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Motivation Report and Impact Assessment for the Part 2: Amendment of Environmental Authorisation for the Strengthening and Raising of the Clanwilliam Dam and Associated Re-alignment of certain Secondary Roads, Clanwilliam Dam, Western Cape

DEADP Ref No: E12/2/1-AC8-TRUNK ROAD 11/4, CLANWILLIAM

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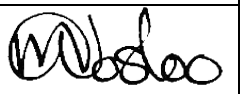
ACTION	DESIGNATION	NAME	DATE	SIGNATURE
Prepared	Environmental Assessment Practitioner (EAP)	Ms. Natasha Lalie	12/11/2025	
Reviewed	Senior Environmental Scientist	Dr. Mathys Vosloo	17/11/2025	
Approved	Environmental Divisional Lead	Dr. Mathys Vosloo	27/11/2025	

RECORD OF REVISIONS

Date	Revision	Author	Comments
27/11/2025	0	Ms. Natasha Lalie/ Dr. Mathys Vosloo	Issued to applicant for review
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LIST OF ACRONYMS

Abbreviation	Full Description
CBA	Critical Biodiversity Area
CRR	Comments and Responses Report
DWS	Department of Water and Sanitation
EAP	Environmental Assessment Practitioner
EA	Environmental Authorisation
ECA	Environmental Conservation Act, No. 73 of 1989
ECO	Environmental Control Officer
EIA	Environmental Impact Assessment
EIAr	Environmental Impact Assessment Report
EMPr	Environmental Management Programme
ENIA	Environmental Noise Impact Assessment
ESA	Ecological Support Area
FEIR	Final Environmental Impact Report
GN	Government Notice
I&AP	Interested and Affected Parties
NEMA	National Environmental Management Act, 1998 (Act No. 107 of 1998)
PPP	Public Participation Process
WCDEADP	Western Cape Department of Environmental Affairs and Development Planning
WUL	Water Use License
WULA	Water Use License Application

1 INTRODUCTION

The Clanwilliam Dam was built in 1935 and is positioned within the Olifants River. The Clanwilliam Dam lies just outside the town of Clanwilliam and is located east of the N7 and southwest of the town of Clanwilliam in the Western Cape province. At present, the Clanwilliam Dam wall stands at 43 meters encompassing a storage capacity of 124 million m^3.

Past dam safety investigations, however, concluded that the Clanwilliam Dam requires remedial work in order to conform with the dam safety requirements stipulated in Chapter 12, Section 123 of the National Water Act (36 of 1998) (NWA) and regulations thereunder. Specific concerns were related to the pre-stressed cables having lost their shear resistance ability and the problems experienced with the alkali-aggregate reaction. As a result, the hazard and risk levels for the dam falls within an unacceptable range according to current Department of Water and Sanitation (DWS) standards. The proposed required remedial works on the Clanwilliam Dam furthermore presented the opportunity to increase the water-yield of the existing Clanwilliam Dam to secure more sustainable water supply and to support the growing water supply need in the Western Cape.

At the time, the activities required for the strengthening and raising of the existing Clanwilliam Dam fell within the ambit of the National Environmental Management Act, No 107 of 1998 (NEMA), and as such required and Environmental Authorisation (EA) before the activities could proceed. The Environmental Impact Assessment (EIA) carried out for the proposed project was initiated during November 2004, prior to promulgation of the NEMA Environmental Impact Assessment Regulations, 2006, and as such the EIA Process for the proposed project was carried out in accordance with the EIA regulations (R.1183) promulgated in terms of the Environment Conservation Act, No 73 of 1989 (ECA).

A conditional Record of Decision (RoD), as per the terminology under ECA, for the proposed project was granted by the Western Cape Department of Environmental Affairs and Development Planning (WCDEADP) on 12 May 2009, allowing the proposed project to be implemented. Subsequent to the issue of the RoD, an appeal was lodged by Interested and Affected Parties (I&APs), however, upon review of the appeal submission by the WCDEADP, the Minister of Local Government dismissed the appeal based on the grounds that the Minister was satisfied that the Competent Authority (CA) took an informed decision when granting the RoD. Given that the aforesaid appeal against the RoD, all conditions, except for the amendment of Section J (Duration and Date of Expiry) are therefore still binding.

The conditional RoD required a number of conditions to be met prior to the commencement of the Construction Phase, including the revision of the DWS's generic Environmental Management Programme (EMPr) to ensure that the document is project specific all of the relevant RoD conditions are incorporated. A site-specific EMPr was prepared in late 2014 and submitted to the WCDEADP on 18 January 2015 for approval. This site-specific EMPr has been in force since then and construction commenced in June 2014 in terms of the RoD and site-specific EMPr.

Since commencement of construction in 2014, a number of recurring non-compliances in terms of the existing RoD and site-specific EMPr were raised by the Environmental Control Officer (ECO) appointed to monitor the compliance of DWS and its contractors during the construction phase of the Clanwilliam Dam raising project. During this time, DWS has reported that it has found it difficult to comply with a number of the conditions, while it felt that some of the other conditions were too onerous and went beyond the scope of the construction impacts. DWS initiated engagements with the WCDEADP to resolve these issues and it was concluded that some of the conditions should be amended in order to make compliance with these conditions achievable.

Furthermore, due to the magnitude of the construction project and construction activities required to execute the project, concerns emerged whether some of the construction activities currently underway, as well as some planned activities, fall within the ambit of the existing RoD and EMPr, or would some construction activities require additional approval. This resulted in a need to undertake an EA Amendment application to authorise proposed changes to some conditions in the EA.

DWS appointed Zitholele Consulting (Pty) Ltd to undertake a Part 2 Amendment of Environmental Authorisation Application process, in terms of Regulation 31 of the Environmental Impact Assessment (EIA) Regulations of 2014 (GN R. 983), as amended, to amend certain conditions in the Environmental Authorisation (EA), Reference No.: E12/2/1-AC8-TRUNK ROAD 11/4, CLANWILLIAM, issued for the Strengthening and Raising of the Clanwilliam Dam and Associated Re-alignment of certain Secondary Roads.

Associated with the EA Amendment Application for the existing RoD is amendment of the existing Environmental Management Programme (EMPr) in terms of Regulation 36 of the Environmental Impact Assessment (EIA) Regulations of 2014 (GN R. 983), as amended, to amend corresponding management measures linked to the proposed amended conditions in the RoD, and to bring the structure and content of the existing EMPr in line with the requirements of the current Environmental Impact Assessment (EIA) regulations, 2014, as amended.

1.1 Document Roadmap

This EA Amendment Application has been compiled in terms of the requirements of Regulation 32 of the EIA Regulations 2014, as amended. The requirements of Regulation 32, including a roadmap indicating where the requirements have been addressed, are included in Table 1-1 below.

Table 1-1: Document roadmap indicating legal requirements and applicable sections in the report where evidence of compliance with the requirements can be found.

Regulation	Requirement	Applicable section in document / Comment
32	**Process and consideration of application for amendment**	
32(1)(a)	The applicant must within 90 days of receipt by the competent authority of the application made in terms of regulation 31, submit to the competent authority a report, reflecting—	The WCDEADP's EA Amendment Application process as proposed by the Department is followed. A pre-application consultation public review will be undertaken for a period of 30 calendar days, whereafter the official 30-day public review and consultation process will be followed. The EA Amendment Application will be submitted to the department at the start of the official 30 days public review period followed by the submission of the final EA Amendment Application and supporting documentation within 60 days of the submission of the application form.
32(1)(a)(i)	an assessment of all impacts related to the proposed change;	Sections 2.2.6, 2.3.6, 2.4.6, 2.5.6, 2.6.6, 2.7.6, 2.8.6, 2.9.6, 2.10.6.
32(1)(a)(ii)	advantages and disadvantages associated with the proposed change; and	Sections 2.2.4, 2.2.5, 2.3.4, 2.3.5, 2.4.4, 2.4.5, 2.5.4, 2.5.5, 2.6.4, 2.6.5, 2.7.4, 2.7.5, 2.8.4, 2.8.5, 2.9.4, 2.9.5, 2.10.4, 2.10.5.
32(1)(a)(iii)	measures to ensure avoidance, management, and mitigation of impacts associated with such proposed change; and	Sections 2.2.7, 2.3.7, 2.4.7, 2.5.7, 2.6.7, 2.7.7, 2.8.7, 2.9.7, 2.10.7.
32(1)(a)(iv)	any changes to the EMPr;	Sections 2.2.7, 2.3.7, 2.4.7, 2.5.7, 2.6.7, 2.7.7, 2.8.7, 2.9.7, 2.10.7.
32(1)(aa)	which report, had been subjected to a public participation process, which had been agreed to by the competent authority, and which was appropriate to bring the proposed change to the attention of potential and registered interested and affected parties, including organs of state, which have jurisdiction in respect of any aspect of the relevant activity, and the competent authority, and	Section 3
32(1)(bb)	reflects the incorporation of comments received, including any comments of the competent authority; or	The Part 2: EA Amendment Application Motivation Report was made available for public review and comment for a period of 30 days from 1 December 2025 to 22 January 2026 (excluding closure period of 15 December 2025 to 5 January 2026). The official public review period will be held from 26 January 2026 to 27 February 2026. Minutes of all stakeholder meetings will be appended to the final Motivation Report for submission to the WCDEADP. The Comments and Responses Report will be captured in the Final Motivation Report.

Regulation	Requirement	Applicable section in document / Comment
32(1)(b)	a notification in writing that the report will be submitted within 140 days of receipt of the application by the competent authority, as significant changes have been made or significant new information has been added to the report, which changes or information was not contained in the report consulted on during the initial public participation process contemplated in sub regulation (1)(a) and that the revised report will be subjected to another public participation process of at least 30 days.	The changes to the Final Motivation Report in support of the Part 2 Amendment of the EA is not considered significant.
32(2)	In the event where sub regulation (1)(b) applies, the report, which reflects the incorporation of comments received, including any comments of the competent authority, must be submitted to the competent authority within 140 days of receipt of the application by the competent authority.	The changes to the Final Motivation Report in support of the Part 2 Amendment of the EA is not considered significant.

2 PROPOSED AMENDMENTS TO THE ROD

2.1 Introduction

Since commencement of construction in 2014, a number of recurring non-compliances in terms of the existing RoD and EMPr were raised by the Environmental Control Officer (ECO) appointed to monitor the compliance of DWS and its contractors during the construction phase of the Clanwilliam Dam raising project. During this time, DWS reported that it has found it difficult to comply with a number of the conditions, while it felt that some of the other conditions were too onerous and went beyond the scope of the construction impacts. DWS initiated engagements with the WCDEADP to resolve these issues, and it was concluded that some of the conditions should be amended in order to make compliance with these conditions achievable.

The writing convention implemented in this Amendment Application Motivation Report include the following:

- When denoting the deletion of a sentence, phrase or word: ~~**Strikethrough and bolding of the sentences, phrases or words.**~~
- When denoting the addition of a sentence, phrase or word: **Bold text the sentence, phrase or word.**

2.2 RECORD OF DECISION, SECTION B: LOCATION

2.2.1 Section B: Location

Record of Decision: Section B: Location states:

"*The Clanwilliam Dam is located on the Olifants River Just outside of the town of Clanwilliam and is situated east of the N7 and south-west of the town,*

co-ordinates: 32° 12' 20" South, 18° 52' 30 East.

All site establishment infrastructure will be located on the western side of the existing Clanwilliam Dam wall (including the site of the old construction site for the used during the construction phase. An area of approximately 300m) (150m on the western side of the N7 will be required to accommodate the concrete batching plant/s, the concrete aggregate stockpiles and the mechanical workshop. An. Area of approximately 60m x 200m situated on the eastern side of the N7 downstream of the dam wall will be used for offices, training facility, and a laboratory, and serve as an area to store construction materials during construction.

All of the locations are hereinafter referred to as "the location/site".

2.2.2 Proposed change of wording for the Amendment of the Section B: Location

The Authorisation Holder propose to make the following amendments to the condition:

The amendment proposes removal of the text:

"*An area of approximately 300m)(150m on the western side of the N7 will be required to accommodate the concrete batching plant/s, the concrete aggregate stockpiles and the mechanical workshop. An. Area of approximately 60m x 200m situated on the eastern side of the N7 downstream of the dam wall will be used for offices, training facility, and a laboratory, and serve as an area to store construction materials during construction*."

And replacing with:

"*The authorised site establishment and construction footprint area is represented by the Development Master Layout Plan included in the amended EMPr. All construction activities associated with the construction and operation of the final raised Clanwilliam Dam must occur within the limits of the Development Master Layout Plan*".

2.2.3 Motivation for the change of wording for Section B: Location

The phrase proposed to be removed does not provide sufficient clarity with regards to the approved construction camp and footprint. This phrase stems from a quantitative description of the extent of the construction activities that was provided in the Clanwilliam Dam Feasibility

Design of Raising report, May 2006. A provisional construction site layout was compiled by DWS construction and was summarised as follow in the RoD:

"Due to unfavourable topography, both sides of the N7 will be used during the construction phase. An area of approximately 300m x 150m on the western side of the N7 will be required to accommodate the concrete batching plants, the concrete aggregate stockpiles and the mechanical workshop. An area of approximately 60m x 200m situated on the eastern side of the N7 downstream of the dam wall will be used for offices, training facility, and a laboratory, and serve as an area to store construction materials during construction."

The above description of the construction site layout represents the only quantitative description of the impact area and construction site camp area in the FEIR. The FEIR and associated reports however do not provide coordinates or starting points from where the construction site camp and construction areas could be delineated geographically.

In the Clanwilliam Dam Feasibility Design of Raising report, May 2006, reference is made to a drawing in Appendix D of the abovementioned report which accompanies the quantitative description of the impact area as described in the report. This drawing delineates the construction site impact footprint area associated with the Option 1 and Option 2 alternatives described in FEIR, as well as the geographic extent of the "Construction Site", a "haul roads" area, "Quarry Site" area and an area presented as the "Perimeter of Impact".

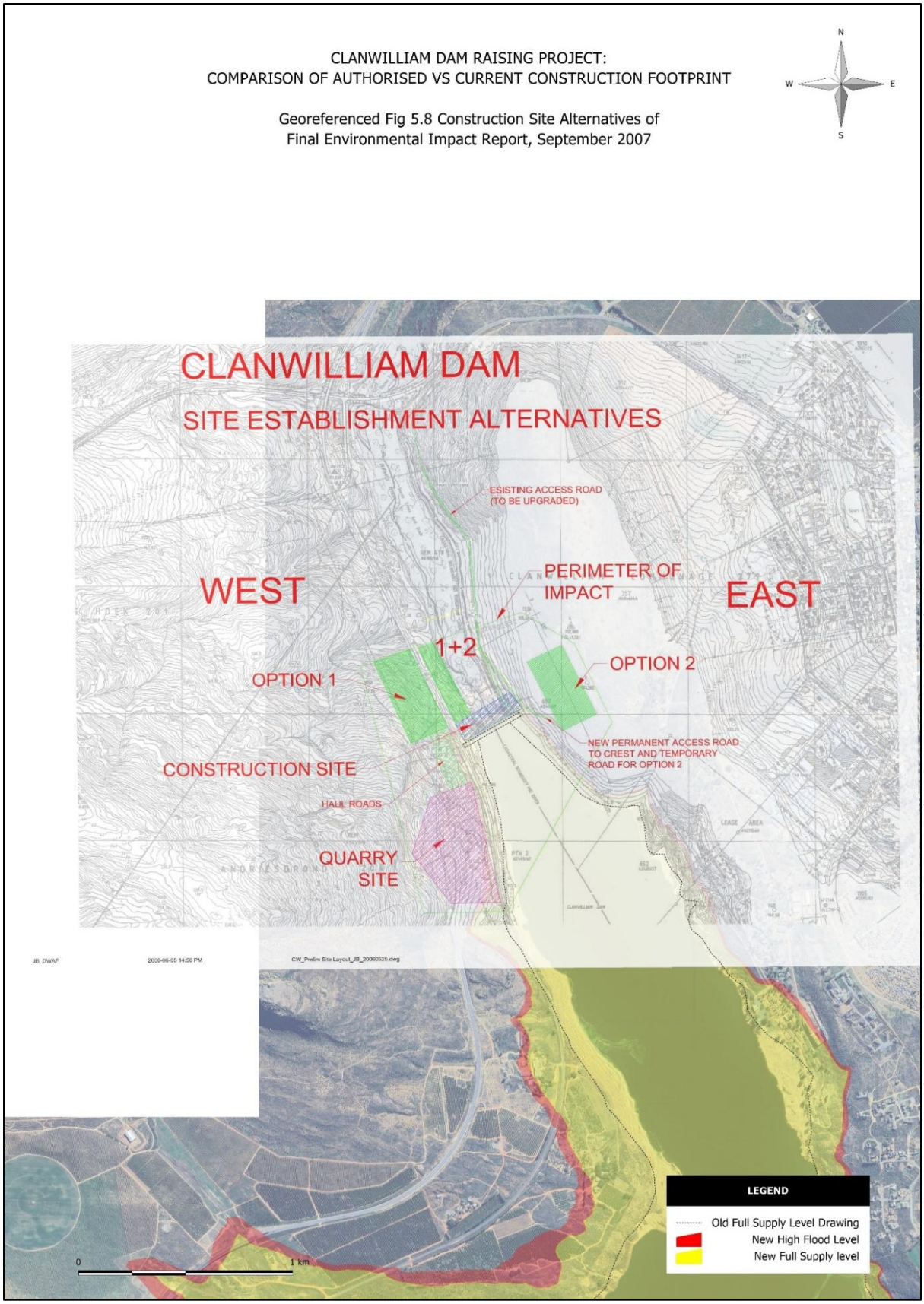

Figure 2-1: Figure 5.8 of FEIR georeferenced and overlayed on satellite imagery of Clanwilliam Dam

This drawing was included as Figure 5.8 in the FEIR, however, was not referenced in the RoD. Since the drawing was included in the FEIR, it is accepted that the information associated with the drawings was revied and accepted by the Competent Authority at the time the RoD was issued. Upon georeferencing Figure 5.8 using Geographic Information Systems (GIS) software the geographic extent of the construction impact areas as was assessed during the original EIA was delineated in Figure 2-1. The georeferenced, delineated footprint, however, is still located within the footprint area that is anticipated to have been assessed during the EIA by the Environmental Assessment Practitioners and the specialist team.

As part of the EA Amendment application process, a biodiversity specialist was appointed to undertake a review of the original biodiversity assessment report and to provide an opinion of the footprint that was assessed by the biodiversity specialists during the original EIA assessment. The specialist noted in the assessment that the vegetation communities assessed in the original Botanical Assessment (Boucher, 2006) covered an area much larger than that of the area authorised. The area delineated by the specialist is delineated in Figure 2-2 below. The specialist opinion report is included in Appendix B.

The specialist concluded that Boucher (2006) specifically focused their assessment on the 120 m full supply level area and the areas to be impacted by the N7 road realignment as these were the main areas expected to be impacted by the project activities. The specialist therefore concluded that, in their opinion, the area that will likely be impacted by the project activities will fall within the 500 m buffer indicated in Figure 2-3.

Based on Zitholele Consulting and the DWS' review and assessment of the original reports and EIA submission, guidance obtained from the WCDEADP regarding the authorised construction footprint, and recommendations made by the biodiversity specialist in the specialist opinion report included with this motivation report, Zitholele proposes that the Clanwilliam Dam Raising Construction Footprint Layout Map depicted in Figure 2-4 be considered for approval as the official layout map depicting the authorised construction impact footprint, site camp area footprint and inundation impact area. A zoomed in view of the main construction area delineated in relation to the new Full Supply Level (FSL) and High Flood Level (HFL), as well as the botanical specialist's opinion of the recommended Project Area of Influence (PAOI) and estimated area of assessment is provided in Figure 2-5.

This layout map will be included in the amended EMPr as the official site layout map depicting the geographical limits within which construction activities will take place, as well as encompassing the existing construction site camp. Construction activities that may take place within the delineated area include:

- Establishment of laydown areas for plan or equipment
- Establishment of stockpile areas
- Establishment of areas to temporarily store spoil material
- Establishment of areas to be utilised as additional area for the contractor's site camp.
- Establishment of temporary roads

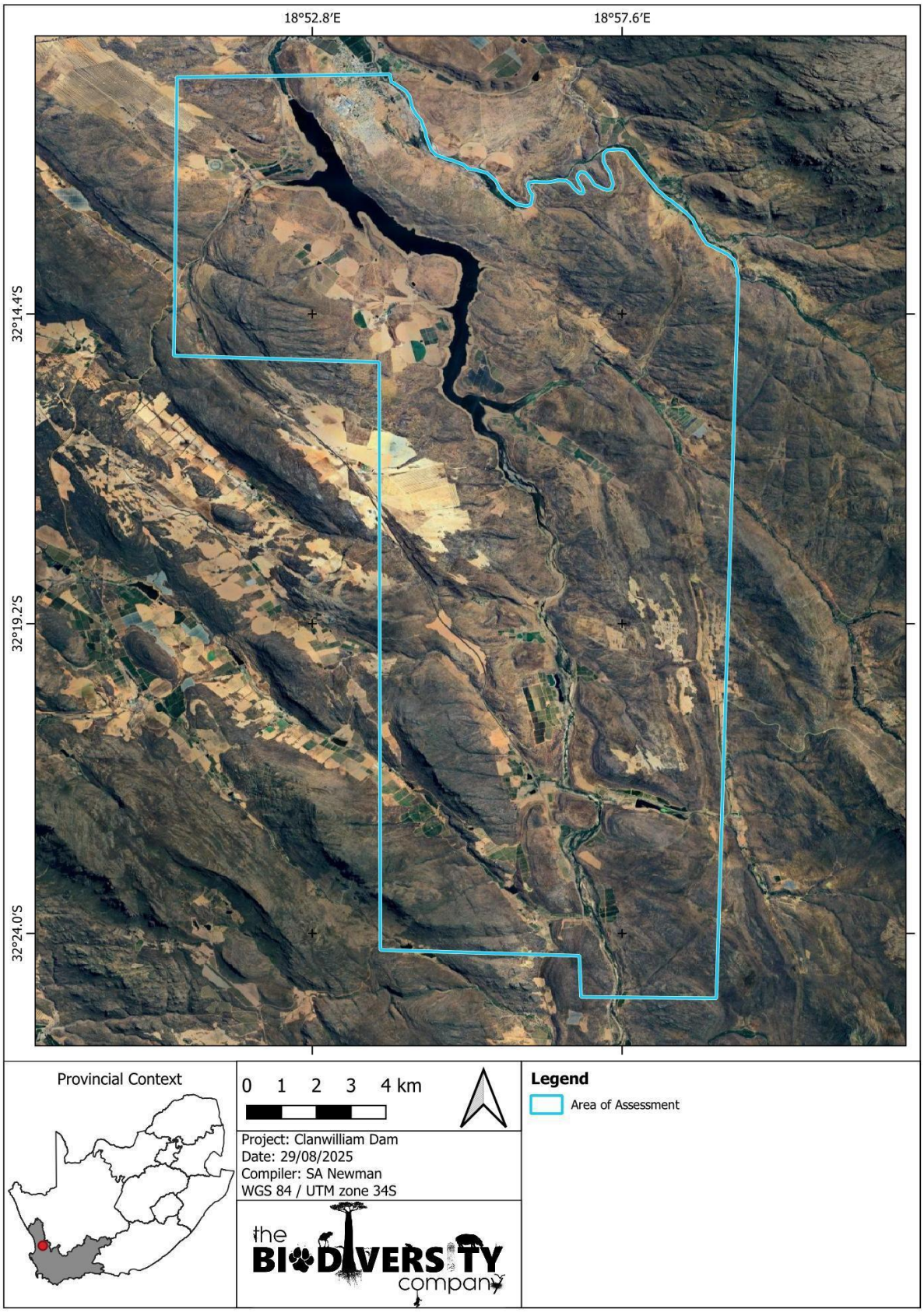

Figure 2-2: Map illustrating the estimated area that was assessed in the Botanical Assessment (Boucher, 2006)

Figure 2-3: Map depicting the recommended Project Area of Influence (PAOI) and Walkdown Area in relation to the New FSL, New HFL and project infrastructure

Figure 2-4: Clanwilliam Dam raising Project Construction Impact and Inundation Area

Figure 2-5: Clanwilliam Dam Raising Project Construction Impact footprint area in relation to new FSL and HFL, as well as botanical specialist opinion of area assessed

2.2.4 Advantage of the proposed amendment of Section B: Location of the RoD

To date uncertainty related to the approved extent of the construction site and construction site camp has resulted in difficulty in enforcing clear development limits by the licence holder and Environmental Control Officer (ECO) acting on behalf of the licence holder. The advantage of the proposed amendment lies in the fact that approval of the amendment will ensure that the Development Master Layout Plan is authorised and make its inclusion in the EMPr legally binding. This will make clear monitoring and enforcement of the construction site limits as depicted by the Development Master Layout Plan achievable, which will result in better compliance of the licence holder to conditions in the RoD and EMPr that is linked to geographical extent.

2.2.5 Disadvantage of the proposed amendment of Section B: Location of the RoD

The proposed amendment does not change any of the authorised activities, identified impacts or mitigation measures as authorised in the existing RoD. The proposed amendment aims to provide clarity regarding the spatial extent of the impact area and construction site that was originally authorised but was not clearly articulated in the RoD that was issued. No disadvantage is therefore anticipated by authorising the proposed amendment.

2.2.6 Impact Assessment for amendment of Section B: Location of the RoD

After review of the original Botanical Assessment (Boucher, 2006) the specialist concluded that the original assessment provides a thorough baseline of the plant communities and habitats of the assessment area. However, due to the time lapse since authorisation in 2009, the specialist expected that some information may be outdated. The specialist proposed that the implementation of the mitigation measures outlined in the original botanical assessment, as well as the mitigations outlined in the Botanical review assessment would appropriately mitigate the expected impacts arising from the project activities as assessed in the original Botanical Assessment of Boucher, 2006.

The specialist did not raise any impacts that would increase in impact significance since the original assessment undertaken by Boucher (2006). The original impact assessment is therefore still valid of the activities and impacts identified.

2.2.7 Management and Mitigation Measures and Changes to the EMPr

Changes proposed to the EMPs related to this proposed amendment include addition of mitigation measures only. Mitigation measures to be included:

<u>Flora management</u>

- Due to the change in conservation status of many of the plant species since authorisation in 2009, an SCC and protected species walkdown is recommended prior

to the commencement of construction activities. This walkdown must cover the areas between the old FSL and the proposed FSL. Any protected or threatened plant species recorded from this area must be relocated to nearby, suitable habitats as recommended by a botanical specialist, upon the receipt of the appropriate permits to do so. In addition, the walkdown must cover a 200 m buffer around the New FSL and HFL (Walkdown Area) and all plant SCC must be clearly marked and left undisturbed during the construction phase.

- Small portions of the site are composed of the Critically Endangered (CR) Citrusdal Shale Renosterveld, which also coincide with Critical Biodiversity Area (CBA) 1 areas according to the Western Cape Biodiversity Sector Plan (2023). Particular care must be taken in these areas, and they should be avoided for all laydown and site activities where possible.
- If required, vegetation clearing commences only after the necessary permits for SCCs or protected plants have been obtained. Any individual of the protected plants that were observed needs a relocation or destruction permit for any individual to be removed or destroyed due to the development. High visibility flags must be placed near any protected plants to avoid any damage or destruction of the species. If left undisturbed the sensitivity and importance of these species needs to be part of the environmental awareness program.
- A Plant Search and Rescue Plan must be compiled and implemented following the walkdown. It is recommended that as many of the threatened plant species as possible are relocated to similar habitats that are not to be impacted by project activities following the procurement of the relevant relocation permits.
- It is recommended that seeds are collected from the indigenous plant community prior to clearing or inundation, and these seeds are used for rehabilitation purposes at a later stage. It is recommended that geophytic and succulent species are relocated to similar habitats nearby or used for rehabilitation purposes where possible and feasible.
- Conduct follow-up rehabilitation and re-vegetation of any bare areas, and areas denuded during construction, with local indigenous grasses, shrubs, and trees, taking into account the following:
    - Areas between the current dam level and the old FSL may be left unvegetated provided they are controlled for alien and invasive plant species.
    - Construction camps and areas earmarked for other site activities must be revegetated using species indigenous to the area to prevent the establishment of alien and invasive plant species, and to assist with erosion control. Where revegetation is not feasible, such as in parking lots, it is recommended that the area is covered in an environmentally friendly, porous material, such as sustainable sourced, untreated wood chips, to help control erosion, dustfall and alien and invasive plant species.
    - Steep banks that are at risk of erosion may be reinforced with erosion control blankets (biodegradable geotextiles) such as jute or sisal.
    - Rehabilitation must be followed by monitoring of the vegetation communities, to be informed by the rehabilitation plan.

Introduction of alien and invasive species, especially plants

- Before dam levels are raised, all alien and invasive plant species must be cleared from the inundation zone. Failure to do so may result in the spread of alien and invasive reproductive plant material to sensitive habitats.
- Conduct regular checks for alien invasive plant (AIP) encroachment during the operational phase to prevent alien invasion issues due to disturbances. Monitoring should occur every three months for the first two years and every six months thereafter for the project's duration.
- Demarcate work areas during the construction phase to avoid affecting outside areas. Use physical barriers e.g., safety tape, not painted lines, and use signage.
- All activities must make use of existing roads and tracks as far as practically and feasibly possible. No new roads or servitudes should be constructed where existing infrastructure can be used.

Pest Control

- A pest control plan must be developed and implemented during the construction phase. It is imperative that poisons not be used.

Hydrocarbon spill management

- A hydrocarbon spill management plan must be put in place to ensure that should there be any chemical spill out or over that it does not run into the surrounding areas. The hydrocarbon spill management plan must include the following:
    - The Contractor shall be in possession of an emergency spill kit that must always be complete and available on site.
    - Drip trays or any form of oil absorbent material must be placed underneath vehicles/machinery and equipment when no in use.
    - All contaminated soil / yard stone shall be treated in situ or removed and be placed in containers.
    - Appropriately contain any generator diesel storage tanks, machinery spills (e.g., accidental spills of hydrocarbons oils, diesel etc.) in such a way as to prevent them from leaking and entering the environment.
    - Construction activities and vehicles could cause spillages of lubricants, fuels and waste material negatively affecting the functioning of the ecosystem.
    - All vehicles and equipment must be maintained, and all re-fuelling and servicing of equipment is to take place in demarcated areas outside of the PAOI.

2.3 RECORD OF DECISION, SECTION C: APPLICANT

2.3.1 Section C: Applicant

Section C: Applicant States:

"*The Director*
The Department of Water Affairs and Forestry
Mr Menard Mugumo
Private Bag X313
PRETORIA
0001
Tel: (012) 336 6838
Fax: (012) 336 6863"

2.3.2 Proposed amendment of Section C: Applicant:

The Authorisation Holder propose to make the following amendments to the condition:

The details of the Licence Holder's contact person have changed and must be amended in the EA. The contact person must be changed to Dr. Jabulani Maluleke.

The amendment proposes amendment of the text:

"*Mr Menard Mugumo*".

And replacing with:

"*Dr. Jabulani Maluleke*".

The full section to be displayed as:

"*The Director*
The Department of Water Affairs and Forestry
Dr. Jabulani Maluleke
Private Bag X313
PRETORIA
0001
Tel: (012) 336 6838
Fax: (012) 336 6863"

2.3.3 Motivation for amendment of Section C: Applicant:

A change in the management of the directorate has been implanted internally at DWS.

2.3.4 Advantage of the amendment of Section C: Applicant:

Once approved, the EA will reflect the correct contact person for the DWS.

2.3.5 Disadvantage of the amendment of Section C: Applicant:

The proposed amendment represents an administrative change to the EA. No disadvantage to the proposed amendment is relevant.

2.3.6 Impact Assessment for amendment of Section C: Applicant:

The proposed amendment represents an administrative change to the EA. No impacts are associated with the proposed amendment.

2.3.7 Management and Mitigation Measures and Changes to the EMPr

The proposed amendment in the RoD, once approved, will require a corresponding amendment in the EMPr to update the contact person to Dr. Maluleke.

2.4 Condition G8 of the RoD:

2.4.1 Condition G8

Condition G8 States:

"*The applicant must ensure that fair, comprehensive and timeous compensation is provided for land, built structures and infrastructure affected by the proposed activities and associated losses. Consultative forums must be established with the affected parties to identify and agree on a criteria for assessing compensation claims and the timing of compensation payments, and opportunities for support or training programmes.*"

2.4.2 Proposed change of wording of Condition G8

The licence holder proposes to make the following amendments to the condition:

- Inclusion of a proposed framework and structure for the Consultative Forum in the Amended EMPr, in order to provide:
    - A framework for stakeholder engagement throughout the construction phase,
    - Provide a platform for information dissemination related to construction activities associated with the Clanwilliam Dam Raising project, as well as
    - Provide a forum for stakeholders to raise concerns related to any construction activities that would affect them. The framework, structure and administration of the Consultative Forum will become legally binding when the EMPr is approved as part of the EA and EMPr Amendment Application process.

- Removal of the phase: "*Consultative forums must be established with the affected parties to identify and agree on a criteria for assessing compensation claims and the timing of compensation payments, and opportunities for support or training programmes*." From Condition G8 as per the motivation provided below.

The licence holder proposes the following changes to the condition wording:

"*The applicant must ensure that fair, comprehensive and timeous compensation is provided for land, built structures and infrastructure affected by the proposed activities and associated losses.*

2.4.3 Motivation for the change of wording for Condition G8

The applicant, DWS, propose to remove the phrase: "*Consultative forums must be established with the affected parties to identify and agree on a criteria for assessing compensation claims and the timing of compensation payments, and opportunities for support or training programmes*" as the Department is of the understanding that the process of expropriation does not depend on a consultative forum. Such process is undertaken according to Section 64 of the National Water Act, Section 25 of the Constitution, and the Expropriation Act (Act 63 of 1975), therefore the criteria for compensation is handled independently in line with the said Acts. It was therefore not possible for DWS to form a committee for the Expropriation process.

The applicant, however, does propose the establishment of a Consultative Forum that will be included in the Amended EMPr. This forum is proposed as a separate and focused forum than the one mentioned in Condition G8 of the ROD which is proposed to be removed. The current format of Condition G8 require a forum specifically for the process of expropriation to ensure that compensation was fair.

The DWS has however developed a Consultative forum strategy but does not focus on compensation related matters but on the project progress and compliance thereof. The proposed framework and structure for the Consultative Forum will be included in the Amended EMPr and aims to provide:

- A framework, structure and functioning of the Consultative Forum with input from key stakeholders and interested and affected parties to ensure a defensible structure to the administration of the Consultative Forum/s, which will be legally defensible once the EA Amendment and EMPr Amendment is authorised by the Competent Authority.
- Provide a platform for information dissemination related to construction activities associated with the Clanwilliam Dam Raising project, as well as
- Provide a forum for stakeholders to raise concerns related to any construction activities that would affect them. The framework, structure and administration of the Consultative Forum will become legally binding when the EMPr is approved as part of the EA and EMPr Amendment Application process.

No specialist input is required to support the proposed amendment, while details related to the framework, structure and functioning of the Consultative Forum was developed by the Authorisation Holder (DWS).

2.4.4 Advantage of the amendment of Condition G8

The advantage of the amendment of the RoD condition wording, and inclusion of details regarding the framework, structure and functioning of the Consultative Forum in the Amended EMPr is that these additions provide a legally binding and defensible structure to the Consultative Forum, which will make the operation of the forum more effective.

Once the details related to the framework, structure and functioning of the Consultative Forum is included in the Amended EMPr and is approved, it will provide the guiding framework and principles against which the Consultative Forums must be administered.

2.4.5 Disadvantage of the amendment of Condition G8

There are no disadvantages associated with the amendment of the condition as suggested above as:

- The manner in which the process of expropriation was undertaken was done son in terms of the provisions of Section 64 of the National Water Act, Section 25 of the Constitution, and the Expropriation Act (Act 63 of 1975), and did not depend on a consultative forum. The expropriation process has since been concluded successfully with the relevant properties having been expropriated.
- The DWS has proposed the establishment of a Consultative Forum that will be included in the Amended EMPr and will provide the .framework, structure and functioning of the Consultative Forum with input from key stakeholders and interested and affected parties to ensure a defensible structure to the administration of the Consultative Forum.

2.4.6 Impact Assessment for amendment of Condition G8

There are no negative impacts associated with the amendment of Condition G8 as suggested above. Therefore, this is not applicable.

2.4.7 Management and Mitigation Measures and Changes to the EMPr

The framework, structure and functioning of the Consultative Forum is included in the Amended EMPr as a standalone section.

2.5 Condition G14 of the RoD

2.5.1 Condition G14

Condition G14 of the RoD States:

"*Appropriate measures to mitigate the impacts on groundwater resources must be determined, designed and implemented, with extensive groundwater monitoring to be done to inform these measures*."

2.5.2 Proposed change of wording of Condition G14

The licence holder proposes to make the following amendments to the condition:

"*Appropriate measures to mitigate the impacts on groundwater resources must be determined, designed and implemented, with extensive groundwater monitoring to be done to* ***inform long-term monitoring focusing on the regional scale impacts once construction is complete. Limited short-term monitoring during the construction phase must be implemented for areas associated with active work areas as proposed in the Amended EMPr. Monitoring may be undertaken by a suitable qualified internal groundwater specialist***."

2.5.3 Motivation for the change of wording for Condition G14

The motivation for the proposed amendment of Condition G14 of the RoD revolves around the requirement imposed by the condition to undertake a detailed groundwater assessment. Based on the review of the original geohydrology specialist report submitted with the EIA application, it seems no comprehensive groundwater study was undertaken to inform the EIA at the time, resulting in a recommendation by the specialist that a comprehensive study be undertaken.

The requirements for groundwater monitoring in the RoD and EMPr are also extensive to the point that the DWS feel that it is way beyond the scope of the construction project. DWS would therefore like to have the condition reassessed and amended to provide more realistic monitoring requirements for the groundwater-related impacts. DWS proposes staggering the study requirements by implementing limited and targeted groundwater monitoring and impact mitigation reporting during construction, followed by a comprehensive groundwater study upon completion of the construction phase.

Correspondence between the DWS and WCDEADP in 2019 furthermore confirmed that an internal groundwater specialist from DWS could undertake the assessment and propose monitoring and mitigation measures.

A groundwater specialist service provider, Elemental Water Services, was appointed to undertake a peer review the original study and recommendations that resulted in the inclusion of Condition G14 to ascertain whether more realistic monitoring requirements for the

groundwater-related impacts was feasible. The geohydrological review and assessment is included in Appendix C to this motivation report.

The key findings of the geohydrology peer review and assessment include:

- The DWAF (2007) Groundwater Report's primary emphasis is on groundwater availability, recharge, and sustainable abstraction yields from the Table Mountain Group (TMG) aquifers. The study appears to be a regional water resources optimisation study, rather than a project-specific assessment of the construction and operation impacts of the Clanwilliam Dam raising. In contrast, the EIA Report (DWAF, 2007) does address several groundwater risk and monitoring concerns.
- Based on the peer review undertaken by the geohydrology specialist, the key groundwater impacts from raising the Clanwilliam Dam wall include changes to aquifer recharge and flow regimes, risks to spring and baseflows, water quality vulnerabilities, potential over-abstraction in TMG aquifers, and uncertainties arising from monitoring and management gaps. Based on the probability of the impacts occurring the specialist assigned a probability ranging from Low to Very Low to all of these impacts.
- The most significant regional scale impact is that of the predicted groundwater mound that will form underneath the Clanwilliam Dam will increase in elevation, with an expected increase in spring flow rates, as well as the occurrence of ‘new’ springs along the preferred flow paths as defined by fractures, faults and joints in the Skurweberg Sandstone underlying and abutting the dam. This is viewed as a positive impact, as existing spring users as well as new spring users may benefit from the added artificial recharge to springs and wells connected to the groundwater mound.
- The geohydrology specialist concluded that in his opinion the groundwater risks associated with the Project have been adequately assessed on a local and regional scale. All impacts are still relevant, and based on the information provided for this review, no additional impacts are foreseen. The Groundwater Report (DWAF, 2009) does mention several concerns that are more regionally based as opposed to local impacts relating to the dam wall expansion and road expansion project. The EIA Report (DWAF, 2007) does evaluate the local scale and probable regional scale impacts and concludes that the overall risk associated with the construction and operational phase of the Project is **low**.

The geohydrology specialist made the following conclusions:

- The peer review of the groundwater and EIA documentation for the Clanwilliam Dam raising project confirms that while groundwater was previously identified as a potential concern, the associated risks remain limited, localised, and primarily tied to construction-phase activities.
- The aquifer systems underlying the dam footprint are of low to moderate yield, with limited connectivity to critical receptors, and the primary construction-related risks (fuel handling, batching plants, camps, quarries, and stockpiles) can be managed effectively through standard mitigation and housekeeping practices.

- The original Record of Decision (2009) imposed very broad and onerous groundwater monitoring conditions in the absence of a comprehensive hydrogeological assessment at the time. This review demonstrates that such requirements are disproportionate to the actual risk profile of the project.
- **Continuous borehole monitoring and extensive modelling are not justified. Instead, a simplified approach focused on surface-based spot checks, event-driven inspections, and clear response protocols for spills or abnormal conditions is sufficient to provide assurance during the construction phase.**
- The geohydrology specialist believes that the groundwater-related monitoring, as proposed by the Groundwater Report and EIA Report, can be relaxed.
- Once construction is complete and the new supply level is reached, a more detailed groundwater evaluation can be staged if spring or seep responses indicate a material change.

2.5.4 Advantage of the amendment of Condition G14

The proposed amendment will align Condition G14 of the RoD with the project-specific impacts, which will focus monitoring on the limited construction phase impacts, which were all rated as Low to Very Low during the original groundwater assessment, and corroborated by the groundwater specialist review undertaken by EWS.

The amendment of the condition will furthermore confirm that an internal DWS groundwater and/or surface water specialist can be assigned to undertake the proposed focused routine monitoring, which will contribute to more efficient use of financial resources for the Department of Water and Sanitation as a whole.

The amendment will furthermore assist the department to comply with the specific requirement in the RoD condition.

2.5.5 Disadvantage of the amendment of Condition G14

There are no negative impacts associated with the change of wording as suggested above. The groundwater peer review assessment corroborated the impact assessments undertaken during the original groundwater assessment, which confirmed that all impacts were rated as Low to Very Low and has remained unchanged during the peer review assessment.

2.5.6 Impact Assessment

The peer review of the geohydrological assessment confirmed that no new impacts were identified and all impacts remained valid and accurate in terms of impact assessment ratings.

In terms of the probability of the above-mentioned impacts occurring during the lifecycle of the project, the following is anticipated:

- Inundation of recharge zones/alteration of flow paths: **Low** – Raising the dam wall will inevitably submerge certain recharge areas, but this is a predictable impact rather than an uncontrolled risk. With adaptive water balance management, long-term significance remains low. Inundation of water will further improve aquifer recharge.
- Impact on springs and baseflows: **Low** – With spring census and monitoring networks installed, early warning signs of spring reductions can be managed adaptively. The presence of a dam is predicted to improve baseflow to the aquifer and rivers and streams connected to the weathered zone (i.e. increase groundwater-surface water interaction surface areas due to a new flood plain). Any increase in the storage level which increases the hydraulic gradient in the Skurweberg fractures is likely to enhance the rate of groundwater flow along this path and increase the surface-water outflow at the spring sites. This is viewed as favourable rather than a hazard to spring water users.
- Fuel, hydrocarbon, or cement contamination (construction phase): **Very Low** – If bunded storage, spill kits, drip trays, and good housekeeping are strictly enforced.
- Agrochemical leaching (operational phase, linked to irrigation expansion): Low – With correct agricultural extension support (fertiliser management, buffer zones), this is manageable. The dam further presents a source for irrigation, and can be considered rather of groundwater resources.
- Sedimentation/turbidity into shallow aquifers: **Low** – If erosion/sediment controls (silt traps, phased clearing, riparian buffers) are implemented.
- Over-abstraction of TMG aquifers: **Low** – Provided abstraction follows a licensed yield ceiling, and monitoring boreholes detect drawdown early. Groundwater abstraction is not part of this project, and therefore, the foreseen impact will be marginal.
- Loss of elastic storage/aquifer depletion: **Very Low** – If pumping tests, model calibrations, and adaptive pumping protocols are respected. The Project in question is a surface water-related Project, and therefore is predicted to enhance recharge in flood plains associated with the Clanwilliam Dam flood plain. The predicted impact on aquifer depletion is low.
- Failure of adaptive management due to poor follow-up: **Very Low** if DWAF/DWS monitoring protocols are enforced and compliance audits are routine. For the greater catchment, ongoing monitoring by DWS for climate change impacts, as well as regional-scale dewatering effects, should be mandatory. However, for the construction and maintenance of the Clanwilliam Dam Project, the predicted impact in terms of groundwater quality and quantity impacts is **low**. Short-term monitoring should be adequate.

2.5.7 Management and Mitigation Measures and Changes to the EMPr

The proposed monitoring plan included in Section 4 of the geohydrology specialist report provides short term (site-focussed) monitoring requirements to be implemented during the construction phase, and Long terms (regional) monitoring requirements that must be implemented by the relevant directorate within the DWS and not by the project. These requirements will be incorporated into the Amended EMPr.

2.6 Condition G15.1 of the RoD

2.6.1 Condition G15.1

The original RoD: Condition G15.1 States:

"*Trees must be planted for visually sensitive receptors along the eastern shore of the dam to screen the raised wall*."

2.6.2 Proposed removal of Condition G15.1

The licence holder proposes the removal of Condition G15.1. Conditions G15.1 and G15.2 are closely related. It is therefore proposed that the content of this condition be included in Condition G15.2, as part of the proposed amendment of Condition G15.2.

2.6.3 Motivation for the removal of Condition G15.1

A Visual specialist was commissioned as part of EA Amendment Application process to review the original Visual Impact Assessment (VIA) report (2006) submitted with the EIA application (see Appendix E). The visual specialist concluded that Conditions G15.1 and G15.2 are closely related. Both conditions are aimed at reducing the visual prominence of the raised dam wall through tree planting as a form of screening for sensitive receptors. Condition G15.1 creates a direct, site-specific obligation on the applicant to establish trees along the eastern shore, thereby ensuring a predictable mitigation outcome. Condition G15.2, by contrast, places the applicant in a facilitative role, requiring DWS to provide saplings to interested parties but leaving the planting itself contingent on voluntary uptake by others. While they share the same purpose and means, the first condition is proactive and controlled, whereas the second is reactive and open-ended, with a less certain visual result.

The visual specialist further noted that the VIA did not specifically call for this differentiation in the 2006 VIA. On page 23 of the 2006 VIA, the authors recommended the following under the sub-heading of 'Raising of the Dam': "*Viewer related mitigation measures could however be implemented, including for example, the planting of trees at receptor sites (e.g. Cederview) to screen the raised wall and accordingly minimise the visual impact. In this regard, DWAF could provide saplings for those who would like to plant and screen the raised wall as an exercise of goodwill, i.e. make trees available to landowners for planting during and at the end of construction*."

2.6.4 Advantage of the removal of Condition G15.1

Incorporating Condition G15.1 into Condition G15.2 streamlines and retains the intent of both Conditions G15.1 and G15.2.

2.6.5 Disadvantage of the removal of Condition G15.1

The removal of Condition G15.1 does not result in the complete removal of the condition from the EA. The condition is incorporated into Condition G15.2 and streamlined to retain the intent of both Conditions G15.1 and G15.2. No disadvantage of incorporating Condition G15.1 into G15.2 is therefore anticipated.

2.6.6 Impact Assessment

The assessment of impacts for both Condition G15.1 and G15.2 is discussed in Section 2.7.6.

2.6.7 Management and Mitigation Measures and Changes to the EMPr

Proposed additions and amendments to existing management and mitigation measures in the EMPr is discussed for Condition G15.1 and G15.2 in Section 2.7.7 below.

2.7 Condition G15.2 of the RoD

2.7.1 Condition G15.2

The original RoD: Condition G15.2 States:

"*DWAF must provide saplings to those who would like to plant and screen the raised wall.*"

2.7.2 Proposed change of wording of Condition G15.2

The licence holder proposes the following changes to the condition wording:

"*The applicant must make suitable saplings and planting guidance available to the local municipality, affected landowners and community members who wish to establish supplementary planting on their properties or within public areas to mitigate any and all visual impacts associated with the project.*"

The licence holder further proposes to re-number the condition from Condition G15.2 to Condition G15.1.

2.7.3 Motivation for the change of wording for Condition G15.2

A Visual specialist was commissioned as part of EA Amendment Application process to review the original Visual Impact Assessment (VIA) report (2006) submitted with the EIA application (see Appendix E). The visual specialist concluded that Conditions G15.1 and G15.2 are closely related. Both conditions are aimed at reducing the visual prominence of the raised dam wall through tree planting as a form of screening for sensitive receptors. Condition G15.1 creates a direct, site-specific obligation on the applicant to establish trees along the eastern shore, thereby ensuring a predictable mitigation outcome. Condition G15.2, by contrast,

places the applicant in a facilitative role, requiring DWS to provide saplings to interested parties but leaving the planting itself contingent on voluntary uptake by others. While they share the same purpose and means, the first condition is proactive and controlled, whereas the second is reactive and open-ended, with a less certain visual result.

Both Condition G15.1 and Condition G15.2 is supported in principle but requires refinement to ensure it is both meaningful and effective. As originally worded, the condition requires the Department to provide saplings to those wishing to plant and screen the raised dam wall. On its own, however, this wording places mitigation in the hands of voluntary uptake by landowners or community members, which makes outcomes uncertain and potentially inconsistent. The intent of the condition is sound, but it must be reframed to promote broader participation while ensuring that planting contributes directly to the mitigation of visual impacts associated with the Project.

2.7.4 Advantage of the amendment of Condition G15.2

The amended wording clarifies the applicant's role in making suitable saplings and planting guidance available, supported by professional oversight. In this way, private landowners, community members, and local institutions can supplement the formal planting programme required under Condition 1, while ensuring that these efforts remain consistent with the broader rehabilitation strategy. By advertising the opportunity through appropriate local channels, such as municipal notices, community meetings, or direct communication with affected households, the amended condition also addresses the practical risk that voluntary planting may otherwise remain negligible or uncoordinated.

Amendment of the wording of Condition G15.2 also helps to correct omissions in the original VIA, which did not explicitly identify the role of individual households, resort facilities, or recreational users in maintaining the scenic and visual quality of the receiving environment. Enabling these groups to access saplings and guidance ensures that planting is not limited to municipal or state-led initiatives, but can also take root in private gardens, holiday resorts, and community spaces where visual sensitivity is highest. Professional oversight is essential in this regard, as it ensures that voluntary planting is consistent with the objectives of visual mitigation and avoids inappropriate species choices or ineffective placement.

In short, the amended condition retains the goodwill principle of the original wording of Condition G15.2 and the intent of Conditions G15.1 and G15.3, and strengthens its effectiveness by requiring the applicant to provide both saplings and professional guidance, actively advertise the opportunity to affected receptors, and integrate community-level planting into the broader mitigation strategy established under Condition G15.1.

2.7.5 Disadvantage of the amendment of Condition G15.2

No perceived disadvantages of the proposed amendment have been identified.

2.7.6 Impact Assessment

According to the 2006 VIA, the raised dam wall, assessed under the 15 m development option as a worst-case scenario, was expected to have a medium visual impact, with low to medium levels of visual intrusion. Although the raising of the wall and subsequent inundation of a larger area constitute non-reversible impacts, they are not expected to be overwhelmingly negative in terms of viewer perception, the VIA recorded a mix of negative, positive, and neutral responses depending on the viewer. The impact assessment does not take into consideration that the intake tower will increase the visibility of the dam project for all receptors, including viewers on the N7, who would otherwise have very little visual access to the dam wall raising.

In contrast, the construction activities associated with the raising of the dam wall are considerably more visually intrusive and carry stronger negative associations from a viewer perception perspective. As construction began in 2013, these impacts can already be regarded as long-term. This suggests that tree planting, if required, would have been far more effective as a mitigation measure for construction-related disturbance rather than for the dam wall itself. Had the visual specialists at the time anticipated the true duration and extent of construction activities, they may have recommended immediate tree planting to help mitigate visual disturbance during or even before the construction phase.

It should be noted that newly planted trees do not provide immediate screening. Most are planted as medium to large nursery stock (50–200 litre specimens), and depending on species and scale of disturbance, may only begin to provide noticeable screening two to five years after establishment, assuming optimal conditions such as well-drained soil, consistent irrigation, and appropriate soil preparation.

Planting trees at receptor sites around the dam to screen disturbance associated with the construction period is more pertinent according to the specialist that undertook the review of the original assessment than screening the dam wall itself. One reason is because the construction period is likely to extend beyond 15 years, thereby constituting a long-term impact as defined in the original VIA. Construction commenced in 2012 with the N7 realignment, while works on the dam began in late 2015 and are expected to continue for several more years. Another reason for the urgent mitigation of construction impact is that the construction phase is more disruptive to daily life, especially when linked to acoustic impacts/noise disturbances.

Although the impacts of construction activities - such as dust, vegetation clearance, large-scale construction camps and facilities, stockpile areas, crusher operations, and general landscape scarring - are reversible in the long term, their visual effects are immediate and recurrent from the point of view of a sensitive receptor. From a viewer perception perspective, these impacts are experienced as long-term, recurring disturbances that extend over more than a decade. This indicates that tree planting should have been prioritised during the early construction phase to help offset the sustained visual intrusion associated with construction activities.

Condition G15.3 is also linked to Condition G15.2 as the raising of the dam wall will result in other permanent visual effects beyond the wall itself, including the creation of a large new inundation zone with its associated fringe (addressed under Condition G15.3), as well as the loss of numerous mature trees on the eastern shore and elsewhere. The original VIA observed that inundation of trees along the eastern shoreline could cause them to die, thereby increasing the visual exposure of the quarry. It is inferred that this observation also applies to other disturbances associated with the raising of the dam wall that are visible from the eastern shore.

2.7.7 Management and Mitigation Measures and Changes to the EMPr

The visual specialist has proposed the following mitigation measures to be included in the amended EMPr.

- Tree planting specifications and guidance on the selection of species, planting locations and irrigation (developed by a registered landscape architect) must be provided along with the sapling.
- The applicant must pro-actively advertise this opportunity to affected visual receptors through appropriate local channels (such as municipal notices, community meetings, or targeted communication with directly affected households, businesses and organizations). Advertising must commence immediately and readvertised monthly until the end of the construction period.
- Mature trees occurring within the municipal dam resort must be felled prior to inundation and either left in place or processed into chip or mulch for use elsewhere.
- The inundation fringe zone and the strip of vegetation directly above the high-water mark should appear as continuous as possible with the surrounding fynbos vegetation. Over time, the inundation fringe zone all along the water's edge should be populated with appropriate indigenous and/or endemic aquatic species that can tolerate, and ideally thrive in, seasonally wet and dry conditions.
- The applicant must appoint a suitably qualified internal or external specialist (i.e. a botanist and/or ecological restoration specialist with proven fynbos expertise) to prepare, approve, and implement a revegetation and rehabilitation plan prior to the completion of the construction phase for the inundation fringe zone that enables ongoing adaptive management and explicitly incorporates visual impact management into its objectives and success criteria.
- Active rehabilitation should be undertaken once the dam raising has been completed to guide the natural succession toward a more continuous and integrated vegetative cover that reduces visual intrusion and enhances ecological function.
- Ongoing monitoring must be undertaken to ensure that revegetation efforts establish correctly, invasive alien plants are removed, and erosion is controlled.

2.8 Condition G15.3 of the RoD

2.8.1 Condition G15.3

The original RoD: Condition G15.3 States:

"*The inundation dam fringe must be revegetated to reduce the aesthetically unpleasant visual scarring effect of dam level fluctuations*."

2.8.2 Proposed removal of Condition G15.3

The licence holder proposes the removal of Condition G15.3. Conditions G15.2 and G15.3 are closely related. It is therefore proposed that the content of this condition be included in Condition G15.2, as part of the proposed amendment of Condition G15.2.

2.8.3 Motivation for removal of Condition G15.3

A Visual specialist was commissioned as part of EA Amendment Application process to review the original Visual Impact Assessment (VIA) report (2006) submitted with the EIA application (See Appendix E). The visual specialist concluded that Conditions G15.2 and G15.3 are closely related. Both conditions are aimed at reducing the visual impacts associated with the raised dam wall.

The visual specialist concluded that based on aerial footage, fieldwork observations, and the photographic record in previous reports, it is evident that without intervention the landscape within the inundation dam fringe area will display an aesthetically unpleasant visual scarring effect. Two terms are important for clarity, and will be used in this report: the inundation zone (the area that will be permanently flooded once the dam wall is raised) and the fringe zone (the fluctuating shoreline where water levels rise and fall).

Consultation with the appointed biodiversity specialist indicated that the primary considerations within the inundation fringe zones are erosion management and alien vegetation control. Both of these measures also serve as means of managing visual impact. The biodiversity specialist's advice, together with site observations, confirms that revegetation is possible and that suitable species exist which are resilient or specialised enough to withstand both prolonged wet and dry conditions within their life cycle.

The visual specialist argued that revegetation of dam inundation edges is not a universally standard practice internationally and many reservoir projects accept fluctuating margins as visually barren and focus instead on erosion control. Where ecological integrity, scenic quality, or social use is prioritised, however, active rehabilitation measures are often imposed as part of approval conditions. Examples include the Berg River Dam (South Africa), where indigenous planting was applied for visual and ecological integration; the Three Gorges Dam (China), which trialled large-scale planting along a 30m fluctuating water zone with mixed

success; and projects on the Colorado River (USA), where riparian rehabilitation was attempted downstream of Glen Canyon Dam. These cases highlight that while outcomes are technically challenging and variable, international precedents do exist. They demonstrate that with suitable species selection, hydrological understanding, and long-term management, inundation-edge revegetation can play a legitimate role in mitigating visual and ecological impacts of major dam projects.

It is therefore recommended that Condition G15.3 be included in Condition G15.2.

2.8.4 Advantage of the removal of Condition G15.3

Incorporating Condition G15.3 into Condition G15.2 streamlines and retains the intent of both Conditions G15.2 and G15.3.

2.8.5 Disadvantage of the removal of Condition G15.3

The removal of Condition G15.3 does not result in the complete removal of the condition from the EA. The condition is incorporated into Condition G15.2 and streamlined to retain the intent of both Conditions G15.2 and G15.3. No disadvantage of incorporating Condition G15.3 into G15.2 is therefore anticipated.

2.8.6 Impact Assessment

The assessment of impacts for both Condition G15.1 and G15.2 is discussed in Section 2.7.6.

2.8.7 Management and Mitigation Measures and Changes to the EMPr

Proposed additions and amendments to existing management and mitigation measures in the EMPr is discussed for Condition G15.2 and G15.3 in Section 2.7.7.

2.9 Condition G15.4 of the RoD

2.9.1 Condition G15.4

The original RoD: Condition G15.4 States:

"*An environmental rehabilitation and restoration plan must be implemented to, inter alia, address revegetation of disturbed areas*."

2.9.2 Proposed amendment of Condition G15.4

The licence holder proposes the following changes to the condition wording:

"*An environmental rehabilitation and restoration plan must be developed* ***at least 6 months prior to completion of the construction phase and*** *implemented* ***during the operational***

phase *to, inter alia, address revegetation of disturbed areas,* ***including the inundation fringe***."

2.9.3 Motivation for the amendment of Condition G15.4

A Visual specialist was commissioned as part of EA Amendment Application process to review the original Visual Impact Assessment (VIA) report (2006) submitted with the EIA application (see Appendix E). The visual specialist concluded that this condition addresses a predominantly reversible visual impact. In terms of visual assessment practice, a reversible visual impact refers to a change in the visual environment that can be restored, over time, to its original or a visually acceptable condition once the activity causing the change has ceased or mitigation has been implemented. If, however, disturbed areas are left unrehabilitated, the impact becomes permanent and potentially of greater magnitude than the raising of the dam wall itself.

Rehabilitation is therefore strongly recommended to ensure that, once construction activity concludes, the scenic environment can be restored to its pre-disturbance condition, which is represented by fynbos vegetation covering graded slopes. All areas, except those beneath permanent infrastructure such as buildings, roads, or parking areas, must be regarded as requiring rehabilitation. The original VIA did not account for construction activities beyond the quarry extension, yet in practice no open, unvegetated, or disturbed soil should remain unrehabilitated after construction is completed.

Wherever possible, rehabilitation should also be implemented progressively (i.e. concurrent with construction rather than delayed until the end of the project). Disturbed areas identified during fieldwork include the extended quarry, crusher plant and screening area, material stockpile areas, cleared surfaces on and around the construction site, and all exposed earthworks and temporary roads associated with the dam wall raising. This includes all embankments and permanent road verges, which should also be stabilized and revegetated.

Even though the visual specialist confirmed that the need to develop a detailed environmental rehabilitation and restoration plan is essential, the condition as stated in the RoD is not clear on when this plan must be developed and implemented. Since the environmental rehabilitation and restoration plan is largely focussed on overall restoration of construction areas and rehabilitation of the inundation fringe that will establish once the dam levels have reached the new Full Supply Level (FSL) during the operational phase, the amendment proposes the development of the environmental rehabilitation and restoration plan just prior to completion of the construction phase and specifically focused on the operational phase.

Management and mitigation measures associated with construction phase activities are already incorporated in the existing EMPr under section 6.17 and is sufficient to manage all construction related rehabilitation requirements.

2.9.4 Advantage of the amendment of Condition G15.4

The advantage of the proposed amendment is that is provides clarity on when the environmental rehabilitation and restoration plan must be developed and implemented.

2.9.5 Disadvantage of the amendment of Condition G15.4

No perceived disadvantages of the proposed amendment have been identified.

The proposed amendment does not propose removal of the need to develop a detailed environmental rehabilitation and restoration plan but provides clarity on when the environmental rehabilitation and restoration plan must be developed and implemented.

Since the environmental rehabilitation and restoration plan is largely focussed on overall restoration of construction areas and rehabilitation of the inundation fringe that will establish once the dam levels have reached the new Full Supply Level (FSL) during the operational phase, the amendment proposes the development of the environmental rehabilitation and restoration plan just prior to completion of the construction phase and specifically focused on the operational phase.

Management and mitigation measures associated with construction phase activities are already incorporated in the existing EMPr under section 6.17 and is sufficient to manage all construction related rehabilitation requirements.

2.9.6 Impact Assessment

The proposed amendment does not result in changes to the impacts associated with rehabilitation and restoration. No changes in the impact assessment, significance or management measures are anticipated. Some additional mitigation measures are however proposed.

2.9.7 Management and Mitigation Measures and Changes to the EMPr

The following mitigation measures have been proposed for inclusion in the amended EMPr.

- The applicant must appoint a suitably qualified specialist team (i.e. a botanical specialist, a registered landscape architect, and an ecological restoration specialist) to prepare, approve, and implement a comprehensive Environmental Rehabilitation and Restoration Plan at least 6 months prior to completion of the construction phase for all disturbed areas outside the inundation zone.
- The plan must include the following as a minimum:
    - Provide for progressive implementation during construction, reinstatement of topsoil, slope stabilisation, indigenous species revegetation, and plant-rescue for use in rehabilitation and local community facilities enrichment.

- The plan must include measurable outcome-based success criteria (including visual impact considerations), a monitoring and reporting programme extending at least 3–5 years post-construction, and ring-fenced financial provision to ensure long-term implementation and accountability.
- All areas subject to cutting, filling, or bulk earthworks must be regraded to a stable slope that imitates the fall of surrounding landforms.
- Topsoil must be reinstated after grading, in accordance with the botanist's or rehabilitation plan's specification. Where topsoil was not stockpiled correctly or at the right time (e.g.; prior to construction), it must be sourced sustainably from elsewhere.
- The rehabilitation plan must account for soil type, slope, aspect, elevation, and other site-specific conditions that influence vegetation type and composition.
- Revegetation must occur over a prolonged period (3–5 years minimum) with active monitoring, to ensure correct species mixes are established and alien invasive species are removed during the establishment period.
- The plan must be informed by a team including, at minimum, a botanical specialist, a landscape architect, and an ecological restoration specialist with sufficient experience in the fynbos biome.
- Timing of rehabilitation interventions must align with seasonal growth cycles and rainfall patterns.
- The plan must be outcome-based, with clear parameters of success and failure, and include detailed recommendations and adaptable methods to ensure targets are achieved. Failure to achieve the specified outcomes must be addressed with specific remedies.
- Monitoring must be actionable, time-based, and carried out by an appropriate professional or specialist to ensure rehabilitation success.

2.10 Condition G21 of the RoD

2.10.1 Condition G21

The original RoD: Condition G21 states:

"*Within 36 months from the date of issue of this environmental authorisation the applicant must submit to this Directorate for approval a catchment management plan for the Olifants/Doring Water Management Area which must, inter alia, include:*

21.1 a water demand and conservation plan;

21.2 an urban, industrial and agricultural water use efficiency plan;

21.3 a water loss investigation and repairs plan for the canal system of the Lower Olifants River Government Water Scheme;

21.4 catchment management, mitigation and improvement measures; and

21.5 the establishment of management entity to co-ordinate and monitor implementation of the plan."

2.10.2 Proposed change of wording for the Amendment of the RoD:

Based on the consideration of the listed points 21.1 to 21.5, it is proposed that these conditions be included in the scope for the development of the catchment management plan by the relevant DWS Directorate .

The following wording is therefore proposed:

"*Within **12** months from the date of **commissioning of the raised Clanwilliam Dam** the **relevant Directorate of the** applicant must submit to this Directorate for approval a **management and monitoring plan for the physical zone of influence within the** Olifants/Doring Water Management Area **resulting from the construction and operation activities,** which must, inter alia, include:*

21.1 a water demand and conservation plan;

21.2 an urban, industrial and agricultural water use efficiency plan;

21.3 a water loss investigation and repairs plan for the canal system of the Lower Olifants River Government Water Scheme;

21.4 catchment management, mitigation and improvement measures; and

21.5 the establishment of management entity to co-ordinate and monitor implementation of the plan."

2.10.3 Motivation for the change of wording for Condition G21 of the RoD:

The licence holder has reported that this specific condition is very difficult to comply with. Although DWS is responsible to manage water resources within the catchment, that function is fulfilled by another directorate within the DWS that is tasked to deal with catchment wide management and monitoring. The licence holder's department does not have the mandate to develop and implement a catchment-wide catchment management plan for the Olifants/Doring Water Management Area.

It is therefore proposed that the condition request that the licence holder compile a request to implement this condition to the relevant DWS directorate and show such official internal request as proof of compliance with the condition.

Given that potential catchment wide impacts will only materialise once the raising of the dam wall has been completed, it is further recommended to the condition be amended to allow compilation and submission of the catchment management plan developed by the relevant Directorate and submitted for approval 6 months prior to commencing with the operational phase of the dam raising project.

2.10.4 Advantage of the proposed amendment

The advantage of the proposed amendments is that the proposed amendment assigned the execution of the condition to the mandated directorate within the DWS to develop the catchment management plan and that can execute the implementation of such plan and provides this mandated directorate to submit an amended catchment management plan for within its own frameworks and procedures to ensure successful implementation of the catchment management plan in the long run.

2.10.5 Disadvantage of the proposed amendment

No perceived disadvantages of the proposed amendment have been identified.

2.10.6 Impact Assessment

The proposed amendment does not result in changes to the impacts associated with Clanwilliam Dam Raising construction activities. No changes in the impact assessment, significance or management measures are anticipated.

2.10.7 Management and Mitigation Measures and Changes to the EMPr

The requirements in terms of the condition will be included in Section 5.1.3 of the EMPr

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3 EMPR AMENDMENT

3.1 Objectives of proposed site-specific EMPr amendment

The amendment of the site-specific Environmental Management Programme (EMPr), document reference: 13086-46-Rep-001-EMPr REV 1, dated 14 November 2024, has been undertaken in line with the following requirements:

- To amend specifications in the existing site-specific EMPr to avoid contradictions and consolidate specifications. These amendments include:
    - Conditions that have been proposed for amendment to avoid contradiction between the amended EA and the site-specific EMPr;
    - To bring the existing site-specific EMPr in line with the requirements of the current legislative regime, i.e. the EIA Regulations (GN R.983), as amended;
    - To incorporate specific requirements of the existing approved Mining EMPr, dated 31 May 2024, that is not currently included in the site-specific EMPr to produce a single overall consolidated site-specific EMPr that manage both construction and mining related conditions in a single consolidated EMPr; and
- To integrate revised or additional management and mitigation measures to ensure better and more effective control of identified impacts.

3.2 Writing convention applied to the Amendment of the EMPr

Additions or deletions of sentences, phrases or words in the amended site-specific EMPr have been denoted in the Amended EMPr accompanying this EA Amendment Motivation Report. The writing convention implemented in the Amended EMPr were denoted as follow:

- When denoting the deletion of a sentence, phrase or word: ~~Strikethrough of the sentences, phrases or words~~.
- When denoting the addition of a sentence, phrase or word: <u>Underline the sentence, phrase or word</u>.

3.3 Amendments of specifications in the existing site-specific EMPr to avoid contradictions and consolidate specifications

Since commencement of construction in 2014, a number of recurring non-compliances in terms of the existing RoD and site-specific EMPr were raised by the Environmental Control Officer (ECO) appointed to monitor the compliance of DWS and its contractors during the construction phase of the Clanwilliam Dam raising project. During this time, DWS reassessed it's ability to comply with the conditions resulting in the recurring non-compliances. It was concluded that some of the conditions were too onerous and went beyond the scope of the construction impacts. DWS initiated engagements with the WCDEADP to resolve these issues, and it was concluded that some of the conditions should be amended in order to make compliance with these conditions achievable.

Proposed amendments were incorporated into the existing site-specific EMPr using the writing conventions proposed in Section 3.2.

3.4 Integrate revised or additional management and mitigation measures

The construction activities associated with the Clanwilliam Dam Raising project has been ongoing since 2014 and over time new impacts or increases in impact significance may arise for the project that must be managed.

One such potential impact is the generation of potentially significant noise levels once the operation of the proposed crusher plant to crush quarry stone for the construction of the dam wall becomes necessary. In 2025, an official noise complaint was lodged by Mr. Stone, a resident still living directly across from the crusher plant location. This prompted the licence holder to commission a noise impact assessment to assess the potential noise impacts on sensitive receptors still located in close proximity to the crusher plant location.

A key component of the construction operations is the on-site crusher plant, which has been established to process rock and aggregate materials required for the dam raising. The plant is currently generating noise that may affect the surrounding environment and nearby communities. The crusher plant infrastructure includes:

- Four Crushers
    - Jaw Crusher
    - Primary Cone Crusher
    - Secondary Cone Crusher
    - Vertical Inclined Crusher
- Two Aggregate screens
- Three 570 kVA Generators

Consequently, an environmental noise impact assessment has been commissioned to evaluate the sound emissions, identify sensitive receptors, and recommend appropriate mitigation measures to minimise any adverse effects. This noise assessment is included as Appendix D to this EA Amendment Motivation Report.

Acoustech Consulting was appointed to undertake an Environmental Noise Impact Assessment (ENIA) for the crusher plant development near the Clanwilliam Dam in the Western Cape. The project forms part of the Clanwilliam Dam wall raising and associated construction works, supported by the on-site crusher plant established to process the required rock and aggregate materials.

The scope of works of the ENIA was to determine if the project complies with the Western Cape Noise Control Regulations (PN 200, 2013) in terms of the Environmental Conservation Act, 1989 (Act No.73 of 1989). The methodologies applied in this report comply with the GN 320 of 20 March 2020 requirements.

One noise measurement was conducted at Point 1, located at the property boundary of the crusher plant, directly opposite the nearest noise sensitive receptor (the complainant's residence). Based on the measurements the following Rating Level was selected for receptor:

− A typical rating level (i.t.o SANS 10103:2008) highlights a Rural District within the study area.

The outcome of the assessment indicates that noise mitigation is required for the crusher plant during the construction phase. The assessment was conducted considering the temporary operation of the crusher plant, as well as procedural and procurement constraints that may influence the timing of implementing the recommended mitigation measures.

Key mitigation options proposed by the specialist include:

- Construction Phase: Due to the high noise levels emitted from the crusher plant, an acoustically engineered enclosure is required to significantly reduce noise emissions. The enclosure must be designed by an acoustic engineer to ensure compliance with applicable noise regulations and minimise impacts on nearby receptors.
- In addition to the technical mitigation measures, The Department of Water and Sanitation (DWS) has identified three alternative management options to address the noise impacts associated with the operation of the crusher plant, based on the ongoing engagement with the affected resident (Mr. Stone) and the project team. These options are separate from the acoustical mitigation requirements outlined in Section 8.1 and represent operational or logistical measures that may be implemented depending on feasibility, timing, and stakeholder agreement.
    - Option 1: Alternative Accommodation for the Affected Party DWS may provide alternative accommodation for the affected party for the remaining five-month period of crushing activities. The cost of accommodation would be borne by the Department. This option would only proceed following proper engagement and mutual agreement with the affected resident. At present, this is considered the most viable and preferred option by DWS as it enables continuation of the construction programme while temporarily removing the receptor from exposure to elevated noise levels.
    - Option 2: Relocation of the Crusher Plant: DWS investigated several potential alternative locations for the crusher plant prior to installation; however, no suitable or feasible sites were available within the project boundary. The project area has limited space, and renting adjacent farmland would be highly costly and may trigger additional environmental impacts such as vegetation clearance, loss of agricultural land, and increased traffic from transporting material. Relocating the plant would also introduce significant delays to the construction schedule. For these reasons, relocation is considered the least viable and least preferred option.
    - Option 3: Temporary Disestablishment of the Crusher Plant Although the crusher plant is situated on land that has been formally expropriated for the

dam works, the recent court ruling requires DWS to seek an amicable resolution to the matter. This resolution process may require additional time. In the interim, DWS may choose to temporarily disestablish the crusher plant or keep it on site without operating it until an agreed solution is reached. Although this option may introduce project delays, substantial quantities of material have already been crushed and may sustain construction progress in the interim.

4 PUBLIC PARTICIPATION PROCESS

A public participation process will be conducted in support of a Part 2 EA Amendment Application for the Clanwilliam Dam Raising project.

4.1 Public Participation Process Report

The PPP that was followed will be documented and reported in the PPP Report compiled by Zitholele after conclusion of the 30-day public review period and will be included an Appendix to the final report.

4.2 Recommendations from Public Participation Process

The following recommendations are provided based on correspondence received from I&APs and engagement with stakeholders during the public review period:

- Zitholele Consulting propose to follow the Public Participation Process as required in terms of Chapter 6 of the NEMA EIA Regulations, 2014, as amended. In terms of these regulations, Zitholele propose the following tasks:
- Site notices will be placed at strategic locations in close proximity to and along the length of the project site.
- A newspaper advertisement will be placed in a provincial or national newspaper that covers the Clanwilliam area and surrounds in its distribution. The newspaper advertisement will include details of the proposed applications, legislative requirements and means to contact the application project team and register as an I&AP.
- The stakeholder database will compiled and will serve as the official register of I&APs and will be updated and maintained throughout the Public Participation Process. The following stakeholder groups will be included in the stakeholder database:
- Background Information Documents (BIDs) will be placed at the local library, other public places, and Municipal Offices. The BID will contain a QR Code which link to the electronic BID and subsequent relevant documents.
- The distribution of Notification letters to notify key stakeholders of the availability of the EA Amendment application and amended EMPr documentation will be undertaken via e-mail.

- Placement of the EA Amendment application and amended EMPr documentation on the Zitholele website and 2 alternative online locations, and hard copies will be placed at two public venues (the Local Municipality and the Library).
- All stakeholders and I&APs will be informed of the start of the 30 calendar day public review and comment period, including the date of a virtual public meeting during this period, 7 days in advance of the review period commencing. Notification will be undertaken via email and SMS notifications to I&APs.
- An in person public meeting will only be held if this is specifically requested by stakeholders of I&APs and will be held either at the Harvester Church Clanwilliam or Clanwilliam Hotel. IF these venues are not available A suitable venue will be secured in Clanwilliam for the meeting.
- Where feasible, all engagements with authority departments, key stakeholders and landowners will be undertaken via virtual meetings or will be undertaken telephonically.
- Distribution of Reports to commenting authorities will be via email or large file transfer portal, e.g., Dropbox, OneDrive, or Google Drive. Authorities requesting a copy of the documents will receive a USB portable drive containing the project documentation. Hard copies of the project documentation will only be issued as the last remaining option to authorities.
- All comments and concerns raised by stakeholders and I&APs will be responded to and addressed in a Comments and Responses Report (CRR), which will be included with the final application documentation to be submitted to the competent authority. A summary of the concerns and comments raised and responses provided will furthermore be included in the EA Amendment technical report.
- The PP process will furthermore be documented in a Public Participation Process report, which will contain a description of the PPP followed and provide evidence of notifications to and communications with I&APs, stakeholders and authorities. It will also contain proof of notification, including copies of the BID, site notices placed with coordinated and photographic evidence, a copy of the newspaper advertisement, and all attendance registers for meetings undertaken during the PPP and a copy of the application stakeholder database.
- Notification to I&APs of the decision made by the Competent Authority regarding the EA and the appeals process will be distributed via e-mail to the existing stakeholder database.

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