLOGIESE SPESIFIKASIE	DREMPEL VAN POTENSIËLE BESORGDHEID (DPB)
Visse	Behou die volgende vissamestelling in die riviermonding: estuariese spesies (35%); gedeeltelik estuaries-afhanklike spesies (50-60%); obligate estuaries-afhanklike spesies (bv. witsteenbras) (> 1%); inheemse varswaterspesies (> 1%); en uitheemse varswaterspesies (< 0.5%).	2.1 Vlak van estuariese spesies daal tot onder 30% van totale visgemeenskap. 2.2 Vlakke van obligate estuaries-afhanklike spesies daal tot onder 1% of totale visgemeenskap. 2.3 Vlakke van gedeeltelik estuaries-afhanklike spesies daal tot onder 50% of styg tot bo 60% van totale visgemeenskap. 2.4 Vlakke van uitheemse varswaterspesies styg tot bo 0.5% van totale visgemeenskap (bv. die Mosambiekse <i>Tilapia</i> verdring standspesies). 2.5 Bentiese standspesies daal tot onder 2% van totale visgemeenskap in die riviermonding 18+ km van die mond.
	Behou aanwas van jong en volwasse visse op die genoemde verwysingsvlakke. Dit vereis die instandhouding van voldoende vloei vir varswaterpluim (temperatuur, soutgehalte en olfaktoriese gradiënt) wat die see binnegaan. Dit beteken 'n beduidende getal visse van 0-1 jaar en geen afwesige jaarklasse.	2.6 'n Jaarklas is afwesig in 'n spesie.
Invertebrate	Behou spesierikheid en spesiesamestelling soos in die huidige situasie (lae spesierikheid; hoë dominansie). In die huidige situasie is een of twee spesies altyd aanwesig in hoë digtheid in vergelyking met ander spesies (bv. <i>Pseudodiaptomus hessei</i> en <i>Ceratonereis keiskama</i>). Vir 'n B-kategorie moet die hoër digtheid gedurende die jaar veranderlik wees wat talrykheid betref.	3.1 Spesierikheid is groter as 30% vir onderskeidelik soöplankton en makro-invertebrate ('n 50%-toename).
	Aanwyserspesies soos <i>Capitella capitata</i> moet bentiese spesies nie op enige terrein oorheers nie.	3.2 <i>Capitella capitata</i> oorskry 50%-bentiese-spesierikheid op enige terrein.
	<i>Calianassa</i>- en <i>Upogebia</i>-verspreidingspatrone soos in die huidige situasie.	3.3 Talrykheidsvlakke of verspreidingsgebiede verminder met meer as 50% (hoofsaaklik laer sanderige lope).
Makrofiete	Handhaaf die huidige verspreiding en rykheid van die verskillende tipe plantgemeenskappe (somer van 2004): <i>Zostera capensis</i> (48 ha); tussengegrysoutveiland (92 ha); bogegrysoutveiland (143 ha); vloedvlaktesoutveiland (797 ha); riete en watergras (60 ha).	4.1 'n Verandering groter as 20% in die gebied gedek deur die verskillende tipe plantgemeenskappe.

KOMPONENT	EKOLOGIESE SPESIFIKASIE	DREMPEL VAN POTENSIËLE BESORGDEHEID (DPB)
	Verminder die gebiede in die bolope gedek deur akwatiese onkruid met 50% in vergelyking met die huidige situasie (somer van 2004). Die gebied gedek deur indringer- akwatiese onkruid (<i>Azolla filiculoides</i>), lastige draderige alge (bv. <i>Enteromorpha</i> en <i>Ulva</i> , <i>Cladophora</i>) en fonteinkruid (<i>Potamogeton pectinatus</i>) moet 30 ha (die helfte van die kanaal) of minder beslaan.	4.2 Meer as 50% van die estuariese waterkanaal in die boonste 15 km van die riviermonding bedek deur indringer- akwatiese onkruid (<i>Azolla filiculoides</i>), lastige draderige alge (bv. <i>Enteromorpha</i> , <i>Ulva</i> en <i>Cladophora</i>) en fonteinkruid (<i>Potamogeton pectinatus</i>).
	Beheer die verspreiding van uitheemse indringerplante (bv. <i>Sesbania punicea</i> en <i>Eucalyptus</i> spp.) in die oewersone.	4.3 'n Toename in die gebied gedek deur indringerplante van meer as 20%.
	Behou die riet- en watergrasgebiede (60 ha) en die soutvleilandgebiede (~ 10 ha) soos in die huidige situasie (somer van 2004) (deur te voorkom dat 'n soutgehalte van 20 ppt verder as 8.5 km stroomopwaarts beweeg en langer as drie maande voorkom).	4.4 Die afsterwing van riete en die voorkoms van soutvleilandgebiede 8.5 km en verder stroomopwaarts van die riviermonding.
	Voorkom 'n toename van kaal grond op die vloedvlaktesoutvleiland deur die grondwatersoutgehalte op < 70 ppt en die diepte tot die watertafel op < 1.5 m te behou.	4.5 'n Toename van meer as 20% in kaal grond op die soutvleiland.
Mikroalge	Behou 'n lae fitoplanktonbiomassa met 'n klein rivier-estuarium-skeidingsone (d.i. 10 ppt tot rivier +1 ppt).	5.1 Die fitoplanktonbiomassa oorskry 15 µg/l chlorofil a in die somer en 10 µg/l chlorofil a in die winter.
		5.2 Blougroen alge oorskry 10% van fitoplankton-seltellings.
	Behou mikroalggroepdiversiteit soos gemeet in die huidige situasie (2004).	5.3 Flagellata is nie meer die dominante groep nie en die diatome word minder divers (< 10 taksa per terrein).
	Behou die tussengety- en subgety-mikrofitobentiese biomassa soos gemeet in die huidige situasie (2004).	5.4 Mikrofitobentiese biomassa oorskry chlorofil a van 40 mg/m ² .
	Behou 'n lae hoeveelheid van dinoflagellata.	5.5 Die hoeveelheid dinoflagellata is meer as 5% van die totale fitoplanktontelling.

KOMPONENT	EKOLOGIESE SPESIFIKASIE	DREMPEL VAN POTENSIËLE BESORGHEID (DPB)
Watergehalte	Die soutindringing moet nie oorskryding van die DPB's vir visse, invertebrate, makrofiete en mikroalge (sien hierbo) tot gevolg hê nie.	6.1 'n Soutgehalte van 20 ppt langer as drie maande 7 km stroomopwaarts van die monding (soutvleiland, riete en watergras, en invertebrate)
		6.2 Die soutgehalte van die grondwater neem toe tot 50 ppt en die diepte tot die watertafel tot 1 m (vloedvlaktesoutvleiland).
		6.3 Totale opgeloste vastestowwe (maat van "southeid") van rivierinvloei oorskry 3 500 mg/l (fitoplankton).
		6.4 Die soutgehalte in die estuarium oorskry 35 ppt (voorkom hipersoutheid) (vir fitoplankton).
		6.5 'n Soutgehalte groter as 10 ppt kom voor 16+ km stroomopwaarts van die monding (vir vis).
	Sisteemveranderlikes (temperatuur, pH, troebelheid, opgeloste suurstof (OS), en gesuspendeerde stowwe) moet nie oorskryding van DPB's vir die biota (sien hierbo) tot gevolg hê nie.	6.6 Riverinvloei: Somertemp. < 20°C pH < 6.5 Troebelheid van rivierinvloei (moet nog bepaal word) Opgeloste suurstof < 4 mg/l
		6.7 Secchiskyflesing meer as 8 km van die monding is groter as 1 m (gebruik as 'n aanduiding van troebelheidkonsentrasies in estuarium).
		6.8 pH > 8.5 of < 6.5 in rivierinvloei of in estuarium.
		6.9 Die waterkolom-OS daal tot onder 4 mg/l (1 m bo die bodem, uitgesonderd in diep gate) (die OS-vlak in digte makrofietbeddings moet snags ondersoek word).
	Anorganiese voedingstofkonsentrasies moet nie oorskryding van die DPB's vir makrofiete en mikroalge (sien hierbo) tot gevolg hê nie.	6.10 Wanneer die gemiddelde rivierinvloei minder is as 5 m³/s en die gemiddelde opgeloste anorganiese stikstofkonsentrasies (OAN-konsentrasies) in die rivierinvloei groter is as 100 µg/l en die gemiddelde OAN-konsentrasies in die bolope van die estuarium (16+ km van die monding) 100 µg/l oorskry.
		6.11 In die hoëvloeiëisoen (vloei > 20 m³/s): die gemiddelde OAN-konsentrasies in die rivierinvloei is meer as 500 µg/l en die gemiddelde OAN-konsentrasies in die bolope van die estuarium (16+ km van die monding) oorskry 500 µg/l.
		6.12 Die gemiddelde opgeloste reaktiewe fosforkonsentrasies (ORP-konsentrasies) in die rivierinvloei oorskry 100 µg/l, en die gemiddelde ORP-konsentrasies in die bolope van die estuarium (16+ km van die monding) oorskry 100 µg/l.

KOMPONENT	EKOLOGIESE SPESIFIKASIE	DREMPEL VAN POTENSIËLE BESORGDEID (DPB)
	Die aanwesigheid van toksiese stowwe moet nie die oorskryding van die DPB's vir biota (sien hierbo) tot gevolg hê nie.	6.13 Wat betref plaagdoders en onkruidodders moet basislynstudies nog onderneem word voordat die DPB's bepaal kan word (besondere besorgdheid oor bolope weens ekstensiewe landboubedrywighede al langs die oewer van die estuarium).
Hidrodinamika	Behou 'n vloeiërgime om die vereiste habitate vir voëls, visse, makrofiete en mikroalge te skep, en hou die watergehalte in stand.	7.1 Die rivierinvloei verspreidingspatrone verskil met meer as 5% van daardie van Scenario 2 (d.i. die aanbevole vloeiërgime vir die Olifants). 7.2 Die rivierinvloei neem te eniger tyd af tot minder as 1.5 m ³ /s. 7.3 'n Rivierinvloei van minder as 2 m ³ /s hou langer as vier maande aan.
Sedimentdinamika	'n Vloedregime om die sedimentverspreidingspatrone en die akwatiese habitat (die fisiese instroom-habitat) te behou ten einde nie die DPB's vir biota (sien hierbo) te oorskry nie.	8.1 Die rivierinvloei verspreidingspatrone (vloedkomponente) verskil met meer as 10% (wat omvang, tydsberekening en veranderlikheid betref) van daardie in die huidige situasie (2004). 8.2 Die gesuspendeerde sedimentkonsentrasie weens rivierinvloei wyk af met meer as 10% van die sedimentvrag/-uitspoelverhouding wat as deel van die basislynstudies bepaal moet word (huidige situasie 2004).
	Veranderinge in sedimentkorrelgrootte-verspreidingspatrone moet nie die oorskryding van die DPB's vir bentiese invertebrate (sien hierbo) tot gevolg hê nie.	8.3 Die mediaanbeddingsedimentdeursnee wyk af met meer as 'n faktor of twee van die vlakke wat as deel van die basislynstudies bepaal moet word (Huidige Stand). 8.4 Die sand/modder-verspreiding in die midlope (8-20 km) verander met meer as 20% van die huidige situasie (2004). 8.5 Veranderinge in die kanaalbatimetrie in die bolope (meer as 20 km stroomopwaarts van die monding) van meer as 20% van die huidige situasie (2004). 8.6 Veranderinge in die gety-amplitude onder die Lutzville laagwaterbrug van meer as 20% van die huidige situasie (2004).

7. HOEVEELHEIDSKOMPONENT VAN GRONDWATER

Grondwataeraanvulling is 'n betekenisvolle komponent van die hidrogeologiese karakter omdat dit 'n groot invloed op die hoeveelheid en gehalte van grondwater het (veral as waterdraertransmissiwiteit en -berging gunstig is). Die grondwataeraanvulling wissel dwarsdeur die Olifants-Doornwaterbestuursgebied (WBG) van 0 mm/a tot 245 mm/a. Die hoogste grondwataeraanvulling kom voor in die Bo-Olifants-subgebied, veral in die gebied van die Winterhoekberge. Beduidende aanvulling kom ook voor in die subgebiede die Koue Bokkeveld, oostelike Doring en oostelike Sandveld. Wat die oorblywende gebiede betref is die grondwataeraanvulling taamlik beperk.

Die BMB-reserwe maak voorsiening vir die wesenlike behoeftes van individue wat deur die betrokke waterhulpbron bedien word met inbegrip van water om te drink, vir voedselvoorbereiding en vir persoonlike higiëne. 'n Lewensondersteunende hoeveelheid van 25 liter per persoon per dag is gebruik. Die aspekte van grondwaterhoeveelheid, ingevolge die BMB en die EWV per kwaterne opvanggebied, word in **Tabel 7.1** opgesom.

Tabel 7.1: Resultate van grondwaterreserwebepaling – hoeveelheidskomponent

Kwaterne opvanggebied	Gebied (km ²)	Aanvulling (mm ³ /a) ¹⁾	Bevolking ²⁾	EWV (mm ³ /a)	BMB (mm ³ /a)	Totale Reserwe (mm ³ /a)
E10A	134	30.12	0	5.44	0	5.44
E10B	202	37.17	1523	6.78	0.013	6.79
E10C	192	24.79	0	5.66	0	5.66
E10D	235	24.35	0	5.74	0	5.74
E10E	366	30.67	15 627	7.35	0.143	7.49
E10F	386	28.28	1184	5.13	0.011	5.14
E10G	508	26.88	1799	4.21	0.016	4.23
E10H	162	9.62	0	1.51	0	1.51
E10J	468	19.32	7797	1.63	0.071	1.70
E10K	235	6.67	0	0.36	0.0	0.36
E21A	190	14.14	2818	1.48	0.026	1.51
E21B	223	8.87	217	0.01	0.002	0.01
E21C	233	8.7	0	0.07	0	0.07
E21D	242	18.21	5024	1.88	0.046	1.93
E21E	293	8.44	797	0.09	0.007	0.10
E21F	379	8.76	0	0.15	0	0.15
E21G	266	18.95	2458	2.07	0.022	2.09
E21H	404	31.2	0	16.66	0	16.66
E21J	317	16.07	0	0.32	0	0.32
E21K	330	11.62	0	0.18	0	0.18
E21L	195	2.53	0	0.14	0	0.14
E22A	750	7.53	553	0.39	0.005	0.40
E22B	638	6.33	86	0.43	0.001	0.43
E22C	490	4.43	2919	0.33	0.027	0.36
E22D	496	4.21	16	0.26	0	0.26
E22E	1013	9.85	8	1.78	0	1.78
E22F	400	1.3	0	0.21	0	0.21
E22G	367	1.27	0	0.43	0	0.43
E23A	762	5.81	0	1.05	0	1.05
E23B	705	5.08	0	0.97	0	0.97
E23C	318	2.03	0	0.44	0	0.44
E23D	750	3.29	0	1.03	0	1.03
E23E	564	2.99	0	0.6	0	0.60
E23F	473	0.95	0	0.51	0	0.51
E23G	747	2.84	152	0.8	0.001	0.80
E23H	660	2.71	0	0.91	0	0.91
E23J	895	1.87	0	0.96	0	0.96
E23K	572	1.08	0	0.61	0	0.61

Kwaternêre opvanggebied	Gebied (km ²)	Aanvulling (mm ³ /a) ¹⁾	Bevolking ²⁾	EWV (mm ³ /a)	BMB (mm ³ /a)	Totale Reserve (mm ³ /a)
E24A	255	6.01	1568	0.47	0.014	0.48
E24B	468	5.09	455	0.86	0.004	0.86
E24C	784	3.68	0	0.75	0	0.75
E24D	997	1.77	0	0.96	0	0.96
E24E	671	2.74	0	1.58	0	1.58
E24F	582	2.23	0	1.07	0	1.07
E24G	633	2.2	0	1.16	0	1.16
E24H	483	0.92	0	0.56	0.004	0.56
E24J	1078	5.13	0	1.24	0	1.24
E24K	652	3.22	0	0.75	0	0.75
E24L	516	9.01	0	1.01	0	1.01
E24M	529	8.41	0	0.71	0	0.71
E31A	2865	1.2	0	0.02	0	0.02
E31B	1476	2.23	0	0.09	0	0.09
E31C	1572	0.89	0	0.09	0	0.09
E31D	839	0.48	0	0.05	0	0.05
E31E	478	0.38	0	0.03	0	0.03
E31F	525	0.92	2716	0.03	0.025	0.05
E31G	1238	0.68	0	0.07	0	0.07
E31H	726	1.09	0	0.04	0	0.04
E32A	1118	4.63	0	0.4	0	0.40
E32B	828	1.52	0	0.3	0	0.30
E32C	638	2.9	0	0.23	0	0.23
E32D	616	1.08	0	0.22	0	0.22
E32E	1001	3.86	0	0.36	0	0.36
E33A	1355	1.84	394	0.08	0.004	0.08
E33B	702	0.8	0	0.06	0.0	0.06
E33C	980	1.37	366	0	0.003	0.00
E33D	1559	2.04	0	0.14	0	0.14
E33E	1282	1.59	632	0.06	0.006	0.07
E33F	725	15.87	7573	0.05	0.069	0.12
E33G	894	7.19	35 929	0	0.328	0.33
E33H	719	3.05	11 768	0.01	0.107	0.12
E40A	941	4.44	0	0.9	0	0.90
E40B	707	3.41	12 350	0.68	0.113	0.79
E40C	530	3.02	1771	0.11	0.016	0.13
E40D	544	3.09	0	1	0	1.00

1) Die aanvulling is geëkspepeer uit "The classification of significant water resources in the Olifants-Doorn Water Management Area: Final technical report".

2) Bevolking afgelei uit 2011-sensus.

8. GEHALTEKOMPONENT VAN GRONDWATER

Die omgewingsgrondwatergehaltewaarde word met die aanbevole Klas 1-waarde vergelyk (DWAF, 1996). Die laagste of die konserwatiewer waarde van die twee word gekies. Wanneer die

omgewingswaarde gekies word, word dit met 10 persent verhoog. In gevalle waar die omgewingsgehalte van geologiese oorsprong die aanbevole waarde oorskry, word die omgewingswatergehalte gebruik. Gebiede met 'n swak watergehalte word uitsluitingsones in die bepaling van die BMB-reserwevereiste. Die grondwatergehalte moet voldoen aan die teikenwatergehalteverspreidings wat in **Tabel 8.1** aangedui word. **Tabel 8.2** toon 'n opsomming van die resultate vir die gehalteaspekte ingevolge die BMB op kwaterneêre vlak. **Tabel 8.3** illustreer die grondwatergehalteklas en die parameters van besorgdheid vir elke kwaterneêre opvanggebied. Parameters van besorgdheid beteken in hierdie geval daardie met verhoogde konsentrasies wanneer dit met die drinkwatergehaltetstandaarde vergelyk word.

Tabel 8.1: Klassifikasie vir die beraming van die geskiktheid van boorgatwater as drinkwater

Bestanddeel/Parameter	Teikenverspreidings vir watergehalte ¹				
	Eenhede	Klas 0	Klas I	Klas II	Klas III
Kalsium as Ca	mg/L	0-80	80-150	150-300	> 300
Magnesium as Mg	mg/L	0-30	30-70	70-100	> 100
Natrium as Na	mg/L	0-100	100-200	200-400	> 400
Chloried as Cl	mg/L	0-100	100-200	200-600	> 600
Sulfate as SO ₄	mg/L	0-200	200-400	400-600	> 600
Nitrate as NO ₃ -N	mg/L	0-6	6-10	10-20	> 20
Flouried as F	mg/L	0-1	1-1.5	1.5-3.5	> 3.5
Fekale koliform	tellings/100ml	0	0-1	1-10	> 10
pH (pH-eenhede)		6-9	5-6 & 9-9.5	4-5 & > 9.5-10	< 4 of > 10
Totale opgeloste vastestowwe	mg/L	0-450	450-1000	1000-2450	> 2450
Elektriese geleiding	mS/m	0-70	70-150	150-300	> 370

1) Bron: *Suid-Afrikaanse riglyne vir watergehalte, volume 1: Huishoudelike watergebruik*, 2^{de} Uitgawe. 1996. Departement van Waterwese en Bosbou. Pretoria, Suid-Afrika.

LET WEL:

Klas 0 Hierdie is die ideale watergehalte, geskik vir lewenslange gebruik, met geen nadelige gesondheidsgevolge vir die gebruiker. Hierdie klas is wesenlik dieselfde as die teikenwatergehalteverspreiding in die tweede uitgawe van die *Suid-Afrikaanse riglyne vir watergehalte, volume 1: Huishoudelike watergebruik* (DWB, 1996).

Klas I Water in hierdie klas is veilig vir lewenslange gebruik, maar beantwoord nie aan die ideale watergehalte nie omdat daar gevalle van nadelige gesondheidsgevolge kan wees. Hierdie gevolge is gewoonlik matig, en die klaarblyklige gesondheidsgevolge is bykans subklinies en moeilik bewysbaar. Water in Klas I het in normale omstandighede geen gesondheidsgevolge nie. Die estetiese gevolge kan egter duidelik wees.

Klas II Water in hierdie klas word omskryf as water waarvan die negatiewe gesondheidsgevolge met beperkte korttermyngebruik ongewoon is. Die negatiewe gesondheidsgevolge kan veral met langdurige gebruik oor baie jare, of met lewenslange gebruik, meer algemeen word. Hierdie klas verteenwoordig water wat slegs geskik is vir gebruik oor die kort termyn of in noodsituasies, maar wat nie noodwendig vir deurlopende gebruik oor 'n leeftyd geskik is nie.

Klas III Hierdie water bevat bestanddele in 'n konsentrasieverspreiding wat met korttermyngebruik, en des te meer met langtermyngebruik, ernstige gesondheidsgevolge vir veral babas of ouer persone tot gevolg het. Die water in hierdie klas is nie sonder afdoende behandeling, wat die water in 'n laer en veiliger klas plaas, as drinkwater geskik nie.

Tabel 8.2: Resultate van aspekte van die gehaltekomponent van grondwater

Chemiese parameter	Eenheid	Kwaternêre opvanggebiede E10A en E10B			
		Getal monsters	Omgewings-grondwater-gehalte of -mediaan	BMB-reserwe	Grondwatergehalte-reserwe
pH		8	7.57	5.0 – 9.5	8.33
Elektriese geleiding	mS/m	8	20.2	< 150	22.22
Kalsium as Ca	mg/L	8	13.15	< 150	14.47
Magnesium as Mg	mg/L	8	4.7	< 100	5.17
Natrium as Na	mg/L	8	10.55	< 200	11.61
Totale alkaliniteit as CaCO ₃	mg/L	8	33.65	NvT	37
Chloried as Cl	mg/L	8	17.8	< 200	19.58
Sulfaat as SO ₄	mg/L	8	6.55	< 400	7.21
Nitrat as NO _x -N	mg/L	8	0.04	< 10	0.04
Fluoried as F	mg/L	8	0.14	< 1.0	0.15
Chemiese parameter	Eenheid	Kwaternêre opvanggebied E10C			
		Getal monsters	Omgewings-grondwater-gehalte of -mediaan	BMB-reserwe	Grondwatergehalte-reserwe
pH		8	5.16	5.0 – 9.5	5.68
Elektriese geleiding	mS/m	8	7.15	< 150	7.87
Kalsium as Ca	mg/L	8	1.25	< 150	1.38
Magnesium as Mg	mg/L	8	1.24	< 100	1.36
Natrium as Na	mg/L	8	5.97	< 200	6.57
Totale alkaliniteit as CaCO ₃	mg/L	8	4	NvT	4.4
Chloried as Cl	mg/L	8	14.5	< 200	15.95
Sulfaat as SO ₄	mg/L	8	3.25	< 400	3.58
Nitrat as NO _x -N	mg/L	8	0.7	< 10	0.77
Fluoried as F	mg/L	8	0.05	< 1.0	0.05

Chemiese parameter	Eenheid	Kwaternêre opvanggebied E10D			
		Getal monsters	Omgewings-grondwater-gehalte of -mediaan	BMB-reserwe	Grondwatergehalte-reserwe
pH		100	6.87	5.0 – 9.5	7.56
Elektriese geleiding	mS/m	100	9	< 150	9.9
Kalsium as Ca	mg/L	97	2.4	< 150	2.64
Magnesium as Mg	mg/L	97	1.96	< 100	2.16
Natrium as Na	mg/L	95	8.22	< 200	9.04
Totale alkaliniteit as CaCO ₃	mg/L	97	10.55	NvT	11.61
Chloried as Cl	mg/L	96	16.44	< 200	18.08
Sulfaat as SO ₄	mg/L	97	2	< 400	2.2
Nitraat as NO _x -N	mg/L	96	0.24	< 10	0.26
Fluoried as F	mg/L	94	0.11	< 1.0	0.12
Chemiese parameter	Eenheid	Kwaternêre opvanggebied E10E			
		Getal monsters	Omgewings-grondwater-gehalte of -mediaan	BMB-reserwe	Grondwatergehalte-reserwe
pH		153	6.23	5.0 – 9.5	6.85
Elektriese geleiding	mS/m	152	11.32	< 150	12.45
Kalsium as Ca	mg/L	153	1.41	< 150	1.55
Magnesium as Mg	mg/L	153	1.9	< 100	2.09
Natrium as Na	mg/L	146	12.35	< 200	13.58
Totale alkaliniteit as CaCO ₃	mg/L	153	5	NvT	5.5
Chloried as Cl	mg/L	153	23.7	< 200	26.07
Sulfaat as SO ₄	mg/L	153	2	< 400	2.2
Nitraat as NO _x -N	mg/L	153	0.34	< 10	0.37
Fluoried as F	mg/L	148	0.05	< 1.0	0.05

Chemiese parameter	Eenheid	Kwaternêre opvanggebied E10F			
		Getal monsters	Omgewings-grondwater-gehalte of -mediaan	BMB-reserwe	Grondwatergehalte-reserwe
pH		92	6.73	5.0 – 9.5	7.4
Elektriese geleiding	mS/m	92	16.01	< 150	17.61
Kalsium as Ca	mg/L	92	4.76	< 150	5.24
Magnesium as Mg	mg/L	92	2.85	< 100	3.14
Natrium as Na	mg/L	88	14	< 200	15.4
Totale alkaliniteit as CaCO ₃	mg/L	92	15.58	NvT	17.14
Chloried as Cl	mg/L	92	27.31	< 200	30.04
Sulfaat as SO ₄	mg/L	92	4.31	< 400	4.74
Nitraat as NO _x -N	mg/L	92	0.41	< 10	0.45
Fluoried as F	mg/L	90	0.1	< 1.0	0.11
Chemiese parameter	Eenheid	Kwaternêre opvanggebied E10G			
		Getal monsters	Omgewings-grondwater-gehalte of -mediaan	BMB-reserwe	Grondwatergehalte-reserwe
pH		107	6.27	5.0 – 9.5	6.9
Elektriese geleiding	mS/m	105	16.9	< 150	18.59
Kalsium as Ca	mg/L	102	1.68	< 150	1.85
Magnesium as Mg	mg/L	103	2.87	< 100	3.16
Natrium as Na	mg/L	100	16.2	< 200	17.82
Totale alkaliniteit as CaCO ₃	mg/L	103	4	NvT	4.4
Chloried as Cl	mg/L	104	28.95	< 200	31.85
Sulfaat as SO ₄	mg/L	104	2	< 400	2.2
Nitraat as NO _x -N	mg/L	102	0.88	< 10	0.97
Fluoried as F	mg/L	99	0.05	< 1.0	0.05

Chemiese parameter	Eenheid	Kwaternêre opvanggebied E10H			
		Getal monsters	Omgewings-grondwater-gehalte of -mediaan	BMB-reserwe	Grondwatergehalte-reserwe
pH		7	6.56	5.0 – 9.5	7.22
Elektriese geleiding	mS/m	7	19.6	< 150	21.56
Kalsium as Ca	mg/L	7	2.79	< 150	3.07
Magnesium as Mg	mg/L	7	3.73	< 100	4.1
Natrium as Na	mg/L	7	11.6	< 200	12.76
Totale alkaliniteit as CaCO ₃	mg/L	7	4	NvT	4.4
Chloried as Cl	mg/L	7	47.22	< 200	51.94
Sulfaat as SO ₄	mg/L	7	2	< 400	2.2
Nitraat as NO _x -N	mg/L	7	0.04	< 10	0.04
Fluoried as F	mg/L	7	0.05	< 1.0	0.05
Chemiese parameter	Eenheid	Kwaternêre opvanggebied E10J			
		Getal monsters	Omgewings-grondwater-gehalte of -mediaan	BMB-reserwe	Grondwatergehalte-reserwe
pH		71	6.4	5.0 – 9.5	7.04
Elektriese geleiding	mS/m	71	50.4	< 150	55.44
Kalsium as Ca	mg/L	65	6.49	< 150	7.14
Magnesium as Mg	mg/L	65	8.85	< 100	9.74
Natrium as Na	mg/L	65	63	< 200	69.3
Totale alkaliniteit as CaCO ₃	mg/L	67	6.2	NvT	6.82
Chloried as Cl	mg/L	66	112.96	< 200	124.26
Sulfaat as SO ₄	mg/L	66	13.95	< 400	15.95
Nitraat as NO _x -N	mg/L	68	2.6	< 10	2.86
Fluoried as F	mg/L	64	0.15	< 1.0	0.17

Chemiese parameter	Eenheid	Kwaternêre opvanggebied E10K			
		Getal monsters	Omgewings-grondwater-gehalte of -mediaan	BMB-reserwe	Grondwatergehalte-reserwe
pH		5	6.74	5.0 – 9.5	7.41
Elektriese geleiding	mS/m	5	175	< 150	175
Kalsium as Ca	mg/L	5	13.9	< 150	15.29
Magnesium as Mg	mg/L	5	55.6	< 100	61.16
Natrium as Na	mg/L	5	207	< 200	207
Totale alkaliniteit as CaCO ₃	mg/L	5	2	NvT	2.2
Chloried as Cl	mg/L	5	471	< 200	471
Sulfaat as SO ₄	mg/L	5	30.3	< 400	33.33
Nitraat as NO _x -N	mg/L	5	2.4	< 10	2.64
Fluoried as F	mg/L	5	0.14	< 1.0	0.15
Chemiese parameter	Eenheid	Kwaternêre opvanggebied E21A			
		Getal monsters	Omgewings-grondwater-gehalte of -mediaan	BMB-reserwe	Grondwatergehalte-reserwe
pH		50	7.63	5.0 – 9.5	8.39
Elektriese geleiding	mS/m	50	24.1	< 150	26.51
Kalsium as Ca	mg/L	50	13.3	< 150	14.63
Magnesium as Mg	mg/L	50	5.65	< 100	6.22
Natrium as Na	mg/L	50	18.2	< 200	20.02
Totale alkaliniteit as CaCO ₃	mg/L	50	35.6	NvT	39.16
Chloried as Cl	mg/L	50	37.25	< 200	41
Sulfaat as SO ₄	mg/L	50	12.25	< 400	13.48
Nitraat as NO _x -N	mg/L	50	0.02	< 10	0.02
Fluoried as F	mg/L	50	0.11	< 1.0	0.12

Chemiese parameter	Eenheid	Kwaternêre opvanggebied E21B			
		Getal monsters	Omgewings-grondwater-gehalte of -mediaan	BMB-reserwe	Grondwatergehalte-reserwe
pH		17	7.5	5.0 – 9.5	8.25
Elektriese geleiding	mS/m	17	89.2	< 150	98.12
Kalsium as Ca	mg/L	17	65.6	< 150	72.16
Magnesium as Mg	mg/L	17	27	< 100	29.7
Natrium as Na	mg/L	17	64.6	< 200	71.06
Totale alkaliniteit as CaCO ₃	mg/L	17	76	NvT	83.6
Chloried as Cl	mg/L	17	150.3	< 200	165.33
Sulfaat as SO ₄	mg/L	17	99.1	< 400	109.01
Nitraat as NO _x -N	mg/L	17	0.11	< 10	0.12
Fluoried as F	mg/L	17	0.22	< 1.0	0.24
Chemiese parameter	Eenheid	Kwaternêre opvanggebied E21C			
		Getal monsters	Omgewings-grondwater-gehalte of -mediaan	BMB-reserwe	Grondwatergehalte-reserwe
pH		9	7.45	5.0 – 9.5	8.19
Elektriese geleiding	mS/m	9	13.7	< 150	15.07
Kalsium as Ca	mg/L	9	4.9	< 150	5.39
Magnesium as Mg	mg/L	9	5	< 100	5.5
Natrium as Na	mg/L	9	10	< 200	11
Totale alkaliniteit as CaCO ₃	mg/L	9	15.3	NvT	16.83
Chloried as Cl	mg/L	9	23.3	< 200	25.63
Sulfaat as SO ₄	mg/L	9	6.7	< 400	7.37
Nitraat as NO _x -N	mg/L	9	0.02	< 10	0.02
Fluoried as F	mg/L	9	0.1	< 1.0	0.11

Chemiese parameter	Eenheid	Kwaternêre opvanggebied E21D			
		Getal monsters	Omgewings-grondwater-gehalte of -mediaan	BMB-reserwe	Grondwatergehalte-reserwe
pH		38	7.53	5.0 – 9.5	8.28
Elektriese geleiding	mS/m	38	21.85	< 150	24.04
Kalsium as Ca	mg/L	38	11.75	< 150	12.93
Magnesium as Mg	mg/L	38	4.05	< 100	4.46
Natrium as Na	mg/L	38	15.28	< 200	16.08
Totale alkaliniteit as CaCO ₃	mg/L	38	31.75	NvT	34.93
Chloried as Cl	mg/L	38	26.08	< 200	28.69
Sulfaat as SO ₄	mg/L	38	5.8	< 400	6.38
Nitraat as NO _x -N	mg/L	38	0.1	< 10	0.11
Fluoried as F	mg/L	38	0.05	< 1.0	0.05
Chemiese parameter	Eenheid	Kwaternêre opvanggebiede E21E, E21F, E21L & E22F			
		Getal monsters	Omgewings-grondwater-gehalte of -mediaan	BMB-reserwe	Grondwatergehalte-reserwe
pH		10	6.93	5.0 – 9.5	7.62
Elektriese geleiding	mS/m	10	12.5	< 150	13.75
Kalsium as Ca	mg/L	10	2.35	< 150	2.59
Magnesium as Mg	mg/L	10	2.8	< 100	3.08
Natrium as Na	mg/L	10	10.5	< 200	11.55
Totale alkaliniteit as CaCO ₃	mg/L	10	7.55	NvT	8.31
Chloried as Cl	mg/L	10	16.95	< 200	18.65
Sulfaat as SO ₄	mg/L	10	6.3	< 400	6.93
Nitraat as NO _x -N	mg/L	9	0.07	< 10	0.07
Fluoried as F	mg/L	10	0.15	< 1.0	0.16

Chemiese parameter	Eenheid	Kwaternêre opvanggebied E21G			
		Getal monsters	Omgewings-grondwater-gehalte of -mediaan	BMB-reserwe	Grondwatergehalte-reserwe
pH		44	6.59	5.0 – 9.5	7.25
Elektriese geleiding	mS/m	43	104	< 150	114.4
Kalsium as Ca	mg/L	44	2.76	< 150	3.04
Magnesium as Mg	mg/L	44	2.39	< 100	2.63
Natrium as Na	mg/L	42	8.76	< 200	9.64
Totale alkaliniteit as CaCO ₃	mg/L	44	8.64	NvT	9.5
Chloried as Cl	mg/L	44	14.64	< 200	16.11
Sulfaat as SO ₄	mg/L	44	6.06	< 400	6.67
Nitraat as NO _x -N	mg/L	44	0.6	< 10	0.66
Fluoried as F	mg/L	42	0.1	< 1.0	0.11
Chemiese parameter	Eenheid	Kwaternêre opvanggebied E21H			
		Getal monsters	Omgewings-grondwater-gehalte of -mediaan	BMB-reserwe	Grondwatergehalte-reserwe
pH		29	5.82	5.0 – 9.5	6.4
Elektriese geleiding	mS/m	29	3.1	< 150	3.41
Kalsium as Ca	mg/L	29	0.5	< 150	0.55
Magnesium as Mg	mg/L	29	0.75	< 100	0.83
Natrium as Na	mg/L	27	2.72	< 200	3
Totale alkaliniteit as CaCO ₃	mg/L	29	4	NvT	4.4
Chloried as Cl	mg/L	27	5	< 200	5.5
Sulfaat as SO ₄	mg/L	29	2	< 400	2.2
Nitraat as NO _x -N	mg/L	29	0.1	< 10	0.11
Fluoried as F	mg/L	27	0.05	< 1.0	0.05

Chemiese parameter	Eenheid	Kwaternêre opvanggebied E21J			
		Getal monsters	Omgewings-grondwater-gehalte of -mediaan	BMB-reserwe	Grondwatergehalte-reserwe
pH		22	7.47	5.0 – 9.5	8.22
Elektriese geleiding	mS/m	22	18.19	< 150	20
Kalsium as Ca	mg/L	22	8.99	< 150	9.9
Magnesium as Mg	mg/L	22	3.6	< 100	3.96
Natrium as Na	mg/L	22	16.8	< 200	17.93
Totale alkaliniteit as CaCO ₃	mg/L	22	26.86	NvT	29.55
Chloried as Cl	mg/L	22	30.59	< 200	33.65
Sulfaat as SO ₄	mg/L	22	9.78	< 400	10.76
Nitraat as NO _x -N	mg/L	22	0.25	< 10	0.28
Fluoried as F	mg/L	21	0.12	< 1.0	0.13
Chemiese parameter	Eenheid	Kwaternêre opvanggebied E21K			
		Getal monsters	Omgewings-grondwater-gehalte of -mediaan	BMB-reserwe	Grondwatergehalte-reserwe
pH		10	7.6	5.0 – 9.5	8.36
Elektriese geleiding	mS/m	10	20.15	< 150	22.17
Kalsium as Ca	mg/L	10	20.22	< 150	22.24
Magnesium as Mg	mg/L	10	1.3	< 100	1.43
Natrium as Na	mg/L	10	11.91	< 200	13.1
Totale alkaliniteit as CaCO ₃	mg/L	10	80.86	NvT	88.95
Chloried as Cl	mg/L	10	6.5	< 200	7.15
Sulfaat as SO ₄	mg/L	10	4.7	< 400	5.17
Nitraat as NO _x -N	mg/L	10	0.05	< 10	0.05
Fluoried as F	mg/L	10	0.17	< 1.0	0.18

Chemiese parameter	Eenheid	Kwaternêre opvanggebied E22A			
		Getal monsters	Omgewings-grondwater-gehalte of -mediaan	BMB-reserwe	Grondwatergehalte-reserwe
pH		13	8.12	5.0 – 9.5	8.93
Elektriese geleiding	mS/m	13	171	< 150	171
Kalsium as Ca	mg/L	13	78.4	< 150	86.24
Magnesium as Mg	mg/L	13	46.8	< 100	51.48
Natrium as Na	mg/L	13	198.1	< 200	198.1
Totale alkaliniteit as CaCO ₃	mg/L	13	271.4	NvT	271.4
Chloried as Cl	mg/L	13	345.1	< 200	345.1
Sulfaat as SO ₄	mg/L	13	109.5	< 400	120.45
Nitraat as NO _x -N	mg/L	13	0.29	< 10	0.32
Fluoried as F	mg/L	13	0.98	< 1.0	0.98
Chemiese parameter	Eenheid	Kwaternêre opvanggebied E22B			
		Getal monsters	Omgewings-grondwater-gehalte of -mediaan	BMB-reserwe	Grondwatergehalte-reserwe
pH		10	7.82	5.0 – 9.5	8.6
Elektriese geleiding	mS/m	10	278.7	< 150	278.7
Kalsium as Ca	mg/L	10	127	< 150	136.7
Magnesium as Mg	mg/L	10	67.9	< 100	74.69
Natrium as Na	mg/L	10	271.8	< 200	271.8
Totale alkaliniteit as CaCO ₃	mg/L	10	225.35	NvT	225.35
Chloried as Cl	mg/L	10	614.55	< 200	614.55
Sulfaat as SO ₄	mg/L	10	197.75	< 400	217.53
Nitraat as NO _x -N	mg/L	10	0.6	< 10	0.66
Fluoried as F	mg/L	10	0.9	< 1.0	0.9

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Chemiese parameter	Eenheid	Kwaternêre opvanggebied E22C			
		Getal monsters	Omgewings-grondwater-gehalte of -mediaan	BMB-reserwe	Grondwatergehalte-reserwe
pH		13	7.69	5.0 – 9.5	8.46
Elektriese geleiding	mS/m	13	64.9	< 150	71.39
Kalsium as Ca	mg/L	13	39	< 150	42.9
Magnesium as Mg	mg/L	13	15	< 100	16.5
Natrium as Na	mg/L	13	50.3	< 200	55.33
Totale alkaliniteit as CaCO ₃	mg/L	13	93.6	NvT	102.96
Chloried as Cl	mg/L	13	77.2	< 200	84.92
Sulfaat as SO ₄	mg/L	13	42.1	< 400	46.31
Nitraat as NO _x -N	mg/L	13	0.08	< 10	0.08
Fluoried as F	mg/L	13	0.2	< 1.0	0.22
Chemiese parameter	Eenheid	Kwaternêre opvanggebied E22D			
		Getal monsters	Omgewings-grondwater-gehalte of -mediaan	BMB-reserwe	Grondwatergehalte-reserwe
pH		6	7.97	5.0 – 9.5	8.77
Elektriese geleiding	mS/m	6	548	< 150	548
Kalsium as Ca	mg/L	6	161.05	< 150	161.05
Magnesium as Mg	mg/L	6	203.55	< 100	203.55
Natrium as Na	mg/L	6	634.9	< 200	634.9
Totale alkaliniteit as CaCO ₃	mg/L	6	186.3	NvT	186.3
Chloried as Cl	mg/L	6	1624.45	< 200	1624.45
Sulfaat as SO ₄	mg/L	6	437.9	< 400	437.9
Nitraat as NO _x -N	mg/L	6	1.13	< 10	1.24
Fluoried as F	mg/L	6	1	< 1.0	1

Chemiese parameter	Eenheid	Kwaternêre opvanggebiede E22E, E22G & E23A-E23D			
		Getal monsters	Omgewings-grondwater-gehalte of -mediaan	BMB-reserwe	Grondwatergehalte-reserwe
pH		12	7.92	5.0 – 9.5	8.71
Elektriese geleiding	mS/m	12	129.15	< 150	142.07
Kalsium as Ca	mg/L	12	61.8	< 150	67.98
Magnesium as Mg	mg/L	12	23.65	< 100	26.02
Natrium as Na	mg/L	12	186.53	< 200	186.53
Totale alkaliniteit as CaCO ₃	mg/L	12	170	NvT	187
Chloried as Cl	mg/L	12	299.95	< 200	299.95
Sulfaat as SO ₄	mg/L	12	49.1	< 400	54.01
Nitraat as NO _x -N	mg/L	12	0.05	< 10	0.05
Fluoried as F	mg/L	12	0.63	< 1.0	0.69
Chemiese parameter	Eenheid	Kwaternêre opvanggebiede E23E-E23H, E23J			
		Getal monsters	Omgewings-grondwater-gehalte of -mediaan	BMB-reserwe	Grondwatergehalte-reserwe
pH		3	8.37	5.0 – 9.5	9.21
Elektriese geleiding	mS/m	3	185.00	< 150	185.00
Kalsium as Ca	mg/L	3	25.90	< 150	28.49
Magnesium as Mg	mg/L	3	4.80	< 100	5.28
Natrium as Na	mg/L	3	414.10	< 200	414.10
Totale alkaliniteit as CaCO ₃	mg/L	3	285.60	NvT	314.16
Chloried as Cl	mg/L	3	344.70	< 200	344.70
Sulfaat as SO ₄	mg/L	3	88.80	< 400	97.68
Nitraat as NO _x -N	mg/L	3	0.02	< 10	0.02
Fluoried as F	mg/L	3	2.77	< 1.0	3.05

Chemiese parameter	Eenheid	Kwaternêre opvanggebied E23K			
		Getal monsters	Omgewings-grondwater-gehalte of -mediaan	BMB-reserwe	Grondwatergehalte-reserwe
pH		14	8.55	5.0 – 9.5	9.40
Elektriese geleiding	mS/m	14	177.50	< 150	177.50
Kalsium as Ca	mg/L	14	9.70	< 150	10.67
Magnesium as Mg	mg/L	14	4.75	< 100	5.23
Natrium as Na	mg/L	14	357.00	< 200	357.00
Totale alkaliniteit as CaCO ₃	mg/L	14	220.35	NvT	242.39
Chloried as Cl	mg/L	14	416.75	< 200	416.75
Sulfaat as SO ₄	mg/L	14	28.80	< 400	31.68
Nitraat as NO _x -N	mg/L	14	0.11	< 10	0.12
Fluoried as F	mg/L	14	1.04	< 1.0	1.04
Chemiese parameter	Eenheid	Kwaternêre opvanggebiede E24C-E24D			
		Getal monsters	Omgewings-grondwater-gehalte of -mediaan	BMB-reserwe	Grondwatergehalte-reserwe
pH		7	8.19	5.0 – 9.5	9.01
Elektriese geleiding	mS/m	7	96.00	< 150	105.60
Kalsium as Ca	mg/L	7	7.00	< 150	7.70
Magnesium as Mg	mg/L	7	2.00	< 100	2.20
Natrium as Na	mg/L	7	240.30	< 200	240.30
Totale alkaliniteit as CaCO ₃	mg/L	7	331.60	NvT	364.76
Chloried as Cl	mg/L	7	129.00	< 200	141.90
Sulfaat as SO ₄	mg/L	7	11.97	< 400	13.17
Nitraat as NO _x -N	mg/L	7	0.04	< 10	0.04
Fluoried as F	mg/L	7	2.98	< 1.0	2.98

Chemiese parameter	Eenheid	Kwaternêre opvanggebied E24E			
		Getal monsters	Omgewings-grondwater-gehalte of -mediaan	BMB-reserwe	Grondwatergehalte-reserwe
pH		8	7.99	5.0 – 9.5	8.78
Elektriese geleiding	mS/m	8	227.65	< 150	227.65
Kalsium as Ca	mg/L	8	143.25	< 150	157.58
Magnesium as Mg	mg/L	8	106.05	< 100	106.05
Natrium as Na	mg/L	8	201.55	< 200	201.55
Totale alkaliniteit as CaCO ₃	mg/L	8	191.65	NvT	210.82
Chloried as Cl	mg/L	8	268.40	< 200	268.40
Sulfaat as SO ₄	mg/L	8	554.50	< 400	554.50
Nitraat as NO _x -N	mg/L	8	3.22	< 10	3.54
Fluoried as F	mg/L	8	0.85	< 1.0	0.94
Chemiese parameter	Eenheid	Kwaternêre opvanggebied E24F			
		Getal monsters	Omgewings-grondwater-gehalte of -mediaan	BMB-reserwe	Grondwatergehalte-reserwe
pH		3	7.90	5.0 – 9.5	8.69
Elektriese geleiding	mS/m	3	275.20	< 150	275.20
Kalsium as Ca	mg/L	3	110.80	< 150	121.88
Magnesium as Mg	mg/L	3	94.40	< 100	103.84
Natrium as Na	mg/L	3	361.40	< 200	361.40
Totale alkaliniteit as CaCO ₃	mg/L	3	213.90	NvT	235.29
Chloried as Cl	mg/L	3	543.90	< 200	543.90
Sulfaat as SO ₄	mg/L	3	378.40	< 400	416.24
Nitraat as NO _x -N	mg/L	3	3.28	< 10	3.61
Fluoried as F	mg/L	3	0.92	< 1.0	1.01

Chemiese parameter	Eenheid	Kwaternêre opvanggebiede E24G-E24H			
		Getal monsters	Omgewings-grondwater-gehalte of -mediaan	BMB-reserwe	Grondwatergehalte-reserwe
pH		6	7.95	5.0 – 9.5	8.75
Elektriese geleiding	mS/m	6	320.00	< 150	320.00
Kalsium as Ca	mg/L	6	116.00	< 150	127.60
Magnesium as Mg	mg/L	6	84.25	< 100	92.68
Natrium as Na	mg/L	6	446.00	< 200	446.00
Totale alkaliniteit as CaCO ₃	mg/L	6	213.55	NvT	234.91
Chloried as Cl	mg/L	6	795.40	< 200	795.40
Sulfaat as SO ₄	mg/L	6	174.10	< 400	191.51
Nitrat as NO _x -N	mg/L	6	1.11	< 10	1.22
Fluoried as F	mg/L	6	0.82	< 1.0	0.90
Chemiese parameter	Eenheid	Kwaternêre opvanggebied E24J			
		Getal monsters	Omgewings-grondwater-gehalte of -mediaan	BMB-reserwe	Grondwatergehalte-reserwe
pH		56	7.31	5.0 – 9.5	8.04
Elektriese geleiding	mS/m	56	138.50	< 150	152.35
Kalsium as Ca	mg/L	56	46.30	< 150	50.93
Magnesium as Mg	mg/L	56	30.50	< 100	33.55
Natrium as Na	mg/L	54	166.55	< 200	183.21
Totale alkaliniteit as CaCO ₃	mg/L	56	92.05	NvT	101.26
Chloried as Cl	mg/L	56	311.85	< 200	311.85
Sulfaat as SO ₄	mg/L	56	63.60	< 400	69.96
Nitrat as NO _x -N	mg/L	56	0.06	< 10	0.06
Fluoried as F	mg/L	54	0.23	< 1.0	0.26

Chemiese parameter	Eenheid	Kwaternêre opvanggebied E24K			
		Getal monsters	Omgewings-grondwater-gehalte of -mediaan	BMB-reserwe	Grondwatergehalte-reserwe
pH		6	7.85	5.0 – 9.5	8.64
Elektriese geleiding	mS/m	6	324.50	< 150	356.95
Kalsium as Ca	mg/L	6	172.25	< 150	189.48
Magnesium as Mg	mg/L	6	110.75	< 100	121.83
Natrium as Na	mg/L	6	269.35	< 200	296.29
Totale alkaliniteit as CaCO ₃	mg/L	6	188.55	NvT	207.41
Chloried as Cl	mg/L	6	801.65	< 200	881.82
Sulfaat as SO ₄	mg/L	6	206.95	< 400	227.65
Nitraat as NO _x -N	mg/L	6	5.54	< 10	6.09
Fluoried as F	mg/L	6	0.52	< 1.0	0.57
Chemiese parameter	Eenheid	Kwaternêre opvanggebied E24L			
		Getal monsters	Omgewings-grondwater-gehalte of -mediaan	BMB-reserwe	Grondwatergehalte-reserwe
pH		40	5.52	5.0 – 9.5	6.07
Elektriese geleiding	mS/m	40	14.55	< 150	16.01
Kalsium as Ca	mg/L	40	3.35	< 150	3.69
Magnesium as Mg	mg/L	40	2.80	< 100	3.08
Natrium as Na	mg/L	40	16.00	< 200	17.60
Totale alkaliniteit as CaCO ₃	mg/L	40	3.00	NvT	3.30
Chloried as Cl	mg/L	40	29.60	< 200	32.56
Sulfaat as SO ₄	mg/L	40	6.45	< 400	7.10
Nitraat as NO _x -N	mg/L	40	1.20	< 10	1.32
Fluoried as F	mg/L	40	0.11	< 1.0	0.12

Chemiese parameter	Eenheid	Kwaternêre opvanggebied E24M			
		Getal monsters	Omgewings-grondwater-gehalte of -mediaan	BMB-reserwe	Grondwatergehalte-reserwe
pH		25	6.67	5.0 – 9.5	7.34
Elektriese geleiding	mS/m	25	165.00	< 150	165.00
Kalsium as Ca	mg/L	22	19.65	< 150	21.62
Magnesium as Mg	mg/L	22	44.15	< 100	48.57
Natrium as Na	mg/L	22	207.70	< 200	207.70
Totale alkaliniteit as CaCO ₃	mg/L	25	9.50	NvT	10.45
Chloried as Cl	mg/L	22	436.60	< 200	436.60
Sulfaat as SO ₄	mg/L	22	50.25	< 400	55.28
Nitraat as NO _x -N	mg/L	25	3.61	< 10	3.97
Fluoried as F	mg/L	22	0.17	< 1.0	0.19
Chemiese parameter	Eenheid	Kwaternêre opvanggebied E31E			
		Getal monsters	Omgewings-grondwater-gehalte of -mediaan	BMB-reserwe	Grondwatergehalte-reserwe
pH		6	8.16	5.0 – 9.5	8.98
Elektriese geleiding	mS/m	6	430.50	< 150	430.50
Kalsium as Ca	mg/L	6	148.12	< 150	162.93
Magnesium as Mg	mg/L	6	95.09	< 100	104.59
Natrium as Na	mg/L	6	605.64	< 200	605.64
Totale alkaliniteit as CaCO ₃	mg/L	6	301.77	NvT	331.94
Chloried as Cl	mg/L	6	1124.69	< 200	1124.69
Sulfaat as SO ₄	mg/L	6	329.66	< 400	362.62
Nitraat as NO _x -N	mg/L	6	2.55	< 10	2.80
Fluoried as F	mg/L	6	1.47	< 1.0	1.62

Chemiese parameter	Eenheid	Kwaternêre opvanggebied E31F			
		Getal monsters	Omgewings-grondwater-gehalte of -mediaan	BMB-reserwe	Grondwatergehalte-reserwe
pH		67	8.05	5.0 – 9.5	8.86
Elektriese geleiding	mS/m	67	190.00	< 150	190.00
Kalsium as Ca	mg/L	64	84.20	< 150	92.62
Magnesium as Mg	mg/L	64	61.67	< 100	67.83
Natrium as Na	mg/L	63	209.10	< 200	209.10
Totale alkaliniteit as CaCO ₃	mg/L	64	250.25	NvT	275.28
Chloried as Cl	mg/L	65	295.30	< 200	295.30
Sulfaat as SO ₄	mg/L	65	221.90	< 400	244.09
Nitraat as NO _x -N	mg/L	65	0.15	< 10	0.16
Fluoried as F	mg/L	62	1.29	< 1.0	1.29
Chemiese parameter	Eenheid	Kwaternêre opvanggebied E31G			
		Getal monsters	Omgewings-grondwater-gehalte of -mediaan	BMB-reserwe	Grondwatergehalte-reserwe
pH		12	8.10	5.0 – 9.5	8.91
Elektriese geleiding	mS/m	12	436.45	< 150	436.45
Kalsium as Ca	mg/L	11	163.80	< 150	163.80
Magnesium as Mg	mg/L	11	147.20	< 100	147.20
Natrium as Na	mg/L	11	584.30	< 200	584.30
Totale alkaliniteit as CaCO ₃	mg/L	12	211.75	NvT	232.93
Chloried as Cl	mg/L	11	1161.90	< 200	1161.90
Sulfaat as SO ₄	mg/L	11	364.50	< 400	364.50
Nitraat as NO _x -N	mg/L	12	4.46	< 10	4.91
Fluoried as F	mg/L	11	1.92	< 1.0	1.92

Chemiese parameter	Eenheid	Kwaternêre opvanggebied E31H			
		Getal monsters	Omgewings-grondwater-gehalte of -mediaan	BMB-reserwe	Grondwatergehalte-reserwe
pH		8	7.98	5.0 – 9.5	8.77
Elektriese geleiding	mS/m	8	438.00	< 150	438.00
Kalsium as Ca	mg/L	8	87.55	< 150	96.31
Magnesium as Mg	mg/L	8	107.10	< 100	107.10
Natrium as Na	mg/L	8	611.10	< 200	611.10
Totale alkaliniteit as CaCO ₃	mg/L	8	198.55	NvT	218.41
Chloried as Cl	mg/L	8	1159.35	< 200	1159.35
Sulfaat as SO ₄	mg/L	8	349.00	< 400	383.90
Nitraat as NO _x -N	mg/L	8	6.09	< 10	6.69
Fluoried as F	mg/L	8	2.10	< 1.0	2.10
Chemiese parameter	Eenheid	Kwaternêre opvanggebied E32A			
		Getal monsters	Omgewings-grondwater-gehalte of -mediaan	BMB-reserwe	Grondwatergehalte-reserwe
pH		6	7.88	5.0 – 9.5	8.67
Elektriese geleiding	mS/m	6	77.40	< 150	85.14
Kalsium as Ca	mg/L	6	50.50	< 150	55.55
Magnesium as Mg	mg/L	6	26.20	< 100	28.82
Natrium as Na	mg/L	6	83.85	< 200	92.24
Totale alkaliniteit as CaCO ₃	mg/L	6	204.65	NvT	225.12
Chloried as Cl	mg/L	6	83.15	< 200	91.47
Sulfaat as SO ₄	mg/L	6	44.20	< 400	48.62
Nitraat as NO _x -N	mg/L	6	0.22	< 10	0.24
Fluoried as F	mg/L	6	0.74	< 1.0	0.81

Chemiese parameter	Eenheid	Kwaternêre opvanggebied E32B			
		Getal monsters	Omgewings-grondwater-gehalte of -mediaan	BMB-reserwe	Grondwatergehalte-reserwe
pH		14	7.74	5.0 – 9.5	8.51
Elektriese geleiding	mS/m	14	181.60	< 150	181.60
Kalsium as Ca	mg/L	14	109.95	< 150	120.95
Magnesium as Mg	mg/L	14	74.95	< 100	82.45
Natrium as Na	mg/L	14	150.65	< 200	165.72
Totale alkaliniteit as CaCO ₃	mg/L	14	192.10	NvT	211.31
Chloried as Cl	mg/L	14	295.15	< 200	295.15
Sulfaat as SO ₄	mg/L	14	278.75	< 400	306.63
Nitraat as NO _x -N	mg/L	14	1.76	< 10	1.93
Fluoried as F	mg/L	14	0.84	< 1.0	0.92
Chemiese parameter	Eenheid	Kwaternêre opvanggebied E32C			
		Getal monsters	Omgewings-grondwater-gehalte of -mediaan	BMB-reserwe	Grondwatergehalte-reserwe
pH		15	7.75	5.0 – 9.5	8.53
Elektriese geleiding	mS/m	15	162.70	< 150	162.70
Kalsium as Ca	mg/L	15	80.20	< 150	88.22
Magnesium as Mg	mg/L	15	60.80	< 100	66.88
Natrium as Na	mg/L	15	185.10	< 200	185.10
Totale alkaliniteit as CaCO ₃	mg/L	15	211.40	NvT	232.54
Chloried as Cl	mg/L	15	203.00	< 200	203.00
Sulfaat as SO ₄	mg/L	15	303.30	< 400	333.63
Nitraat as NO _x -N	mg/L	15	2.32	< 10	2.55
Fluoried as F	mg/L	15	0.96	< 1.0	0.96

Chemiese parameter	Eenheid	Kwaternêre opvanggebied E32D			
		Getal monsters	Omgewings-grondwater-gehalte of -mediaan	BMB-reserwe	Grondwatergehalte-reserwe
pH		25	7.75	5.0 – 9.5	8.53
Elektriese geleiding	mS/m	25	170.80	< 150	170.80
Kalsium as Ca	mg/L	25	101.90	< 150	112.09
Magnesium as Mg	mg/L	25	57.30	< 100	63.03
Natrium as Na	mg/L	25	201.40	< 200	201.40
Totale alkaliniteit as CaCO ₃	mg/L	25	192.90	NvT	212.19
Chloried as Cl	mg/L	25	239.40	< 200	239.40
Sulfaat as SO ₄	mg/L	25	256.30	< 400	281.93
Nitrat as NO _x -N	mg/L	25	0.49	< 10	0.54
Fluoried as F	mg/L	25	1.33	< 1.0	1.33
Chemiese parameter	Eenheid	Kwaternêre opvanggebied E32E			
		Getal monsters	Omgewings-grondwater-gehalte of -mediaan	BMB-reserwe	Grondwatergehalte-reserwe
pH		15	7.80	5.0 – 9.5	8.58
Elektriese geleiding	mS/m	15	273.00	< 150	273.00
Kalsium as Ca	mg/L	15	106.30	< 150	116.93
Magnesium as Mg	mg/L	15	88.50	< 100	97.35
Natrium as Na	mg/L	15	303.10	< 200	303.10
Totale alkaliniteit as CaCO ₃	mg/L	15	188.00	NvT	206.80
Chloried as Cl	mg/L	15	748.30	< 200	748.30
Sulfaat as SO ₄	mg/L	15	137.20	< 400	150.92
Nitrat as NO _x -N	mg/L	15	2.23	< 10	2.45
Fluoried as F	mg/L	15	0.82	< 1.0	0.90

Chemiese parameter	Eenheid	Kwaternêre opvanggebied E33A			
		Getal monsters	Omgewings-grondwater-gehalte of -mediaan	BMB-reserwe	Grondwatergehalte-reserwe
pH		10	8.10	5.0 – 9.5	8.90
Elektriese geleiding	mS/m	10	433.00	< 150	433.00
Kalsium as Ca	mg/L	10	155.85	< 150	155.85
Magnesium as Mg	mg/L	10	118.55	< 100	118.55
Natrium as Na	mg/L	10	659.45	< 200	659.45
Totale alkaliniteit as CaCO ₃	mg/L	10	178.25	NvT	196.08
Chloried as Cl	mg/L	10	1327.85	< 200	1327.85
Sulfaat as SO ₄	mg/L	10	305.25	< 400	335.78
Nitraat as NO _x -N	mg/L	10	5.42	< 10	5.96
Fluoried as F	mg/L	10	2.14	< 1.0	2.14
Chemiese parameter	Eenheid	Kwaternêre opvanggebied E33B			
		Getal monsters	Omgewings-grondwater-gehalte of -mediaan	BMB-reserwe	Grondwatergehalte-reserwe
pH		6	8.18	5.0 – 9.5	8.99
Elektriese geleiding	mS/m	6	998.20	< 150	998.20
Kalsium as Ca	mg/L	6	232.15	< 150	232.15
Magnesium as Mg	mg/L	6	240.60	< 100	240.60
Natrium as Na	mg/L	6	1780.80	< 200	1780.80
Totale alkaliniteit as CaCO ₃	mg/L	6	250.95	NvT	276.05
Chloried as Cl	mg/L	6	3063.90	< 200	3063.90
Sulfaat as SO ₄	mg/L	6	717.85	< 400	717.85
Nitraat as NO _x -N	mg/L	6	4.51	< 10	4.96
Fluoried as F	mg/L	6	1.77	< 1.0	1.77

Chemiese parameter	Eenheid	Kwaternêre opvanggebied E33C			
		Getal monsters	Omgewings-grondwater-gehalte of -mediaan	BMB-reserwe	Grondwatergehalte-reserwe
pH		11	8.23	5.0 – 9.5	9.05
Elektriese geleiding	mS/m	11	482.00	< 150	482.00
Kalsium as Ca	mg/L	11	76.10	< 150	83.71
Magnesium as Mg	mg/L	11	131.70	< 100	131.70
Natrium as Na	mg/L	11	674.60	< 200	674.60
Totale alkaliniteit as CaCO ₃	mg/L	11	260.80	NvT	286.88
Chloried as Cl	mg/L	11	1472.40	< 200	1472.40
Sulfaat as SO ₄	mg/L	11	215.50	< 400	237.05
Nitraat as NO _x -N	mg/L	11	1.76	< 10	1.94
Fluoried as F	mg/L	11	1.49	< 1.0	1.49
Chemiese parameter	Eenheid	Kwaternêre opvanggebied E33D			
		Getal monsters	Omgewings-grondwater-gehalte of -mediaan	BMB-reserwe	Grondwatergehalte-reserwe
pH		149	7.79	5.0 – 9.5	8.57
Elektriese geleiding	mS/m	149	636.10	< 150	636.10
Kalsium as Ca	mg/L	143	111.54	< 150	122.69
Magnesium as Mg	mg/L	143	121.40	< 100	121.40
Natrium as Na	mg/L	143	1055.72	< 200	1055.72
Totale alkaliniteit as CaCO ₃	mg/L	144	180.56	NvT	198.62
Chloried as Cl	mg/L	144	1799.25	< 200	1799.25
Sulfaat as SO ₄	mg/L	144	357.20	< 400	392.92
Nitraat as NO _x -N	mg/L	143	0.24	< 10	0.26
Fluoried as F	mg/L	143	1.84	< 1.0	1.84

Chemiese parameter	Eenheid	Kwaternêre opvanggebied E33E			
		Getal monsters	Omgewings-grondwater-gehalte of -mediaan	BMB-reserwe	Grondwatergehalte-reserwe
pH		32	7.65	5.0 – 9.5	8.41
Elektriese geleiding	mS/m	32	585.60	< 150	585.60
Kalsium as Ca	mg/L	32	142.45	< 150	142.45
Magnesium as Mg	mg/L	32	168.40	< 100	168.40
Natrium as Na	mg/L	32	857.70	< 200	857.70
Totale alkaliniteit as CaCO ₃	mg/L	32	155.10	NvT	170.61
Chloried as Cl	mg/L	32	1712.00	< 200	1712.00
Sulfaat as SO ₄	mg/L	32	301.65	< 400	331.82
Nitraat as NO _x -N	mg/L	32	1.50	< 10	1.64
Fluoried as F	mg/L	32	2.18	< 1.0	2.18
Chemiese parameter	Eenheid	Kwaternêre opvanggebied E33F			
		Getal monsters	Omgewings-grondwater-gehalte of -mediaan	BMB-reserwe	Grondwatergehalte-reserwe
pH		672	8.00	5.0 – 9.5	8.80
Elektriese geleiding	mS/m	672	185.80	< 150	185.80
Kalsium as Ca	mg/L	667	102.50	< 150	112.75
Magnesium as Mg	mg/L	666	45.27	< 100	49.80
Natrium as Na	mg/L	627	183.38	< 200	183.38
Totale alkaliniteit as CaCO ₃	mg/L	669	165.69	NvT	182.26
Chloried as Cl	mg/L	665	402.61	< 200	402.61
Sulfaat as SO ₄	mg/L	647	96.46	< 400	106.10
Nitraat as NO _x -N	mg/L	671	1.06	< 10	1.17
Fluoried as F	mg/L	626	0.27	< 1.0	0.30

Chemiese parameter	Eenheid	Kwaternêre opvanggebied E33G			
		Getal monsters	Omgewings-grondwater-gehalte of -mediaan	BMB-reserwe	Grondwatergehalte-reserwe
pH		75	8.13	5.0 – 9.5	8.95
Elektriese geleiding	mS/m	75	160.00	< 150	160.00
Kalsium as Ca	mg/L	74	87.31	< 150	96.04
Magnesium as Mg	mg/L	74	40.51	< 100	44.56
Natrium as Na	mg/L	69	170.39	< 200	187.43
Totale alkaliniteit as CaCO ₃	mg/L	75	226.57	NvT	249.22
Chloried as Cl	mg/L	74	323.58	< 200	323.58
Sulfaat as SO ₄	mg/L	70	101.70	< 400	111.87
Nitraat as NO _x -N	mg/L	75	0.63	< 10	0.69
Fluoried as F	mg/L	68	0.45	< 1.0	0.49
Chemiese parameter	Eenheid	Kwaternêre opvanggebied E33H			
		Getal monsters	Omgewings-grondwater-gehalte of -mediaan	BMB-reserwe	Grondwatergehalte-reserwe
pH		10	7.78	5.0 – 9.5	8.55
Elektriese geleiding	mS/m	10	372.80	< 150	372.80
Kalsium as Ca	mg/L	10	51.85	< 150	57.04
Magnesium as Mg	mg/L	10	80.00	< 100	88.00
Natrium as Na	mg/L	10	551.25	< 200	551.25
Totale alkaliniteit as CaCO ₃	mg/L	10	150.50	NvT	165.55
Chloried as Cl	mg/L	10	1015.30	< 200	1015.30
Sulfaat as SO ₄	mg/L	10	133.65	< 400	147.02
Nitraat as NO _x -N	mg/L	10	0.67	< 10	0.74
Fluoried as F	mg/L	10	0.72	< 1.0	0.79

Chemiese parameter	Eenheid	Kwaternêre opvanggebied E40A			
		Getal monsters	Omgewings-grondwater-gehalte of -mediaan	BMB-reserwe	Grondwatergehalte-reserwe
pH		132	7.99	5.0 – 9.5	8.79
Elektriese geleiding	mS/m	132	183.10	< 150	183.10
Kalsium as Ca	mg/L	132	91.90	< 150	101.09
Magnesium as Mg	mg/L	132	68.60	< 100	75.46
Natrium as Na	mg/L	132	235.60	< 200	235.60
Totale alkaliniteit as CaCO ₃	mg/L	132	219.90	NvT	241.89
Chloried as Cl	mg/L	132	333.30	< 200	333.30
Sulfaat as SO ₄	mg/L	132	165.25	< 400	181.78
Nitraat as NO _x -N	mg/L	132	0.34	< 10	0.38
Fluoried as F	mg/L	132	1.10	< 1.0	1.10
Chemiese parameter	Eenheid	Kwaternêre opvanggebied E40B			
		Getal monsters	Omgewings-grondwater-gehalte of -mediaan	BMB-reserwe	Grondwatergehalte-reserwe
pH		123	7.87	5.0 – 9.5	8.66
Elektriese geleiding	mS/m	123	200.50	< 150	200.50
Kalsium as Ca	mg/L	120	100.30	< 150	110.33
Magnesium as Mg	mg/L	119	58.40	< 100	64.24
Natrium as Na	mg/L	119	181.60	< 200	199.76
Totale alkaliniteit as CaCO ₃	mg/L	120	208.25	NvT	229.08
Chloried as Cl	mg/L	122	358.00	< 200	358.00
Sulfaat as SO ₄	mg/L	122	141.86	< 400	156.04
Nitraat as NO _x -N	mg/L	122	0.70	< 10	0.77
Fluoried as F	mg/L	119	0.64	< 1.0	0.70

Chemiese parameter	Eenheid	Kwaternêre opvanggebied E40C			
		Getal monsters	Omgewings-grondwater-gehalte of -mediaan	BMB-reserwe	Grondwatergehalte-reserwe
pH		6	7.57	5.0 – 9.5	8.32
Elektriese geleiding	mS/m	6	91.05	< 150	100.16
Kalsium as Ca	mg/L	6	24.35	< 150	26.79
Magnesium as Mg	mg/L	6	8.55	< 100	9.41
Natrium as Na	mg/L	6	112.20	< 200	123.42
Totale alkaliniteit as CaCO ₃	mg/L	6	110.60	NvT	121.66
Chloried as Cl	mg/L	6	193.30	< 200	193.30
Sulfaat as SO ₄	mg/L	6	11.30	< 400	12.43
Nitraat as NO _x -N	mg/L	6	0.34	< 10	0.38
Fluoried as F	mg/L	6	0.28	< 1.0	0.31
Chemiese parameter	Eenheid	Kwaternêre opvanggebied E40D			
		Getal monsters	Omgewings-grondwater-gehalte of -mediaan	BMB-reserwe	Grondwatergehalte-reserwe
pH		8	7.23	5.0 – 9.5	7.95
Elektriese geleiding	mS/m	8	17.60	< 150	19.36
Kalsium as Ca	mg/L	8	3.35	< 150	3.69
Magnesium as Mg	mg/L	8	4.10	< 100	4.51
Natrium as Na	mg/L	8	28.45	< 200	31.30
Totale alkaliniteit as CaCO ₃	mg/L	8	17.85	NvT	19.64
Chloried as Cl	mg/L	8	40.40	< 200	44.44
Sulfaat as SO ₄	mg/L	8	7.75	< 400	8.53
Nitraat as NO _x -N	mg/L	8	1.55	< 10	1.70
Fluoried as F	mg/L	8	0.23	< 1.0	0.25

Tabel 8.3: Opsomming van die grondwatergehalteklas en die parameters van besorgdheid

Opvanggebied	Gebied (km ²)	Watergehalteklas (DWAf, 1996)	Watergehalteparameters van besorgdheid
E10A	134	0	
E10B	202	0	
E10C	192	I	pH
E10D	235	0	
E10E	366	0	
E10F	386	0	
E10G	508	0	
E10H	162	0	
E10J	468	0	
E10K	235	II	Cl, Na, EG
E21A	190	0	
E21B	223	I	EG
E21C	233	0	
E21D	242	0	
E21E	293	0	
E21F	379	0	
E21G	266	I	EG
E21H	404	I	pH
E21J	317	0	
E21K	330	0	
E21L	195	0	
E22A	750	II	EG, Cl
E22B	638	III	Cl
E22C	490	0	
E22D	496	III	Cl, Na, Mg
E22E	1013	II	Cl
E22F	400	0	
E22G	367	II	Cl
E23A	762	II	Cl
E23B	705	II	Cl
E23C	318	II	Cl
E23D	750	II	Cl
E23E	564	III	Na
E23F	473	III	Na
E23G	747	III	Na
E23H	660	III	Na
E23J	895	III	Na
E23K	572	II	F, Na

Opvanggebied	Gebied (km ²)	Watergehalteklas (DWAF, 1996)	Watergehalteparameters van besorgdheid
E24A	255	III	Cl, Na
E24B	468	III	Cl, Na
E24C	784	II	F, Na
E24D	997	II	F, Na
E24E	671	III	Mg
E24F	582	II	Cl, Na, EG
E24G	633	III	Cl, Na
E24H	483	III	Cl, Na
E24J	1078	II	Cl
E24K	652	III	Cl, Mg
E24L	516	I	pH
E24M	529	II	Cl, Na, EG
E31A	2865	III	Ca, Cl, Na, EG, NO ₃ , Mg
E31B	1476	III	Cl, Na, EG, SO ₄
E31C	1572	III	Cl, Na, EG, Mg
E31D	839	III	Cl, Na, EG, Mg
E31E	478	III	Cl, Na, EG
E31F	525	II	Cl, Na, EG
E31G	1238	III	Cl, Na, EG
E31H	726	III	Cl, Na, EG
E32A	1118	I	EG, F
E32B	828	II	Cl, EG
E32C	638	II	Cl, EG
E32D	616	II	Cl, EG, Na, F
E32E	1001	III	Cl
E33A	1355	III	Cl, EG, Na
E33B	702	III	Cl, EG, Na, Mg, SO ₄
E33C	980	III	Cl, EG, Na
E33D	1559	III	Cl, EG
E33E	1282	III	Cl, EG, Na
E33F	725	III	Cl
E33G	894	II	Cl, EG
E33H	719	III	Cl, EG, Na
E40A	941	II	Cl, EG, Na, F
E40B	707	II	Cl, EG
E40C	530	I	Cl, EG, Na
E40D	544	0	

ISAZISO SIKARHULUMENTE**R. SIKAZ2017****ISEBE LEMICIMBI YEZAMANZI NOGUTYULO LOKUNGCOLA NELINDLE****UMTHETHO WAMANZI WESIZWE, KA1998****(UMTHETHO WAMA-36 KA-1998)****ISIGQIBO MALUNGA NOHLELO LWEMIJELO YAMANZI KUMMANDLA WOLAWULO LWAMANZI
I- DOORN**

Mna, Sifiso Mkhize, uMphathi-jikelele oBambeleyo weSebe leMicimbi yezaManzi noGutyulo lweLindle, ndigunyaziswa nguMqathango-13 woMthetho waManzi weSizwe, (uMthetho wama-36 ka-1998), neSolotya-3 loMthetho malunga nokuyilwa kweNdelela yokuHlela iMijelo yaManzi ngokweNdidi njengoko kuxeliwe kuMmiselo-810 weSaziso sikaRhulumente esinguNombolo-33541, esakhutshwa ngoMhla we-17 kuSeptemba ka-2010, nesasigunyaziswa yimiqathango -16(1) no-63(1)(a) yoMthetho, ukuba ndibhengeze iSigqibo ngokuhlelwa kweMijelo yaManzi kuMmandla woBoniselo ngaManzi i-Olifants-Doorn.

Imibuzo malunga nesi sigqibo mayithunyelwe ku:
UMphathi weCandelo leZigqibo zoHlelo lweMijelo yaManzi
Mnu Yakeen Atwaru
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0001

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MNU. SIFISO MKHIZE

UMPHATHISWA-JIKELELE (OBAMBELEYO)

UMHLA: 13/12/2017

**ISIGQIBO MALUNGA NOHLELO LWEMIJELO YAMANZI KUMMANDLA WOLAWULO LWAMANZI
I- DOORN NGOKWEMIQATHANGO YESIQENDU 16(1) NO-(2) SOMTHETHO WAMANZI WESIZWE
(UMTHETHO WAMA-36, KA1998)**

ULUDWE LWENKQUBO

1. SIWUCHAZA NJANI UMJELO WAMANZI

- 1.1 UHlelo luchaphazela yonke imijelo yamanzi ephantsi kommandla wolawulo lwamanzi i-
Olifants-Doorn, njengoko kubonisiwe apha ngezantsi:

UMmandla woLawulo lwaManzi: yi-Berg-Olifants-Doorn

Ingingqi yoFunxo: yi-Primary Drainage

Imilambo: yonke imilambo ephantsi kwe-Olifants-Doorn

Ichweba lomlambo: yi-Olifants

Imimandla engeyonxalenye: wonke ummandla ophantsi kommandla wolawulo i-Berg,
neendawana nje zommandla wolawulo i-Olifants
catchment
(umzekelo u-G30 no-F60)

- 1.2 UMphathiswa, ngokwemiqathango yesiqendu-16 soMthetho, ka1998 (uMthetho wama-36
ka1998) ("uMthetho"), ukhuphe ingxelo malunga nendlela yokuhlela imijelo yamanzi kwiSaziso
sikaRhulumente esingNombolo-810, esipapashwe kuXwebhu lweZaziso zikaRhulumente
olunguNombolo-33541, lomhla we-17 Septemba ka-2010. Ngokwemiqathango yesiqendu-
16(1) soMthetho, uMphathiswa makenze oku, futhi enze oko ngokukhupha iSaziso
ngokukhawuleza emva kokuba ududu lomjelo wamanzi luxeliwe; abeke/asibhale
ngokusesikweni iSigqibo soHlelo lwaloo mjelo wamanzi (uwonke okanye ezo ndawana zawo.

- 1.3 UMphathiswa, ngokwemiqathango yesiqendu-16 soMthetho, u-(1) no-(2), wazisa
ngokusesikweni esi Sigqibo soHlelo silandelayo ngommandla wolawulo i-Olifants-Doorn.

**2. ISIGQIBO SOHLELO NGEKWEMIQATHANGO YESIQENDU- 16 SOMTHETHO, U-
(1) NO-(2)**

- 2.1 Uluhlu lwezifinyezi-magama ezikhethiweyo (neenkcazo) lukwinqanaba-3.
- 2.2 Isishwankathelo malunga nemithamo yemilambo equka iziza i-EWR ne-BHN
ngokwemiqathango yesiqendu-16(1) soMthetho ngokubhekiselele kummandla wolawulo
lwamanzi i-Olifants-Doorn njengoko kubonisiwe kwiTafile-4.1.
- 2.3 Isishwankathelo malunga nemeko yokomelela nobuhle bemilambo kwisiza-EWR
ngokwemiqathango yesiqendu-16(1) soMthetho ngokubhekiselele kummandla wolawulo
lwamanzi i-Olifants-Doorn njengoko kubonisiwe kwiTafile- 5.1 - 5.6.
- 2.4 Isishwankathelo sesiza-EWR malunga nezinga lokwehla kwamanzi agalela emantla
kummandla wolawulo lwamanzi kuchweme lomlambo i-Olifants ngokwemiqathango yesiqendu-
16(1) soMthetho ngokubhekiselele kummandla wolawulo lwamanzi i-Olifants-Doorn njengoko
kubonisiwe kwiTafile-6.1 - 6.3.

- 2.5 Isishwankathelo segalelo lamanzi angaphezu komhlaba kuHlelo malunga nomthamo ndawonye nokomelela kwemijelo yamanzi ngokwemiqathango yesiqendu-16(1) soMthetho ngokubhekiselele kummandla wolawulo lwamanzi i-Olifants-Doorn njengoko kubonisiwe kwiiTafle-7.1 - 8.3.
- 2.6 ISigqibo malunga neHlelo siza kusetyenziswa ukusukela kumhla esityikitywe ngawo ngokwemiqathango yesiqendu-16(1) soMthetho, ngaphandle kokuba umphathiswa ugqibe ngolunye uhlobo.

3. IZISHUNQULELI-MAGAMA NEENKCAZO

3.1 Izishunquleli-magama

BHN	Iimfuno zoluntu ezisisiseko
EcoSpecs	Izinto ezikhethekileyo ngendawo ethile
EIS	Inqaku elibonisa ukubaluleka kochweme lomlambo Estuarine
EWR	Iimfuno zamanzi zechweme lomlambo
GRA II	IBakala lesi-II lohlobo lwemijelo yamanzi angaphezu komhlaba
GRDM	Indlela yokwenza isiGqibo ngehlelo/hlobo lomjelo wamanzi angaphezu komhlaba
GRUs	AmaBakala emijelo yamanzi angaphantsi komhlaba
MAR	Ubuncikane bamanzi emvula (ngonyaka)
MCM	Ii-Metre zobalo-mthamo lwamanzi
MAR	Ubuncikane bamanzi emvula (ngonyaka)
PES	Ubume bangoku bendawo
REC	IBakala lendawo elivunyiweyo
TEC	IBakala lendawo echongiweyo
TPCs	Imiyinge malunga nenqanaba omawuqale ngalo ukukrokra

3.2 Iinkcazo

Isichenene

amanzana asoloko ebonakala (emilanjani) ngamaxesha embalela futhi ingekuba sisuka kumanzi angaphezu komhlaba includes contribution from delayed interflow and groundwater discharge.

I-EWR

Ibhekisa kuhlobo olunye lokunkcenkceza kwamanzi (kujongwe kwisixa, ixesha, nethuba ankcenkceza ngalo) nemiba yomthamo wamanzi owamkelekileyo khunukuze izilwanyana zasemanzini zikwazi ukuphila kwiimeko ezithile.

Ukuvuselela

Le yimeko yokumana kugalelwa/kunkinkishwa amanzi kwindawo atshe kuyo, mhlawumbi ngokuncitshiswa kokunyuka komphunga wamanzi okanye amanzi asemhlabeni, okanye ke kususwe/kuthuthwe amanzi kwindawo yogcino lwawo esisiwa kwenye ngenxa yemeko ethile (umzekelo ngexesha leempuphuma).

UHlelo

Libhekisa kumthamo nobumnandi/coceko lwamanzi afunekayo khonukuze abe anele okanye alungele ukusetyenziswa ngabantu. Le nto yenziwa ngokuthi kubekwe mbinana ethile asisisiseko eya kwanelisa imfuno yabantu, kwandule kukhuselwe loo ndawo ithile yogcino lwamanzi ukuqinisekisa ukuba izilwanyana zasemanzini zisoloko zinawo amanzi ukuze ziphile, futhi loo manzi abe anele rhoqo kuza kusetyenziswa loo mjelo uthile wamanzi.

4. AMANZI ANGAPHEZU KOMHLABA- UMTHAMO WAMANZI EMILAMBO

Iziphumo zeSiggibo soHlelo lwemijelo yamanzi kwimilambo ephantsi kommandla wolawulo lwamanzi i-Olifants/Doring. Amanani-miyinge oHlelo aboniswe ngeepesenti ze-MAR kuyo yonke imamandla yolawulo lwamanzi ngokwemiqathango yesiqendu-16(1) soMthetho.

Itafile-4.1: Isishwankathelo malunga nemithamo yemilambo, oko kuquka iziza- EWR no-BHN.

Umandla wolawulo lwamanzi	Umjelo wamanzi	i-PES	i-EIS	i-REC	Umjelo wezilwanyan a eziphila emanzini (uyaguquguquka) (% MAR)	Umjelo weemfuno zamanzi zoluntu (% MAR)	i-MAR (MCM)	UHlelo lulonke (%MAR)
E10A	Olifants	C	Phezulu	C	43.58	0.00	60.475	43.58
E10B	Olifants	C	Phezulu	C	44.26	0.01	129.003	44.27
E10C	Olifants	B	Phezulu	B	51.09	0.00	182.405	51.09
E10D	Olifants	C	Phakathi	D	52.38	0.00	233.767	52.38
E10E	Olifants	C	Phakathi	D	37.77	0.4	293.467	38.17
E10F (EWR 1)	Olifants	D	Phakathi	D	37.77	0.03	355.557	37.8
E10G	Olifants	C	Phakathi	D	26.59	0.03	437.273	26.62
E10G (EWR 3)	Rondegat	B	Phakathi	B	42.75	0.03	7.411	42.78
E10H	Jan Dissels	D	Phakathi	C	19.70	0.00	44.686	19.70
E10J & E10J (Q7)	Olifants	D	Phakathi	D	14.90*	0.154	46.205*	15.054
E10K (EWR 2)**	Olifants	E	Phakathi	E	9.32	0.00	505.716	9.32
E21A	Kruis	E	Phantsi	C	41.98	0.07	39.425	42.05
E21B	Welgemoed	D	Phantsi	D	23.56	0.161	1.230	23.72
E21C	Winkelhaak	D	Phantsi	C	19.48	0.00	41.939	19.48
E21D	Houdenbeks	D	Phantsi	D	27.72	0.092	50.217	27.81
E21E	Riet	B	Phantsi	B	29.13	0.008	93.772	29.14
E21F	Riet	A/B	Phantsi	B	21.72	0.00	95.862	21.72
E21G	Groot/ Leeu	D	Phantsi	D	38.55	0.04	55.220	38.59
E21H	Twee	A/B	Phantsi	B	70.21*	0.00	55.055*	70.21
E21H	Leeu	A/B	Phantsi	B	64.3	0.00	138.715	64.3
E21J (EWR 6)	Groot	B	Phantsi	B	50.65	0.00	140.463	50.65
E21K	Maatjies	B	Phantsi	B	62.86	0.00	1.819	68.86
E21L	Groot	B	Phantsi	B	50.02	0.00	239.220	50.02
E22A	Doring	A/B	Phantsi	B	47.5	0.012	4.138	47.512
E22B	Doring	B	Phantsi	B	43.1	0.002	7.66	43.10
E22C	Tankwa	C	Phantsi	A/B	47.47	0.984	2.704	48.45
E22D	Tankwa	A/B	Phantsi	A/B	31.93	0.027	5.44	31.957
E22E	Doring	B	Phantsi	B	43.11	0.0004	18.688	43.11
E22F	Doring	B	Phantsi	B	43.11	0.00	20.894	43.11
E22G	Doring	B	Phezulu	B	50.42	0.00	266.606	50.42
E23A	Tankwa	A/B	Phantsi	A/B	32.42	0.00	8.001	32.42
E23B	Tankwa	A/B	Phantsi	A/B	32.42	0.00	15.403	32.42
E23C	Tankwa	A/B	Phantsi	A/B	32.42	0.00	3.339	32.42
Low	Tankwa	A/B	Phantsi	A/B	32.42	0.00	26.617	32.24

Ummandla wolawulo lwamanzi	Umjelo wamanzi	i-PES	i-EIS	i-REC	Umjelo wezilwanyan a eziphila emanzini (uyaguquguquka) (% MAR)	Umjelo weemfuno zamanzi zoluntu (% MAR)	i-MAR (MCM)	UHlelo lulonke (%MAR)
Low	Tankwa	A/B	Phantsi	A/B	32.42	0.00	5.922	32.24
Low	Tankwa	C	Phantsi	B	26.38	0.00	37.503	26.38
Low	Ongeluks	A/B	Phantsi	A/B	32.42	0.018	7.844	32.44
Low	Ongeluks	A/B	Phantsi	A/B	32.42	0.00	69.30	32.42
Low	Ongeluks	A/B	Phantsi	A/B	32.42	0.00	61.673	32.42
Low	Tankwa	B	Phantsi	B	26.38	0.00	105.182	26.38
Low	Tra-tra	B	Phantsi	B	73.6	0.316	4.523	73.92
Low	Tra-tra	B	Phantsi	B	63.19	0.0324	12.803	63.22
Low	Bos	B	Phantsi	C	32.55	0.00	13.855	32.55
Low	Bos	C	Phantsi	C	17.71	0.00	31.475	17.71
Low	Wolf	A/B	Phantsi	A/B	32.54	0.00	11.855	32.54
Low	Wolf	A/B	Phantsi	A/B	32.54	0.00	22.140	32.54
E24G	Wolf	A/B	Phantsi	A/B	32.54	0.00	33.327	32.54
E24H (EWR 4)	Doring	A/B	Phezulu	B	44.99	0.0098	420.425	44.99
E24J	Doring	B	Phezulu	B	48.47	0.00	439.475	48.47
E24K(EWR 5)	Doring	A/B	Phezulu	B	48.47	0.00	450.996	48.47
E24L	Brandewyn (Doringmain stem)	B	Phezulu	B	50.29	0.00	508.227	50.29
E24M	Doring	B	Phezulu	B	50.33	0.00	517.577	50.33
E31A-Q2	Sa raip se Laagte	B	Phakathi	B	26.12	0.00	3.091	26.12
E31B	Kromme	B	Phakathi	B	25.66	0.00	0.978	25.66
E31C	Kromme	B	Phakathi	B	25.66	0.00	2.012	25.66
E31D	Kromme	B	Phakathi	B	25.66	0.00	2.556	25.66
E31E	Kromme	B	Phakathi	B	25.66	0.00	2.880	25.66
E31F	Hantams	B	Phakathi	B	25.62	7.654	0.324	33.27
E31G	Kromme	B	Phakathi	B	25.65	0.00	0.814	25.65
E31H	Hantams	B	Phakathi	B	25.65	0.00	4.506	25.65
E32A	Kromme	B	Phakathi	B	17.30	0.00	0.681	17.30
E32B	Hantams	B	Phakathi	B	26.23	0.00	7.018	26.23
E32C	Hantams	B	Phakathi	B	26.23	0.00	9.320	26.23
E32D	Hantams	B	Phakathi	B	26.22	0.00	11.544	26.22
E32E	Hantams	B	Phakathi	B	26.22	0.00	15.148	26.22
E33A	Sout	B	Phakathi	C	26.03	0.017	20.579	26.05
E33B	Sout	C	Phakathi	C	17.40	0.00	21.273	17.40
E33C	Vars	D	Phakathi	C	17.04	0.327	1.009	17.37
E33D	Geelbek	C	Phakathi	C	17.09	0.00	1.590	17.09
E33E	Sout	C	Phakathi	C	17.39	0.023	25.197	17.413

Ummandla wolawulo lwamanzi	Umjelo wamanzi	i-PES	i-EIS	i-REC	Umjelo wezilwanyana eziphila emanzini (uyaguquguquka) (% MAR)	Umjelo weemfuno zamanzi zoluntu (% MAR)	i-MAR (MCM)	UHlelo lulonke (%MAR)
E33F-Q1	Troe-troe	D	Phakathi	D	11.22	1.366	4.530	12.586
E33G	Olifants	D	Phakathi	D	12.14	0.032	1028.771	12.172
E33H	Olifants	D	Phakathi	D	12.97	0.0102	1054.724	12.98
E40A	Oorlogskloof	C	Phakathi	C	41.51	0.00	16.631	41.51
E40B	Oorlogskloof	C	Phakathi	C	41.53	0.387	29.125	41.92
E40C	Oorlogskloof	C	Phezulu	C	51.84	0.042	38.491	51.882
E40D	Koebee	C	Phezulu	B	56.69	0.00	48.104	56.69

Ingcaciso: MAR – ubuncikane bamanzi emvula ngonyaka

MCM- Imetre ezibonisa umyinge wamanzi

*Imfuneko (enyukelayo) kumjelo onezilwanyana eziphila kuwo

**Ngokwemiqathango ye-RDM inqanaba elibonisa impilo-ntle yezilwanyana kuloo mjelo uthile mayingabi ngaphantsi ko-D (DWAf 1999)

5. AMANZI ANGAPHEZU KOMHLABA- UBUHLE NOCOCEKO LWEMILAMBO (Isishwankathelo sobuhle, ucoceko nokomelela kwisiza-EWR)

Itafile-5.1. Imiqathango ngendawo yezilwanyana zasemanzini (Ecospecs) nee-TPC zesiza-RU4-Olifants, njengoko zimelwe sisiza -EWR (1): UKUSUKA ECITRUSDAL UKUYA KWIDAMA I-CLANWILLIAM)

IINKCAZO NGEZI NDAWO	II-TPC
Ubuhle nococeko lwamanzi	
<i>Iityuwa</i>	
MgSO ₄ (mg/l)	>37
Na ₂ SO ₄ (mg/l)	>51
MgCl ₂ (mg/l)	>51
CaCl ₂	>105
NaCl (mg/l)	>389
Ubushushu bamanzi	Abuxelwanga
pH	<6.5 – >9.0
EC (mS/m)	>15
DO (mg/l)	< 6.0
<i>Iityhefu</i>	
Ammonia as NH ₃ (mg/l)	>0.007
<i>Nutrients</i>	
Nitrates as N (mg/l)	>0.100
Phosphorous as PO ₄ -P (mg/l)	>0.020
Izilwanyana zasemanzini ezingenamqolo	
Amangaku e-SASS5	<100
ASPT	<7.5
Ephemeroptera: Baetidae	Zingaphantsi kwe- 4 iindidi eziphila kwesi siza
Ephemeroptera: Leptophlebiidae	Ezingekhoyo ukusukela kwi > 50% yeesampulu
Ephemeroptera: Heptageniidae	Ezingekhoyo ukusukela kwi-SIC/SOC biotope ehlolweni
Coleoptera and Trichoptera	Lungaphantsi kwe-3 usapho olukhoyo
Odonata	Lungaphantsi ko-1 usapho olukhoyo nakuyiphi na isampulu
Plecoptera: Notonemouridae	Ezingekhoyo ukusukela kwi > 50% yeesampulu kwi-SIC
Izityalo zasemanzini ne-SIC	Azikhho

Table 5.2. Imiqathango yomjelo ohlala izilwanyana nee-TPCs kwisiza-RU6-Olifants, ezimelwe sisiza- **EWR Site 2** (UKUSUKELA KU-RU 6: BULSHOEK BARRAGE IYOQHINA EKUDIBANENI NOMLAMBO I-DORING)

IINKCAZO NGEZI NDAWO	II-TPC
Ubuhle nococeko lwamanzi	

<i>lityuwa</i>	
MgSO ₄ (mg/l)	>37
Na ₂ SO ₄ (mg/l)	>51
MgCl ₂ (mg/l)	>51
CaCl ₂	>105
NaCl (mg/l)	>389
Ubushushu bamanzi	Abuxelwanga
pH	<6.5 – >9.0
EC (mS/m)	>25
DO (mg/l)	< 6.0
<i>Toxics</i>	
Ammonia as NH ₃ (mg/l)	>0.007
<i>Nutrients</i>	
Nitrates as N (mg/l)	>0.100
Phosphorous as PO ₄ -P (mg/l)	>0.015
Izilwanyana zasemanzini ezingenamqolo	
SASS5 Score	< 30
ASPT	< 4.5
Ephemeroptera: Baetidae	Ezingekhoyo ukusukela kwi-50% yeesampulu
Hemiptera and Odonata	Ezingaphantsi kwe-2 sosapho kudidi ngalunye

Itafile-5.3. UMLAMBO I-RONDEGAT NESIZA- EWR 3.

IINKCAZO NGEZI NDAWO	II-TPC
Ubuhle nococeko	
<i>lityuwa</i>	
MgSO ₄ (mg/l)	>23
Na ₂ SO ₄ (mg/l)	>33
MgCl ₂ (mg/l)	>30
CaCl ₂	>57
NaCl (mg/l)	>191
Ubushushu bamanzi	Abuxelwanga (akukho kuxhomekeka bushushwini buxeliweyo)
pH	<5.2 or >7.0
EC (mS/m)	>10
DO (mg/l)	< 6.0
<i>lityhefu</i>	
Ammonia as NH ₃ (mg/l)	>0.007
<i>Nutrients</i>	
Nitrates as N (mg/l)	>0.020
Phosphorous as PO ₄ -P (mg/l)	>0.010
Izilwanyana zesemanzini ezingenamqolo	
SASS5 Score	< 170
ASPT	< 7.5
Ephemeroptera: Baetidae	Zingaphantsi kwe-7 iindidi ezikhoyo kwisiza siphela
<i>Demoreptus capensis</i>	Azibikho ehlotyeni
Trichoptera	Zingaphantsi kwe-5 iindidi ezikhoyo kwisiza siphela Fewer than 5 species present overall at site, zimele ezi ntsapho zine zilandelayo : Barbarochthonidae, Leptoceridae, Petrothrincidae, Sericostomatidae
Ephemeroptera: Leptophlebiidae	Zikhona kodwa ngaphantsi kwe-80% yeesampulu (ziyaguquguquka ngesi siza, zithathwa ekuhambeni kwexesha)
Ephemeroptera: Heptageniidae	Zimbalwa kunee-Baetidae kwiisampulu zasehlotyeni
Coleoptera	Zingaphantsi kwi-3 yeentsapho ezikhoyo
Blephariceridae and Notonemouridae	Azibikho ebusika
Utyani/izityalo zasemanzini (ezingaphandle kwamaza); utyani oluxutyiweyo; i-SIC	Azikhona ezindawo

Itafle-5.4. Imiqathango yemjelo ehlala izilwanyana nee-TPC zomlambo i-RU4-Doring, ezimelwe sisiza-EWR Site 4. (UKUSUKA KUMLAMBO I-RU 4: TANKWA/DORING UKUYA KUQHINA EKUDIBANENI NE-DORINGBOS)

IINKCAZO NGEZI NDAWO	II-TPC
Ubuhle nooceko lwamanzi	
<i>lityuwa</i>	
MgSO ₄ (mg/l)	<23
Na ₂ SO ₄ (mg/l)	<33
MgCl ₂ (mg/l)	<30
CaCl ₂	<57
NaCl (mg/l)	<191
Ubushushu bamanzi	lintlanzi ezindala : ubuncikane bazo mihla le = kangange-40 °C (unyaka wonke). Ubuncikane bokuzala kwazo= kangange-19 °C, iqondo lozalo eliyimfuneko = 25-28 °C (Novemba ukuya ku-Janyuwar).
pH	6.5 – 8.5
EC (mS/m)	<20
DO (mg/l)	> 6.0
Toxics	
Ammonia as NH ₃ (mg/l)	<0.007
Nutrients	
Nitrates as N (mg/l)	<0.020
Phosphorous as PO ₄ -P (mg/l)	<0.020
Aquatic Invertebrates	
Amanqaku e-SASS5	< 125
ASPT	< 6
Trichoptera: Ecnomidae, Philopotamidae (winter), Hydropsychidae, Hydroptilidae	Ngaphantsi kwe-2 seendidi ezikhoyo
Ephemeroptera: Leptophlebiidae	Ezingekhoyo ukusukela kwi > 20% yeesampulu
Diptera: Simuliidae	Ezingekhoyo ukusukela kwi > 50% yeesampulu ze-SIC
Utyani/izityalo zasemanzini (ezingaphandle kwamaza); utyani oluxutyiweyo; i-SIC	Azikhho

Itafle-5.5. Imiqathango yemjelo ehlala izilwanyana nee-TPC zomlambo i-RU4-Doring, ezimelwe sisiza-EWR Site 5. (UKUSUKA KUMLAMBO I-RU 5: DORINGBOS UKUYA KUQHINA EKUDIBANENI NE-OLIFANTS/DORING)

IINKCAZO NGEZI NDAWO	II-TPC
Ubuhle nooceko lwamanzi	
<i>lityuwa</i>	
MgSO ₄ (mg/l)	> 23
Na ₂ SO ₄ (mg/l)	> 33
MgCl ₂ (mg/l)	> 30
CaCl ₂	> 57
NaCl (mg/l)	> 191
Ubushushu bamanzi	lintlanzi ezindala : ubukhulu bazo mihla le = kangange-40 °C (unyaka wonke). Ubuncikane bokuzala kwazo= kangange-19 °C, iqondo lozalo eliyimfuneko = 25-28 °C ((ukusukela kuNovemba ukuya kuJanyuwar).
pH	< 6.5 or > 8.5
EC (mS/m)	> 50
DO (mg/l)	< 6.0
Toxics	
Ammonia as NH ₃ (mg/l)	> 0.007
Izondlo	
Nitrates as N (mg/l)	> 0.020

Phosphorous as $\text{PO}_4\text{-P}$ (mg/l)	> 0.020
Izilwanyana zasemanzini ezingenamqolo	
SASS5 Score	< 125
ASPT	< 6
Trichoptera: Ecnomidae, Philopotamidae (winter), Hydropsychidae, Hydroptilidae	Zingaphantsi kweendidi ezikhoyo
Ephemeroptera: Leptophlebiidae	Azikhokho ukusuka kwi > 20% yeesampulu (ziyaguquguquka ngesiza, zithathwa ekuhambeni kwexesha)
Diptera: Simuliidae	Azikhokho ukusuka kwi > 50% yeesampulu ze-SIC
Utyani/izityalo zasemanzini (ezingaphandle kwamaza); utyani oluxuliyweyo; i-SIC	Azikhokho ezi ndawo

Itafile-5.6. Imiqathango yemijelo ehlala izilwanyana nee-TPC zomlambo i-RU4-Grootng, ezimelwe sisiza-EWR Site 6. (UKUSUKA KUMLAMBO I-RU 2: GROOT UKUYA E-GEORGE KUQHINA EKUDIBANENI NE-OLIFANTS/DORING)

IINKCAZO NGEZI NDAWO	II-TPC
Ubuhle nococeko lwamanzi	
<i>lityuwa</i>	
MgSO_4 (mg/l)	> 23
Na_2SO_4 (mg/l)	> 33
MgCl_2 (mg/l)	> 30
CaCl_2	> 57
NaCl (mg/l)	> 191
Ubushushu bamanzi	lintlanzi ezindala : ubukhulu bazo mihla le = kangange-40 °C (unyaka wonke). Ubuncikane bokuzala kwazo = kangange-19 °C, iqondo lozalo eliyimfuneko = 25-28 °C ((ukusukela kuNovemba ukuya kuJanyuwari).
pH	< 6.5 OR > 8.5
EC (mg/l)	> 20
DO (mg/l)	< 6.0
<i>Toxics</i>	
Ammonia as NH_3 (mg/l)	> 0.007
<i>Izondlo</i>	
Nitrates as N (mg/l)	> 0.020
Phosphorous as $\text{PO}_4\text{-P}$ (mg/l)	> 0.020
Izilwanyana zasemanzini ezingenamqolo	
Amanquaku e-SASS5	< 170
ASPT	< 7.5
Trichoptera: Ecnomidae, Philopotamidae (winter), Hydropsychidae, Hydroptilidae	Ubuncikane ziintsapho ezi-3 zeeccaddis ezivalelwe kwizindlwana ezikhoyo kwisiza siphela, nobuncikane bezi ntsapho zi4 zilandelayo: - Ecnomidae, Leptoceridae, - Philopotamidae , Sericostomatidae
Ephemeroptera: Leptophlebiidae	Absent from > 10% of samples
Ephemeroptera: Heptageniidae	Absent from > 20% of samples
Megaloptera: Corydalidae	Absent from > 40% of samples
Coleoptera	< 3 families
Stones-in-current, including fast-flowing, turbulent riffle and run	

6. Uchweme lomlambo

Imida yobume bomhlaba kwichweme lomlambo i-Olifants

Umda osemazantsi omlambo: emlonyeni wechweme (31° 42.00'S; 18° 11.34'E).

Umda osemantla omlambo: Umgangatho wefuthe lweliza, oko kukuthi umcangatho e-Lutzville – kangangee-km ezingama-36 km ukusuka emlonyeni wochweme (31°33.80'S; 18°19.78'E).

Umda osemacaleni omlambo: iimitha ezi-5 zeengxondorha ezingaphezu komgangatho wolwandle kunxweme ngalunye.

Itafile-6.1. iimfuno/umyinge wamanzi ofunekayo kumjelo wamanzi ngamnye ophantsi kochweme lwe-Olifants Estuary.

Ummandla wolawulo lwamanzi	Umjelo wamanzi	i-PES	i-EIS	i-REC	Uhlelo lomjelo wamanzi ohlala izilwanyana (% MAR)	i-MAR (MCM)	Lulonke uhlelo (%MAR)
Uchweme-E33H	Olifants	C	Phezulu kakhulu	B	56	1055	56

UHLELO LWEMIJELO EHLALA IZILWANYANA NGOKUMETA IMITHAMO YAWO

UMYINGE OVUNYIWEYO WOKUHAMBA KWAMANZI

Uchweme lwe-Olifants luxelwe njengeyona ndawo emelwe kukhuselwa (DWAF, 2004). Ngokwemiqathango yesikhokelo yokuxela umyinge ovunyiweyo wokuhamba kwamanzi (i-REC) uchweme olo malube kwiBakala-A kungenjalo lube kweyona meko intle yaziwayo (kwinqanaba i-BAS) noko kunjalo, kuba uphuhliso lwamadama amakhulu sele luqhubeka kulo mmandla wolawulo lwamanzi (umzekelo idama i-Clanwilliam) kuza kuba nzima ukuphuhlisa i-Olifants ide ifikelele kwiBakala-A. Kungoko sicebisa ukuba uchweme lomlambo i-Olifants luphuhlise ukuya kufikelele kuphela kubuncikane be- REC emiselwe “amachweme abaluleke kakhulu”, abizwa ngokuba ngamachweme eBakala-**Category B**, uMboniso-2, oko kukuthi umboniso wohambo lwamanzi okhoyo nomyinge wokuhamba kwamanzi ovunyiweyo kwimijelo yamanzi ehlala izilwanyana. (I-MAR = $800.3 \times 10^6 \text{ m}^3$) ngumyinge ovunyiweyo wokuhamba kwamanzi kuchweme lomlambo i-Olifants. Imiyinge yokuhamba kwamanzi eyabelwe olu chweme ibonisiwe apha ngezantsi:

Itafile-6.2. Umyinge owabelwe uMboniso-2.

iiPercentile	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
99%ile	48.13	32.08	21.50	37.21	24.46	7.77	96.73	194.20	550.92	472.06	230.02	153.70
90%ile	28.90	9.60	7.24	3.64	3.76	3.85	9.62	80.90	151.71	159.08	126.25	65.58
80%ile	16.05	4.30	2.06	1.75	1.68	2.21	4.85	22.01	93.83	104.19	79.44	48.08
70%ile	12.84	2.93	1.68	1.55	1.38	1.81	3.07	11.18	57.99	78.10	66.22	34.22
60%ile	11.49	2.93	1.51	1.51	1.37	1.46	2.88	8.24	42.45	58.26	50.45	25.66
50%ile	10.11	2.93	1.50	1.51	1.34	1.42	2.84	6.19	37.99	51.82	47.54	22.18
40%ile	9.01	2.49	1.50	1.51	1.34	1.42	2.49	3.57	36.22	39.92	44.77	16.34
30%ile	8.32	1.51	1.50	1.51	1.34	1.42	1.76	3.42	24.20	30.79	33.23	14.73
20%ile	6.36	1.43	1.18	1.51	0.91	1.11	1.41	2.05	15.78	21.17	28.07	11.21
10%ile	4.02	0.83	0.58	0.99	0.85	1.00	1.28	1.15	7.44	9.49	17.41	9.66
1%ile	1.01	0.15	0.00	0.99	0.34	0.00	0.04	0.29	0.82	2.07	5.35	4.04

IMIQUATHANGO NGEMIJELO EHLALA IZILWANYANA

Le yimiqathango ecace gca nekulula ukuyihlola xa kujongisiwa iimpawu zemijelo ehlala izilwanyana. Xa sibhekiselele kumachweme omlambo sithetha ngokuhlola uguquguquko lwamaza, ubuhle nococeko lwamanzi nezinye iimpawu ezahlukeyo kuba ezi nkukacha zibonisa iBakala elithile ekulo imijelo ehlala izilwanyana (**iBakala-B** xa sibhekiselele kuchweme lomlambo i-Olifant). Impawu ezibonisa ukuba kukho ingxaki zichazwa njengezalathisi ezihlolekayo ezithi ukuba ude wafikelela kuzo xa usenza uhlolo kunyanzeleke ukuba uqalise ukuza nesisombululo sengxaki leyo.

Itafile-6.3. imiqathango ngemijelo ehlala izilwanyana nee-TPC ezibandakanyekayo

UDIDI LWESILWANYANA	IMIQUATHANGO YOMJELO	UPHAU OLUBONISA UBUKHO BENGXAKI
Iintaka	Umjelo mawugcine: ubuhle bodidi (Iweentaka), ubuninzi neentlobo-ntlobo zeentaka, umele ezo zihlalayo nezo zifudukayo, eziphumayo neziphila emanzini kuphela ngokwemeko yelo xesha (ngaphandle kwamaxa zixhaphakile ezi ziphila emanzini kuphela (xa zisanda kangange-10% kunamanani esiqhelo)	1.1 Amanani eentaka aguquguquka kangange-50% nangaphezulu xa kuthlekiswa nesimo esiqhelekileyo ngamaxesha athile omnyaka, mhlawumbi de ibe yiminyaka emibini elandelelanayo isenzeka lee nto (ehlotyeni okanye ebusika) 1.2 Xa ubunzulu bamanzi busehla kangange-20% xa kuthlekiswa nesimo esiqhelekileyo de ibe yiminyaka emibini elandelelanayo isenzeka lee nto (ehlotyeni okanye ebusika) de ibe yiminyaka emibini elandelelanayo isenzeka lee nto (ehlotyeni okanye ebusika)
Iintlanzi	Ugcine ezi ntlobo zentlanzi: ezihlala ngqo/oko eluchwemeni lomlambo (35%), zihlala zimana ziphumaphuma eluchwemeni lomlambo (50-60%), ezinyanzelisayo ukuhlala eluchwemeni (>1%), ezikholwa kukuhlala emanzini amnandi nacocekileyo (>1%). Ezizingcayo ngokuhlala emanzini amnandi nacocekileyo (<0.5%)	2.1 Xa ibakala leentlanzi eziphila eluchwemeni lisehla kangange-30% kunenani elikhulu lesiqhelo 2.2 Xa ibakala leentlanzi ezinyanzelekileyo ukuba zihlale eluchwemeni lisehla kangange-1% kunenani elikhulu lesiqhelo 2.3 Xa ibakala leentlanzi ezihlalayo ze zimana ziphumaphuma eluchwemeni lomlambo lisehla kangange- 50% okanye 60% kunenani elikhulu lesiqhelo 2.4 Xa ibakala leentlanzi ezizingcayo ngokuhlala emanzini amnandi nacocekileyo lingaphezu kwe-0.5% 2.5 Xa ibakala leentlanzi ezihlala kwi-Benthic lisehla nge-2% kunenani elikhulu lesiqhelo kuchweme olungaphezulu kwee-km ezili-18 ukusuka emlonyeni wochweme

UDIDI LWESILWANYANA	IMIQATHANGO YOMJELO	UPHAWU OLUBONISA UBUKHO BENGXAKI
	Ukhuthaze ukumenywa kweentlanzi ezindala nezincinane kumabakala eemeko ngeemeko (lo mqathango ufuna ugcinwe amanzi ahambayo/nangena ngokwaneleyo elwandle khonukuze ahlale epholile emnandi (ngokobushushu nangokobukho betyuwa) . Le nto ithetha ukuthi mazibe ninzi iintlanzi ezineminyaka e: 0 -1 ziphila.	2.6 Xa kukho ezo zifuduka zimke kangangonyaka kwiindidi ezithile zentlanzi
Ezingenamqolo	Ugcine ubuhle bodidi lwezi zilwanyana, zihlale zixubile (ezininzi nezimbalwa). Kodwa ngokwemeko yangoku lubakho olo didi luninzi ukwedlula olunye. NgeBakala-B ezo zongameleyo mazibe ziintlobontlo ezininzi phakathi enyakeni.	3.1 Ubuhle bodidi lwezi zilwanyana bungaphezu kwe 30% ne50% nge-zooplankton ne-macroinvertebrates ngokulandelelanayo
	Ugcine Udidi oluyi- <i>Capitella capitata</i> malungabi luninzi ukwedlula olwe-benthic	3.2 i- <i>Capitella capitata</i> idlula i-benthic nge-50%
	Ugcine ipethini yokuhanjiswa kodidi i- <i>Calanassa</i> nodidi i- <i>Upogebia</i> , njengoko isimo sangoku sibonisa	3.3 amabakala obuninzi okanye iindawo ezithuthelwa kuzo ehla kangange-50% (isikakhulu ezo zihlala ezantsi esantini)
ii-Macrophytes	Ugcine isimo sangoku sokuhanjiswa (uhlobo luka2004) nobuninzi bezityalo eziziintlobo ngeentlobo (umzekelo ii- <i>Zostera capensis</i> (48 ha), intertidal salt marsh (92 ha), supratidal salt marsh (143 ha), floodplain salt marsh (797 ha), reeds and sedges (60 ha)	4.1 lungaphezulu kwe-20% utshintsho kwindawo ethiwe jize/egqunywe ziintlobo ngeentlobo zezityalo
	Unciphise indawo egqunywe lukhula kumphezulu wochweme kangange-50% xa uthelekisa nemeko yangoku (uhlobo luka2004). Ngoko ke indawo egqunywe ngamakhula (afana nala: <i>Azolla filiculoides</i> , nuisance filamentous algae, <i>Enteromorpha</i> , <i>Ulva</i> , <i>Cladophora</i> nepondweed (<i>Potamogeton pectinatus</i>) ube yi-30 ha	4.2 i-15 km kumphezulu wochweme kummandla i-50% kwindlela yamanzi ochweme olugqunywe lukhula (i- <i>Azolla filiculoides</i>), i-nuisance filamentous algae (umzekelo i- <i>Enteromorpha</i> , <i>Ulva</i> , <i>Cladophora</i>) nepondweed (<i>Potamogeton pectinatus</i>).
	Ulawule ukusasazeka kwamakhula atshabalalisayo ngengala: i- <i>Sesbania punicea</i> ne- <i>Eucalyptus</i> spp.	4.3 anyuke ngaphezulu kwe- 20 %
	Ugcine indawo yeengcongolo nenqoboka (60 ha) netyuwa engange (~10 ha) ngokwesimo sangoku (uhlobo luka2004) (ngokunqanda amanzi anetyuwa eninzi)	4.4 iingcongolo neetyuwa kumgama i- 8.5 km ukuya kutsho phaya emantla ukusuka emlonyeni wochweme.

UDIDI LWESILWANYANA	IMIQATHANGO YOMJELO	UPHAWU OLUBONISA UBUKHO BENGXAKI
	Unqande ukwanda komhlaba oze ngokugcina ubutyuwa bamanzi angaphezulu komhlaba buyi- <70 nobunzulu ukuya kwitafle yamanzi buyi- < 1.5 m	4.5 bunyuke ngaphezulu kwe-20% kwindawo eze yeetyuwa
ii-Microalgae	Ugcine i-phytoplankton biomass iphantsi kangange-REI (10 ppt to +1 ppt)	5.1 Ubunzima be-Phytoplankt budlula obohlaza kangange-15 µg/l ehlotyeni, kangange-10 ug/l ebusika 5.2 I-Blue-green algae yodlula i-phytoplankton kangange-10% cell counts
	Ugcine iqela le-microalgal lahlukile njengoko kuthathwe umlinganiselo wayo kwisimi sangoku (ku2004)	5.3 ii-Flagellates ziyayeka ukongamela ze zona ii-diatoms zihle ngokwahlukahluka (kangange<10 taxa kwisiza ngasinye)
	Ugcine ubunzima be-intertidal ne-subtidal microphytobenthic njengoko kuthathwe umlinganiselo wayo kwisimi sangoku (ku2004)	5.4 Ubunzima be-Benthic microphytobenthic bodlula uhlaza kangange-40 mg/m ²
	Ugcine ubukho bee-dinoflagellates busezantsi	5.5 Ubukho be-dinoflagellates bodlula obe-phytoplankton kangange-5% counts
Ubuhle nococeko lwamanzi	Ukungenelela kwetyuwa mabungabangeli ukuwanda ngokugqithileyo kwe- TPCs yeentlanzi, yezilwanyana ezingenamqolo, yee- macrophytes nee-microalgae (njengoko kubonisiwe ngentla	6.1 Ubutyuwa emanzini ungaphezulu kwe-20 kwisithuba esingaphezulu kweenyanga ezi- 3 months, kubude obungange- 7 km ukuya emantla ukusukela emlonyeni wochweme
		6.2 Ubutyuwa emanzini angaphezulu komhlaba bunyuka nge- 50 ppt ze ubunzulu bube - 1 m ukuya kwitafle yamanzi
		6.3 Zizonke iziqina ezinyibilikisiweyo zinyuka nge 3500 mg/l (i-phytoplankton) 6.4 Ubutyuwa bamanzi kuchweme lomlambo budlula kanga nge- 35 ppt (prevent hyper- salinity) (for phytoplankton) 6.5 Ubutyuwa bamanzi obungaphezulu kwe-10 ppt buyavakala kubude obuyi- 16 km emantla ukuya emlonyeni wochweme lomlambo.
	Ukwahluka (ngokobushushu, i-, pH, ubukho bodaka emanzini, i-oksijini enyibilikisiweyo, neziqini ezirhoxisiweyo (yiya phaya phezulu)	6.6 Okungena emlanjeni: Ubushushu ehlotyeni < 20°C i-pH < 6.5 'udaka' olungena emlanjeni (luseza kuqikelelwa) i-oksijini enyibilikayo < 4 mg/l 6.7 umbhalo we-Secchi disc ongaphezu ngee-8 km ukusuka emlonyeni ungaphezulu kwe 1 m (esetyenziswa njengendlela yokuthatha umlinganiselo wobukho bodaka kuchweme lomlambo)

UDIDI LWESILWANYANA	IMIQATHANGO YOMJELO	UPHAWU OLUBONISA UBUKHO BENGXAKI
		6.8 i-pH > 8.5 okanye < 6.5 koko kungena emlanjeni okanye eluchwemeni
		6.9 Amathontsi i-DO angaphantsi kwe- 4 mg/l (i-1 m ngaphezu ezantsi, ngaphandle kwakwimixunya enzulu. (imfuneko yokuba kuphandwe ukuba lingakanani inqanaba le-DO ebusuku
	Imixube yezondlo ezingaphiliyo mazingabangeli ii-TPC ezidluleleyo kwii- macrophytes nee-microalgae (yiya phaya phezulu).	6.10 Xa amanzi angena emlanjeni engaphantsi kwe- 5 m ³ /s ze imixube ye-DIN yesiqhelo ibethe ngaphaya kwe-100 µg/l kumanzi angena emlanjeni ze imixube ye-DIN yesiqhelo ibethe ngaphaya kwe-100 µg/l kumantla ochweme lomlambo (ngaphezu kwe-16 km ukusuka emlonyeni wochweme).
		6.11 Ngamanxa amanzi agalela emlanjeni emaninzi kakhulu (kangange- > 20 m ³ /s) ze imixube ye-DIN yesiqhelo ibethe ngaphaya kwe-500 µg/l kumanzi angena emlanjeni ze imixube ye-DIN yesiqhelo ibethe ngaphaya kwe-500 µg/l kumantla ochweme lomlambo (ngaphezu kwe-16 km ukusuka emlonyeni wochweme).
		6.12 Xa imixube ye-DRP yesiqhelo ibethe ngaphaya kwe-100 µg/l kumanzi angena emlanjeni ze imixube ye-DRP yesiqhelo ibethe ngaphaya kwe-100 µg/l kumantla ochweme lomlambo (ngaphezu kwe-16 km ukusuka emlonyeni wochwemeAverage
	Ubukho bezinto eziyityhefu mabungabangeli ii-TPC ezidluleleyo nge-biota (yiya phaya phezulu).	6.13 Xa ufundo ngeerhorhwana zasemanzini lwenziwe kuqala nangaphambi kokuba ii- TPCs zixelwe (yeyona ngxaki ke le phaya emantla apho imisebenzi yolimo yenziwa kakhulu phaya kunxweme lochweme.
Uguquguquko lwaseemanzini	Ugcine uhlobo olunye lokuhamba kwamanzi khonukuze kubekho indawo yokuhlala efanele iintaka, iintlanzi, ii-macrophytes, ii-microalgae nococeko lwamanzi	7.1 Xa iipethini zokuhamba kwamanzi angena emlanjeni esahluka nge- 5% kulawo axeliweyo kumboniso 2 (umboniso ovunyelwe i- Olifants)
		7.2 Xa amanzi agalela emlanjeni esihla de abe ngaphantsi kwe 1.5 m ³ /s, nangaliphi na ixesha
		7.3 Xa amanzi agalela emlanjeni esihla de abe ngaphantsi kwe2 m ³ /s, ze aqhube njalo de kuphele iinyanga ezi-4 nangaphezulu
Uguquguquko lwentlenga	Ubukho beempuphuma bugcine iipethini zokuthuthwa kwentlenga neendawo zokuhlala emanzini ukuze bungabikho ngapahya kwee- TPC nge biota (yiya phezulu)	8.1 Xa iipethini zamanzi agalela emlanjeni (iimpuphuma) zisahluka ngaphaya kwe-10% (xa ujonge ubuninzi, ixesha, noguquguquko) kulawo esimo sangoku (ku2004)
		8.2 Xa umxube wentlenga erhoxisiweyo (kuloo manzi agalelayo emlanjeni) uguquka nge-10 kwiintlenga yesiqhelo ze oko kusetyenziswe njengenxalenye yezifundo ezikumila kunje (isimo sangoku 2004)

UDIDI LWESILWANYANA	IMIQATHANGO YOMJELO	UPHAWU OLUBONISA UBUKHO BENGXAKI
	Uguquguquko lweepethini zothutho lwentfenge mazingabangeli ii-TPCs ezedluleleyo kwizilwanyana ezingenamqolo kwi- benthic (Jonga phaya phezulu).	8.3 Ububanzi bombindi webhedi yamanzi uguquguquka kabini nangaphezulu kumanqanaba aseza kuxelwa njengxalenye yamaqalela ezifundo ngophando lwamanzi (IMeko yaNgoku). 8.4 Isanti/udaka olusembinini (umgama ugu-8-20 km) luguquguquka kangangee-20% kwiMeko yaNgoku (2004) 8.5 linguqu kumjelokazi i-bathymetry esemantla omlomo wochweme (umgama ongaphezu kwe-20 km) zingaphezu kwee-20% kwiMeko yaNgoku (2004) 8.6 linguqu kubukhulu beliza ngaphantsi kwejelo i-Lutzville zingaphezu kwee-20% kwiMeko yaNgoku (2004)

7. AMANZI ANGAPHEZU KOMHLABA – UMTHAMO WOMJELO

Ukuvuselelwa kwemijelo yamanzi angaphezulu komhlaba yinto ebaluleke kakhulu ekuchazweni kwemo yamanzi kuba lunefuthe kumthamo wamanzi angaphezulu komhlaba (ngakumbi ukuba iindawo zogcino lwamanzi nendlela aphethwe ngayo amanzi kwezi ndawo zisoloko zikwimeko entle. Kuwo wonke ummandla wolawulo lwamanzi i-Doorn amanzi avuselelwa kangange- 0 mm/a to 245 mm/a. uvuselelo lwamanzi oluthe kratya lwenzeka emantla omlambo i-Olifants, ngakumbi kummandla wentaba i-Winterhoek. Uvuselelo olubaluleke kakhulu lwenzeka kwimimandla i-Koue Bokkeveld, iMpuma-Doring, eMpuma-Sandveld. Kwezinye nje iindawo ezingaxelwanga uvuselelo lwamanzi aluluninzanga kuyaphi.

UHlelo malunga neemfuno ezisisiseko zamanzi luzithathela ingqalelo iimfuno zoluntu ezibalulekileyo ngomjelo ngamnye futhi ziquka amanzi okusela, okwenza ukutya nokuzigcina usempilweni. Kusetyenziswa isikhokelo esiziilire ezingama-25 ngomntu ngamnye njengemfuno ezisisiseko. Isishwankathelo malunga neenkukacha zamanzi angaphezu komhlaba ngokubhekiselele kwi-BHN ne-EWR kummandla ngamnye wolawulo lwamanzi sibonisiwe kwitafle-7.1 apha ngezantsi.

Itafle- 7.1: Iziphumo zophando malunga noHlelo lwamanzi angaphantsi komhlaba – Umthamo womjelo

Ummandla wolawulo lwamanzi	Indawo (km ²)	Ukuvuselela (Mm ³ /a) ¹⁾	Abemi ²⁾	i-EWR (Mm ³ /a)	i-BHN (Mm ³ /a)	Lulonke uHlelo iReserve (Mm ³ /a)
E10A	134	30.12	0	5.44	0	5.44
E10B	202	37.17	1523	6.78	0.013	6.79
E10C	192	24.79	0	5.66	0	5.66
E10D	235	24.35	0	5.74	0	5.74
E10E	366	30.67	15 627	7.35	0.143	7.49
E10F	386	28.28	1184	5.13	0.011	5.14
E10G	508	26.88	1799	4.21	0.016	4.23
E10H	162	9.62	0	1.51	0	1.51
E10J	468	19.32	7797	1.63	0.071	1.70
E10K	235	6.67	0	0.36	0.0	0.36
E21A	190	14.14	2818	1.48	0.026	1.51
E21B	223	8.87	217	0.01	0.002	0.01

Ummandla wolawulo lwamanzi	Indawo (km ²)	Ukuvuselela (Mm ³ /a) ¹⁾	Abemi ²⁾	i-EWR (Mm ³ /a)	i-BHN (Mm ³ /a)	Lulonke uHlelo iReserve (Mm ³ /a)
E21C	233	8.7	0	0.07	0	0.07
E21D	242	18.21	5024	1.88	0.046	1.93
E21E	293	8.44	797	0.09	0.007	0.10
E21F	379	8.76	0	0.15	0	0.15
E21G	266	18.95	2458	2.07	0.022	2.09
E21H	404	31.2	0	16.66	0	16.66
E21J	317	16.07	0	0.32	0	0.32
E21K	330	11.62	0	0.18	0	0.18
E21L	195	2.53	0	0.14	0	0.14
E22A	750	7.53	553	0.39	0.005	0.40
E22B	638	6.33	86	0.43	0.001	0.43
E22C	490	4.43	2919	0.33	0.027	0.36
E22D	496	4.21	16	0.26	0	0.26
E22E	1013	9.85	8	1.78	0	1.78
E22F	400	1.3	0	0.21	0	0.21
E22G	367	1.27	0	0.43	0	0.43
E23A	762	5.81	0	1.05	0	1.05
E23B	705	5.08	0	0.97	0	0.97
E23C	318	2.03	0	0.44	0	0.44
E23D	750	3.29	0	1.03	0	1.03
E23E	564	2.99	0	0.6	0	0.60
E23F	473	0.95	0	0.51	0	0.51
E23G	747	2.84	152	0.8	0.001	0.80
E23H	660	2.71	0	0.91	0	0.91
E23J	895	1.87	0	0.96	0	0.96
E23K	572	1.08	0	0.61	0	0.61
E24A	255	6.01	1568	0.47	0.014	0.48
E24B	468	5.09	455	0.86	0.004	0.86
E24C	784	3.68	0	0.75	0	0.75
E24D	997	1.77	0	0.96	0	0.96
E24E	671	2.74	0	1.58	0	1.58
E24F	582	2.23	0	1.07	0	1.07
E24G	633	2.2	0	1.16	0	1.16
E24H	483	0.92	0	0.56	0.004	0.56
E24J	1078	5.13	0	1.24	0	1.24
E24K	652	3.22	0	0.75	0	0.75
E24L	516	9.01	0	1.01	0	1.01
E24M	529	8.41	0	0.71	0	0.71
E31A	2865	1.2	0	0.02	0	0.02
E31B	1476	2.23	0	0.09	0	0.09
E31C	1572	0.89	0	0.09	0	0.09
E31D	839	0.48	0	0.05	0	0.05
E31E	478	0.38	0	0.03	0	0.03
E31F	525	0.92	2716	0.03	0.025	0.05
E31G	1238	0.68	0	0.07	0	0.07

Ummandla wolawulo lwamanzi	Indawo (km ²)	Ukuvuselela (Mm ³ /a) ¹⁾	Abemi ²⁾	i-EWR (Mm ³ /a)	i-BHN (Mm ³ /a)	Lulonke uHlelo iReserve (Mm ³ /a)
E31H	726	1.09	0	0.04	0	0.04
E32A	1118	4.63	0	0.4	0	0.40
E32B	828	1.52	0	0.3	0	0.30
E32C	638	2.9	0	0.23	0	0.23
E32D	616	1.08	0	0.22	0	0.22
E32E	1001	3.86	0	0.36	0	0.36
E33A	1355	1.84	394	0.08	0.004	0.08
E33B	702	0.8	0	0.06	0.0	0.06
E33C	980	1.37	366	0	0.003	0.00
E33D	1559	2.04	0	0.14	0	0.14
E33E	1282	1.59	632	0.06	0.006	0.07
E33F	725	15.87	7573	0.05	0.069	0.12
E33G	894	7.19	35 929	0	0.328	0.33
E33H	719	3.05	11 768	0.01	0.107	0.12
E40A	941	4.44	0	0.9	0	0.90
E40B	707	3.41	12 350	0.68	0.113	0.79
E40C	530	3.02	1771	0.11	0.016	0.13
E40D	544	3.09	0	1	0	1.00

1) Uhlelo malunga namanzi ovuselelo luthatyathelwe kwimijelo yamanzi ephambili yommandla wolawulo lwamanzi i-Olifants-Doom (iNgcxelo yoBugcisa yokugqibela.

2) Inkcazo ngabemi etyatyathelwe kuBalo luka2011.

8. AMANZI ANGAPHEZULU KOMHLABA – UBUHLE NOCOCEKO

Ucoceko lwamanzi angaphezulu komhlaba luthelakiswe nexabiso elivunyiweyo leHlelo1 (DWAF, 1996). Kukhethwe elona xabiso lisezantsi nelingundoqo phakathi kwalawo mabini. Kwiimeko apho kuye kukhethwe ixabiso elingundoqo liye linyuswe kangangeepesenti ezili- 10. Kwiimeko apho ucoceko lwamanzi luye lubethe ngaphaya kwexabiso elivunyiweyo kuye kusetyenziswa yona loo nkcukacha. Iindawo ezinamanzi amtyuba ziye zixelwe njengeemimandla engenakusetyenziswa njengemfuneko yoHlelo olumalunga neemfuno zabantu ezisisiseko. Isimo sococeko lwamanzi angaphezulu komhlaba masiyilandele imiqathango yococeko lwamanzi elindelekileyo njenoko kubonisiwe kwitafile-8.1. Itafile-8.2 ibonisa isishwankathelo seziphumo malunga nemiba yococeko lwamanzi kummandla othile wolawulo lwamanzi ngokwemiqathango ye-BHN. Itafile-8.3 ibonisa ihlelo lococeko lwamanzi angaphezulu komhlaba nemida/iindawana ezibonisa ingxaki yamanzi kuloo mmandla wolawulo lwamanzi uthile. Xa kuthethwa ngeendawana eziyingxaki kubhekiswa kuloo manzi abonisa ubukho bemixube ethile xa kuthelakiswa nemiqathango elindelekileyo ngamanzi aselekayo.

Itafile-8.1: Uhlelo/iziphumo zohlolo lwemingxunya-sitsala-manzi ukujonga ukuba ikulungele na ukugcina amanzi anokusetyenziswa luluntu.

Ummandla /Ubunjani bento	Amabakala ococeko lwamanzi ajongiweyo ¹				
	Imivo	Ihlelo 0	Ihlelo I	Ihlelo II	Ihlelo III
Calcium as Ca	mg/l	0 - 80	80 - 150	150 - 300	> 300
Magnesium njenge-Mg	mg/l	0 - 30	30 - 70	70 - 100	> 100
Sodium njenge- Na	mg/l	0 - 100	100 - 200	200 - 400	> 400
Chloride njenge-Cl	mg/l	0 - 100	100 - 200	200 - 600	> 600

Sulphate njenge-SO ₄	mg/l	0 - 200	200 - 400	400 - 600	> 600
Nitrate njenge-NO _x -N	mg/l	0 - 6	6 - 10	10 - 20	> 20
Flouride njenge- F	mg/l	0 - 1	1 - 1.5	1.5 - 3.5	> 3.5
Ubukho bekaka emanzi	counts/100ml	0	0 - 1	1 - 10	> 10
i-pH (Imivo ye-pH)		6 - 9	5 - 6 & 9 - 9.5	4 - 5 & 9.5 - 10	< 4 or > 10
Iziqiniezinyibilikisiweyo zonke	mg/l	0 - 450	450 - 1000	1000 - 2450	> 2450
Ukuthwala umbane	mS/m	0 - 70	70 - 150	150 - 300	> 370

- 1) Ngokubhekiselele: KwiMiqathango yoCoceko lwamanzi eMzantsi Afrika (ISouth African Water Quality Guidelines, Volume 1: Domestic Water Use, 2nd Ed. 1996). ISebe leMicimbi yezaManzi naMahlathi (Department of Water Affairs and Forestry, Pretoria, South Africa).

QAPHELA:

Ihlelo-0 Olu licoceko lwamanzi olufunekayo, lukulungele ukusetyenziswa ubomi bonke, alunamakhwiniba ngokubhekiselele kwimpilo yomntu. Olu hlelo luyafana nebakala elilindelekileyo licoceko lwamanzi ekuthethwe ngalo kuxhwebhu lwesibini olumalunga nococeko lwamanzi (i- 2nd edition of the *South African Water Quality Guidelines for Domestic Use* (DWAf, 1996).

Ihlelo-I Amanzi eli hlelo ayaseleka, kodwa alide lifikelele ncam kucoceko lwamanzi olufunekayo kuba asenokuba nobungozi empilweni yomntu: kodwa ubungozi obo abuxhalabisi futhi amakhwiniba avelayo ayanyangeka kwaye akaziveli ngendlela embi. Amanzi eHlelo-1 kahlekahle akanabo ubungozi empilweni yomntu xa sele sithetha, noxa zisenobakho nje ezo mpawu zalatha ingxaki.

Class II Amanzi eli hlelo singawachaza ngokuba zibakho iingxaki (abakho amaxesha o-) zobungozi okwexeshana. Kodwa ubungozi bawo bona buba nefuthe ixesha elide empilweni yomntu, ngakumbi xa liza kuman'ukufika elo xeshana lubungozi bawo minyaka le. Singathi eli hlelo lamanzi limele kusetyenziswa nje okwethutyana, okanye ngaloo maxesha kaXakeka, hayi ubomi bonke.

Class III Amanzi eli hlelo anemixube emininzi kuwo futhi anobungozi kakhulu, ngakumbi ebantwaneni nabantu abadala. Amanzi anje akamele ze asetyenziselwe ukusela engakhange acocwe khonukuze ahlele kwinqanaba elisezantsi nelikhuselekileyo.

Table 8.2: Iziphumo zamanzi angaphezulu komhlaba- imiba yococeko

Ubunjani bekhemikhali	Umvo	Imimandla yolawulo lwamanzi u-E10A no-E10B			
		Inani leesampulu	Ucoceko okanye umbindi ozolileyo wohlobo lwe-GW	UHlelo i-BHN Reserve	UHlelo malunga nococeko lwamanzi angaphezulu komhlaba
I-pH		8	7.57	5.0 - 9.5	8.33
Ukuthwala umbane	mS/m	8	20.2	<150	22.22
Calcium njenge- Ca	mg/l	8	13.15	<150	14.47
Magnesium njenge- Mg	mg/l	8	4.7	<100	5.17
Sodium njenge- Na	mg/l	8	10.55	<200	11.61
Ubualkhalini xa bubonke njenge-CaCO ₃	mg/l	8	33.65	N/A	37
Chloride njenge- Cl	mg/l	8	17.8	<200	19.58

Sulphate njenge- SO_4	mg/l	8	6.55	<400	7.21
Nitrate njenge- $\text{NO}_x\text{-N}$	mg/l	8	0.04	<10	0.04
Fluoride njenge- F	Mg/l	8	0.14	<1.0	0.15
Ubunjani bekhemikhali	Umvo	ummandla wolawulo lwamanzi u-E10C			
		Inani leesampulu	Ucoceko okanye umbindi ozolileyo wohlobo lwe-GW	UHlelo i-BHN Reserve	Uhlelo malunga nococeko lwamanzi angaphezu komhlaba
I-pH		8	5.16	5.0 – 9.5	5.68
Ukuthwala umbane	mS/m	8	7.15	<150	7.87
Calcium njenge- Ca	mg/l	8	1.25	<150	1.38
Magnesium njenge- Mg	mg/l	8	1.24	<100	1.36
Sodium njenge- Na	mg/l	8	5.97	<200	6.57
Ubualkhalini xa bubonke njenge- CaCO_3	mg/l	8	4	N/A	4.4
Chloride njenge- Cl	mg/l	8	14.5	<200	15.95
Sulphate njenge- SO_4	mg/l	8	3.25	<400	3.58
Nitrate njenge- $\text{NO}_x\text{-N}$	mg/l	8	0.7	<10	0.77
Fluoride njenge- F	Mg/l	8	0.05	<1.0	0.05

Ubunjani bekhemikhali	Umvo	ummandla wolawulo lwamanzi u-E10D			
		Inani leesampulu	Ucoceko okanye umbindi ozolileyo wohlobo lwe-GW	UHlelo i-BHN Reserve	Uhlelo malunga nococeko lwamanzi angaphezu komhlaba
I-pH		100	6.87	5.0 – 9.5	7.56
Ukuthwala umbane	mS/m	100	9	<150	9.9
Calcium njenge- Ca	mg/l	97	2.4	<150	2.64
Magnesium njenge- Mg	mg/l	97	1.96	<100	2.16
Sodium njenge- Na	mg/l	95	8.22	<200	9.04
Ubualkhalini xa bubonke njenge- CaCO_3	mg/l	97	10.55	N/A	11.61

Chloride njenge- Cl	mg/l	96	16.44	<200	18.08
Sulphate njenge- SO ₄	mg/l	97	2	<400	2.2
Nitrate njenge- NO _x -N	mg/l	96	0.24	<10	0.26
Fluoride njenge- F	Mg/l	94	0.11	<1.0	0.12
Ubunjani bekhemikhali	Umvo	ummandla wolawulo lwamanzi u-E10E			
		Inani leesampulu	Ucoceko okanye umbindi ozolileyo wohlobo lwe-GW	Uhlelo i-BHN Reserve	Uhlelo malunga nococeko lwamanzi angaphezu komhlaba
I-pH		153	6.23	5.0 – 9.5	6.85
Ukuthwala umbane	mS/m	152	11.32	<150	12.45
Calcium njenge- Ca	mg/l	153	1.41	<150	1.55
Magnesium njenge- Mg	mg/l	153	1.9	<100	2.09
Sodium njenge- Na	mg/l	146	12.35	<200	13.58
Ubualkhalini xa bubonke njenge-CaCO ₃	mg/l	153	5	N/A	5.5
Chloride njenge- Cl	mg/l	153	23.7	<200	26.07
Sulphate njenge- SO ₄	mg/l	153	2	<400	2.2
Nitrate njenge- NO _x -N	mg/l	153	0.34	<10	0.37
Fluoride njenge- F	Mg/l	148	0.05	<1.0	0.05

Ubunjani bekhemikhali	Umvo	ummandla wolawulo lwamanzi u-E10F			
		Inani leesampulu	Ucoceko okanye umbindi ozolileyo wohlobo lwe-GW	UHlelo i-BHN Reserve	Uhlelo malunga nococeko lwamanzi angaphezu komhlaba
I-pH		92	6.73	5.0 – 9.5	7.4
Ukuthwala umbane	mS/m	92	16.01	<150	17.61
Calcium njenge- Ca	mg/l	92	4.76	<150	5.24
Magnesium njenge- Mg	mg/l	92	2.85	<100	3.14
Sodium njenge- Na	mg/l	88	14	<200	15.4
Ubualkhalini xa bubonke njenge-CaCO ₃	mg/l	92	15.58	N/A	17.14
Chloride njenge- Cl	mg/l	92	27.31	<200	30.04
Sulphate njenge- SO ₄	mg/l	92	4.31	<400	4.74
Nitrate njenge- NO _x -N	mg/l	92	0.41	<10	0.45
Fluoride njenge- F	Mg/l	90	0.1	<1.0	0.11
Ubunjani bekhemikhali	Umvo	ummandla wolawulo lwamanzi u-E10G			
		Inani leesampulu	Ucoceko okanye umbindi ozolileyo wohlobo lwe-GW	UHlelo i-BHN Reserve	Uhlelo malunga nococeko lwamanzi angaphezu komhlaba
I-pH		107	6.27	5.0 – 9.5	6.9
Ukuthwala umbane	mS/m	105	16.9	<150	18.59
Calcium njenge- Ca	mg/l	102	1.68	<150	1.85
Magnesium njenge- Mg	mg/l	103	2.87	<100	3.16
Sodium njenge- Na	mg/l	100	16.2	<200	17.82
Ubualkhalini xa bubonke njenge-CaCO ₃	mg/l	103	4	N/A	4.4
Chloride njenge- Cl	mg/l	104	28.95	<200	31.85
Sulphate njenge- SO ₄	mg/l	104	2	<400	2.2
Nitrate njenge- NO _x -N	mg/l	102	0.88	<10	0.97
Fluoride njenge- F	Mg/l	99	0.05	<1.0	0.05

Ubunjani bekhemikhali	Umvo	ummandla wolawulo lwamanzi u-E10H			
		Inani leesampulu	Ucoceko okanye umbindi ozolileyo wohlobo lwe-GW	UHlelo i-BHN Reserve	Uhlelo malunga nococeko lwamanzi angaphezu komhlaba
I-pH		7	6.56	5.0 – 9.5	7.22
Ukuthwala umbane	mS/m	7	19.6	<150	21.56
Calcium njenge- Ca	mg/l	7	2.79	<150	3.07
Magnesium njenge- Mg	mg/l	7	3.73	<100	4.1
Sodium njenge- Na	mg/l	7	11.6	<200	12.76
Ubualkhalini xa bubonke njenge-CaCO ₃	mg/l	7	4	N/A	4.4
Chloride njenge- Cl	mg/l	7	47.22	<200	51.94
Sulphate njenge- SO ₄	mg/l	7	2	<400	2.2
Nitrate njenge- NO _x -N	mg/l	7	0.04	<10	0.04
Fluoride njenge- F	Mg/l	7	0.05	<1.0	0.05
Ubunjani bekhemikhali	Umvo	ummandla wolawulo lwamanzi u- E10J			
		Inani leesampulu	Ucoceko okanye umbindi ozolileyo wohlobo lwe-GW	UHlelo i-BHN Reserve	Uhlelo malunga nococeko lwamanzi angaphezu komhlaba
I-pH		71	6.4	5.0 – 9.5	7.04
Ukuthwala umbane	mS/m	71	50.4	<150	55.44
Calcium njenge- Ca	mg/l	65	6.49	<150	7.14
Magnesium njenge- Mg	mg/l	65	8.85	<100	9.74
Sodium njenge- Na	mg/l	65	63	<200	69.3
Ubualkhalini xa bubonke njenge-CaCO ₃	mg/l	67	6.2	N/A	6.82
Chloride njenge- Cl	mg/l	66	112.96	<200	124.26
Sulphate njenge- SO ₄	mg/l	66	13.95	<400	15.95
Nitrate njenge- NO _x -N	mg/l	68	2.6	<10	2.86
Fluoride njenge- F	Mg/l	64	0.15	<1.0	0.17

Ubunjani bekhemikhali	Umvo	ummandla wolawulo lwamanzi u- E10K			
		Inani leesampulu	Ucoceko okanye umbindi ozolileyo wohlobo lwe- GW	UHlelo i-BHN Reserve	Uhlelo malunga nococeko lwamanzi angaphezu komhlaba
I-pH		5	6.74	5.0 – 9.5	7.41
Ukuthwala umbane	mS/m	5	175	<150	175
Calcium njenge- Ca	mg/l	5	13.9	<150	15.29
Magnesium njenge- Mg	mg/l	5	55.6	<100	61.16
Sodium njenge- Na	mg/l	5	207	<200	207
Ubualkhalini xa bubonke njenge-CaCO ₃	mg/l	5	2	N/A	2.2
Chloride njenge- Cl	mg/l	5	471	<200	471
Sulphate njenge- SO ₄	mg/l	5	30.3	<400	33.33
Nitrate njenge- NO _x -N	mg/l	5	2.4	<10	2.64
Fluoride njenge- F	Mg/l	5	0.14	<1.0	0.15
Ubunjani bekhemikhali	Umvo	ummandla wolawulo lwamanzi u- E21A			
		Inani leesampulu	Ucoceko okanye umbindi ozolileyo wohlobo lwe- GW	UHlelo i-BHN Reserve	Uhlelo malunga nococeko lwamanzi angaphezu komhlaba
I-pH		50	7.63	5.0 – 9.5	8.39
Ukuthwala umbane	mS/m	50	24.1	<150	26.51
Calcium njenge- Ca	mg/l	50	13.3	<150	14.63
Magnesium njenge- Mg	mg/l	50	5.65	<100	6.22
Sodium njenge- Na	mg/l	50	18.2	<200	20.02
Ubualkhalini xa bubonke njenge-CaCO ₃	mg/l	50	35.6	N/A	39.16
Chloride njenge- Cl	mg/l	50	37.25	<200	41
Sulphate njenge- SO ₄	mg/l	50	12.25	<400	13.48
Nitrate njenge- NO _x -N	mg/l	50	0.02	<10	0.02
Fluoride njenge- F	Mg/l	50	0.11	<1.0	0.12

Ubunjani bekhemikhali	Umvo	ummandla wolawulo lwamanzi u- E21B			
		Inani leesampulu	Ucoceko okanye umbindi ozolileyo wohlobo lwe- GW	UHlelo i-BHN Reserve	Uhlelo malunga nococeko lwamanzi angaphezu komhlaba
I-pH		17	7.5	5.0 – 9.5	8.25
Ukuthwala umbane	mS/m	17	89.2	<150	98.12
Calcium njenge- Ca	mg/l	17	65.6	<150	72.16
Magnesium njenge- Mg	mg/l	17	27	<100	29.7
Sodium njenge- Na	mg/l	17	64.6	<200	71.06
Ubualkhalini xa bubonke njenge-CaCO ₃	mg/l	17	76	N/A	83.6
Chloride njenge- Cl	mg/l	17	150.3	<200	165.33
Sulphate njenge- SO ₄	mg/l	17	99.1	<400	109.01
Nitrate njenge- NO _x -N	mg/l	17	0.11	<10	0.12
Fluoride njenge- F	Mg/l	17	0.22	<1.0	0.24
Ubunjani bekhemikhali	Umvo	ummandla wolawulo lwamanzi u-E21C			
		Inani leesampulu	Ucoceko okanye umbindi ozolileyo wohlobo lwe- GW	UHlelo i-BHN Reserve	Uhlelo malunga nococeko lwamanzi angaphezu komhlaba
I-pH		9	7.45	5.0 – 9.5	8.19
Ukuthwala umbane	mS/m	9	13.7	<150	15.07
Calcium njenge- Ca	mg/l	9	4.9	<150	5.39
Magnesium njenge- Mg	mg/l	9	5	<100	5.5
Sodium njenge- Na	mg/l	9	10	<200	11
Ubualkhalini xa bubonke njenge-CaCO ₃	mg/l	9	15.3	N/A	16.83
Chloride njenge- Cl	mg/l	9	23.3	<200	25.63
Sulphate njenge- SO ₄	mg/l	9	6.7	<400	7.37
Nitrate njenge- NO _x -N	mg/l	9	0.02	<10	0.02
Fluoride njenge- F	Mg/l	9	0.1	<1.0	0.11

Ubunjani bekhemikhali	Umvo	ummandla wolawulo lwamanzi u- E21D			
		Inani leesampulu	Ucoceko okanye umbindi ozolileyo wohlobo lwe- GW	UHlelo i-BHN Reserve	UHlelo malunga nococeko lwamanzi angaphezu komhlaba
I-pH		38	7.53	5.0 – 9.5	8.28
Ukuthwala umbane	mS/m	38	21.85	<150	24.04
Calcium njenge- Ca	mg/l	38	11.75	<150	12.93
Magnesium njenge- Mg	mg/l	38	4.05	<100	4.46
Sodium njenge- Na	mg/l	38	15.28	<200	16.08
Ubualkhalini xa bubonke njenge-CaCO ₃	mg/l	38	31.75	N/A	34.93
Chloride njenge- Cl	mg/l	38	26.08	<200	28.69
Sulphate njenge- SO ₄	mg/l	38	5.8	<400	6.38
Nitrate njenge- NO _x -N	mg/l	38	0.1	<10	0.11
Fluoride njenge- F	Mg/l	38	0.05	<1.0	0.05
Ubunjani bekhemikhali	Umvo	Imimandla yolawulo lwamanzi-E21E,E21F,E21L NO-E22F			
		Inani leesampulu	Ucoceko okanye umbindi ozolileyo wohlobo lwe- GW	UHlelo i-BHN Reserve	UHlelo malunga nococeko lwamanzi angaphezu komhlaba
I-pH		10	6.93	5.0 – 9.5	7.62
Ukuthwala umbane	mS/m	10	12.5	<150	13.75
Calcium njenge- Ca	mg/l	10	2.35	<150	2.59
Magnesium njenge- Mg	mg/l	10	2.8	<100	3.08
Sodium njenge- Na	mg/l	10	10.5	<200	11.55
Ubualkhalini xa bubonke njenge-CaCO ₃	mg/l	10	7.55	N/A	8.31
Chloride njenge- Cl	mg/l	10	16.95	<200	18.65
Sulphate njenge- SO ₄	mg/l	10	6.3	<400	6.93
Nitrate njenge- NO _x -N	mg/l	9	0.07	<10	0.07
Fluoride njenge- F	Mg/l	10	0.15	<1.0	0.16

Ubunjani bekhemikhali	Umvo	ummandla wolawulo lwamanzi u- E21G			
		Inani leesampulu	Ucoceko okanye umbindi ozolileyo wohlobo lwe- GW	UHlelo i-BHN Reserve	Uhlelo malunga nococeko lwamanzi angaphezu komhlaba
I-pH		44	6.59	5.0 – 9.5	7.25
Ukuthwala umbane	mS/m	43	104	<150	114.4
Calcium njenge- Ca	mg/l	44	2.76	<150	3.04
Magnesium njenge- Mg	mg/l	44	2.39	<100	2.63
Sodium njenge- Na	mg/l	42	8.76	<200	9.64
Ubualkhalini xa bubonke njenge-CaCO ₃	mg/l	44	8.64	N/A	9.5
Chloride njenge- Cl	mg/l	44	14.64	<200	16.11
Sulphate njenge- SO ₄	mg/l	44	6.06	<400	6.67
Nitrate njenge- NO _x -N	mg/l	44	0.6	<10	0.66
Fluoride njenge- F	Mg/l	42	0.1	<1.0	0.11
Ubunjani bekhemikhali	Umvo	ummandla wolawulo lwamanzi u- E21H			
		Inani leesampulu	Ucoceko okanye umbindi ozolileyo wohlobo lwe- GW	UHlelo i-BHN Reserve	Uhlelo malunga nococeko lwamanzi angaphezu komhlaba
I-pH		29	5.82	5.0 – 9.5	6.4
Ukuthwala umbane	mS/m	29	3.1	<150	3.41
Calcium njenge- Ca	mg/l	29	0.5	<150	0.55
Magnesium njenge- Mg	mg/l	29	0.75	<100	0.83
Sodium njenge- Na	mg/l	27	2.72	<200	3
Ubualkhalini xa bubonke njenge-CaCO ₃	mg/l	29	4	N/A	4.4
Chloride njenge- Cl	mg/l	27	5	<200	5.5
Sulphate njenge- SO ₄	mg/l	29	2	<400	2.2
Nitrate njenge- NO _x -N	mg/l	29	0.1	<10	0.11
Fluoride njenge- F	Mg/l	27	0.05	<1.0	0.05

Ubunjani bekhemikhali	Umvo	ummandla wolawulo lwamanzi u- E21J			
		Inani leesampulu	Ucoceko okanye umbindi ozolileyo wohlobo lwe- GW	UHlelo I-BHN Reserve	Uhlelo malunga nococeko lwamanzi angaphezu komhlaba
I-pH		22	7.47	5.0 – 9.5	8.22
Ukuthwala umbane	mS/m	22	18.19	<150	20
Calcium njenge- Ca	mg/l	22	8.99	<150	9.9
Magnesium njenge- Mg	mg/l	22	3.6	<100	3.96
Sodium njenge- Na	mg/l	22	16.8	<200	17.93
Ubualkhalini xa bubonke njenge-CaCO ₃	mg/l	22	26.86	N/A	29.55
Chloride njenge- Cl	mg/l	22	30.59	<200	33.65
Sulphate njenge- SO ₄	mg/l	22	9.78	<400	10.76
Nitrate njenge- NO _x -N	mg/l	22	0.25	<10	0.28
Fluoride njenge- F	Mg/l	21	0.12	<1.0	0.13
Ubunjani bekhemikhali	Umvo	ummandla wolawulo lwamanzi u- E21K			
		Inani leesampulu	Ucoceko okanye umbindi ozolileyo wohlobo lwe- GW	UHlelo I-BHN Reserve	Uhlelo malunga nococeko lwamanzi angaphezu komhlaba
I-pH		10	7.6	5.0 – 9.5	8.36
Ukuthwala umbane	mS/m	10	20.15	<150	22.17
Calcium njenge- Ca	mg/l	10	20.22	<150	22.24
Magnesium njenge- Mg	mg/l	10	1.3	<100	1.43
Sodium njenge- Na	mg/l	10	11.91	<200	13.1
Ubualkhalini xa bubonke njenge-CaCO ₃	mg/l	10	80.86	N/A	88.95
Chloride njenge- Cl	mg/l	10	6.5	<200	7.15
Sulphate njenge- SO ₄	mg/l	10	4.7	<400	5.17
Nitrate njenge- NO _x -N	mg/l	10	0.05	<10	0.05
Fluoride njenge- F	Mg/l	10	0.17	<1.0	0.18

Ubunjani bekhemikhali	Umvo	ummandla wolawulo lwamanzi u- E22A			
		Inani leesampulu	Ucoceko okanye umbindi ozolileyo wohlobo lwe- GW	UHlelo i-BHN Reserve	UHlelo malunga nococeko lwamanzi angaphezu komhlaba
I-pH		13	8.12	5.0 – 9.5	8.93
Ukuthwala umbane	mS/m	13	171	<150	171
Calcium njenge- Ca	mg/l	13	78.4	<150	86.24
Magnesium njenge- Mg	mg/l	13	46.8	<100	51.48
Sodium njenge- Na	mg/l	13	198.1	<200	198.1
Ubualkhalini xa bubonke njenge-CaCO ₃	mg/l	13	271.4	N/A	271.4
Chloride njenge- Cl	mg/l	13	345.1	<200	345.1
Sulphate njenge- SO ₄	mg/l	13	109.5	<400	120.45
Nitrate njenge- NO _x -N	mg/l	13	0.29	<10	0.32
Fluoride njenge- F	Mg/l	13	0.98	<1.0	0.98
Ubunjani bekhemikhali	Umvo	ummandla wolawulo lwamanzi u- E22B			
		Inani leesampulu	Ucoceko okanye umbindi ozolileyo wohlobo lwe- GW	UHlelo i-BHN Reserve	UHlelo malunga nococeko lwamanzi angaphezu komhlaba
pH		10	7.82	5.0 – 9.5	8.6
Electrical Conductivity	mS/m	10	278.7	<150	278.7
Calcium as Ca	mg/l	10	127	<150	136.7
Magnesium as Mg	mg/l	10	67.9	<100	74.69
Sodium as Na	mg/l	10	271.8	<200	271.8
Total Alkalinity as CaCO ₃	mg/l	10	225.35	N/A	225.35
Chloride as Cl	mg/l	10	614.55	<200	614.55
Sulphate as SO ₄	mg/l	10	197.75	<400	217.53
Nitrate as NO _x -N	mg/l	10	0.6	<10	0.66
Fluoride as F	Mg/l	10	0.9	<1.0	0.9

Ubunjani bekhemikhali	Umvo	ummandla wolawulo lwamanzi u- E22C			
		Inani leesampulu	Ucoceko okanye umbindi ozolileyo wohlobo lwe- GW	UHlelo i-BHN Reserve	Uhlelo malunga nococeko lwamanzi angaphezu komhlaba
I-pH		13	7.69	5.0 – 9.5	8.46
Ukuthwala umbane	mS/m	13	64.9	<150	71.39
Calcium njenge- Ca	mg/l	13	39	<150	42.9
Magnesium njenge- Mg	mg/l	13	15	<100	16.5
Sodium njenge- Na	mg/l	13	50.3	<200	55.33
Ubualkhalini xa bubonke njenge-CaCO ₃	mg/l	13	93.6	N/A	102.96
Chloride njenge- Cl	mg/l	13	77.2	<200	84.92
Sulphate njenge- SO ₄	mg/l	13	42.1	<400	46.31
Nitrate njenge- NO _x -N	mg/l	13	0.08	<10	0.08
Fluoride njenge- F	Mg/l	13	0.2	<1.0	0.22
Ubunjani bekhemikhali	Umvo	ummandla wolawulo lwamanzi u- E22D			
		Inani leesampulu	Ucoceko okanye umbindi ozolileyo wohlobo lwe- GW	UHlelo i-BHN Reserve	Uhlelo malunga nococeko lwamanzi angaphezu komhlaba
I-pH		6	7.97	5.0 – 9.5	8.77
Ukuthwala umbane	mS/m	6	548	<150	548
Calcium njenge- Ca	mg/l	6	161.05	<150	161.05
Magnesium njenge- Mg	mg/l	6	203.55	<100	203.55
Sodium njenge- Na	mg/l	6	634.9	<200	634.9
Ubualkhalini xa bubonke njenge-CaCO ₃	mg/l	6	186.3	N/A	186.3
Chloride njenge- Cl	mg/l	6	1624.45	<200	1624.45
Sulphate njenge- SO ₄	mg/l	6	437.9	<400	437.9
Nitrate njenge- NO _x -N	mg/l	6	1.13	<10	1.24
Fluoride njenge- F	Mg/l	6	1	<1.0	1

Ubunjani bekhemikhali	Umvo	imimandla yolawulo lwamanzi u- E22E, E22G no-E23A-E23D			
		Inani leesampulu	Ucoceko okanye umbindi ozolileyo wohlobo lwe-GW	UHlelo i-BHN Reserve	Uhlelo malunga nococeko lwamanzi angaphezu komhlaba
I-pH		12	7.92	5.0 – 9.5	8.71
Ukuthwala umbane	mS/m	12	129.15	<150	142.07
Calcium njenge- Ca	mg/l	12	61.8	<150	67.98
Magnesium njenge- Mg	mg/l	12	23.65	<100	26.02
Sodium njenge- Na	mg/l	12	186.53	<200	186.53
Ubualkhalini xa bubonke njenge-CaCO ₃	mg/l	12	170	N/A	187
Chloride njenge- Cl	mg/l	12	299.95	<200	299.95
Sulphate njenge- SO ₄	mg/l	12	49.1	<400	54.01
Nitrate njenge- NO _x -N	mg/l	12	0.05	<10	0.05
Fluoride njenge- F	Mg/l	12	0.63	<1.0	0.69
Ubunjani bekhemikhali	Umvo	imimandla yolawulo lwamanzi u- E23E-E23H, E23J			
		Inani leesampulu	Ucoceko okanye umbindi ozolileyo wohlobo lwe-GW	UHlelo i-BHN Reserve	Uhlelo malunga nococeko lwamanzi angaphezu komhlaba
I-pH		3	8.37	5.0 – 9.5	9.21
Ukuthwala umbane	mS/m	3	185.00	<150	185.00
Calcium njenge- Ca	mg/l	3	25.90	<150	28.49
Magnesium njenge- Mg	mg/l	3	4.80	<100	5.28
Sodium njenge- Na	mg/l	3	414.10	<200	414.10
Ubualkhalini xa bubonke njenge-CaCO ₃	mg/l	3	285.60	N/A	314.16
Chloride njenge- Cl	mg/l	3	344.70	<200	344.70
Sulphate njenge- SO ₄	mg/l	3	88.80	<400	97.68
Nitrate njenge- NO _x -N	mg/l	3	0.02	<10	0.02
Fluoride njenge- F	mg/l	3	2.77	<1.0	3.05

Ubunjani bekhemikhali	Umvo	ummandla wolawulo lwamanzi u- E23K			
		Inani leesampulu	Ucoceko okanye umbindi ozolileyo wohlobo lwe- GW	UHlelo i-BHN Reserve	Uhlelo malunga nococeko lwamanzi angaphezu komhlaba
I-pH		14	8.55	5.0 – 9.5	9.40
Ukuthwala umbane	mS/m	14	177.50	<150	177.50
Calcium njenge- Ca	mg/l	14	9.70	<150	10.67
Magnesium njenge- Mg	mg/l	14	4.75	<100	5.23
Sodium njenge- Na	mg/l	14	357.00	<200	357.00
Ubualkhalini xa bubonke njenge-CaCO ₃	mg/l	14	220.35	N/A	242.39
Chloride njenge- Cl	mg/l	14	416.75	<200	416.75
Sulphate njenge- SO ₄	mg/l	14	28.80	<400	31.68
Nitrate njenge- NO _x -N	mg/l	14	0.11	<10	0.12
Fluoride njenge- F	mg/l	14	1.04	<1.0	1.04
Ubunjani bekhemikhali	Umvo	imimandla yolawulo lwamanzi u- E24C-E24D			
		Inani leesampulu	Ucoceko okanye umbindi ozolileyo wohlobo lwe- GW	UHlelo i-BHN Reserve	Uhlelo malunga nococeko lwamanzi angaphezu komhlaba
I-pH		7	8.19	5.0 – 9.5	9.01
Ukuthwala umbane	mS/m	7	96.00	<150	105.60
Calcium njenge- Ca	mg/l	7	7.00	<150	7.70
Magnesium njenge- Mg	mg/l	7	2.00	<100	2.20
Sodium njenge- Na	mg/l	7	240.30	<200	240.30
Ubualkhalini xa bubonke njenge-CaCO ₃	mg/l	7	331.60	N/A	364.76
Chloride njenge- Cl	mg/l	7	129.00	<200	141.90
Sulphate njenge- SO ₄	mg/l	7	11.97	<400	13.17
Nitrate njenge- NO _x -N	mg/l	7	0.04	<10	0.04
Fluoride njenge- F	mg/l	7	2.98	<1.0	2.98

Ubunjani bekhemikhali	Umvo	ummandla wolawulo lwamanzi u- E24E			
		Inani leesampulu	Ucoceko okanye umbindi ozolileyo wohlobo lwe- GW	UHlelo i-BHN Reserve	UHlelo malunga nococeko lwamanzi angaphezu komhlaba
I-pH		8	7.99	5.0 – 9.5	8.78
Ukuthwala umbane	mS/m	8	227.65	<150	227.65
Calcium njenge- Ca	mg/l	8	143.25	<150	157.58
Magnesium njenge- Mg	mg/l	8	106.05	<100	106.05
Sodium njenge- Na	mg/l	8	201.55	<200	201.55
Ubualkhalini xa bubonke njenge-CaCO ₃	mg/l	8	191.65	N/A	210.82
Chloride njenge- Cl	mg/l	8	268.40	<200	268.40
Sulphate njenge- SO ₄	mg/l	8	554.50	<400	554.50
Nitrate njenge- NO _x -N	mg/l	8	3.22	<10	3.54
Fluoride njenge- F	mg/l	8	0.85	<1.0	0.94
Ubunjani bekhemikhali	Umvo	ummandla wolawulo lwamanzi u- E24F			
		Inani leesampulu	Ucoceko okanye umbindi ozolileyo wohlobo lwe- GW	UHlelo i-BHN Reserve	UHlelo malunga nococeko lwamanzi angaphezu komhlaba
I-pH		3	7.90	5.0 – 9.5	8.69
Ukuthwala umbane	mS/m	3	275.20	<150	275.20
Calcium njenge- Ca	mg/l	3	110.80	<150	121.88
Magnesium njenge- Mg	mg/l	3	94.40	<100	103.84
Sodium njenge- Na	mg/l	3	361.40	<200	361.40
Ubualkhalini xa bubonke njenge-CaCO ₃	mg/l	3	213.90	N/A	235.29
Chloride njenge- Cl	mg/l	3	543.90	<200	543.90
Sulphate njenge- SO ₄	mg/l	3	378.40	<400	416.24
Nitrate njenge- NO _x -N	mg/l	3	3.28	<10	3.61
Fluoride njenge- F	mg/l	3	0.92	<1.0	1.01

Ubunjani bekhemikhali	Umvo	imimandla yolawulo lwamanzi u- E24G-E24H			
		Inani leesampulu	Ucoceko okanye umbindi ozolileyo wohlobo lwe- GW	UHlelo i-BHN Reserve	UHlelo malunga nococeko lwamanzi angaphezu komhlaba
I-pH		6	7.95	5.0 – 9.5	8.75
Ukuthwala umbane	mS/m	6	320.00	<150	320.00
Calcium njenge- Ca	mg/l	6	116.00	<150	127.60
Magnesium njenge- Mg	mg/l	6	84.25	<100	92.68
Sodium njenge- Na	mg/l	6	446.00	<200	446.00
Ubualkhalini xa bubonke njenge-CaCO ₃	mg/l	6	213.55	N/A	234.91
Chloride njenge- Cl	mg/l	6	795.40	<200	795.40
Sulphate njenge- SO ₄	mg/l	6	174.10	<400	191.51
Nitrate njenge- NO _x -N	mg/l	6	1.11	<10	1.22
Fluoride njenge- F	mg/l	6	0.82	<1.0	0.90
Ubunjani bekhemikhali	Umvo	ummandla wolawulo lwamanzi u- E24J			
		Inani leesampulu	Ucoceko okanye umbindi ozolileyo wohlobo lwe- GW	UHlelo i-BHN Reserve	UHlelo malunga nococeko lwamanzi angaphezu komhlaba
I-pH		56	7.31	5.0 – 9.5	8.04
Ukuthwala umbane	mS/m	56	138.50	<150	152.35
Calcium njenge- Ca	mg/l	56	46.30	<150	50.93
Magnesium njenge- Mg	mg/l	56	30.50	<100	33.55
Sodium njenge- Na	mg/l	54	166.55	<200	183.21
Ubualkhalini xa bubonke njenge-CaCO ₃	mg/l	56	92.05	N/A	101.26
Chloride njenge- Cl	mg/l	56	311.85	<200	311.85
Sulphate njenge- SO ₄	mg/l	56	63.60	<400	69.96
Nitrate njenge- NO _x -N	mg/l	56	0.06	<10	0.06
Fluoride njenge- F	mg/l	54	0.23	<1.0	0.26

Ubunjani bekhemikhali	Umvo	ummandla wolawulo lwamanzi u- E24K			
		Inani leesampulu	Ucoceko okanye umbindi ozolileyo wohlobo lwe- GW	UHlelo i-BHN Reserve	Uhlelo malunga nococeko lwamanzi angaphezu komhlaba
I-pH		6	7.85	5.0 – 9.5	8.64
Ukuthwala umbane	mS/m	6	324.50	<150	356.95
Calcium njenge- Ca	mg/l	6	172.25	<150	189.48
Magnesium njenge- Mg	mg/l	6	110.75	<100	121.83
Sodium njenge- Na	mg/l	6	269.35	<200	296.29
Ubualkhalini xa bubonke njenge-CaCO ₃	mg/l	6	188.55	N/A	207.41
Chloride njenge- Cl	mg/l	6	801.65	<200	881.82
Sulphate njenge- SO ₄	mg/l	6	206.95	<400	227.65
Nitrate njenge- NO _x -N	mg/l	6	5.54	<10	6.09
Fluoride njenge- F	mg/l	6	0.52	<1.0	0.57
Ubunjani bekhemikhali	Umvo	ummandla wolawulo lwamanzi u- E24L			
		Inani leesampulu	Ucoceko okanye umbindi ozolileyo wohlobo lwe- GW	UHlelo i-BHN Reserve	Uhlelo malunga nococeko lwamanzi angaphezu komhlaba
I-pH		40	5.52	5.0 – 9.5	6.07
Ukuthwala umbane	mS/m	40	14.55	<150	16.01
Calcium njenge- Ca	mg/l	40	3.35	<150	3.69
Magnesium njenge- Mg	mg/l	40	2.80	<100	3.08
Sodium njenge- Na	mg/l	40	16.00	<200	17.60
Ubualkhalini xa bubonke njenge-CaCO ₃	mg/l	40	3.00	N/A	3.30
Chloride njenge- Cl	mg/l	40	29.60	<200	32.56
Sulphate njenge- SO ₄	mg/l	40	6.45	<400	7.10
Nitrate njenge- NO _x -N	mg/l	40	1.20	<10	1.32
Fluoride njenge- F	mg/l	40	0.11	<1.0	0.12

Ubunjani bekhemikhali	Umvo	ummandla wolawulo lwamanzi u- E24M			
		Inani leesampulu	Ucoceko okanye umbindi ozolileyo wohlobo lwe- GW	UHlelo i-BHN Reserve	Uhlelo malunga nococeko lwamanzi angaphezu komhlaba
I-pH		25	6.67	5.0 – 9.5	7.34
Ukuthwala umbane	mS/m	25	165.00	<150	165.00
Calcium njenge- Ca	mg/l	22	19.65	<150	21.62
Magnesium njenge- Mg	mg/l	22	44.15	<100	48.57
Sodium njenge- Na	mg/l	22	207.70	<200	207.70
Ubualkhalini xa bubonke njenge-CaCO ₃	mg/l	25	9.50	N/A	10.45
Chloride njenge- Cl	mg/l	22	436.60	<200	436.60
Sulphate njenge- SO ₄	mg/l	22	50.25	<400	55.28
Nitrate njenge- NO _x -N	mg/l	25	3.61	<10	3.97
Fluoride njenge- F	mg/l	22	0.17	<1.0	0.19
Ubunjani bekhemikhali	Umvo	ummandla wolawulo lwamanzi u- E31E			
		Inani leesampulu	Ucoceko okanye umbindi ozolileyo wohlobo lwe- GW	UHlelo i-BHN Reserve	Uhlelo malunga nococeko lwamanzi angaphezu komhlaba
I-pH		6	8.16	5.0 – 9.5	8.98
Ukuthwala umbane	mS/m	6	430.50	<150	430.50
Calcium njenge- Ca	mg/l	6	148.12	<150	162.93
Magnesium njenge- Mg	mg/l	6	95.09	<100	104.59
Sodium njenge- Na	mg/l	6	605.64	<200	605.64
Ubualkhalini xa bubonke njenge-CaCO ₃	mg/l	6	301.77	N/A	331.94
Chloride njenge- Cl	mg/l	6	1124.69	<200	1124.69
Sulphate njenge- SO ₄	mg/l	6	329.66	<400	362.62
Nitrate njenge- NO _x -N	mg/l	6	2.55	<10	2.80
Fluoride njenge- F	mg/l	6	1.47	<1.0	1.62

Ubunjani bekhemikhali	Umvo	ummandla wolawulo lwamanzi u-			
		Inani leesampulu	Ucoceko okanye umbindi ozolileyo wohlobo lwe- GW	UHlelo i-BHN Reserve	Uhlelo malunga nococeko lwamanzi angaphezu komhlaba
I-pH		67	8.05	5.0 – 9.5	8.86
Ukuthwala umbane	mS/m	67	190.00	<150	190.00
Calcium njenge- Ca	mg/l	64	84.20	<150	92.62
Magnesium njenge- Mg	mg/l	64	61.67	<100	67.83
Sodium njenge- Na	mg/l	63	209.10	<200	209.10
Ubualkhalini xa bubonke njenge-CaCO ₃	mg/l	64	250.25	N/A	275.28
Chloride njenge- Cl	mg/l	65	295.30	<200	295.30
Sulphate njenge- SO ₄	mg/l	65	221.90	<400	244.09
Nitrate njenge- NO _x -N	mg/l	65	0.15	<10	0.16
Fluoride njenge- F	mg/l	62	1.29	<1.0	1.29
Ubunjani bekhemikhali	Umvo	ummandla wolawulo lwamanzi u- E31G			
		Inani leesampulu	Ucoceko okanye umbindi ozolileyo wohlobo lwe- GW	UHlelo i-BHN Reserve	Uhlelo malunga nococeko lwamanzi angaphezu komhlaba
I-pH		12	8.10	5.0 – 9.5	8.91
Ukuthwala umbane	mS/m	12	436.45	<150	436.45
Calcium njenge- Ca	mg/l	11	163.80	<150	163.80
Magnesium njenge- Mg	mg/l	11	147.20	<100	147.20
Sodium njenge- Na	mg/l	11	584.30	<200	584.30
Ubualkhalini xa bubonke njenge-CaCO ₃	mg/l	12	211.75	N/A	232.93
Chloride njenge- Cl	mg/l	11	1161.90	<200	1161.90
Sulphate njenge- SO ₄	mg/l	11	364.50	<400	364.50
Nitrate njenge- NO _x -N	mg/l	12	4.46	<10	4.91
Fluoride njenge- F	Mg/l	11	1.92	<1.0	1.92

Ubunjani bekhemikhali	Umvo	ummandla wolawulo lwamanzi u- E31H			
		Inani leesampulu	Ucoceko okanye umbindi ozolileyo wohlobo lwe- GW	UHlelo I-BHN Reserve	UHlelo malunga nococeko lwamanzi angaphezu komhlaba
I-pH		8	7.98	5.0 – 9.5	8.77
Ukuthwala umbane	mS/m	8	438.00	<150	438.00
Calcium njenge- Ca	mg/l	8	87.55	<150	96.31
Magnesium njenge- Mg	mg/l	8	107.10	<100	107.10
Sodium njenge- Na	mg/l	8	611.10	<200	611.10
Ubualkhalini xa bubonke njenge-CaCO ₃	mg/l	8	198.55	N/A	218.41
Chloride njenge- Cl	mg/l	8	1159.35	<200	1159.35
Sulphate njenge- SO ₄	mg/l	8	349.00	<400	383.90
Nitrate njenge- NO _x -N	mg/l	8	6.09	<10	6.69
Fluoride njenge- F	Mg/l	8	2.10	<1.0	2.10
Ubunjani bekhemikhali	Umvo	ummandla wolawulo lwamanzi u- E32A			
		Inani leesampulu	Ucoceko okanye umbindi ozolileyo wohlobo lwe- GW	UHlelo i-BHN Reserve	UHlelo malunga nococeko lwamanzi angaphezu komhlaba
I-pH		6	7.88	5.0 – 9.5	8.67
Ukuthwala umbane	mS/m	6	77.40	<150	85.14
Calcium njenge- Ca	mg/l	6	50.50	<150	55.55
Magnesium njenge- Mg	mg/l	6	26.20	<100	28.82
Sodium njenge- Na	mg/l	6	83.85	<200	92.24
Ubualkhalini xa bubonke njenge-CaCO ₃	mg/l	6	204.65	N/A	225.12
Chloride njenge- Cl	mg/l	6	83.15	<200	91.47
Sulphate njenge- SO ₄	mg/l	6	44.20	<400	48.62
Nitrate njenge- NO _x -N	mg/l	6	0.22	<10	0.24
Fluoride njenge- F	Mg/l	6	0.74	<1.0	0.81

Ubunjani bekhemikhali	Umvo	ummandla wolawulo lwamanzi u- E32B			
		Inani leesampulu	Ucoceko okanye umbindi ozolileyo wohlobo lwe- GW	UHlelo i-BHN Reserve	UHlelo malunga nococeko lwamanzi angaphezu komhlaba
I-pH		14	7.74	5.0 – 9.5	8.51
Ukuthwala umbane	mS/m	14	181.60	<150	181.60
Calcium njenge- Ca	mg/l	14	109.95	<150	120.95
Magnesium njenge- Mg	mg/l	14	74.95	<100	82.45
Sodium njenge- Na	mg/l	14	150.65	<200	165.72
Ubualkhalini xa bubonke njenge-CaCO ₃	mg/l	14	192.10	N/A	211.31
Chloride njenge- Cl	mg/l	14	295.15	<200	295.15
Sulphate njenge- SO ₄	mg/l	14	278.75	<400	306.63
Nitrate njenge- NO _x -N	mg/l	14	1.76	<10	1.93
Fluoride njenge- F	Mg/l	14	0.84	<1.0	0.92
Ubunjani bekhemikhali	Umvo	ummandla wolawulo lwamanzi u- E32C			
		Inani leesampulu	Ucoceko okanye umbindi ozolileyo wohlobo lwe- GW	UHlelo i-BHN Reserve	UHlelo malunga nococeko lwamanzi angaphezu komhlaba
I-pH		15	7.75	5.0 – 9.5	8.53
Ukuthwala umbane	mS/m	15	162.70	<150	162.70
Calcium njenge- Ca	mg/l	15	80.20	<150	88.22
Magnesium njenge- Mg	mg/l	15	60.80	<100	66.88
Sodium njenge- Na	mg/l	15	185.10	<200	185.10
Ubualkhalini xa bubonke njenge-CaCO ₃	mg/l	15	211.40	N/A	232.54
Chloride njenge- Cl	mg/l	15	203.00	<200	203.00
Sulphate njenge- SO ₄	mg/l	15	303.30	<400	333.63
Nitrate njenge- NO _x -N	mg/l	15	2.32	<10	2.55
Fluoride njenge- F	Mg/l	15	0.96	<1.0	0.96

Ubunjani bekhemikhali	Umvo	ummandla wolawulo lwamanzi u- E32D			
		Inani leesampulu	Ucoceko okanye umbindi ozolileyo wohlobo lwe- GW	UHlelo i-BHN Reserve	Uhlelo malunga nococeko lwamanzi angaphezu komhlaba
I-pH		25	7.75	5.0 – 9.5	8.53
Ukuthwala umbane	mS/m	25	170.80	<150	170.80
Calcium njenge- Ca	mg/l	25	101.90	<150	112.09
Magnesium njenge- Mg	mg/l	25	57.30	<100	63.03
Sodium njenge- Na	mg/l	25	201.40	<200	201.40
Ubualkhalini xa bubonke njenge-CaCO ₃	mg/l	25	192.90	N/A	212.19
Chloride njenge- Cl	mg/l	25	239.40	<200	239.40
Sulphate njenge- SO ₄	mg/l	25	256.30	<400	281.93
Nitrate njenge- NO _x -N	mg/l	25	0.49	<10	0.54
Fluoride njenge- F	Mg/l	25	1.33	<1.0	1.33
Ubunjani bekhemikhali	Umvo	ummandla wolawulo lwamanzi u- E32E			
		Inani leesampulu	Ucoceko okanye umbindi ozolileyo wohlobo lwe- GW	UHlelo i-BHN Reserve	Uhlelo malunga nococeko lwamanzi angaphezu komhlaba
I-pH		15	7.80	5.0 – 9.5	8.58
Ukuthwala umbane	mS/m	15	273.00	<150	273.00
Calcium njenge- Ca	mg/l	15	106.30	<150	116.93
Magnesium njenge- Mg	mg/l	15	88.50	<100	97.35
Sodium njenge- Na	mg/l	15	303.10	<200	303.10
Ubualkhalini xa bubonke njenge-CaCO ₃	mg/l	15	188.00	N/A	206.80
Chloride njenge- Cl	mg/l	15	748.30	<200	748.30
Sulphate njenge- SO ₄	mg/l	15	137.20	<400	150.92
Nitrate njenge- NO _x -N	mg/l	15	2.23	<10	2.45
Fluoride njenge- F	Mg/l	15	0.82	<1.0	0.90

Ubunjani bekhemikhali	Umvo	ummandla wolawulo lwamanzi u- E33A			
		Inani leesampulu	Ucoceko okanye umbindi ozolileyo wohlobo lwe- GW	UHlelo i-BHN Reserve	Uhlelo malunga nococeko lwamanzi angaphezu komhlaba
I-pH		10	8.10	5.0 – 9.5	8.90
Ukuthwala umbane	mS/m	10	433.00	<150	433.00
Calcium njenge- Ca	mg/l	10	155.85	<150	155.85
Magnesium njenge- Mg	mg/l	10	118.55	<100	118.55
Sodium njenge- Na	mg/l	10	659.45	<200	659.45
Ubualkhalini xa bubonke njenge-CaCO ₃	mg/l	10	178.25	N/A	196.08
Chloride njenge- Cl	mg/l	10	1327.85	<200	1327.85
Sulphate njenge- SO ₄	mg/l	10	305.25	<400	335.78
Nitrate njenge- NO _x -N	mg/l	10	5.42	<10	5.96
Fluoride njenge- F	Mg/l	10	2.14	<1.0	2.14
Ubunjani bekhemikhali	Umvo	ummandla wolawulo lwamanzi u- E33B			
		Inani leesampulu	Ucoceko okanye umbindi ozolileyo wohlobo lwe- GW	UHlelo i-BHN Reserve	Uhlelo malunga nococeko lwamanzi angaphezu komhlaba
I-pH		6	8.18	5.0 – 9.5	8.99
Ukuthwala umbane	mS/m	6	998.20	<150	998.20
Calcium njenge- Ca	mg/l	6	232.15	<150	232.15
Magnesium njenge- Mg	mg/l	6	240.60	<100	240.60
Sodium njenge- Na	mg/l	6	1780.80	<200	1780.80
Ubualkhalini xa bubonke njenge-CaCO ₃	mg/l	6	250.95	N/A	276.05
Chloride njenge- Cl	mg/l	6	3063.90	<200	3063.90
Sulphate njenge- SO ₄	mg/l	6	717.85	<400	717.85
Nitrate njenge- NO _x -N	mg/l	6	4.51	<10	4.96
Fluoride njenge- F	Mg/l	6	1.77	<1.0	1.77

Ubunjani bekhemikhali	Umvo	ummandla wolawulo lwamanzi u- E33C			
		Inani leesampulu	Ucoceko okanye umbindi ozolileyo wohlobo lwe- GW	UHlelo i-BHN Reserve	Uhlelo malunga nococeko lwamanzi angaphezu komhlaba
I-pH		11	8.23	5.0 – 9.5	9.05
Ukuthwala umbane	mS/m	11	482.00	<150	482.00
Calcium njenge- Ca	mg/l	11	76.10	<150	83.71
Magnesium njenge- Mg	mg/l	11	131.70	<100	131.70
Sodium njenge- Na	mg/l	11	674.60	<200	674.60
Ubualkhalini xa bubonke njenge-CaCO ₃	mg/l	11	260.80	N/A	286.88
Chloride njenge- Cl	mg/l	11	1472.40	<200	1472.40
Sulphate njenge- SO ₄	mg/l	11	215.50	<400	237.05
Nitrate njenge- NO _x -N	mg/l	11	1.76	<10	1.94
Fluoride njenge- F	Mg/l	11	1.49	<1.0	1.49
Ubunjani bekhemikhali	Umvo	ummandla wolawulo lwamanzi u- E33D			
		Inani leesampulu	Ucoceko okanye umbindi ozolileyo wohlobo lwe- GW	UHlelo i-BHN Reserve	Uhlelo malunga nococeko lwamanzi angaphezu komhlaba
I-pH		149	7.79	5.0 – 9.5	8.57
Ukuthwala umbane	mS/m	149	636.10	<150	636.10
Calcium njenge- Ca	mg/l	143	111.54	<150	122.69
Magnesium njenge- Mg	mg/l	143	121.40	<100	121.40
Sodium njenge- Na	mg/l	143	1055.72	<200	1055.72
Ubualkhalini xa bubonke njenge-CaCO ₃	mg/l	144	180.56	N/A	198.62
Chloride njenge- Cl	mg/l	144	1799.25	<200	1799.25
Sulphate njenge- SO ₄	mg/l	144	357.20	<400	392.92
Nitrate njenge- NO _x -N	mg/l	143	0.24	<10	0.26
Fluoride njenge- F	Mg/l	143	1.84	<1.0	1.84

Ubunjani bekhemikhali	Umvo	ummandla wolawulo lwamanzi u- E33E			
		Inani leesampulu	Ucoceko okanye umbindi ozolileyo wohlobo lwe-GW	UHlelo i-BHN Reserve	Uhlelo malunga nococeko lwamanzi angaphezu komhlaba
I-pH		32	7.65	5.0 – 9.5	8.41
Ukuthwala umbane	mS/m	32	585.60	<150	585.60
Calcium njenge- Ca	mg/l	32	142.45	<150	142.45
Magnesium njenge- Mg	mg/l	32	168.40	<100	168.40
Sodium njenge- Na	mg/l	32	857.70	<200	857.70
Ubualkhalini xa bubonke njenge-CaCO ₃	mg/l	32	155.10	N/A	170.61
Chloride njenge- Cl	mg/l	32	1712.00	<200	1712.00
Sulphate njenge- SO ₄	mg/l	32	301.65	<400	331.82
Nitrate njenge- NO _x -N	mg/l	32	1.50	<10	1.64
Fluoride njenge- F	Mg/l	32	2.18	<1.0	2.18
Ubunjani bekhemikhali	Umvo	ummandla wolawulo lwamanzi u- E33F			
		Inani leesampulu	Ucoceko okanye umbindi ozolileyo wohlobo lwe-GW	UHlelo i-BHN Reserve	Uhlelo malunga nococeko lwamanzi angaphezu komhlaba
I-pH		672	8.00	5.0 – 9.5	8.80
Ukuthwala umbane	mS/m	672	185.80	<150	185.80
Calcium njenge- Ca	mg/l	667	102.50	<150	112.75
Magnesium njenge- Mg	mg/l	666	45.27	<100	49.80
Sodium njenge- Na	mg/l	627	183.38	<200	183.38
Ubualkhalini xa bubonke njenge-CaCO ₃	mg/l	669	165.69	N/A	182.26
Chloride njenge- Cl	mg/l	665	402.61	<200	402.61
Sulphate njenge- SO ₄	mg/l	647	96.46	<400	106.10
Nitrate njenge- NO _x -N	mg/l	671	1.06	<10	1.17
Fluoride njenge- F	Mg/l	626	0.27	<1.0	0.30

Ubunjani bekhemikhali	Umvo	ummandla wolawulo lwamanzi u- E33G			
		Inani leesampulu	Ucoceko okanye umbindi ozolileyo wohlobo lwe-GW	UHlelo i-BHN Reserve	Uhlelo malunga nococeko lwamanzi angaphezu komhlaba
I-pH		75	8.13	5.0 – 9.5	8.95
Ukuthwala umbane	mS/m	75	160.00	<150	160.00
Calcium njenge- Ca	mg/l	74	87.31	<150	96.04
Magnesium njenge- Mg	mg/l	74	40.51	<100	44.56
Sodium njenge- Na	mg/l	69	170.39	<200	187.43
Ubualkhalini xa bubonke njenge-CaCO ₃	mg/l	75	226.57	N/A	249.22
Chloride njenge- Cl	mg/l	74	323.58	<200	323.58
Sulphate njenge- SO ₄	mg/l	70	101.70	<400	111.87
Nitrate njenge- NO _x -N	mg/l	75	0.63	<10	0.69
Fluoride njenge- F	Mg/l	68	0.45	<1.0	0.49
Ubunjani bekhemikhali	Umvo	ummandla wolawulo lwamanzi u- E33H			
		Inani leesampulu	Ucoceko okanye umbindi ozolileyo wohlobo lwe-GW	UHlelo i-BHN Reserve	Uhlelo malunga nococeko lwamanzi angaphezu komhlaba
I-pH		10	7.78	5.0 – 9.5	8.55
Ukuthwala umbane	mS/m	10	372.80	<150	372.80
Calcium njenge- Ca	mg/l	10	51.85	<150	57.04
Magnesium njenge- Mg	mg/l	10	80.00	<100	88.00
Sodium njenge- Na	mg/l	10	551.25	<200	551.25
Ubualkhalini xa bubonke njenge-CaCO ₃	mg/l	10	150.50	N/A	165.55
Chloride njenge- Cl	mg/l	10	1015.30	<200	1015.30
Sulphate njenge- SO ₄	mg/l	10	133.65	<400	147.02
Nitrate njenge- NO _x -N	mg/l	10	0.67	<10	0.74
Fluoride njenge- F	Mg/l	10	0.72	<1.0	0.79

Ubunjani bekhemikhali	Umvo	ummandla wolawulo lwamanzi u- E40A			
		Inani leesampulu	Ucoceko okanye umbindi ozolileyo wohlobo lwe- GW	UHlelo i-BHN Reserve	UHlelo malunga nococeko lwamanzi angaphezu komhlaba
I-pH		132	7.99	5.0 – 9.5	8.79
Ukuthwala umbane	mS/m	132	183.10	<150	183.10
Calcium njenge- Ca	mg/l	132	91.90	<150	101.09
Magnesium njenge- Mg	mg/l	132	68.60	<100	75.46
Sodium njenge- Na	mg/l	132	235.60	<200	235.60
Ubualkhalini xa bubonke njenge-CaCO ₃	mg/l	132	219.90	N/A	241.89
Chloride njenge- Cl	mg/l	132	333.30	<200	333.30
Sulphate njenge- SO ₄	mg/l	132	165.25	<400	181.78
Nitrate njenge- NO _x -N	mg/l	132	0.34	<10	0.38
Fluoride njenge- F	Mg/l	132	1.10	<1.0	1.10
Ubunjani bekhemikhali	Umvo	ummandla wolawulo lwamanzi u- E40B			
		Inani leesampulu	Ucoceko okanye umbindi ozolileyo wohlobo lwe- GW	UHlelo i-BHN Reserve	UHlelo malunga nococeko lwamanzi angaphezu komhlaba
I-pH		123	7.87	5.0 – 9.5	8.66
Ukuthwala umbane	mS/m	123	200.50	<150	200.50
Calcium njenge- Ca	mg/l	120	100.30	<150	110.33
Magnesium njenge- Mg	mg/l	119	58.40	<100	64.24
Sodium njenge- Na	mg/l	119	181.60	<200	199.76
Ubualkhalini xa bubonke njenge-CaCO ₃	mg/l	120	208.25	N/A	229.08
Chloride njenge- Cl	mg/l	122	358.00	<200	358.00
Sulphate njenge- SO ₄	mg/l	122	141.86	<400	156.04
Nitrate njenge- NO _x -N	mg/l	122	0.70	<10	0.77
Fluoride njenge- F	Mg/l	119	0.64	<1.0	0.70

Ubunjani bekhemikhali	Umvo	ummandla wolawulo lwamanzi u- E40C			
		Inani leesampulu	Ucoceko okanye umbindi ozolileyo wohlobo lwe- GW	UHlelo i-BHN Reserve	UHlelo malunga nococeko lwamanzi angaphezu komhlaba
I-pH		6	7.57	5.0 – 9.5	8.32
Ukuthwala umbane	mS/m	6	91.05	<150	100.16
Calcium njenge- Ca	mg/l	6	24.35	<150	26.79
Magnesium njenge- Mg	mg/l	6	8.55	<100	9.41
Sodium njenge- Na	mg/l	6	112.20	<200	123.42
Ubualkhalini xa bubonke njenge-CaCO ₃	mg/l	6	110.60	N/A	121.66
Chloride njenge- Cl	mg/l	6	193.30	<200	193.30
Sulphate njenge- SO ₄	mg/l	6	11.30	<400	12.43
Nitrate njenge- NO _x -N	mg/l	6	0.34	<10	0.38
Fluoride njenge- F	Mg/l	6	0.28	<1.0	0.31
Ubunjani bekhemikhali	Umvo	ummandla wolawulo lwamanzi u- E40D			
		Inani leesampulu	Ucoceko okanye umbindi ozolileyo wohlobo lwe- GW	UHlelo i-BHN Reserve	UHlelo malunga nococeko lwamanzi angaphezu komhlaba
I-pH		8	7.23	5.0 – 9.5	7.95
Ukuthwala umbane	mS/m	8	17.60	<150	19.36
Calcium njenge- Ca	mg/l	8	3.35	<150	3.69
Magnesium njenge- Mg	mg/l	8	4.10	<100	4.51
Sodium njenge- Na	mg/l	8	28.45	<200	31.30
Ubualkhalini xa bubonke njenge-CaCO ₃	mg/l	8	17.85	N/A	19.64
Chloride njenge- Cl	mg/l	8	40.40	<200	44.44
Sulphate njenge- SO ₄	mg/l	8	7.75	<400	8.53
Nitrate njenge- NO _x -N	mg/l	8	1.55	<10	1.70
Fluoride njenge- F	Mg/l	8	0.23	<1.0	0.25

Itafule-8.3 Isishwankathelo sococeko lwamanzi angaphezulu komhlaba nemida/neendawana zobungozi

Ummandla wolawulo lwamanzi	Ummandla (km ²)	Ihlelo lococeko lwamanzi (DWAF, 1996)	Iindawana ezibonisa iingxaki ngococeko
E10A	134	0	
E10B	202	0	
E10C	192	I	pH
E10D	235	0	
E10E	366	0	
E10F	386	0	
E10G	508	0	
E10H	162	0	
E10J	468	0	
E10K	235	II	Cl, Na, EC
E21A	190	0	
E21B	223	I	EC
E21C	233	0	
E21D	242	0	
E21E	293	0	
E21F	379	0	
E21G	266	I	EC
E21H	404	I	pH
E21J	317	0	
E21K	330	0	
E21L	195	0	
E22A	750	II	EC, Cl
E22B	638	III	Cl
E22C	490	0	
E22D	496	III	Cl, Na, Mg
E22E	1013	II	Cl
E22F	400	0	
E22G	367	II	Cl
E23A	762	II	Cl
E23B	705	II	Cl
E23C	318	II	Cl
E23D	750	II	Cl
E23E	564	III	Na
E23F	473	III	Na
E23G	747	III	Na
E23H	660	III	Na

Ummandla wolawulo lwamanzi	Ummandla (km ²)	Ihlelo lococeko lwamanzi (DWAF, 1996)	Iindawana ezibonisa iingxaki ngococeko
E23J	895	III	Na
E23K	572	II	F, Na
E24A	255	III	Cl, Na
E24B	468	III	Cl, Na
E24C	784	II	F, Na
E24D	997	II	F, Na
E24E	671	III	Mg
E24F	582	II	Cl, Na, EC
E24G	633	III	Cl, Na
E24H	483	III	Cl, Na
E24J	1078	II	Cl
E24K	652	III	Cl, Mg
E24L	516	I	pH
E24M	529	II	Cl, Na, EC
E31A	2865	III	Ca, Cl, Na, EC, NO ₃ , Mg
E31B	1476	III	Cl, Na, EC, SO ₄
E31C	1572	III	Cl, Na, EC, Mg
E31D	839	III	Cl, Na, EC, Mg
E31E	478	III	Cl, Na, EC
E31F	525	II	Cl, Na, EC
E31G	1238	III	Cl, Na, EC
E31H	726	III	Cl, Na, EC
E32A	1118	I	EC, F
E32B	828	II	Cl, EC
E32C	638	II	Cl, EC
E32D	616	II	Cl, EC, Na, F
E32E	1001	III	Cl
E33A	1355	III	Cl, EC, Na
E33B	702	III	Cl, EC, Na, Mg, SO ₄
E33C	980	III	Cl, EC, Na
E33D	1559	III	Cl, EC
E33E	1282	III	Cl, EC, Na
E33F	725	III	Cl
E33G	894	II	Cl, EC
E33H	719	III	Cl, EC, Na
E40A	941	II	Cl, EC, Na, F
E40B	707	II	Cl, EC
E40C	530	I	Cl, EC, Na
E40D	544	0	

GENERAL NOTICES • ALGEMENE KENNISGEWINGS

DEPARTMENT OF ENERGY

NOTICE 92 OF 2018



MINISTER
ENERGY
REPUBLIC OF SOUTH AFRICA

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NATIONAL NUCLEAR REGULATOR ACT, 1999 (ACT NO 47 OF 1999)**Notice in terms of section 28 of the National Nuclear Regulator Act, 1999 (Act No 47 of 1999), on fees for Nuclear Authorisations.**

1. I David Mahlobo, Minister of Energy acting under section 28 of the National Nuclear Regulator Act, 1999 (Act No. 47 of 1999), hereby determine in the Schedule, the fees payable to the Regulator in respect of —

- (a) any application for the granting of a nuclear authorisation;
- (b) an annual nuclear authorisation fee for the financial year (2017/2018)

2. The fees shall be payable to the National Nuclear Regulator of South Africa, for the period of 01 April 2017 to 31 March 2018 by the licensed holders concerned.


MR, D. MAHLOBO, MP
MINISTER OF ENERGY
DATE: 16/02/2018

		
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NATIONAL NUCLEAR REGULATOR PROPOSED AUTHORISATION FEES FOR 2017/18 FINANCIAL YEAR			
Facilities	No of license holders	Approved 2016/17	Recommended @6% 2017/18
Necsa Pelindaba		37 149 497	39 378 398
Necsa Vaalputs		5 722 134	6 065 462
Eskom: KNPS Normal Operations		70 459 432	74 687 067
Eskom: KNPS Steam Generator Replacement (New project)		17 210 379	18 243 002
Eskom-Thys punt- Nuclear Installation Site license application		-	15 347 056
Category 1	51	50 853	53 915
Category 2	27	63 579	67 394
Category 3	5	356 044	377 407
Category 4	46	406 634	431 032
Category 5	10	966 405	1 024 389
Approved @6%			155 675 122

DEPARTMENT OF HEALTH**NOTICE 93 OF 2018****COUNCIL FOR MEDICAL SCHEMES**

The Registrar of Medical Schemes hereby notifies, in accordance with section 25 of the Medical Schemes Act, 1998, (Act 131 of 1998), that the undermentioned medical schemes have been registered as indicated.

This list replaces the list published in Government Gazette No. 40639 dated 24 February 2017 and contains 80 Medical Schemes.

DEPARTEMENT VAN GESONDHEID**KENNISGEWING 93 VAN 2018****RAAD VAN MEDIESE SKEMAS**

Die Registrateur van Mediese Skemas maak ooreenkomstig artikel 25 van die Wet op Mediese Skemas, 1998, (Wet No. 131 van 1998), bekend dat ondergemelde mediese skemas geregistreer is soos aangedui.

Hierdie lys vervang die lys wat in Staatskoerant No. 40639 gedateer 24 Februarie 2017 gepubliseer is en bevat 80 Mediese Skemas.

MEDICAL SCHEMES REGISTERED IN TERMS OF THE MEDICAL SCHEMES ACT, NO 131 OF 1998, AS AT FEBRUARY 2018

NO.	NAME OF SCHEME NAAM VAN SKEMA	TYPE	PO BOX/PRIVATE BAG POSBUS/PRIVAAT SAK	CITY/TOWN STAD/DORP	POSTAL CODE POSKODE	REF. NR. VERW. NO.	DATE OF REG. DATUM VAN REG.	TEL NR. TEL. NO.
A								
1	AECI MEDICAL AID SOCIETY	RESTRICTED	1101	FLORIDA GLEN	1708	1005	11-Feb-71	086 000 2103
2	ALLIANCE-MIDMED MEDICAL SCHEME	RESTRICTED	343	WESVILLE	3630	1485	30-Aug-76	086 000 2101
3	ANGLO MEDICAL SCHEME	RESTRICTED	62524	JOHANNESBURG	2107	1012	16-Oct-88	086 022 2633
4	ANGLOVAAL GROUP MEDICAL SCHEME	RESTRICTED	62509	BENMORE	2010	1571	28-Jul-97	086 010 0893
B								
5	BANKMED	RESTRICTED	1242	CAPE TOWN	8000	1279	29-Jun-72	080 022 65633
6	BARLOWORLD MEDICAL SCHEME	RESTRICTED	1101	FLORIDA GLEN	1708	1507	12-Jan-80	086 000 2106
7	BESTMED MEDICAL SCHEME	OPEN	2297	PRETORIA	0001	1252	11-Aug-71	012 472 6000
8	BMW EMPLOYEES MEDICAL AID SOCIETY	RESTRICTED	784262	SANDTON	2146	1526	13-Jan-84	086 000 2107
9	BONITAS MEDICAL FUND	OPEN	3496	CRAMERVILLE	2060	1512	1-Mar-82	011 384 5100
10	BP MEDICAL AID SOCIETY	RESTRICTED	6006	ROGGEBAAL	8012	1237	20-Feb-70	021 480 4810
11	BUILDING & CONSTRUCTION INDUSTRY MEDICAL AID FUND	RESTRICTED	3201	JOHANNESBURG	2000	1590	2-Aug-01	011 208 1005
C								
12	CAPE MEDICAL PLAN	OPEN	986	PAROW	7499	1034	11-Nov-71	021 937 8300
13	CHARTERED ACCOUNTANTS (SA) MEDICAL AID FUND (CAMAF)	RESTRICTED	2964	RANDBURG	2125	1043	6-Aug-71	086 170 0800
14	COMMUNITY MEDICAL AID SCHEME (COMMED)	OPEN	P/Bag X146	HALFWAY HOUSE	1685	1552	26-Jan-95	011 290 6338
15	COMPICARE WELLNESS MEDICAL SCHEME	OPEN	1411	RIVONIA	2128	1491	1-Jun-78	011 208 1000
D								
16	DE BEERS BENEFIT SOCIETY	RESTRICTED	1922	KIMBERLEY	8300	1068	29-May-69	053 807 3111
17	DISCOVERY HEALTH MEDICAL SCHEME	OPEN	786722	SANDTON	2146	1125	8-Oct-71	011 529 2888
E								
18	ENGEL MEDICAL BENEFIT FUND	RESTRICTED	35	CAPE TOWN	8000	1572	7-Aug-97	021 403 4593
F								
19	FEDHEALTH MEDICAL SCHEME	OPEN	P/Bag X3045	RANDBURG	2125	1202	26-Nov-69	086 000 2153
20	FISHING INDUSTRY MEDICAL SCHEME (FISH-MED)	RESTRICTED	2416	CAPE TOWN	8000	1271	20-Oct-67	021 402 9827
21	FOODWORKERS' MEDICAL BENEFIT FUND	RESTRICTED	1067	PAROW	7499	1086	20-Oct-67	021 930 3550

MEDICAL SCHEMES REGISTERED IN TERMS OF THE MEDICAL SCHEMES ACT, NO 131 OF 1998, AS AT FEBRUARY 2018

NO.	NAME OF SCHEME NAAM VAN SKEMA	TYPE TIPPE	PO BOX/PRIVATE BAG POSBUS/PRIVAAT SAK	CITY/TOWN STAD/DORP	POSTAL CODE POSKODE	REF. NR. VERW. NO.	DATE OF REG. DATUM VAN REG.	TEL NR. TEL. NO.
G								
22	GENESIS MEDICAL SCHEME	OPEN	5467	CAPE TOWN	8000	1554	25-May-95	021 442 9900
23	GLENCORE MEDICAL SCHEME	RESTRICTED	1101	FLORIDA GLEN	1724	1253	7-Aug-88	086 000 2141
24	GOLDEN ARROW EMPLOYEES MEDICAL BENEFIT FUND	RESTRICTED	15729	VLAEBERG	8018	1270	30-Jun-72	086 010 4122
25	GOVERNMENT EMPLOYEES MEDICAL SCHEME (GEMS)	RESTRICTED	P/Bag X1	HATFIELD	0028	1598	1-Jan-05	086 111 4367
26	GRINTEK ELECTRONICS MEDICAL AID SCHEME	RESTRICTED	P/Bag X1411	RIVONIA	2128	1523	9-Dec-83	011 591 8207
H								
27	HORIZON MEDICAL SCHEME	RESTRICTED	1101	FLORIDA GLEN	1708	1566	11-Sep-96	086 010 1103
28	HOSMED MEDICAL AID SCHEME	OPEN	16148	DOORNFONTEIN	2028	1537	1-Sep-88	086 146 7633
I								
29	IMPALA MEDICAL PLAN	RESTRICTED	P/Bag X82324	RUSTENBURG	0300	1591	15-Jul-02	014 569 4748
30	IMPERIAL GROUP MEDICAL SCHEME	RESTRICTED	2140	HOUGHTON	2041	1559	12-Jan-95	011 547 8611
K								
31	KEYHEALTH MEDICAL SCHEME	OPEN	14145	LYTTELTON	0140	1087	28-May-68	086 067 1050
L								
32	LA-HEALTH MEDICAL SCHEME	RESTRICTED	Postnet Suite 116/P/Bag X19	MILNERTON	7435	1145	10-Jan-68	021 914 2103
33	LIBCARE MEDICAL SCHEME	RESTRICTED	P/Bag X3	CENTURY CITY	7446	1197	20-Feb-69	080 012 2273
34	LONMIN MEDICAL SCHEME	RESTRICTED	P/Bag X508	MARIKANA	0284	1599	1-Jan-06	086 010 4883
M								
35	MAKOTI MEDICAL SCHEME	OPEN	P/Bag X47	RIVONIA	2128	1466	7-Sep-76	011 208 1000
36	MALCOR MEDICAL AID SCHEME	RESTRICTED	1181	PARKLANDS	2121	1547	18-May-94	086 010 0698
37	MASSMART HEALTH PLAN	RESTRICTED	1411	RIVONIA	2128	1495	20-Oct-78	011 208 1000
38	MBMED MEDICAL AID FUND	RESTRICTED	708	FLORIDA HILLS	1716	1039	5-Dec-69	086 000 2109
39	MEDIHELP MEDICAL SCHEME	OPEN	26004	ARCADIA	0007	1149	23-Jun-69	086 010 0676

MEDICAL SCHEMES REGISTERED IN TERMS OF THE MEDICAL SCHEMES ACT, NO 131 OF 1998, AS AT FEBRUARY 2018

NO.	NAME OF SCHEME	TYPE	PO BOX/PRIVATE BAG POSBUS/PRIVAAT SAK	CITY/TOWN STAD/DORP	POSTAL CODE POSKODE	REF. NR. VERW. NO.	DATE OF REG. DATUM VAN REG.	TEL NR. TEL. NO.
	NAAM VAN SKEMA	TIPE						
40	MEDIMED MEDICAL SCHEME	OPEN	1672	PORT ELIZABETH	6000	1506	12-Sep-80	041 395 4400
41	MEDIPOS MEDICAL SCHEME	RESTRICTED	2087	PRETORIA	0074	1548	15-Jun-94	086 010 0078
42	MEDSHIELD MEDICAL SCHEME	OPEN	4346	RANDBURG	2021	1140	6-Feb-88	010 597 4700
43	MOMENTUM HEALTH	OPEN	2338	DURBAN	4000	1167	6-May-71	086 011 7859
44	MOTOHEALTH CARE	RESTRICTED	3882	RANDBURG	2195	1600	1-Oct-07	086 132 9800
	N							
45	NASPERS MEDICAL FUND	RESTRICTED	2271	CAPE TOWN	8000	1241	7-Mar-72	086 062 7633
46	NEDGROUP MEDICAL AID SCHEME	RESTRICTED	2446	CAPE TOWN	8000	1469	24-Dec-76	086 010 0080
47	NETCARE MEDICAL SCHEME	RESTRICTED	652509	BENMORE	2010	1584	19-Dec-00	086 163 8633
	O							
48	OLD MUTUAL STAFF MEDICAL AID FUND	RESTRICTED	86	CAPE TOWN	8000	1214	13-Feb-89	021 509 7036
	P							
49	PARMED MEDICAL AID SCHEME	RESTRICTED	836	FLORIDA HILLS	1718	1441	29-Mar-74	086 000 2126
50	PG GROUP MEDICAL SCHEME	RESTRICTED	2329	BEDFORDVIEW	2008	1186	20-Nov-70	011 417 5800
51	PICK N PAY MEDICAL SCHEME	RESTRICTED	15774	VLAEBEG	8018	1563	9-May-96	080 000 4388
52	PLATINUM HEALTH	RESTRICTED	P/Bag X82081	RUSTENBURG	0300	1583	19-Dec-00	014 592 3068
53	PROFMED	RESTRICTED	1004	HOUGHTON	2041	1194	8-Oct-69	011 628 8900
	Q							
54	QUANTUM MEDICAL AID SOCIETY	RESTRICTED	652509	BENMORE	2010	1516	1-Mar-83	086 010 2958
	R							
55	RAND WATER MEDICAL SCHEME	RESTRICTED	1127	JOHANNESBURG	2000	1201	24-Oct-89	011 682 0452
56	REMEDI MEDICAL AID SCHEME	RESTRICTED	652509	BENMORE	2010	1430	18-Sep-72	086 011 6116
57	RESOLUTION HEALTH MEDICAL SCHEME	OPEN	1555	FONTAINEBLEAU	2032	1575	9-Apr-98	086 1791 6425
58	RETAIL MEDICAL SCHEME	RESTRICTED	215	BRACKENFELL	7561	1176	10-Feb-70	021 980 4465
59	RHODES UNIVERSITY MEDICAL SCHEME	RESTRICTED	1672	PORT ELIZABETH	6000	1013	15-Dec-87	041 395 4476

MEDICAL SCHEMES REGISTERED IN TERMS OF THE MEDICAL SCHEMES ACT, NO 131 OF 1998, AS AT FEBRUARY 2018

NO.	NAME OF SCHEME	TYPE	PO BOX/PRIVATE BAG POSBUS/PRIVAAT SAK	CITY/TOWN STAD/DORP	POSTAL CODE POSKODE	REF. NR. VERW. NO.	DATE OF REG. DATUM VAN REG.	TEL. NR. TEL. NO.
	S							
60	SA BREWERIES MEDICAL AID SOCIETY (SABMAS)	RESTRICTED	782178	SANDTON	2146	1209	1-Sep-70	086 000 2133
61	SABC MEDICAL SCHEME	RESTRICTED	1101	FLORIDA GLEN	1708	1424	23-Jun-72	086 000 2136
62	SOUTH AFRICAN MUNICIPAL UNION NATIONAL MEDICAL SCHEME(SAMWUMED)	RESTRICTED	134	CAPE TOWN	7760	1038	11-Nov-68	021-697-9000
63	SASOLMED	RESTRICTED	5486	JOHANNESBURG	2000	1234	17-Feb-71	086 000 2134
64	SEDMED	RESTRICTED	488	BLOEMFONTEIN	9300	1531	19-Feb-87	051 447 8991
65	SELFMED MEDICAL SCHEME	OPEN	5543	TYGERVALLEY	7536	1446	19-Nov-74	021 943 2300
66	SISONKE HEALTH MEDICAL SCHEME	RESTRICTED	1672	PORT ELIZABETH	6000	1568	15-Jan-97	041 395 4400
67	SIZWE MEDICAL FUND	OPEN	62345	MARSHALL TOWN	2107	1486	17-Mar-78	011 2981500
68	SOUTH AFRICAN POLICE SERVICE MEDICAL SCHEME (POLMED)	RESTRICTED	14812	HATFIELD	0028	1580	1-Nov-99	012 818 7500
69	SPECTRAMED MEDICAL SCHEME	OPEN	P/Bag X30	GALLO MANOR	2052	1141	23-Aug-71	086 024 6637
70	SUREMED HEALTH	OPEN	1672	PORT ELIZABETH	6000	1464	20-Aug-76	086 008 0888
	T							
71	TFG MEDICAL AID SCHEME	RESTRICTED	652509	BENMORE	2010	1578	18-Nov-88	021 527 1159
72	THEBEMED MEDICAL SCHEME	OPEN	4709	JOHANNESBURG	2000	1592	12-Sep-02	011 544 8899
73	TIGER BRANDS MEDICAL SCHEME	RESTRICTED	P/Bag X131	RIVONIA	2128	1544	1-Jun-93	080 000 2636
74	TOPMED MEDICAL SCHEME	OPEN	1462	DURBAN	4000	1422	24-Apr-72	0860 00 2158
75	TRANSMED MEDICAL FUND	RESTRICTED	32043	BRAAMFONTEIN	2017	1582	22-Nov-00	080 045 0010
76	TSOGO SUN GROUP MEDICAL SCHEME	RESTRICTED	652509	BENMORE	2010	1579	30-Jul-99	086 010 0421
	U							
77	UMVUZO HEALTH MEDICAL SCHEME	RESTRICTED	1463	FAERIE GLEN	0043	1597	1-Jul-04	012 845 0000
78	UNIVERSITY OF KWAZULU NATAL MEDICAL SCHEME	RESTRICTED	786722	SANDTON	2010	1520	1-Jul-83	086 011 3322
	W							
79	WITBANK COALFIELDS MEDICAL AID SOCIETY (WCMAS)	RESTRICTED	26	WITBANK	1035	1291	30-Apr-69	013 656 1407
80	WOOLTRU HEALTHCARE FUND	RESTRICTED	15403	VLAEBERG	8018	1293	12-Dec-69	080 222 8922

INDEPENDENT COMMUNICATIONS AUTHORITY OF SOUTH AFRICA

NOTICE 94 OF 2018



Independent Communications Authority of South Africa

Pinmill Farm, 164 Katherine Street, Sandton

Private Bag X10002, Sandton, 2146

GENERAL NOTICE

EXPIRY OF INDIVIDUAL ELECTRONIC COMMUNICATIONS NETWORK SERVICES (I-ECNS) AND INDIVIDUAL ELECTRONIC COMMUNICATIONS SERVICES (I-ECS) LICENCES ISSUED TO BLUE IQ INVESTMENT HOLDINGS

1. The Independent Communications Authority of South Africa (ICASA) hereby gives notice that Blue IQ Investment Holdings, to which Individual Electronic Communications Network Services Network and Individual Electronic Communications Services licenses were issued on 15 January 2009, had not, after due inquiry by the Authority, met their licence obligations. The licensee failed to commence operations or request extension to commence operations as prescribed in regulation 5, Schedule 2 for Individual ECNS and regulation 5, schedule 3 for Individual ECS of the Regulations Regarding Standard Terms and Conditions for Individual Licences, 2010. The licensee also failed to submit the Annual Financial Statements or pay General Licence fees as prescribed in terms of the General Licence Fees Regulations, 2009. The licensee further failed to pay Universal Service Annual Fees (USAF) as prescribed in terms of the USAF Regulations, 2011.
2. ICASA, accordingly, declares as follows:
 - a. That the Electronic Communications Service licenses (No 0109/IECNS/Jan/09 and 0109/IECS/Jan/09) issued in terms of the Electronic Communications Act 36 of 2005 to **Blue IQ Investment Holdings** with address 1st Floor Central Place Building, Newtown and Postal Address P. O. Box 10420, Johannesburg are declared to have expired on the date of this Government Gazette: either since these licences have not become operative within the time period prescribed by Regulations or since the licensee has ceased its operations without having applied to ICASA for more time to do so.

3. Any queries must be directed to Ms. Lindisa Mabulu on e-mail: lmabulu@icasa.org.za or Tel: 011 566 3217 or Physical Address: Block D, Pinmill Farm, 164 Katherine Street, Sandton Postal Address: Private Bag X10002, Sandton, 2146.



Rubben Mohlaloga
Chairperson

DEPARTMENT OF TRADE AND INDUSTRY
NOTICE 95 OF 2018

SECTION 12I TAX ALLOWANCE PROGRAMME

The Minister of Trade and Industry, Dr Rob Davies - in terms of section 12I (19)d of the Income Tax Act, 1962 (Act 58 of 1962) as amended (herein after referred to as the Act) and the Regulations promulgated in the Government Gazette No. 33385 of 23 July 2010 - hereby publishes the decision to **approve** an application received for the 12I Tax Allowance Programme.

Particulars of applicant

- Name of applicant: **Adcock Ingram Healthcare (Pty) Ltd**
- Adcock Ingram Healthcare (Pty) Ltd- Eye Drop Facility Project** is a project to manufacture **Eye Drops**. The project will invest a total of **R92 981 015**, with the value of qualifying manufacturing assets equal to **R92 981 015**. The project is classifiable under **SIC 3353**.
- Description and costs of qualifying manufacturing assets:

Assets	Expected Date of Assets In Use	Value of Qualifying Assets (R)
Plant and Machinery	1 September 2019	63 192 265
Buildings	1 September 2019	29 788 750
Total Qualifying Assets		R92 981 015

- Date of approval: **21 November 2017**.
- Envisaged date of commercial production: **1 September 2019**.
- Additional investment allowance benefit period: **November 2017 to November 2021**.
- Adcock Ingram Healthcare (Pty) Ltd** –is approved as a **Greenfield** project and awarded 7 points and afforded **Preferred Status**.
- The approved amount for the additional **investment** allowance in respect of manufacturing assets to be brought into use **Adcock Ingram Healthcare (Pty) Ltd** is **R51 139 558** (fifty one million, one hundred and thirty nine thousand, five hundred and fifty eight rand).
- The approved amount for the additional **training** allowance is **R 1 332 000** (one million three hundred and thirty two thousand rand).

- Total potential national revenue to be forgone by virtue of deduction of the approved allowances **Adcock Ingram Healthcare (Pty) Ltd** will be **R14 692 036**.

Enquiries relating to this publication should be made to:

The Secretariat: 12I Tax Allowance Programme
Department of Trade and Industry
Private Bag X84
PRETORIA
0001

For attention:	Crystal Papier
Telephone No.:	012 394 1069
Fax No.:	012 394 2069

BOARD NOTICES • RAADSKENNISGEWINGS

BOARD NOTICE 27 OF 2018

HEALTH PROFESSIONS COUNCIL OF SOUTH AFRICA

HEALTH PROFESSIONS ACT, 1974 (ACT NO. 56 OF 1974)

The Health Professions Council of South Africa, in terms of the authority granted to it by the Minister of Health in terms of section 62 (1) under Government Notices R.2281 and R.2283 of 3 December 1976, hereby prescribe the annual fees payable by registered practitioners as set out in the Schedule.

SCHEDULE

1. The annual fees payable by persons registered in terms of the Health Professions Act, 1974 (Act No. 56 of 1974), shall be as set out in this schedule and shall be due and payable with effect from 1 April 2018.

ANNUAL FEES

DENTAL THERAPY AND ORAL HYGIENE:		FEES
CODE	CATEGORY	R
TT	Dental Therapist	1860.00
OH	Oral Hygienist	1860.00
DA	Dental Assistant	775.00
DIETETICS AND NUTRITION:		
DT	Dietitian	1671.00
SDT	Supplementary Dietitian	1671.00
NT	Nutritionist	1671.00
SNT	Supplementary Nutritionist	1671.00

EMERGENCY CARE:

ANT	Paramedic	983.00
ECP	Emergency Care Practitioner	983.00
ECT	Emergency Care Technician	983.00
ANA	Ambulance Emergency Assistant	983.00
BAA	Basic Ambulance Assistant	808.00
OECO	Operational Emergency Care Orderly	983.00
ECA	Emergency Care Assistant	808.00

ENVIRONMENTAL HEALTH:

HI	Environmental Health Practitioner	1344.00
FI	Food Inspector	164.00
HIA	Environmental Health Assistant	673.00

MEDICINE AND DENTISTRY:

AN	Anaesthetist Assistant	299.00
BE	Biomedical Engineer	1048.00
KB	Clinical Biochemist	570.00
DP	Dentist	1830.00
DP	Dentist (Specialist)	1865.00
GC	Genetic Counsellor	1048.00
GR	Genetic Counsellor	1048.00
HA	Health Assistant	299.00
PH	Medical Physicist	1048.00
MP	Medical Practitioner	1830.00
MP	Medical Practitioner (Specialist)	1865.00
MS	Medical Scientist	1048.00
MW	Medical Biological Scientist	1048.00
SMW	Supplementary Medical Scientist	1048.00
CA	Clinical Associate	777.00
IN	Medical Intern	737.00

MEDICAL TECHNOLOGY:

MLS	Medical Laboratory Scientist	1362.00
MT	Medical Technologist	1362.00
SGT	Supplementary Medical Technician	956.00
GT	Medical Technician	598.00
SLA	Supplementary Laboratory Assistant	564.00
LA	Laboratory Assistant	564.00

OCCUPATIONAL THERAPY, MEDICAL ORTHOTICS AND PROSTHETICS AND ARTS THERAPY:

OT	Occupational Therapist	1480.00
OS	Medical Orthotist and Prosthetist	1480.00
SOT	Supplementary Occupational Therapist	1480.00
SOS	Supplementary Medical Orthotist and Prosthetist	1480.00
OB	Orthopaedic Footwear Technician	480.00
OTT	Occupational Therapy Technician	480.00
OAS	Assistant Medical Orthotist and Prosthetist, and Leatherworkers	480.00
OTB	Occupational Therapy Assistant	465.00
AT	Arts Therapist	1480.00
OSA	Orthopaedic Technical Assistant	480.00
OTE	Single Medium Therapist	1480.00

OPTOMETRY AND DISPENSING OPTICIANS:

OP	Optometrist	1963.00
OD	Dispensing Optician	1873.00
SOD	Supplementary Dispensing Optician	1926.00
SOP	Supplementary Optometrist	1926.00
OR	Orthoptist	372.00

PHYSIOTHERAPY, PODIATRY AND BIOKINETICS:

PT	Physiotherapist	1352.00
CH	Podiatrist	1352.00
BK	Biokineticist	1352.00
SPT	Supplementary Physiotherapist	1352.00
SCH	Supplementary Podiatrist	1352.00
PTA	Physiotherapy Assistant	490.00
PTT	Physiotherapy Technician	601.00
MA	Masseur	531.00
RM	Remedial Gymnast	490.00
SBK	Supplementary Biokineticist	1352.00

PSYCHOLOGY:

PS	Psychologist	1971.00
PMT	Psychometrist	1014.00
PM	Psychotechnician	838.00
PSIN	Intern Psychologist	668.00
PRC	Registered Counsellor	1014.00

RADIOGRAPHY AND CLINICAL TECHNOLOGY:

DR	Radiographer	1204.00
KTG	Graduate Clinical Technologist	1204.00
KT	Clinical Technologist	1204.00
SKT	Supplementary Clinical Technologist	1204.00
KTA	Assistant Clinical Technologist	440.00
SDR	Supplementary Diagnostic Radiographer	440.00
RSDR	Restricted Supplementary Diagnostic Radiographer	440.00
EE	Electro-Encephalographic Technician	440.00
SEE	Supplementary Electro-Encephalographic Technician	440.00
RLT	Radiation Laboratory Technologist	754.00
SRLT	Supplementary Radiation Technologist	754.00

SPEECH, LANGUAGE AND HEARING:

STA	Speech Therapist and Audiologist	1642.00
SSTA	Supplementary Speech Therapist and Audiologist	1642.00
AU	Audiologist	1642.00
SAU	Supplementary Audiologist	1642.00
GAK	Hearing Aid Acoustician	1642.00
SGAK	Supplementary Hearing Aid Acoustician	1642.00
SGG	Community Speech and Hearing Worker	568.00
SGK	Speech and Hearing Correctionist	568.00
AM	Audiometrician	568.00
STB	Speech Therapy Assistant	513.00
ST	Speech Therapist	1642.00
SHA	Speech and Hearing Assistant	513.00

2. The annual fees payable by persons registering for the first time in terms of the Health Professions Act, 1974 shall be a pro rata amount of the applicable annual fee referred to in the schedule, to be calculated according to the month of registration after the due date for payment of annual fees.
3. The annual fees prescribed in terms of this notice are inclusive of Value Added Tax (VAT).
4. Board Notice No. 10 in *Government Gazette* No. 40625 of 17 February 2017 is hereby repealed.



ADV PHELELANI KHUMALO

ACTING REGISTRAR

DATE: 05 FEBRUARY 2018

BOARD NOTICE 28 OF 2018
AGRICULTURAL PRODUCE AGENTS COUNCIL
RULES IN RESPECT OF LIVESTOCK AGENTS

It is hereby made known that -

- (a) the rules set out in the Schedule have been made under section 10(b) of the Agricultural Produce Agents Act, 1992, (Act No. 12 of 1992) ("the Act"), read with section 22(2) and (3) of the said Act;
- (b) the rules shall come into effect on the date of publication hereof in the Gazette.

L PRETORIUS

Registrar of Agricultural Produce Agents.

A. Arrangement of Rules-

Part I	Definitions	1
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PART 1: DEFINITIONS

1 Definitions and Interpretation

- (1) In these rules, any word or expression to which a meaning has been assigned in the Act, unless the context otherwise indicates, shall have that meaning and the following words shall have the following meanings -

“auditor” has the meaning set out in the Auditing Profession Act, 2005 (Act 26 of 2005);

“bank” means a bank registered as such in terms of the Banks Act, 1990 (Act No. 94 of 1990), referred to in the Act as a “deposit taking institution”;

“conflict of interest” includes any situation in which a livestock agent or an employee has an actual or potential interest that may, in rendering a service to a principal -

(a) influence the objective performance of his obligations to that principal; or

(b) prevent a livestock agent or employee from rendering an unbiased and fair service to that principal, or from acting in the best interests of that principal including, but not limited to-

(i) a financial interest;

(ii) an ownership interest;

(iii) any relationship with a third party;

“employee” means a person employed by a livestock agent for the purposes of selling or buying livestock on behalf of the principal of his employer;

“financial interest” means a direct interest of a financial, monetary or economic nature, or to which a monetary value may be attributed, other than an immaterial financial interest;

“livestock” means agricultural produce of the kinds specified in Part B of Schedule 1 of the Act;

“immaterial financial interest” means any financial interest with a determinable monetary value, the aggregate of which does not exceed R10 000 (ten thousand Rand) in any calendar year from the same third party in that calendar year received by-

(a) a livestock agent; or

(b) an employee for his direct or indirect benefit;

(c) a livestock agent, who for its benefit or that of some or all of its employees, aggregates the immaterial financial interest paid to its employees;

“interrelated”, when used in respect of three or more persons, means persons who are related to one another in a linked series of relationships, such that two of the persons are related in the manner contemplated in sub-rule (4), and one of them is related to the third in any such manner, and so forth in an unbroken series;

“juristic person” includes –

(a) a foreign company; and

(b) a trust, irrespective of whether or not it was established within or outside the Republic;

“ownership interest” means-

(a) any equity or proprietary interest, owned by a livestock agent, other than equity or a proprietary interest held as an approved nominee on behalf of another person; and

(b) includes any dividend, profit share or similar benefit derived from that equity or ownership interest;

“public regulation” means any national, provincial or local government legislation or subordinate legislation, or any license, permit, directive or similar authorisation issued by a regulatory authority or pursuant to any statutory authority;

“related” when used in respect of two persons, means persons who are connected to one another in any manner contemplated in sub-rule (6) below;

“the Act” means the Agricultural Produce Agents Act, 1992 (Act No. 12 of 1992);

“third party” means any person, other than the principal concerned, who in terms of an agreement or arrangement with a livestock agent or an employee or a person related to a livestock agent or an employee, provides a financial interest to a livestock agent or any of its employees or to any person related to a livestock agent or an employee, whether such financial interest relates to a specific transaction or to the occupation of the livestock agent in general;

“writing” includes communication by telefax or any appropriate electronic medium that is accurately and readily reducible to written or printed form; and **‘written’** has a corresponding meaning.

- (2) When, in these Rules a particular number of "business days" is provided for between the happening of one event and another, the number of days must be calculated by-
 - (a) excluding the day on which the first such event occurs;
 - (b) including the day on or by which the second event is to occur; and
 - (c) excluding any public holiday, Saturday or Sunday that falls on or between the days contemplated in paragraphs (a) and (b), respectively.
- (3) These Rules must be construed -
 - (a) in conjunction with the provisions of the Act and in a manner conducive to the promotion and achievement of the objectives of the Act; and
 - (b) as being in addition to any other law not inconsistent with these provisions and not as replacing any such law.

- (4) In the case of any inconsistency or conflict between a provision of these Rules and a provision of any other law specifically regulating conduct pertaining to the rendering of services by livestock agents in respect of livestock, the provisions of that other law, unless inconsistent or in conflict with the Rules, shall prevail.
- (5) The provisions of these Rules apply, unless stated otherwise herein or otherwise by law, to all livestock agents and employees notwithstanding where they practice their occupation, and irrespective of the nature of their remuneration.
- (6) For purposes of these Rules-
 - (a) an individual is related to another individual if they –
 - (i) are married, or live together in a relationship similar to a marriage; or
 - (ii) are separated by no more than two degrees of natural or adopted consanguinity or affinity;
 - (b) an individual is related to a juristic person if the individual directly or indirectly controls the juristic person, as determined in accordance with sub-rule (7); and
 - (c) a juristic person is related to another juristic person if-
 - (i) either of them directly or indirectly controls the other, or the business of the other, as determined in accordance with sub-rule (7);
 - (ii) either is a subsidiary of the other; or
 - (iii) a person directly or indirectly controls each of them, or the business of each of them, as determined in accordance with sub-rule (7).
- (7) For the purpose of this sub-rule (7), a person controls a juristic person, or its business, if-
 - (a) in the case of a juristic person that is a company-

- (i) that juristic person is a subsidiary of the first person, as determined in accordance with section 3(1)(a) of the Companies Act, 2008; or
- (ii) the first person together with any related or interrelated person, is-
 - (aa) directly or indirectly able to exercise or control the exercise of a majority of the voting rights associated with securities of that company, whether pursuant to a shareholder agreement or otherwise; or
 - (bb) has the right to appoint or elect, or control the appointment or election of, the directors of that company who control a majority of the votes at a meeting of the board of that company;
- (b) in the case of a juristic person that is a close corporation, that first person owns the majority of the members' interests, or controls directly, or has the right to control, the majority of members' votes in the close corporation;
- (c) in the case of a juristic person that is a trust, that first person has the ability to control the majority of the votes of the trustees or to appoint the majority of the trustees, or to appoint or change the majority of the beneficiaries of the trust; or
- (d) that first person has the ability to materially influence the policy of the juristic person in a manner comparable to a person who, in ordinary commercial practice, would be able to exercise an element of control referred to in paragraph (a), (b) or (c).
- (8) For all purposes of these Rules, the male gender shall include the female and neuter genders and vice versa.

PART II: CODE OF CONDUCT FOR LIVESTOCK AGENTS AND EMPLOYEES

2 Fiduciary duty and Conflict of Interest

- (1) Every livestock agent and every employee owes a fiduciary duty to his principal and must, therefore, at all times render his services-
 - (a) honestly and in good faith;

- (b) with due skill, care and diligence reasonably expected of a person-
- (i) carrying out the same functions in relation to the principal as those carried out by that livestock agent or that employee, whichever is the case; and
- (ii) having the general knowledge, skill and experience of that livestock agent or that employee, whichever is the case; and
- (c) subject to the provisions of rule 2(8) below, in the best interests of his principal.
- (2) Subject to the provisions of these rules, a livestock agent and an employee must at all times avoid a conflict of interest between his and his employer's personal interests and their principal's interests, and this involves that he must-
 - (a) not make secret profits and he must account to his principal for profits;
 - (b) not misappropriate opportunities intended for his principal;
 - (c) not unreasonably compete with his principal;
 - (d) disclose financial interests and ownership interests;
 - (e) communicate to his principal at the earliest opportunity any relevant information that comes to his attention, unless he reasonably believes that such information is immaterial to the principal or is generally available to the public, or known to his principal.
- (3) A livestock agent and an employee must avoid and where this is not possible, mitigate and disclose, in writing, any conflict of interest between the livestock agent and his principal or the employee and the said principal;
- (4) A livestock agent and an employee must, in writing, and within 10 (ten) business days after he has been employed or mandated by his principal or if he is already so employed or mandated, at the earliest reasonable opportunity-

- (a) disclose to his principal the nature and extent of any conflict of interest in respect of that principal to be used for purposes of this rule until changed or withdrawn by further notice from that livestock agent or employee, including-
 - (i) the measures taken or to be taken, in accordance with the conflict of interest management policy of the livestock agent referred to in rule 4(1), to avoid or mitigate the conflict;
 - (ii) any financial interest, other than an immaterial financial interest, that the livestock agent and/or any one of his employees may have or may become eligible for, including its general nature and any material information relating thereto;
 - (iii) the nature of any relationship or arrangement with a third party that gives rise to a conflict of interest, in sufficient detail to his principal to enable the principal to understand the exact nature and extent of the relationship or arrangement and the nature and extent of the conflict of interest;
- (b) inform his principal of the conflict of interest management policy referred to in rule 4(1) and how it may be accessed.
- (5) When a livestock agent or an employee renders a service to his principal the livestock agent and the employee involved, must not directly or indirectly deal in any livestock of his principal for his own benefit, account or interest to the detriment of his principal.
- (6) A livestock agent shall maintain an impartial approach in practicing his occupation, and for this purpose be free of any influence or relationship that, either directly or indirectly, could impair his judgment or independence.
- (7) A livestock agent shall maintain such integrity and objectivity in the practicing of his occupation as is necessary to enable him to apply unbiased judgment and objective consideration in forming an opinion or arriving at decisions.
- (8) A livestock agent shall not unduly discriminate between principals.

3. Financial Interests

- (1) A livestock agent or its employees may only receive or offer the following financial interest from, or to a third party-
 - (a) any consideration, if the receipt or payment of that consideration has been specifically approved by a principal in writing following proper disclosure of that interest in the manner contemplated in rule 2(4)(a)(iii) above, or despite having been approved without proper disclosure of that interest, it has subsequently been ratified by the principal concerned in writing following proper disclosure of that interest; provided however that such approval may be withdrawn at the discretion of that principal on giving the livestock agent at least 40 (forty) business days' written notice of his intention to do so; provided further, that such withdrawal shall not bar the livestock agent from receiving any consideration which he became entitled to receive, before he was so notified. Notwithstanding anything to the contrary herein, under no circumstances whatsoever shall a livestock agent or an employee be permitted, after having received the notice referred to above, to sell his principal's livestock to, or, procure, for and on behalf of his principal, services from a business or juristic person in which the livestock agent or employee or a person related to that livestock agent or that employee has a financial interest.
 - (b) fees or remuneration for the rendering of a service by a third party, which fees or remuneration are reasonably commensurate to the service being rendered
 - (c) subject to any other law, an immaterial financial interest; and
 - (d) a financial interest, not referred to under subparagraph (a) to (c) above, for which a consideration, fair value or remuneration that is reasonably commensurate to the value of the financial interest, is paid, promised, given or offered by that livestock agent or employee at the time of receipt thereof.
- (2) A livestock agent may not give, and may not offer any financial interest to an employee of that livestock agent for giving, promising or offering –

- (a) undue preference to the quantity of business secured for the livestock agent to the detriment of the quality of the service rendered to principals; or
- (b) undue preference in whatever manner to a specific principal or to the livestock of a specific principal, to the detriment of another principal represented by that livestock agent.
- (3) When a livestock agent or an employee acquires a financial interest in any agreement or other matter in which his principal has a material interest, or knows that a related person has acquired a financial interest in that matter, after the agreement or other matter has been approved by the principal concerned, the livestock agent or employee, as the case may be, must promptly disclose to the principal concerned, the nature and extent of that interest, and the material circumstances relating to the livestock agent's or employee's or a related person's acquisition of that interest.

4 Conflict of Interest Management Policy

- (1) Every livestock agent, other than an employee, must adopt, maintain and implement a conflict of interest management policy that complies with the provisions of the rules, and a copy thereof must be made available to the Registrar once it has been adopted in terms of rule 4(3) below.
- (2) A conflict of interest management policy must-
 - (a) provide for the management of conflicts of interest;
 - (b) include mechanisms for the identification of conflicts of interest;
 - (c) include measures for the avoidance of conflicts of interest, and where avoidance is not possible, the reasons therefore and the measures for the mitigation of such conflicts of interest;
 - (d) include measures for the disclosure of conflicts of interest;
 - (e) include processes, procedures and internal controls to facilitate compliance with the policy;

- (f) describe consequences of non-compliance with the policy by the livestock agent's employees;
 - (g) include a list of all its related persons;
 - (h) include the names of any third parties in which the livestock agent holds an ownership interest or a financial interest;
 - (i) include the names of any third parties that hold an ownership interest or a financial interest in the livestock agent;
 - (j) include the nature and extent of the ownership interest or financial interest referred to in subparagraphs (h) and (i) above; and
 - (k) be drafted in an easily comprehensible form and manner.
- (3) A conflict of interest management policy must be adopted by the sole proprietor of a livestock agent, the board of directors of a livestock agent which is a company or, in the case where a livestock agent is not a company, the governing body of that livestock agent.
- (4) A livestock agent must ensure that its employees are aware of the contents of its conflict of interest management policy and provide for appropriate training and educational material in this regard.
- (5) A livestock agent must continuously monitor compliance with its conflict of interest management policy and annually conduct a review of the policy.
- (6) A livestock agent must inform his principals in writing that he has adopted a conflict of interest management policy in appropriate media and ensure that it is made available to his principals at their written request and is also easily accessible for public inspection at all reasonable times.
- (7) A livestock agent or employee may not avoid, limit or circumvent or attempt to avoid, limit or circumvent compliance with this rule through an associate or an arrangement involving an associate.

- (8) The livestock agent, must on annual basis and before 31 August of each year, provide the Registrar with a written report on the livestock agent's conflict of interest management policy, such report to deal with the matters referred to in rule 4(2)(f) – (j) and rule 4(6) above, and must include a statement confirming compliance with rule 4(5) above, and if any changes have been made to the conflict of interest management policy, such changes must be brought to the attention of the Registrar.
- (9) The report referred to in sub-rule (8) must report on at least the implementation, monitoring and compliance with, and the accessibility of the conflict of interest management policy.

5 Other duties of livestock agents and employees

- (1) When a livestock agent or an employee renders a service to his principal-
 - (a) representations made and information provided to a principal by the livestock agent or the employee-
 - (i) must be factually correct;
 - (ii) must be provided in plain language, avoid uncertainty or confusion and not be misleading;
 - (iii) must be adequate and appropriate in the circumstances of the particular type of service, taking into account the level of knowledge of the principal;
 - (iv) must be provided timeously so as to afford the principal reasonably sufficient time to make an informed decision;
 - (v) may, subject to the provisions of these Rules, be provided orally and, at the principal's written request, confirmed in writing within a reasonable time after such request;

- (vi) must, where provided in writing or by means of standard forms or format, be in a clear and readable print size, spacing and format;
- (vii) must, as regards all amounts, sums, values, charges, fees, remuneration or monetary obligations mentioned or referred to therein and payable to a third party or to the livestock agent, be reflected in specific monetary terms; provided that where any such amount, sum, value, charge, fee, remuneration or monetary obligation is not reasonably pre-determinable, its basis of calculation must be adequately described; and
- (viii) need not be duplicated or repeated to the same principal unless material or significant changes affecting that principal occur, or the nature of the service renders it necessary, in which case a disclosure of the changes to the principal must be made without delay;
- (b) he must disclose to his principal whether the livestock agent holds guarantees or professional indemnity or fidelity insurance cover or not and, if so, the nature and extent thereof;
- (c) he must disclose to his principal by way of a separate disclosure (and not mere disclosure of an all-inclusive fee or charge) of any charges and fees to be levied against that principal for any service rendered or to be rendered, including-
 - (i) the amount, rate or basis of calculation and the frequency of payment thereof;
 - (ii) particulars of the identity of the recipient of such fees or charges but only if so demanded by his principal, in writing, and then within 20 (twenty) business days of that written demand; and
- (iv) the services or other purpose for which each fee or charge is levied;
- (v) the nature, extent and frequency of any incentive, remuneration, consideration, commission, fee or brokerages ('valuable consideration'), which will or may become payable to the livestock agent or an employee or person related to the livestock agent or employee, directly or indirectly, by any third party, or for which the livestock agent, employee, or person related to the livestock agent or

employee, may become eligible, as a result of rendering of the services, as well as the identity of the third party providing or offering the valuable consideration;

- (d) the services must be rendered in accordance with the contractual relationship and/or reasonable requests or instructions of the principal, which must be executed as soon as reasonably possible and with due regard to the interests of the principal which must be afforded appropriate priority over any interests of the livestock agent and the employee; and
 - (e) all transactions of whatever nature concluded on behalf of a principal must be accurately and timeously accounted for.
- (2) A livestock agent and an employee, on behalf of the livestock agent, must-
- (a) in making contact arrangements, and in all communications and dealings with his principal, act honorably, professionally and with due regard to the convenience of his principal; and
 - (b) at the commencement of any contact, visit or call initiated by the livestock agent, explain the purpose thereof.
- (3) Notwithstanding the provisions of rule 5 (1) above, the livestock agent shall within 10 (ten) business days of being mandated by his principal procure that he and his principal execute and sign a service level agreement setting out the terms and conditions governing their relationship or in the absence of such signed a service level agreement the livestock agent must communicate in writing to his principal the terms and conditions governing their relationship which shall as a minimum include (but not be limited to) the following-
- (a) the identity of the livestock agent and each representative of the livestock agent if the livestock agent is a juristic person and the registration number (if any), physical address, postal address, telephone number, e-mail address, facsimile number and VAT registration number of the livestock agent;

- (b) the identity of the principal and each representative of the principal if the principal is a juristic person and the registration number (if any), physical address, postal address, telephone number, e-mail address, facsimile number and VAT registration number of the principal;
 - (c) the duties, responsibilities and risk attributable to each party;
 - (d) the nature, manner and basis in which the price payable for livestock is to be calculated, and if the livestock agent and the principal agree on a minimum guaranteed price, this fact should be stipulated on a separate document which is to be signed by both parties and which document should as a minimum stipulate who bears the risk should the minimum guaranteed price not be achieved;
 - (e) the liability of the principal and/or livestock agent for damages and/or losses suffered by the principal;
 - (f) full particulars of the insurance (as contemplated in rule 10 below) held by the livestock agent;
 - (g) full and comprehensive details of the payment terms; and
 - (h) the particulars referred to in rule 5(1)(c)(iv) above.
- (4) A livestock agent must have appropriate procedures and systems in place to-
- (a) record such verbal and written communications and reports relating to a service rendered to a principal as are contemplated in the Act or in these Rules;
 - (b) store and retrieve such records and any other material documentation relating to the principal or services rendered to the principal; and
 - (c) keep such records, reports and documentation safe from destruction.
- (5) All such records must be kept for a period of five years after the rendering of the service concerned.

- (6) Livestock agents are not required to keep the records at their premises but must ensure that they are available for inspection within 5 (five) business days of the Registrar's request.
- (7) Records may be kept in an appropriate electronic or recorded format, which are accessible and readily reducible to written or printed form.
- (8) A livestock agent and an employee may not disclose any confidential information acquired or obtained from a principal in regard to such principal, unless the prior written consent of the principal has been obtained or disclosure of the information is required in the public interest or under any law.
- (9) A livestock agent shall maintain his knowledge and skills at such a level that he is able to conduct his business in accordance with the applicable laws, regulations and rules as well as the technical and professional standards common to his occupation.
- (10) A livestock agent shall-
 - (a) ensure that his employees comply with the laws, regulations and rules applicable to his occupation, and for that purpose he shall-
 - (b) provide the necessary training to his employees;
 - (c) adequately supervise his employees;
 - (d) procure that each livestock agent and each employee shall attend all regulatory courses and pass all regulatory examinations or training set by or on behalf of the Council within the period determined by the Registrar, but in the case of a livestock agent not later than 12 (twelve) months after that livestock agent has been issued with a registration certificate.
 - (e) bring to the attention of the Council and other responsible authorities any non-compliance or suspected non-compliance of applicable laws, regulations or rules by his employee or by other livestock agent and shall furnish the Council with copies of all documentation which could be used to support such alleged non-compliance or suspected non-compliance;

- (f) at all times whilst acting on behalf of his principal, act in a transparent manner.

6 INFORMATION ABOUT SERVICE PROVIDERS

- (1) A livestock agent must on demand whenever his principal or the Registrar so requires in writing, furnish the principal or the Registrar, as the case may be, in writing with full particulars of the following information about all service providers contracted or utilised on behalf of or for the benefit of the principal during the previous 3 (three) years-
- (a) name, physical location, and postal, telephone and e-mail contact details of the service provider;
 - (b) the nature and extent of his or a related person's contractual relationship with that service provider (if any), and whether the livestock agent has contractual relationships with other service providers;
 - (c) where applicable, the fact that the livestock agent -
 - (i) directly or indirectly holds more than 10% (ten percent) of the relevant service provider's shares, or has any equivalent substantial financial interest in the service provider;
 - (ii) during the preceding 12 (twelve) month period received more than 30% (thirty percent) of his total income, including commission, from the service provider, and the livestock agent must convey any changes thereafter in regard to such information at the earliest opportunity to the principal and the Registrar.
- (2) A livestock agent must, where the relevant, terms of employment or mandate enables such livestock agent to provide principals with services in respect of a choice of service providers, exercise judgment objectively in the interest of the principal concerned.

- (3) A livestock agent may not, in dealing with a principal, compare different service providers or livestock agents unless the differing characteristics of each are made clear, and may not make inaccurate, unfair or unsubstantiated criticisms of any service provider or livestock agent.

7 INFORMATION ON BUYERS TO WHOM CREDIT WAS GRANTED

- (1) Where a livestock agent in compliance with such policies on the granting of credit as the Council may from time to time implement and with the prior written consent of his principal and on his principal's behalf and at the risk of the principal grants credit to a buyer, the livestock agent must at the written request of his principal furnish the principal with full particulars of the following information and, where such information is provided orally, must confirm such information within 5 (five) business days in writing-
- (a) full business and trade names, registration number (if any), postal and physical addresses, telephone and, where applicable, cellular phone number, and internet and e-mail addresses, in respect of that buyer, as well as the names and contact details of appropriate contact persons or offices;
- (b) a copy of a document which records the amount for which, the terms and conditions on which, and the period (not to exceed the period referred to in rule 31(5) below) for which credit was granted;
- (c) concise details of the legal and contractual status of the buyer, and whether the livestock agent holds guarantees or any other form of security for the outstanding debt or not, to be provided in a manner which can reasonably be expected to make it clear to the principal which person or entity accepts responsibility for the payment of the outstanding debt and the extent to which the principal will have to accept such responsibility.

8 INFORMATION ABOUT SERVICES RENDERED

- (1) Subject to the provisions of these rules, a livestock agent must where applicable, at the written request of a principal, provide the principal with a copy

of the statement of account referred to in Rule 28 below, reflecting all services rendered to his principal or on behalf of his principal.

- (2) No livestock agent may in the course of the rendering of a service request any principal to sign any written or printed form or document unless all essential details required to be inserted thereon by the principal or on behalf of the principal have already been inserted.

9 ACCESS TO INFORMATION

- (1) In the event of any other public regulation requiring a person acting as a livestock agent to keep and retain the information referred to in these Rules, then such livestock agent shall be deemed to have complied with the provisions of these Rules, if and to the extent that the said livestock agent complied with the said public regulation, provided that such other public regulation is in this regard not less onerous than these Rules.
- (2) The rights of access to information set out in this rule are in addition to, and not in substitution for, any rights a principal may have to access information in terms of –
- (i) section 32 of the Constitution of the Republic of South Africa, 1996;
 - (ii) the Promotion of Access to Information Act, 2000 (Act 2 of 2000); or
 - (iii) any other public regulation.

10 RISK MANAGEMENT

Control measures

- (1) A livestock agent must at all times have and effectively employ such resources, procedures and appropriate technological systems that can reasonably be expected to eliminate as far as reasonably possible, the risk that principals will suffer loss or damage through theft, fraud, other dishonest acts, negligence, or other culpable omissions.

Specific control objectives

- (2) A livestock agent, excluding an employee, must, without limiting the generality of sub-rule (1), structure his internal control procedures so as to provide reasonable assurance that-
 - (a) the relevant business can be carried on in an orderly and efficient manner;
 - (b) financial and other information used or provided by the livestock agent will be reliable;
 - (c) all funds will be properly and timeously accounted for; and
 - (d) all applicable laws and rules will be complied with.
- (3) A livestock agent must-
 - (a) display a certified copy of each registration certificate issued to him and to every employee in a prominent and durable manner within every business premises of the livestock agent;
 - (b) ensure that a reference to the fact that such a registration certificate is held by such livestock agent, is contained in all business documentation, advertisements and other promotional material;
 - (c) ensure that all registration certificates are at all times immediately or within a reasonable time available for production to any person requesting proof of registration under authority of a law or for the purpose of entering into a business relationship with the livestock agent.

Insurance

- (1) A livestock agent shall consult with his principal regarding the matters stipulated in this sub-rule and shall, to the extent reasonably required by his principal in writing, maintain in force a suitable guarantee acceptable to his principal or professional indemnity or fidelity insurance cover, to cover his principal against -

- (a) the risk of losses or damages suffered due to theft committed by the livestock agent or his staff of any monies or livestock handed over by or on behalf of his principals to him; and
 - (b) the risk of losses or damages suffered due to dishonest conduct by a livestock agent or his staff insofar as such conduct relates to monies or livestock handed over by or on behalf of his principal to him.
- (2) Full details of the guarantee or insurance cover obtained must be provided, in writing, by the livestock agent upon written request by the principal or the Council, and such details are to include a copy of the certificate of insurance or guarantee (as the case may be), and provided further that any change in such details shall forthwith be communicated by the livestock agent to his principal and to the Council.
- (3) In the event of a claim, the livestock agent shall process the claim fully and use all reasonable endeavors to succeed in such claim. Any excess deductible from the claim value shall be for the principal's account.

11 Remuneration

- (1) No livestock agent may claim remuneration in an amount or at a higher price, rate or scale than the agreed remuneration, unless the prior written approval of the principal has been obtained.
- (2) A livestock agent shall not –
- (a) overreach his principal in any manner whatsoever;
 - (b) charge remuneration or recover costs or expenses at an amount, rate or scale which in the view of the Council is unreasonably high, having regard to all relevant circumstances.
 - (c) present any remuneration as a cost or an expense which is not normally regarded as a cost or expense.

12 Acceptance of gifts

No livestock agent or a member of his family shall otherwise than in accordance with generally accepted business practices accept any goods, service or hospitality that results or could result in a conflict of interest or an impairment of his independent judgment in the practicing of his occupation.

13 Financial obligations

A livestock agent shall at all times ensure that financial obligations incurred by him will not impair or cause to impair his independence.

14 Publicity and advertisements

- (1) A livestock agent may by means of publicity and advertisements bring his business and the nature of the services rendered by him to the notice of the public, provided –
 - (a) a due sense of responsibility towards the industry and the public is displayed therein; and
 - (b) the contents and presentation thereof in the opinion of the Council, bear testimony of good taste, and
 - (c) the livestock agent concerned does not draw comparisons with or disparage the services of other livestock agents.
- (2) An advertisement by any livestock agent must-
 - (a) not contain any statement, promise or forecast which is fraudulent, untrue or misleading;
 - (b) if it contains-
 - (i) performance data (including awards and rankings), include references to their source and date;
 - (ii) illustrations, forecasts or hypothetical data-

- (aa) contain support in the form of clearly stated basic assumptions (including but not limited to any relevant assumptions in respect of performance, turnover, costs and charges) with a reasonable prospect of being met under current circumstances; and
- (bb) make it clear that they are not guaranteed and are provided for illustrative purposes only.
- (iii) information about past performances, also contain a warning that past performances are not necessarily indicative of future performances.

15 Canvassing and touting

A livestock agent may canvass for business on condition that he does not —

- (a) propagate any false or misleading or questionable information of any nature whatsoever;
- (b) interfere directly or indirectly with the sale, handling or inspection of livestock handed over for sale to another livestock agent;
- (c) directly or indirectly influence purchasers not to buy certain livestock, from a certain livestock agent, or from a certain principal, unless he can show good cause therefore.

16 Relations with other livestock agents, principals and the Council

- (1) The behavior of a livestock agent towards other livestock agents, his principals and the Council shall be of such nature that it will foster co-operation and good relations.
- (2) A livestock agent shall not, express any malicious or unfounded criticism on the activities of another livestock agent.
- (3) No livestock agent shall receive, accept or handle any livestock dispatched to or intended for delivery to or sale by another livestock agent unless such other livestock agent does not have a representative to accept the delivery, and then only after all reasonable attempts have been made to notify the livestock agent concerned of that delivery.

PART III: COMPLAINTS AND WAIVER OF RIGHTS

17 General

(1) In rules 17-20 -

'complaint' means a specific complaint relating to a service rendered by a livestock agent or employee to the complainant or to the conduct of a livestock agent or employee and in which complaint it is alleged that the livestock agent or employee-

- (a) has contravened or failed to comply with a provision of the Act or of these rules irrespective of whether as a result thereof the complainant has suffered or is likely to suffer loss or damage;
- (b) has willfully or negligently rendered a service to the complainant which has caused loss or damage to the complainant or which is likely to result in such loss or damage; or
- (c) has treated the complainant unfairly, unprofessionally or improperly;
- (d) has through any other act or omission conducted himself unprofessionally, improperly or disgracefully.

'internal complaint resolution system and procedures', in relation to a livestock agent and a person, means the system and procedures established and maintained by the livestock agent in accordance with these rules for the resolution of complaints by principals or other persons;

'resolution', or **'internal resolution'**, in relation to a complaint and a livestock agent, means the process of the resolving of a complaint through and in accordance with the internal complaint resolution system and procedures of the livestock agent;

(2) A livestock agent must-

- (a) request that any person who has a complaint against the livestock agent must lodge such complaint in writing;

- (b) maintain a record of such complaints for a period of five years;
- (c) handle complaints in a timely and fair manner;
- (d) take steps to investigate and respond promptly to such complaints; and
- (e) where such a complaint is not resolved to the complainant's satisfaction, advise the complainant that other steps are available to the complainant in terms of the Act and these rules.

18 Basic principles of systems and procedures

A livestock agent, excluding an employee must maintain an internal complaint resolution system and procedures based on the following-

- (a) maintenance of a comprehensive complaints policy outlining the livestock agent's commitment to, and system and procedures for, internal resolution of complaints;
- (b) transparency and visibility: ensuring that complainants have full knowledge of the procedures for resolution of their complaints;
- (c) accessibility of facilities: ensuring the existence of easy access to such procedures at any office or branch of the livestock agent open to clients, or through ancillary postal, fax, telephone or electronic helpdesk support; and
- (d) fairness: ensuring that a resolution of a complaint can during and by means of the resolution process be effected which is fair to both complainants and the livestock agent and its staff.

19 Resolution of complaints

The internal complaint resolution system and procedures of the livestock agent must be designed to ensure the existence and maintenance of at least the following for purposes of effective and fair resolution of complaints-

- (a) availability of adequate manpower and other resources;

- (b) adequate training of all relevant staff, including imparting and ensuring full knowledge of the provisions of the Act, and the rules with regard to resolution of complaints;
- (c) ensure that responsibilities and mandates are delegated to facilitate complaints resolution of a routine nature;
- (d) ensure that there is provision for the escalation of non-routine serious complaints and the handling thereof by staff with adequate expertise;
- (e) internal follow-up procedures to ensure avoidance of occurrences giving rise to complaints, or to improve services and complaint systems and procedures where necessary.

20 Specific obligations

- (1) Subject to the other provisions of rules 17 - 20, the internal complaint resolution system and procedures of a livestock agent must contain arrangements which-
 - (a) must-
 - (i) reduce the details of the internal complaint resolution system and procedures of the livestock agent, including all subsequent updating or upgrading thereof, to writing;
 - (ii) provide that access to the procedures is at all times available to complainants at any relevant office or branch of the livestock agent, or by electronic medium, and that such availability is appropriately made known by public press or electronic announcements or separate business communications to existing principals;
 - (vi) include in the details envisaged in subparagraph (i), a reference to the duties of the livestock agent and the rights of a complainant set out in rules 17 to 20 above;
 - (iv) include in such details a clear summary of the provisions of the Act, which will apply whenever the complainant, after dismissal of a complaint by the livestock agent, wishes to pursue further proceedings before the Council; and

- (v) include in such details the name, address and other contact particulars of the Registrar;
- (b) must stipulate that complaints must, if possible, be submitted in writing and must contain all relevant information, and that copies of all relevant documentation must be attached thereto;
- (c) must provide that the receipt of complaints is promptly acknowledged in writing to the complainant, with communication particulars of contact staff to be involved in the resolution of the complaint, and are properly internally recorded by the relevant staff for purposes of compliance with rule 20(3) below;
- (d) must make provision that after the receipt and recording of a particular complaint, the complaint will as soon as practically possible be forwarded to the relevant staff appointed to consider its resolution, and that-
 - (i) the complaint receives proper consideration;
 - (ii) appropriate management controls are available to exercise effective control and supervision of the consideration process;
 - (iii) the complainant is informed of the results of the consideration within six weeks of receipt of a complaint; provided that if the outcome is not favourable to the complainant, full written reasons must be furnished to the complainant within six weeks of receipt of a complaint, and the complainant must be advised that the complaint may within six months be pursued with the Council whose name, address and other contact particulars must simultaneously be provided to the complainant.
- (2) In any case where a complaint is resolved in favor of a complainant, the livestock agent must ensure that a full and appropriate level of redress is offered to the complainant without any delay.
- (3) A livestock agent must maintain records for a minimum period of five years regarding complaints received, together with an indication whether or not any such complaint has been resolved.

21 Termination of Agreement or Business

- (1) A livestock agent must –
 - (a) subject to any contractual obligations, give immediate effect to a request of a principal who voluntarily seeks to terminate any agreement or mandate with the livestock agent;
 - (b) where the principal makes the request on the advice of the livestock agent, the livestock agent must take reasonable steps to ensure that the principal fully understands all the implications of the termination;
- (2) A livestock agent, other than an employee, who ceases to operate as such, must immediately notify all affected principals accordingly and take, where reasonably necessary or appropriate in consultation with the principals, reasonable steps to ensure that any outstanding business is completed promptly or transferred to another livestock agent selected by the affected principals; and
- (3) Where an employee ceases to be employed by that livestock agent, such livestock agent must immediately take, where reasonably necessary or appropriate in consultation with the employee concerned, reasonable steps to notify all affected principals accordingly and ensure that outstanding business is completed or transferred to another employee of that livestock agent or such other livestock agent as selected by the principal concerned.

22 Waiver of Rights

No livestock agent may request or induce in any manner his principal to waive any right or benefit conferred on his principal by or in terms of any provision of the Act or these Rules, or recognise, accept or act on any such waiver by the principal, and any such waiver is null and void.

PART IV: REGISTRATION CERTIFICATES**23 Applications for registration certificates**

- (1) An application for a registration certificate shall be made every 2 (two) years, not later than 20 (twenty) business days before each anniversary of the date of issue of the registration certificate concerned on a form available from the Council for this purpose.
- (2) Such form shall –
- (a) be completed in full in accordance with the directions indicated thereon, and shall be signed by the applicant or by a person duly authorised thereto, on behalf of the applicant;
 - (b) be accompanied by-
 - (i) the applicable application fee determined by the Council for this purpose, as well as the other applicable particulars and documents indicated thereon; and
 - (ii) a tax clearance certificate issued to the applicant by the South African Revenue Services which tax clearance certificate is not older than 3 (three) months since date of issue;
 - (c) be forwarded by post to the Council to, or be delivered to the Council at, the address indicated thereon; and
 - (d) authorise holders of personal data to furnish information regarding the applicant's credentials to the Council and/or its duly authorised verification agent.
- (3) In order to determine whether the applicant and the persons referred to in sub-rule 5 (a) below are fit and proper persons, the application form submitted to the Council shall provide particulars of such persons and shall also deal with the matters referred to in sub-rules 5 (a) – (b) below.

- (4) A livestock agent must in the application to the Council, be candid and accurate and must, of his own accord, disclose all facts and information at his disposal or which may be accessible to him, and which may be relevant for purposes of a decision by the Council.
- (5) The Council must, on receipt of an application by a livestock agent for the issue of a registration certificate, consider the application on the basis of all information disclosed in the application, or otherwise obtained in terms of the Act or these rules, relating to the proposed issue of a registration certificate and of the following criteria and guidelines-
- (a) that the applicant and the persons who are in charge or in control of the applicant-
 - (i) are fit and proper persons;
 - (ii) have sufficient and appropriate knowledge of the provisions of the Act and the Rules, and particularly of all duties and obligations imposed on the applicant in terms of the Act and the Rules and of duties and obligations to be discharged by the applicant in the enforcement of any rights granted by the Act;
 - (iii) will, as regards the relevant business, have adequate resources available to ensure proper compliance monitoring, including as regards the activities of the employees of the livestock agent concerned;
 - (iv) will be able to function adequately independently or objectively;
 - (v) will be able and enabled to keep a written record of all activities undertaken in the course of the business including, but not limited to, accounting records and relevant financial transactions;
 - (vi) will be able to function in a manner ensuring that no actual or potential conflicts of interest arise either internally or externally;
 - (vii) will be able to liaise directly with the Registrar; and
 - (b) the number of regulatory courses or training attended and regulatory examinations or training passed by the persons referred to in sub-rule (5)(a).

- (6) in the exercise of the approval function, the Council is vested with a discretion and may grant an approval temporarily, provisionally, conditionally or unconditionally and in a particular case notwithstanding that the Council is not satisfied that any particular criterion or guideline is fully met in any such case; provided that the Council shall not grant an approval where non-compliance with rule 23(5)(a) (i), (ii), (v) or (vi) is found.

24 Payment for and maintenance of registration certificates

- (1) The Council shall not issue a registration certificate to a livestock agent unless the amount referred to in rule 24 (7) has been paid in full to the Council.
- (2) The amount required from a livestock agent by the Council in terms of sub-rule (1) above shall be determined by the Council on an annual basis and shall be paid to the Council simultaneously with the application referred to in rule 23 (1) above.
- (3) Such payment, together with any interest accrued in terms of sub-rule (4) (if applicable), shall reach the Council on or before 30 June first following the date of the relevant notice referred to in sub-rule (1).
- (4) The total outstanding amount owing from time to time in terms of sub-rule (1) shall bear interest at the mora interest rate determined from time to time in terms of the Prescribed Rate of Interest Act, 55 of 1975.
- (5) The Council shall annually not later than 30 April in writing notify each livestock agent and each employee who is the holder of a registration certificate, of the amount determined in terms of section 16(9)(a) of the Act, that is payable for the maintenance of such certificate, which payment is to be made not later than the date determined by the Council.
- (6) The Council may suspend a livestock agent from conducting his business as livestock agent, if-

- (a) that livestock agent has failed to make the payment referred to in sub-rule (2) above;
or
- (b) on written demand by the Registrar, has failed to-
 - (i) comply with rule 31 (3) below and give satisfactory reasons for the failure to furnish the required report; or
 - (ii) show satisfactory cause for the livestock agent to continue conducting his business as such.
- (7) If the Council orders a suspension as contemplated in sub-rule (6), any interested person may apply in the prescribed manner and form to the Council, to cancel the suspension of the livestock agent; provided however that if such request is made by or on behalf of the livestock agent concerned, the Council shall cancel the suspension of the livestock agent only after the livestock agent has complied with his outstanding obligations in terms of sub-rules (3), (5) and rule 31 (3) below (as the case may be).

PART V: RECEIPT AND SALE OF LIVESTOCK

25 Register of livestock received

- (1) Each livestock agent shall keep a register at his business address in which he shall record the following particulars in respect of all livestock received by him for sale-
 - (a) The date of receipt of the livestock.
 - (b) The name and address of the principal from whom it was received.
 - (c) The number of the delivery note which accompanied it.
 - (d) The kind and gender and description of livestock received.
 - (e) The quantity received.
- (2) The particulars referred to in sub-rule (1) shall –

- (a) be recorded in such register in chronological order of receipt of the livestock concerned; and
- (b) be thus recorded not later than the business day first following the day of receipt of the livestock concerned.
- (3) If a livestock agent uses more than one register simultaneously, he shall notify the Council in writing of the number of registers that are in use.
- (4) Records kept in terms of this rule may be kept in the electronic format approved of by the Council.

26 Marking and Reports on unsold livestock

- (1) A livestock agent shall, on receipt of the livestock for sale mark each animal or other livestock product in such manner that it is identifiable and distinguishable from any other animal or livestock product received for sale.
- (2) A livestock agent shall at all times comply with the provisions of the Stock Theft Act, 1959 (Act No. 57 of 1959) and the Animal Identification Act, 2002 (Act No. 6 of 2002) to the extent that they apply to livestock agents.
- (3) If the livestock is not fully sold within 2 (two) business days after the receipt thereof, the livestock agent concerned shall forthwith inform his principal in writing of the extent and condition of the unsold livestock and a copy of such a report shall be retained for inspection by his principal or by the Council.
- (4) Similar written reports shall thereafter be provided to a principal on a daily basis until all livestock have been sold or otherwise disposed of and copies of such reports shall be retained for inspection by his principal or by the Council.
- (5) A livestock agent or his employee shall on demand provide the Registrar or the Council of copies of the reports referred to in sub-rules (3) and (4).
- (6) A livestock agent shall not be entitled to destroy the reports referred to sub-rules (3) and (4) before the expiry of the period referred to in rule 5(5) above.

27 Sale of Livestock

- (1) A livestock agent who sells his principal's livestock by way of an auction, shall comply with the provisions of section 45 of the Consumer Protection Act, 2008 (Act No. 68 of 2008) and the regulations promulgated in terms of that Act, to the extent that they apply to the sale of livestock by auctioneers.

28 Sales notes

- (1) A livestock agent shall forthwith after each sales transaction issue a sales note and before the livestock concerned is removed from his custody or from the custody from anyone who held the livestock concerned on his behalf, also issue a removal certificate which complies with the provisions of section 8 of the Stock Theft Act, 1959 (No. 57 of 1959) to the purchaser thereof.
- (2) The following particulars shall be indicated on a sales note-
- (a) A serial number.
 - (b) The name or code mark of the livestock agent concerned.
 - (c) The date of the sale concerned.
 - (d) The name of the principal concerned.
 - (e) In the case of a credit sale, the name and physical and postal address of the purchaser concerned.
 - (f) The kind, gender and description of livestock sold, and the quantity and/or mass so sold.
 - (g) The price at which each such quantity and/or mass was sold.
 - (h) The designation of the premises at which such sale took place.
- (3) The sales note referred to in sub-rule (1) may be produced in electronic form approved of by the Council.

29 Payments for sales by Buyers

- (1) Payment made by a buyer to a livestock agent for livestock sold by the livestock agent on behalf of his principal to the buyer shall be made in cash, by way of an electronic funds transfer to the credit of the livestock agent's bank account or by way of a crossed cheque in favour of the livestock agent.
- (2) A cheque or electronic funds transfer as payment for livestock sold that is presented to or made in favour of a livestock agent as payment for livestock sold by him shall be made out in favour of the livestock agent concerned, and if a cheque, be crossed and be endorsed with the expression "not transferable" or "nie oordraagbaar".
- (3) If a cheque does not comply with the requirements set out in sub-rule (1), the livestock agent concerned shall forthwith cross it, and endorse it in the manner provided in sub-rule (1).

PART VI: ACCOUNTING TO PRINCIPALS**30 Accounting to principals**

- (1) A livestock agent shall not later than 1 (one) business day after having sold livestock on behalf of his principal, issue a statement to his principal on which the following particulars are indicated-
 - (a) A serial number.
 - (b) The name of the livestock agent concerned.
 - (c) The name and address of the principal concerned.
 - (d) The date of sale of the livestock concerned.
 - (e) The number of the delivery note (if any) that accompanied the delivery of the livestock.
 - (f) The kind, gender and description of livestock received, the quantity thereof that has been sold, and the selling price and gross amount realised.

- (g) The number of the relevant sales notes referred to in rule 28, in sequence of the date of issue thereof.
- (h) The amount and nature of each deduction in respect of expenses incurred in connection with the sale and delivery of the livestock concerned or in respect of any other service rendered by the livestock agent to the principal at the written request of the principal.
- (i) The amount, rate or scale at which remuneration was claimed, and the amount of such remuneration.
- (j) Particulars of livestock that have in terms of some or other law been found to be unsuitable to be presented for sale or have for another reason been withdrawn from sale.
- (k) in the event of a sale of livestock having taken place on credit, particulars of the purchaser of such livestock as required by rule 7 above and an indication whether such credit was granted by the livestock agent or by his principal and the extent thereof.
- (2) Copies of the relevant sales notes referred to in rule 28 shall forthwith be made available to the principal at his written request.
- (3) The serial number indicated on a statement in terms of sub-rule (1)(a) shall not later than the business day first following the date of issue of the statement concerned, be recorded in the relevant register referred to in rule 25 opposite the particulars of the livestock concerned.
- (4) If a livestock agent intends to recover any amount other than a deduction referred to in sub-rule (1)(i) from the proceeds of a sale, he shall –
 - (a) be in possession of a written consent from the principal concerned in which such deduction is authorised; and
 - (b) indicate full particulars of such recovery on the relevant statement referred to in sub-rule (1).

- (5) When a livestock agent indicates particulars referred to in sub-rule(1)(j) on a statement, he shall, when requested thereto by his principal or by the Council, provide him with a copy of the order by the appropriate authority that the livestock concerned has in terms of some or other law been found to be unsuitable to be presented for sale.

31 Payments to principals

- (1) Payment made by a livestock agent to his principal for livestock sold by him on behalf of his principal shall be made in cash, by way of an electronic funds transfer to the credit of his principal's bank account or by way of a crossed cheque drawn on his bank account in favour of his principal.
- (2) Unless a livestock agent has sold the livestock of his principal on his principal's credit, he shall make payment to his principal not later than 1 (one) business day after the livestock concerned has been sold, unless his principal agrees, in writing, that payment may be extended to a date which shall not be later than the last business day of the month in which the livestock concerned was sold.
- (3) The amount of such payment shall correspond with the amount due indicated on the relevant statement issued to the principal concerned in terms of rule 30; provided that the amounts due as indicated on two or more such statements may be combined for the purpose of making a single payment, in which case the livestock agent concerned shall also issue a summarised statement to his principal on which the following particulars are indicated-
- (a) the serial numbers of each of the statements referred to in rule 30(1), as well as the net amount due in terms of each such statement;
- (b) the total net amount owing; and
- (c) the number of the cheque or reference of the electronic transfer concerned.
- (4) The date of issue indicated on any cheque drawn or any electronic transfer made to effect payment, shall not be later than the date on which it has to be forwarded to the principal concerned in terms of sub-rule (2).

- (5) A livestock agent shall not be entitled without the prior written approval of his principal, who approved such credit either for a specific buyer, or generally for a category of potential buyers and the specific buyer falls within that category to sell his principal's livestock on the credit of his principal; provided however that such credit shall not be granted for a period longer than 30 (thirty) days after date of the sales transaction concerned and provided further that the livestock agent shall-
- (a) also comply with the provisions of rule 6; and
- (b) make payment in full to his principal, without any right of set-off, on the first business day following the expiry of the 30 (thirty) day period referred to in rule 31(5), unless his principal agrees, in writing, that payment may be extended to a date not later than the last business day of that month. Payment shall be made with full written particulars of the amount received, the identity of the buyer who made payment, the sales transaction to which such payment relates and the amount remaining outstanding after such payment has been made.
- (6) An employee shall not be entitled to sell the livestock of his employer's principal on credit, without the prior written consent of his employer.

PART VII: CONTROL AND ADMINISTRATION OF ACCOUNTING ACCOUNTS

32 Addresses at which accounting records are kept

- (1) Every livestock agent shall keep at his business address entered in the records of the Council, accounting records of-
- (a) all monies received, kept or expended by him;
- (b) all his assets and liabilities;
- (c) all his financial transactions; and
- (d) all livestock received, kept, sold and lawfully destroyed by him;

and shall retain such accounting records for a period of at least three years after the last entry in respect of any transaction made therein, together with the vouchers, receipts and other documents relating to those accounting records.

- (2) Notwithstanding the provisions of sub-rule (1), the Council may at the request of a livestock agent grant written approval that such records may be kept at another address specified in the approval concerned.

33 Accounting Records to be audited

- (1) Every livestock agent shall cause his accounting records to be audited at his expense by an auditor within 4 (four) months after the final date of every financial year of the livestock agent, which final date shall not be amended by him without the prior written approval of the Council.
- (2) Notwithstanding the provisions of Rule 33 (1), the Council may, on good cause shown, at any time order any livestock agent by notice in writing to submit to the Council within a period stated in such notice, but not less than 30 (thirty) business days, an audited statement fully setting out the state of affairs in respect of the matters referred to in Rule 33 (1).
- (3) The accounting records of a livestock agent shall represent fully and accurately in accordance with the financial reporting standards applicable to the business of the livestock agent the state of affairs and business of the livestock agent and explain the transactions completed on behalf of his principal.
- (4) The accounting records shall distinguish in readily discernible form between transactions concluded on his own behalf and transactions concluded on behalf of his principals.
- (5) A livestock agent shall make and keep proper back-ups of his accounting records which shall be kept off site in a locked and fireproof safe, and he shall ensure that his auditors shall, annually, in the report referred to in rule 34(1) below, certify that the livestock agent complied with his duties in this regard.

34 Auditor's Report

- (1) A livestock agent shall cause the auditor referred to in rule 33(1), immediately after having completed the audit contemplated in rule 33(1) above, to submit to the Council a report in the form determined by the Council regarding his findings, and a copy thereof to the livestock agent concerned. Such report shall be accompanied by the audited financial statements of the livestock agent concerned.
- (2) If a livestock agent fails or is, in the opinion of the Registrar unlikely to comply with the provisions of rules 33(1) and/or 34(1), the Registrar may designate an auditor to comply with those provisions on behalf of and at the expense of the livestock agent concerned.

35 Bank Accounts

- (1) The bank account to be kept and held by a livestock agent other than his employee shall be a cheque account and for that purpose every livestock agent shall-
 - (a) open and keep a bank account at a commercial bank; and
 - (b) unless otherwise agreed, forthwith deposit therein the proceeds of the sale of livestock sold by him on the instructions of or on behalf of his principal.
- (2) A livestock agent shall within 5 (five) business days after a cheque account has been so opened, provide the Council with the particulars of his bank account.
- (3) Any change in connection with a bank account referred to in sub-rule (2) above shall be brought to the attention of the bank concerned and be reported to the Council in writing within 5 (five) business days after such change has been effected.

36 Deposits in bank accounts, withdrawals and transfers from bank accounts

- (1) The proceeds of the sale of livestock to be deposited into the bank account of a livestock agent shall be deposited in his cheque account.

- (2) A payment or withdrawal from a bank account shall, in the case of a cheque account, not be made otherwise than by means of an electronic transfer of funds or the issuing of a crossed cheque, which cheque, unless the livestock agent is trading as a sole proprietor, shall be countersigned by at least 2 (two) signatories, and which transfer of funds shall be authorised by at least 2 (two) persons authorised thereto by the livestock agent concerned and shall be made payable to or to the order of a payee specifically designated; provided however that a livestock agent shall be entitled to make cash payments to principals who do not have bank accounts.
- (3) No livestock agent shall withdraw any amount from the account referred to in sub-rule (1) in respect of his remuneration as a livestock agent or for other expenses incurred by him in connection with the sale of livestock unless –
- (a) the proceeds of the sale of the livestock concerned have already been deposited in such account or paid to the principal in cash;
- (b) in the case of such other expenses, they have already been incurred by him; and
- (c) he is in possession of documentary proof to substantiate such withdrawal.
- (d) the remuneration or expense has been correctly debited in his accounting records.

PART VIII: MISCELLANEOUS PROVISIONS

37 Certain convictions to be reported to Council

- (1) Whenever a livestock agent or any of his employees are convicted of an offence involving an element of dishonesty, such livestock agent shall within 5 (five) business days after the date of sentencing, notify the Council by registered post or email of the date of conviction, the nature of the offence, the sentence imposed, and by which court.

- (2) Whenever an employee leaves the employment of the livestock agent who employed him, such livestock agent and such employee shall within 5 (five) business days after the date of termination of employment, notify the Council by registered post or e-mail of the date of termination of employment and the reasons for the termination of his employment.

38 Payment of unclaimed moneys to Council

- (1) If the amount to be paid by a livestock agent to his principal has not been claimed by the principal within 200 (two hundred) days after the sale, that livestock agent shall pay the amount from his bank account to the Council, and furnish the Council with the particulars required in the rules in connection therewith.
- (2) A payment of unclaimed moneys to the Council in terms of sub-rule (1) shall be accompanied by a copy of the relevant sales note referred to in rule 28 (1).
- (3) Payments referred to in sub-rule (2) shall annually be made to the Council during March and September to reach the Council not later than the last business day of each of the said months.
- (4) Whenever a person becomes entitled to receive any money out of the fund kept by the Council for the receipt of unclaimed monies, proof of identity as well as proof of the fact that the person has become entitled to payment must be submitted to the Council, and such person shall comply with the Council's requirements.

39 Payment of moneys

Any amount payable to the Council in terms of the Act or these rules shall be paid by crossed cheque, electronic funds transfer, postal order or money order made out in favor of or for the credit of the Agricultural Produce Agents Council.

PART IX: GENERAL**40 Address of Council**

The address of the Council shall –

- (a) for the purposes of documents forwarded by post, be Suite Number 69, Private Bag X 9, East Rand 1462;
- (b) for the purposes of documents delivered by hand, Benvista Office Park, Unit 5, Edgar Road, Jansen Park (Boksburg); and
- (c) for purposes of notices and other communications at admin@apacouncil.co.za.

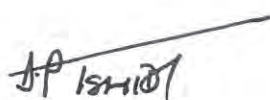
41 Title of rules

These rules shall be called the Rules in respect of Livestock Agents, 2017.

BOARD NOTICE 29 OF 2018
FINANCIAL MARKETS ACT, 2012

PROPOSED AMENDMENTS TO THE JSE LISTINGS REQUIREMENTS:
TRANSFERABILITY OF SECURITIES

I, Dube Phineas Tshidi, Registrar of Securities Services, hereby give notice under section 11(6)(c) of the Financial Markets Act, 2012 (Act No. 19 of 2012) that the proposed amendments to the JSE Listing Requirements have been published on the official website of the Financial Services Board (www.fsb.co.za) for public comment. All interested persons who have any objections to the proposed amendments are hereby called upon to lodge their objections with the Registrar of Securities Services, at the following email address: Michael.Kabai@fsb.co.za, within a period of 14 days from the date of publication of this notice.



D P TSHIDI

REGISTRAR OF SECURITIES SERVICES

BOARD NOTICE 30 OF 2018**FINANCIAL SERVICES BOARD****LONG-TERM INSURANCE ACT, 1998 (ACT NO. 52 OF 1998) AND SHORT-TERM
INSURANCE ACT, 1998 (ACT NO. 53 OF 1998)****PROPOSED AMENDMENTS TO THE POLICYHOLDER PROTECTION RULES**

I, Caroline Dey Da Silva, Deputy Registrar of Long-term Insurance and Short-term Insurance, hereby, under the Long-term Insurance Act, 1998 (Act No. 52 of 1998) and Short-term Insurance Act, 1998 (Act No. 53 of 1998) ("the Acts"), give notice of the release, for public comment, of proposed amendments to the Policyholder Protection Rules ("PPRs") made under section 62 of the Long-term Insurance Act, 1998 and section 55 of the Short-term Insurance Act, 1998.

The proposed amendments to the PPRs, together with a statement explaining the amendments and tracked changes versions of the existing PPRs highlighting the proposed amendments are available on the Financial Services Board's website at <https://www.fsb.co.za>.

Comments on the proposed PPRs may be submitted in writing on or before 13 April 2018 to the Financial Services Board, c/o Jo-Ann Ferreira at FSB.INSProposedPPRs@FSB.co.za.


CD DA SILVA**DEPUTY REGISTRAR OF LONG-TERM INSURANCE AND SHORT-TERM INSURANCE**

BOARD NOTICE 31 OF 2018

QUANTITY SURVEYING PROFESSION ACT, 2000 (ACT NO. 49 OF 2000)

APPOINTMENT OF COUNCIL MEMBERS TO SERVE ON THE SOUTH AFRICAN COUNCIL FOR THE QUANTITY SURVEYING PROFESSION (SACQSP)

The Minister of Public Works, Hon. NPT Nhleko, has in terms of *Section 4 of the Quantity Surveying Profession Act, 2000 (Act No. 49 of 2000)* appointed the following persons to serve as council members on the South African Council for the Quantity Surveying Profession for the term: 1 February 2018 to 31 January 2022:

NO	STATUTORY CATEGORY	APPOINTED MEMBERS
1	Section 3(1)(a) – Registered Professionals	Mr Baloyi Vongani Newton
2		Mr Kotze Petrus Daniel
3		Dr Letchmiah Deenadayalan Ruthensamy
4		Mr Mbatha Qinisani Nhlanhla
5		Mr Meyer Gert Hendrik
6		Ms Ncalane Nomthandazo Lucia
7		Mr Ngwenya Vusiwe Hebron
8		Ms Qina Noninzi
9		Ms Tselane Onwaba Kanya Viwe
10	Section 3(1)(b) – Academic Representatives	Ms Hefer Elke Helene
11		Mr Matshidze Lindelani Baldwin
12	Section 3(1)(c) - State Representatives	Ms Mongane Nosiyabonga Portia
13		Ms Mjandana Vuyokazi
14		Mr Meiring Martin
15	Section 3(1)(d) – Public Representative	Ms Difeto Phyllis Motsatsi
16		Dr Harinarain Nishani
17		Ms Mosing Mpho Sonia

BOARD NOTICE 32 OF 2018**ARCHITECTURAL PROFESSION ACT, 2000 (ACT NO. 44 OF 2000)****APPOINTMENT OF COUNCIL MEMBERS TO FILL VACANCIES IN THE CURRENT SOUTH AFRICAN COUNCIL FOR THE ARCHITECTURAL PROFESSION (SACAP)**

The Minister of Public Works, Hon. NPT Nhleko, has in terms of *Section 6(4)(a) of the Architectural Profession Act, 2000 (Act No. 44 of 2000)* appointed the following persons to fill the vacancies in the current South African Council for the Architectural Profession for the remainder of its term of office, which expires on 14 April 2018:

NO	STATUTORY CATEGORY	APPOINTED MEMBERS
1	Section 3(1)(a) – Registered Professionals	Mr Philasande Jolobe
2		Mr Ntsindiso Charles Nduku
3		Ms Letsabisa Lerotholi
4		Mr Koena Samuel Manyathela
5	Section 3(1)(b) - State Representatives	Mr Vusi James Phailane

BOARD NOTICE 33 OF 2018**CONSTRUCTION INDUSTRY DEVELOPMENT BOARD ACT, 2000 (ACT NO. 38 OF 2000)****APPOINTMENT OF BOARD MEMBERS TO SERVE ON THE CONSTRUCTION INDUSTRY DEVELOPMENT BOARD (CIDB)**

The Minister of Public Works, Hon. NPT Nhleko, has in terms of *Section 6 of the Construction Industry Development Board Act, 2000 (Act No. 38 of 2000)* appointed the following persons to serve as board members on the Construction Industry Development Board for the term: 2 January 2018 to 31 December 2020.

NO	APPOINTED MEMBERS
1	Ms Terresa Nonkululeko Sindane
2	Mr Khuliso Kennedy Maimela
3	Ms Malebo Matolong
4	Mr Danny Lesiba Masimene
5	Ms Thuthuka Siphumezile Songelwa
6	Mr Tjiamogale Eric Manchidi
7	Mr Obed Mboniseni Dlamini
8	Ms Bongekile Zulu
9	Mr Mpedulo Ndlazi
10	Mr Lufuno Nevhutalu
11	Mr. Sipho Abednego Mosai
12	Mr. Gonasagran Maduray
13	Dr Natalie Carol Skeepers

WARNING!!!

To all suppliers and potential suppliers of goods to the Government Printing Works

The Government Printing Works would like to warn members of the public against an organised syndicate(s) scamming unsuspecting members of the public and claiming to act on behalf of the Government Printing Works.

One of the ways in which the syndicate operates is by requesting quotations for various goods and services on a quotation form with the logo of the Government Printing Works. Once the official order is placed the syndicate requesting upfront payment before delivery will take place. Once the upfront payment is done the syndicate do not deliver the goods and service provider then expect payment from Government Printing Works.

Government Printing Works condemns such illegal activities and encourages service providers to confirm the legitimacy of purchase orders with GPW SCM, prior to processing and delivery of goods.

To confirm the legitimacy of purchase orders, please contact:

Renny Chetty (012) 748-6375 (Renny.Chetty@gpw.gov.za),

Anna-Marie du Toit (012) 748-6292 (Anna-Marie.DuToit@gpw.gov.za) and

Siraj Rizvi (012) 748-6380 (Siraj.Rizvi@gpw.gov.za)

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