

24/04/2023

# **DRAFT BASIC ASSESSMENT REPORT**

**PROPOSED TWEEFONTEIN  
GAUGING WEIR NEAR BOTHAVILLE,  
NALA LOCAL MUNICIPALITY**

**DESTEA REF. NO.: EMB/12(i)(a),19,12(b)(iv)/23/06**



ENVIRONMENTAL & SOCIAL SCIENTISTS

### EXECUTIVE SUMMARY

NSVT Consultants has been appointed by the Free State Department of Water and Sanitation as the independent Environmental Assessment Practitioner to undertake a Basic Assessment process for the proposed construction of Tweefontein gauging weir in Vals River located near Bothaville, within the jurisdiction of Nala Local Municipality. The proposed development, triggers activities in Listing Notice 1 and 3, as the development is within a watercourse. The weir will be situated in the river with the right banks located on Farm Botha's Drift No. 286 and left banks on Farm Winkelplaats No. 312. Therefore, an Environmental Authorisation must be obtained from the competent authority, namely, the Free State Department of Economic, Small Business Development, Tourism and Environmental Affairs in terms of the National Environmental Management Act (Act 107 of 1998) and the Environmental Impact Assessment Regulations, 2014 as amended. A water use license in terms of the National Water Act, 1998 (Act No. 36 of 1998) is not required as the applicant is the authorising authority and a legal opinion to that effect is attached. The proposed Crump gauging weir located in the lower reaches of Vals River will be used to provide data that will be used to calibrate inaccurate readings from the Rooiwal station, which will be correlated with the data from Lindley so that the Bloemhof Dam operators are able to synchronise the water releases with the natural flow in the Vals and Vaal River. North of the proposed site is a damaged bridge on the S722 Road and further is Bothaville. On the eastern and southern side is agricultural lands, and the R30 Provincial road on the western side, which the access road branches from. Upstream of the proposed site is an existing storage weir that will be used as a coffer dam, one of the reasons that the identified site is suitable in addition to it being accessible even during floods. An additional coffer dam will be constructed downstream and a temporary construction camp on the left bank. The camp identified for the right bank will not go ahead due to accessibility issues. The photographic history depicting the conditions and land uses within and surrounding the proposed site and the Google Satellite Imagery is provided. As part of the Basic Assessment process, a public participation process was undertaken to ensure that identified Interested and Affected Parties are provided with an opportunity to raise their concerns/inputs and/or comments and they included commenting authorities, landowners of the left and right banks, land user of the right banks. The means of contacting I&APs included advertising in a local newspaper, *i.e.*, the "Vista News", on-site notice, posters at prominent places and the current phase, reviewing of the Draft BAR. From the notification phase, nobody registered as an I&AP although comments were received from the Department of Police, Roads and Transport, with their main interest being impact that the proposed development would have on provincial roads in proximity as well as requesting additional information in terms of accessibility to the proposed site amongst other issues. Comments and responses report will be compiled on completion of the reviewing of the Draft Basic Assessment before submission of the Final Basic Assessment Report for decision-making. The methodology that was adopted to complete the Basic Assessment process, included desktop study, site visit for ground truthing, consultation with I&APs as explained above and the involvement of specialists, *i.e.*, Heritage Specialist, Ecologist, and Hydrologist. Therefore, based on the findings, identification and assessment of impacts associated with the proposed development, mitigation and management measures and recommendations were presented. The potential impacts were assessed using the Significance Assessment Methodology that considers the nature of the potential impact, extent and duration, reversibility, probability, magnitude, whether the impact is cumulative and whether there will be residual risks. The significance of the potential impacts was evaluated prior to implementing any mitigation measures and evaluated again with mitigation and management measures in place. The identified impacts were mostly associated

with the construction phase and were therefore temporary and limited to the development footprint. However, there will be a long term impact on the vegetation of the proposed development as it will be cleared to accommodate the proposed development.


From the assessment, significance of potential impacts ranged between Low and Medium with mitigation measures proposed to avoid or at least minimize the impact. Therefore, the identified impacts will be reduced greatly with implementation of the outlined mitigation measures and the likelihood of residual impacts will be limited. The identified negative impacts associated with the earthmoving activities, operation of equipments, movement of machinery, behaviour of the labourers, etc. are outweighed by the positive impact during operation, *i.e.*, ensuring that accurate readings will be received to synchronise release of water at the Bloemhof Dam and although the project is not for socio-economic project, there will be temporary jobs created that will boost the local economy. The operational impacts were able to be avoided by ensuring that the design of the weir has erosion protection measures thus routine inspection of the features should be implemented and the height of the weir is almost the same height as the existing weir, therefore, no significant increase of the water level upstream and downstream are anticipated. The development does not compromise the integrity of the municipality's Integrated Development Plan and local and provincial Spatial Development Framework. The selected crump weir is selected because it is able to provide accurate readings of up to 90% submergence, thus doesn't need to be built higher, thus no alternative technology was considered. The agricultural activity in the area that surrounds the proposed site will remain largely unaffected by the proposed development. Due to the demolition of the coffer dam, post construction of the proposed development will result in a very little difference in the current conditions. The proposed development is of regional importance to downstream users that depends on the water released from Bloemhof Dam, therefore, buffering the effects of floods or dry season. The location factors favours the proposed development, thus no alternative site was considered. The principles of the National Environmental Management Act, 1998 (Act No. 107 of 1998) have also been considered as part of the process. The screening tool is contained in the report showing the sensitivity of the site based on the outlined environmental themes as well as specialists studies to be undertaken. A Site Sensitivity Verification Report, was compiled whereby the EAP pointed out whether they were in agreement with the rating provided by the Screening Tool and motivation provided for specialists studies that were not commissioned. The EAP is in agreement with the rating for Animal Species, Aquatic Biodiversity, Archaeological and Cultural Heritage, Defence, Plant Species and Terrestrial Biodiversity, hence the commissioned assessment of Biodiversity (Terrestrial and Aquatic) and Hydrological as well as obtain input from a Heritage specialist. The draft report is sent for review and comments and/or inputs will be included in the Final Basic Assessment Report to be submitted to DESTEA for review and decision-making.

Given the above information, the Environmental Assessment Practitioner is in view of that the proposed development be approved with the requirement that the recommendations, conditions of authorisation and mitigation measures outlined in the Basic Assessment Report and Environmental Management Programme including the management plans be implemented. It is deemed that the information that has been provided in this report is adequate to enable the competent authority to make an informed decision regarding the proposed gauging weir.

**BASIC ASSESSMENT REPORT**

Basic Assessment Report (“BAR”) in terms of the Environmental Impact Assessment (“EIA”) Regulations, 2014 (as amended), promulgated in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (as amended) (“NEMA”).

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## DRAFT BASIC ASSESSMENT REPORT

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### PROJECT INFORMATION

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**REPORT TITLE:** Basic Assessment Report

**REPORT STATUS:** Draft

**PURPOSE OF REPORT:** The purpose of this Draft BAR is to present information on the proposed development and the need for the development; provide details of the Environmental Assessment Practitioner (“EAP”) appointed to undertake the Basic Assessment (“BA”) process; provide an overview of the public participation process; and to set out the environmental outcomes, impacts and residual risks.

**PROJECT TITLE:** Proposed Tweefontein Gauging Weir near Bothaville, Nala Local Municipality

**APPLICANT:** Free State Department of Water and Sanitation

**ENVIRONMENTAL CONSULTANTS:** NSVT Consultants

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Appendix I: Specialist's declaration of interest  
Appendix J: Additional Information

# DRAFT BASIC ASSESSMENT REPORT

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**destea**

department of  
economic, small business development,  
tourism and environmental affairs  
FREE STATE PROVINCE

(For official use only)

**File Reference Number:**

**Application Number:**

**Date Received:**


Basic assessment report in terms of the Environmental Impact Assessment Regulations, 2014, promulgated in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended.

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**Kindly note that:**

1. This **basic assessment report** is a standard report that may be required by a competent authority in terms of the EIA Regulations, 2014 as amended and is meant to streamline applications. Please make sure that it is the report used by the particular competent authority for the activity that is being applied for.
2. This report format is current as of **13 February 2020**. It is the responsibility of the applicant to ascertain whether subsequent versions of the form have been published or produced by the competent authority
3. The report must be typed within the spaces provided in the form. The size of the spaces provided is not necessarily indicative of the amount of information to be provided. The report is in the form of a table that can extend itself as each space is filled with typing.
4. Where applicable **tick** the boxes that are applicable in the report.
5. An incomplete report may be returned to the applicant for revision.
6. The use of “not applicable” in the report must be done with circumspection because if it is used in respect of material information that is required by the competent authority for assessing the application, it may result in the rejection of the application as provided for in the regulations.
7. This report must be handed in at offices of the relevant competent authority as determined by each authority.
8. No faxed or e-mailed reports will be accepted.
9. The signature of the EAP on the report must be an original signature.



10. The report must be compiled by an independent environmental assessment practitioner.
11. Unless protected by law, all information in the report will become public information on receipt by the competent authority. Any interested and affected party should be provided with the information contained in this report on request, during any stage of the application process.
12. A competent authority may require that for specified types of activities in defined situations only parts of this report need to be completed.
13. Should a specialist report or report on a specialised process be submitted at any stage for any part of this application, the terms of reference for such report must also be submitted.
14. Two (2) colour hard copies and one (1) electronic copy of the report must be submitted to the competent authority.
15. Shape files (.shp) for maps must be included in the electronic copy of the report submitted to the competent authority.

## SECTION A: ACTIVITY INFORMATION

Has a specialist been consulted to assist with the completion of this section?

<input checked="" type="checkbox"/>	NO
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If YES, please complete the form entitled "Details of specialist and declaration of interest" for the specialist appointed and attach in Appendix I.

### 1. PROJECT DESCRIPTION

#### a) Describe the project associated with the listed activities applied for

Proposed construction of a Crump gauging weir with a development footprint of 3220m<sup>2</sup> consisting of approach channel, downstream channel and gauging structure in the Vals River near Bothaville. This will necessitate clearance of riparian vegetation, followed by the excavation, removal of material from and infilling into the watercourse, *i.e.*, Vals River of more than 10m<sup>3</sup>. There would be clearing of indigenous vegetation for the construction of a temporary site camps on either side of the watercourse as well as grading of the existing track road to access the proposed site. The horizontal Crump structure of the proposed gauging weir will have two (2) notches with a length of 21m each. The left bank wall located on Farm Winkelplaats 312, will have a width of 1.000m, length of 19.400m and a Reduced Level of 1264.70m, whereas the right bank wall is 1.000m in width, length of 16.000m and a Reduced Level of 1264.700m located on Farm Botha's Drift 286. The Left and Right bank cut-off walls would be 1.000m in width, 50.000m in length with a Reduced Level of 1264.700m. The Left and Right bank erosion protection/riprap would be up to a maximum level of 1269.000m. The detailed scope of work for the proposed development is attached hereto as **Appendix J1**. The gauging structure will be constructed on a stable foundation and crest of the structure will be placed perpendicular to the direction of flow in the stream. The instrumentation hut will be located on the right bank. The existing storage weir will be used as a coffer wall, which will reduce the volume of coffer material required during construction and a temporary one will be constructed downstream. The low notch level of the proposed weir will be the same level as the existing storage weir thus no change in the storage capacity will be effected. However, on completion of the construction phase, the existing storage weir will be demolished. A temporary construction camp will be established on the left bank thus will be subjected to vegetation clearance. The existing dirt road, branching off R30 Provincial Road on the left bank will be used to access the proposed site. The Preliminary Design Report and Drawings for the proposed construction of a gauging weir, is attached hereto as **Appendix J2**. The stability of the proposed structure was determined using the Swartekrag Damstrukture and with few modifications, it was found to be satisfactory. The gauging weir is designed in a way that accurate readings are taken most of the time because approach channel, downstream channel and selected gauging structure was taken into consideration. The envisaged construction period is 18 to 24 months.

The Basic Assessment Process is undertaken to determine possible environmental impacts that the proposed development may have on the receiving and surrounding environment, *i.e.*, Vals river and surroundings and ensure that there will be no long-term consequences to the environment and the community within which the project is proposed.

**b) Provide a detailed description of the listed activities associated with the project as applied for**

Listed activity as described in GN 327,325 and 324	Description of project activity
<p>GNR. 327 Activity 12(i)(a)                      The development of— (i) dams or <u>weirs</u>, where the dam or weir, including infrastructure and water surface area, <u>exceeds 100 square metres</u>; or (ii) infrastructure or structures with a physical footprint of 100 square metres or more; where such development occurs (a) <u>within a watercourse</u>; (b) in front of a development setback; or (c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse; — excluding— (aa) the development of infrastructure or structures within existing ports or harbours that will not increase the development footprint of the port or harbour; (bb) where such development activities are related to the development of a port or harbour, in which case activity 26 in Listing Notice 2 of 2014 applies; (cc) activities listed in activity 14 in Listing Notice 2 of 2014 or activity 14 in Listing Notice 3 of 2014, in which case that activity applies; (dd) where such development occurs within an urban area; (ee) where such development occurs within existing roads, road reserves or railway line reserves; or (ff) the development of temporary infrastructure or structures where such infrastructure or structures will be removed within 6 weeks of the commencement of development and where indigenous vegetation will not be cleared.</p>	<p>Development of a gauging weir, with the total development footprint of 3220m<sup>2</sup> and length of approximately 140m. however, 400m<sup>2</sup> will be within the Vals river.</p>
<p>GNR. 327 Activity 19                      The infilling or depositing of any material of more than <u>10 cubic metres</u> into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 10 cubic metres from a watercourse excluding where such infilling, depositing, dredging, excavation, removal or moving— (a) will occur behind a development setback; (b) is for maintenance purposes undertaken in accordance with a maintenance management plan; (c) falls within the ambit of activity 21 in this Notice, in which case that activity applies; (d)</p>	<p>There will be dredging, excavation, removal and infilling or depositing of more than 10m<sup>3</sup> of soil for the construction of a Crump gauging weir in the Vals River.</p>

<p>occurs within existing ports or harbours that will not increase the development footprint of the port or harbour; or (e) where such development is related to the development of a port or harbour, in which case activity 26 in Listing Notice 2 of 2014 applies.</p>	
<p>GNR. 324:- Activity 12 (b)(iv): The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan.</p> <p><b>b. Free State</b></p> <p>i. Within any critically endangered or endangered ecosystem listed in terms of section 52 of the NEMBA or prior to the publication of such a list, within an area that has been identified as critically endangered in the National Spatial Biodiversity Assessment 2004;</p> <p>ii. Within critical biodiversity areas identified in bioregional plans;</p> <p>iii. On land, where, at the time of the coming into effect of this Notice or thereafter such land was zoned open space, conservation or had an equivalent zoning; or</p> <p>iv. Areas within a watercourse or wetland; or <b>within 100 metres from the edge of a watercourse</b> or wetland.</p>	<p>Vegetation clearance of an area of more than 300m<sup>2</sup> for the construction of a temporary construction site camp on the left bank within 100m of a watercourse, Vals River.</p>

## 2. FEASIBLE AND REASONABLE ALTERNATIVES

“**alternatives**”, in relation to a proposed activity, means different means of meeting the general purpose and requirements of the activity, which may include alternatives to—

- (a) the property on which or location where it is proposed to undertake the activity;
- (b) the type of activity to be undertaken;
- (c) the design or layout of the activity;
- (d) the technology to be used in the activity;
- (e) the operational aspects of the activity; and
- (f) the option of not implementing the activity.

Describe alternatives that are considered in this application as required by Appendix 1 (3)(h) of GN 326, Regulation 2014 as amended. Alternatives should include a consideration of all possible means by

which the purpose and need of the proposed activity (NOT PROJECT) could be accomplished in the specific instance taking account of the interest of the applicant in the activity. The no-go alternative must in all cases be included in the assessment phase as the baseline against which the impacts of the other alternatives are assessed.

The determination of whether site or activity (including different processes, etc.) or both is appropriate needs to be informed by the specific circumstances of the activity and its environment. After receipt of this report, the competent authority may also request the applicant to assess additional alternatives that could possibly accomplish the purpose and need of the proposed activity if it is clear that realistic alternatives have not been considered to a reasonable extent.

The identification of alternatives should be in line with the Integrated Environmental Assessment Guideline Series 11, published by the DEA in 2004. Should the alternatives include different locations and lay-outs, the co-ordinates of the different alternatives must be provided. The co-ordinates should be in degrees, minutes and seconds. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection.

**a) Site alternatives**

<b>Alternative 1 (preferred alternative)</b>		
Description	Lat (DDMMSS)	Long (DDMMSS)
	<b>27°29'42.25"</b>	<b>26°39'34.40"</b>
<b>Alternative 2</b>		
Description	Lat (DDMMSS)	Long (DDMMSS)
<b>Alternative 3</b>		
Description	Lat (DDMMSS)	Long (DDMMSS)

In the case of linear activities:

**Alternative:**

**Latitude (S):**

**Longitude (E):**

Alternative S1 (preferred)

- Starting point of the activity
- Middle/Additional point of the activity
- End point of the activity


Alternative S2 (if any)

- Starting point of the activity
- Middle/Additional point of the activity
- End point of the activity


Alternative S3 (if any)

- Starting point of the activity

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- Middle/Additional point of the activity
- End point of the activity


For route alternatives that are longer than 500m, please provide an addendum with co-ordinates taken every 250 meters along the route for each alternative alignment.

In the case of an area being under application, please provide the co-ordinates of the corners of the site as indicated on the lay-out map provided in Appendix A of this form.

### b) Lay-out alternatives

<b>Alternative 1 (preferred alternative)</b>		
Description	Lat (DDMMSS)	Long (DDMMSS)
	<b>27°29'42.25"</b>	<b>26°39'34.40"</b>
<b>Alternative 2</b>		
Description	Lat (DDMMSS)	Long (DDMMSS)
<b>Alternative 3</b>		
Description	Lat (DDMMSS)	Long (DDMMSS)

### c) Technology alternatives

<b>Alternative 1 (preferred alternative)</b>
When selecting the design of the structure, multiple potentially suitable locations in the river are identified and assessed based on the foundation conditions, stability of the bank as well as natural controls in the river hydraulics. These facets are all interlinked at rock outcrops in the river there is a natural hydraulic control occurring. The selected weir structure, the Crump gauging weir is typically used by DWS because of its ease to construct (lower tolerance than a parshall flume), its robustness in terms of vandalism and damage (its less susceptible to damage and/or theft of the crest iron than a sharp crested weir. Its robustness in terms of flow gauging and conditions in the river, as the structure can still provide accurate readings up to 90% submergence, therefore, does not require to be built higher to overcome the potential submergence thereby resulting in a larger back water inundation effect unlike other structure, hence its height is almost the same as the existing weir.
<b>Alternative 2</b>
<b>Alternative 3</b>

**d) Other alternatives (e.g. scheduling, demand, input, scale and design alternatives)**

<b>Alternative 1 (preferred alternative)</b>		
None		
<b>Alternative 2</b>		
<b>Alternative 3</b>		

**e) No-go alternative**

If the proposed gauging weir does not go ahead as planned, there will be no real-time information received on the magnitude of flow in the lower reach of the Vals River, which will be used in correlation with the existing monitoring site in the Vaal WMA, *i.e.*, C6H001 (Vals River@Roodewal), a sharp-crested weir located on a bent, which currently gives inaccurate flow records, thus providing inadequate information required to be used in combination with station C6H009 Vals River@Lindley to synchronise the release of water at Bloemhof Dam with the natural flow events in the Vals River and Vaal River. Due to the inadequate information, it would mean the use of water stored in the Bloemhof dam will not be used optimally and this would eventually affect the downstream users, property, and animals during especially during floods and dry season. To ensure that accurate inaccurate readings obtained from station C6H001 is adjusted before being used by operators at Bloemhof Dam, the proposed Tweefontein gauging weir would have to be constructed so that it can use the records required for the adjustment.

**Paragraphs 3 – 13 below should be completed for each alternative.**

**3. PHYSICAL SIZE OF THE ACTIVITY**

**a) Indicate the physical size of the preferred activity/technology as well as alternative activities/technologies (footprints):**

**Alternative:**

- Alternative A1<sup>1</sup> (preferred activity alternative)
- Alternative A2 (if any)
- Alternative A3 (if any)

**Size of the activity:**

<b>3220m<sup>2</sup></b>
m <sup>2</sup>
m <sup>2</sup>

or, for linear activities:

**Alternative:**

- Alternative A1 (preferred activity alternative)
- Alternative A2 (if any)

**Length of the activity:**

<b>±140m</b>
m

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<sup>1</sup> "Alternative A.." refer to activity, process, technology or other alternatives.

Alternative A3 (if any) m

**b) Indicate the size of the alternative sites or servitudes (within which the above footprints will occur):**

Alternative:	Size of the site/servitude:
Alternative A1 (preferred activity alternative)	0m <sup>2</sup>
Alternative A2 (if any)	m <sup>2</sup>
Alternative A3 (if any)	m <sup>2</sup>

#### 4. SITE ACCESS

Does ready access to the site exist? YES             
 If NO, what is the distance over which a new access road will be built m

Describe the type of access road planned:

The existing ±300m dirt road on the left bank, branching off Provincial Road R30 will be used to access the proposed site.

Include the position of the access road on the site plan and required map, as well as an indication of the road in relation to the site.

#### 5. LOCALITY MAP

An A3 locality map must be attached to the back of this document, as Appendix A. The scale of the locality map must be relevant to the size of the development (at least 1:50 000. For linear activities of more than 25 kilometres, a smaller scale e.g. 1:250 000 can be used. The scale must be indicated on the map.). The map must indicate the following:

- an accurate indication of the project site position as well as the positions of the alternative sites, if any;
- indication of all the alternatives identified;
- closest town(s);
- road access from all major roads in the area;
- road names or numbers of all major roads as well as the roads that provide access to the site(s);
- all roads within a 1km radius of the site or alternative sites; and
- a north arrow;
- a legend; and
- locality GPS co-ordinates (Indicate the position of the activity using the latitude and longitude of the centre point of the site for each alternative site. The co-ordinates should be in degrees and decimal



minutes. The minutes should have at least three decimals to ensure adequate accuracy. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection.

Locality Map is attached hereto as **Appendix A1**.

## 6. LAYOUT/ROUTE PLAN

A detailed site or route plan(s) must be prepared for each alternative site or alternative activity. It must be attached as Appendix A to this document.

The site or route plans must indicate the following:

- the property boundaries and numbers of all the properties within 50 metres of the site;
- the current land use as well as the land use zoning of the site;
- the current land use as well as the land use zoning each of the properties adjoining the site or sites;
- the exact position of each listed activity applied for (including alternatives);
- servitude(s) indicating the purpose of the servitude;
- a legend; and
- a north arrow.

Layout Plan is attached hereto as **Appendix A2**.

## 7. SENSITIVITY MAP

The layout/route plan as indicated above must be overlain with a sensitivity map that indicates all the sensitive areas associated with the site, including, but not limited to:

- watercourses;
- the 1:100 year flood line (where available or where it is required by DWS);
- ridges;
- cultural and historical features;
- areas with indigenous vegetation (even if it is degraded or infested with alien species); and
- critical biodiversity areas.

The sensitivity map must also cover areas within 100m of the site and must be attached in Appendix A.

Sensitivity Map is attached hereto as **Appendix A3**.

## 8. SITE PHOTOGRAPHS

Colour photographs from the centre of the site must be taken in at least the eight major compass directions with a description of each photograph. Photographs must be attached under Appendix B to this report. It must be supplemented with additional photographs of relevant features on the site, if applicable.

Site Photographs are attached hereto as **Appendix B**.

## 9. FACILITY ILLUSTRATION

A detailed illustration of the activity must be provided at a scale of at least 1:200 as Appendix C for activities that include structures. The illustrations must be to scale and must represent a realistic image of the planned activity. The illustration must give a representative view of the activity.

The Design Drawings are contained in Addendum E-Engineering Drawings of Appendix J1-Preliminary Design Report.

## 10. ACTIVITY MOTIVATION




Motivate and explain the need and desirability of the activity (including demand for the activity):

<b>1. Is the activity permitted in terms of the property's existing land use rights?</b>	<b>YES</b>	<div style="background-color: black; width: 20px; height: 15px; display: inline-block;"></div> Please explain
The proposed activity is to be located on agricultural land but is not itself agricultural in nature. A land use planning approval will therefore have to be applied for and obtained from the municipality before the proposed activity can be established.		
<b>2. Will the activity be in line with the following?</b>		
<b>(a) Provincial Spatial Development Framework (PSDF)</b>	<b>YES</b>	<div style="background-color: black; width: 20px; height: 15px; display: inline-block;"></div> Please explain
This proposed activity is a very small development proposal that has no bearing on the PSDF. In addition, the proposed activity is in line with the Provincial efforts to ensure adequate access to water is attained, as information obtained from the proposed gauging weir will be used to determine the suitable amount of water to be released from the Bloemhof Dam for <i>inter alia</i> , meeting the needs of downstream users.		

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<b>(b) Urban edge / Edge of Built environment for the area</b>	<b>YES</b>	NO	Please explain
<p>The proposed activity has no bearing on the urban edge and Edge of Built environment for the area, as the proposed activity will occupy a very small footprint within a watercourse and the banks thereof and is for the purpose of obtaining scientific information that will be used to <i>inter alia</i>, determine the amount of water that should be released from the Bloemhof Dam. Agricultural activity in the area that surrounds the proposed site will remain largely unaffected by the proposed activity.</p>			
<b>(c) Integrated Development Plan (IDP) and Spatial Development Framework (SDF) of the Local Municipality (e.g. would the approval of this application compromise the integrity of the existing approved and credible municipal IDP and SDF?).</b>	<b>YES</b>	NO	Please explain
<p>The proposed gauging weir is a very small development proposal that has no bearing on the Municipality's IDP and SDF</p>			
<b>(d) Approved Structure Plan of the Municipality</b>		<b>NO</b>	Please explain
<p>Nala Local Municipality does not have an approved structure plan. All the same, the proposed development within a watercourse and the banks thereof has a footprint that is too small to have any bearing on any municipal structure plan.</p>			
<b>(e) An Environmental Management Framework (EMF) adopted by the Department (e.g. Would the approval of this application compromise the integrity of the existing environmental management priorities for the area and if so, can it be justified in terms of sustainability considerations?)</b>		NO	Please explain
<p>There is no adopted EMF for the area.</p>			
<b>(f) Any other Plans (e.g. Guide Plan)</b>		NO	Please explain
<b>3. Is the land use (associated with the activity being applied for) considered within the timeframe intended by the existing approved SDF agreed to by the relevant environmental authority (i.e. is the proposed development in line with the projects and programmes identified as priorities within the credible IDP)?</b>	<b>YES</b>		Please explain
<p>There is a storage weir upstream that will be used as a coffer dam and be demolished on completion of the construction phase, therefore, there is very little difference in the current situation within the watercourse and the banks thereof that will be caused by the proposed activity. In addition, the proposed activity is of such a small size and makes no difference to the agricultural usage of land in the area that the proposed activity has no bearing on the Guide Plan or any similar, SDF and or other land use planning policy of the municipality or province.</p>			

<p><b>4. Does the community/area need the activity and the associated land use concerned (is it a societal priority)? (This refers to the strategic as well as local level (e.g. development is a national priority, but within a specific local context it could be inappropriate.)</b></p>	<p>YES</p>	<p></p>	<p>Please explain</p>
<p>On the local level it is crucial that the proposed development take place to ensure that adequate hydrological information is received to determine more reliably, the amount of water that should be released from the Bloemhof Dam in order to meet the needs of <i>inter alia</i>, downstream end users.</p>			
<p><b>5. Are the necessary services with adequate capacity currently available (at the time of application), or must additional capacity be created to cater for the development? (Confirmation by the relevant Municipality in this regard must be attached to the final Basic Assessment Report as Appendix I.)</b></p>	<p></p>	<p>NO</p>	<p>Please explain</p>
<p>The proposed development does not require any services from the municipality to function.</p>			
<p><b>6. Is this development provided for in the infrastructure planning of the municipality, and if not what will the implication be on the infrastructure planning of the municipality (priority and placement of services and opportunity costs)? (Comment by the relevant Municipality in this regard must be attached to the final Basic Assessment Report as Appendix I.)</b></p>	<p></p>	<p>NO</p>	<p>Please explain</p>
<p>The applicant is the Free State Department of Water and Sanitation, responsible for measuring the flow of water in rivers within this Catchment and using the gathered information for the release of water from dams. Therefore, there will be no implication on the infrastructure planning thus no comment is required from the municipality in this regard.</p>			
<p><b>7. Is this project part of a national programme to address an issue of national concern or importance?</b></p>	<p></p>	<p>NO</p>	<p>Please explain</p>
<p>The proposed project is of regional importance to downstream users that depend on the water released from the Bloemhof Dam, whether by buffering the effect of floods or helping to ensure water supply during the dry season.</p>			

<p><b>8. Do location factors favour this land use (associated with the activity applied for) at this place? (This relates to the contextualisation of the proposed land use on this site within its broader context.)</b></p>	<p>YES</p>		<p>Please explain</p>
<p>The proposed site is suitable for the proposed activity, as the proposed site is a straight stretch of the river and according to the Hydrological Specialist Report, this means the hydrological information collected at the weir will be more accurate. The rock outcrop substrate on site is suitable for foundation of the structure thus making it more stable. There are no steep slopes, thus approach channel has a flat slope. The banks are stabilised due to the presence of the existing structure. Accessibility is not an issue even during floods. The site is located in the lower reaches of the Vals River and will be used with the combined information from existing station at Rooiwal, which gives inaccurate data thus requiring additional data for calibrating and the one in Lindley, in the upper reaches of the river.</p>			
<p><b>9. Is the development the best practicable environmental option for this land/site?</b></p>	<p>YES</p>		<p>Please explain</p>
<p>It is located in the lower reach of the Vals River and will be used with the existing Rooiwal and the Lindley station in the upper reach. Due to the rock outcrop in the river, there is a natural hydraulic control occurring, thus making it a suitable foundation for the proposed development, therefore limit the amount of excavations required. The existing upstream weir will be used a coffer dam during construction and thereafter demolished, therefore only one new temporary coffer will be required downstream.</p>			
<p><b>10. Will the benefits of the proposed land use/development outweigh the negative impacts of it?</b></p>	<p>YES</p>		<p>Please explain</p>
<p>The identified environmental impacts are short-term, therefore with careful planning and practising due to environmental diligence during the construction phase, together with proper site reinstatement, thereafter, any potential residual environmental impacts will be highly limited.</p> <p>After rehabilitation, the receiving environment will be restored as close as possible to the pre-construction state. However, the development footprint of the gauging weir will exist as a permanent structure occupying space on the proposed site. This is the only long-term negative impact that will result from the proposed development. On completion of the project, the operators of the Bloemhof Dam will receive real-time hydrological data.</p> <p>The envisaged positive impacts of the proposed activity therefore do outweigh the potential negative impacts. During the operational phase, the Hydrology section of the Free State Department of Water and Sanitation in the Free State Province will be responsible for the operation and maintenance of the gauging weir and will thus have to adopt “duty of care” measures.</p>			

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<b>11. Will the proposed land use/development set a precedent for similar activities in the area (local municipality)?</b>		<b>NO</b>	Please explain
The gauging weir will be used together with the other gauging weir at Roodewal and Lindley (Upper Reach of Vals River) and it is not envisaged that any other weir in the area will be required.			
<b>12. Will any person's rights be negatively affected by the proposed activity/ies?</b>		<b>NO</b>	Please explain
No person's rights will be negatively affected, as the river will remain accessible to users in the same manner as is currently the case. It is noteworthy that during the public participation process undertaken, no objections from any aggrieved persons were received.			
<b>13. Will the proposed activity/ies compromise the "urban edge" as defined by the local municipality?</b>		<b>NO</b>	Please explain
The proposed activity has a very small development footprint within the Vals River and the banks thereof and will also not cause any change in the agricultural usage of land currently taking place in the area of the proposed site. The proposed development will therefore not compromise the Urban Edge as defined by the local municipality.			
<b>14. Will the proposed activity/ies contribute to any of the 17 Strategic Integrated Projects (SIPS)?</b>	<b>YES</b>		Please explain
The proposed gauging weir will contribute to SIP 6-Integrated Municipal Infrastructure Project that entails the following: " <i>Develop national capacity to assist the 23 least resourced districts (19 million people) to address all the maintenance backlogs and upgrades required in water, electricity, and sanitation bulk infrastructure</i> ". As this indirectly will ensure that there is adequate water for the downstream users of Bloemhof Dam.			
<b>15. What will the benefits be to society in general and to the local communities?</b>	Please explain		
The operators of the Bloemhof Dam will be provided with hydrological information that is more reliable for determining how much water should be released from the Bloemhof Dam to meet the needs of <i>inter alia</i> , downstream users and also how much water should be kept behind the wall of the Bloemhof Dam to assist with services such the amelioration of floods.			

<p><b>16. Any other need and desirability considerations related to the proposed activity?</b></p>	<p>Please explain</p>
<p>The proposed activity will enable the National Department of Water and Sanitation to obtain a clearer historical picture of how the Vals River behaves, as the hydrological readings obtained at the proposed weir will be used to determine a coefficient that will be used to correct the hydrological data collected since 1913 by the CH6001, which is located on a bend and not a straight stretch of the river and that is why it supplies hydrological data that requires a correcting. Therefore, a weir with real-time data is required to calibrate the inaccurate data.</p> <p>The longer the historical record that exists on a river, the more reliable the predictions that can be made on how the river will behave in the future and this enables better river management for the benefit of society and even for other organisms that also depend on the river.</p>	
<p><b>17. How does the project fit into the National Development Plan for 2030?</b></p>	<p>Please explain</p>
<p>The aim of the NDP is to eliminate poverty and reduce inequality by 2030 and one of the challenges faced is poor and inadequate infrastructure. The longer historical record of how the Vals River has been behaving will provide clarity on whether or not adequate infrastructure exists to ameliorate the flood events that the Vals River has experienced in the past and may therefore experience again in the future.</p> <p>Should the longer historical record dating back to 1912 reveal that the existing flood amelioration infrastructure is inadequate, preparations to provide the additional required infrastructure can then be made on time so that the severity of flood-related disasters is lowered.</p>	
<p><b>18. Please describe how the general objectives of Integrated Environmental Management as set out in section 23 of NEMA have been taken into account.</b></p>	
<p>The objectives of IEM have been considered, as the National Department of Water and Sanitation as the applicant will be responsible for implementation of the proposed development and compliance with the conditions that will be set out in the Environmental Authorisation. Some of the identified aspects were addressed by specialist professionals to help ensure that adequate mitigation measures and recommendations are outlined to minimize the negative impacts on the receiving environment. Mitigation and management measures that are outlined will help to limit any adverse effects, particularly on vulnerable and disadvantaged individuals. The Public Participation Process was undertaken and during the process, means of empowering people so that they can have meaningful involvement were sought. Comments and input received during review of the Draft BAR, will be captured so that they can be considered during decision-making. On completion of the project, the management of water in the Vals River system and associated Bloemhof Dam will be improved. The information obtained during the Basic Assessment Process will be reported to the DESTEA so that an informed decision with regard to the proposed development.</p>	

**19. Please describe how the principles of environmental management as set out in section 2 of NEMA have been taken into account.**

The proposed development will enable the Department of Water and Sanitation in the Free State Province to obtain hydrological data that covers a longer historical period dating back to 1912. This longer spanning historical hydrological data will enable the operators of the Bloemhof Dam determine in a more accurate manner, how much water to release from the dam in order to maintain ecological baseflows in the Vals River. In addition, the longer historical record will shed more light on extreme events e.g., floods and droughts experienced by the river and its catchment in the past so that future extreme events can be better prepared for. In this way loss of human life and damage to property can be minimised. Organisms that depend on the river will also benefit from the baseflows that will be kept closer to the natural base flows that existed in the past when human activities had not impacted the river as much as is the case nowadays.

It is therefore both the socio-economic aspects of the triple bottom line that will be better addressed by the proposed activity as well as the ecological aspects. All the legislation and regulations relevant to the proposed development will be complied with and the applicant will implement the mitigation and management measures outlined in the specialist reports and environmental authorisation. A public participation process that meets legal requirements was undertaken as part of the BA to provide an opportunity for meaningful input and engagement with from potential Interested and Affected Parties.

**11. APPLICABLE LEGISLATION, POLICIES AND/OR GUIDELINES**

List all legislation, policies and/or guidelines of any sphere of government that are applicable to the application as contemplated in the EIA regulations, if applicable:

<b>Title of legislation, policy or guideline</b>	<b>Applicability to the project</b>	<b>Administering authority</b>	<b>Date</b>
The Constitution of the Republic of South Africa, 1996 (Act No. 108 of 1996)	Chapter 2-Bill of Rights Section 24: Environmental Right Section 32: Right to access of Information. No-one's environmental right is infringed upon as a result of the proposed development. During the public participation process, information regarding the proposed development would be made available and no-one will be prohibited from accessing the environmental report.	Government of South Africa	04 February 1997
National Environmental Management Act (Act 107 of 1998)	Chapter 1-National Environmental Management Principles Section 2: National Environmental	Department of Environmental Affairs	29 January 1999



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	<p>management principles.</p> <p>Chapter 5-Integrated Environmental Management</p> <p>Section 24: Environmental Authorisation (control of activities which may have a detrimental effect on the environment).</p> <p>Chapter 7: Compliance and Enforcement</p> <p>Section 28: Duty of care and remediation of environmental damage.</p> <p>Section 29: Protection of workers refusing to do environmentally hazardous work.</p> <p>Measures must be in place to ensure activities that are to be undertaken during the duration of this project will not result in environmental degradation. The environmental legislation must be complied with, and no-one must be exposed to hazardous working conditions. The outlined principles must be considered when a decision for the proposed development is issued.</p>		
Environmental Impact Assessment Regulation, 2014 as amended	<p>GNR 326 Chapter 4 outlines the Basic Assessment process to be undertaken.</p> <p>Listing Notice 1 of 2014 (GNR 327) and Listing Notice 3 (GNR 324)– which set out activities, of which some are triggered by the proposed gauging weir, which require a Basic Assessment process to be undertaken before an Environmental Authorisation may be issued.</p>	Provincial Environmental Affairs-DESTEa	07 April 2017
National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004)	<p>Chapter 4-Air Quality Management. Measures</p> <p>Section 32: Control of Dust</p> <p>Section 34: Control of Noise.</p> <p>Measures must be in place to control excessive generation of dust and noise during the construction phase to prevent pollution that could affect the land and water systems, and decrease agricultural yields, as well as ecological degradation.</p>	Department of Environmental Affairs	11 September 2005

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National Environmental Management: Biodiversity Act (Act 10 of 2004)	Chapter 5-Species and organisms posing threat to the Biodiversity Section 75: Control and eradication of Listed Alien Invasive Species To ensure measures are in place to eradicate and control establishment of alien invasive species within the project construction footprint with the intent of protecting the biodiversity and protection of species and ecosystem.	Department of Environmental Affairs	01 September 2004
National Environmental Management: Waste Act (Act 59 of 2008)	Chapter 4-Waste Management Measures Section 21: General Requirements for Storage of Waste Section 26: Prohibition of unauthorised disposal Section 27(2)(a): Littering To ensure waste generated is handled and disposed efficiently in a way that it would not pollute the receiving environment. Overall waste management measures must be aimed at reducing, re-using, recycling and recovering of waste.	Department of Environmental Affairs	01 July 2009
National Heritage Resources Act (Act 25 of 1999)	Section 34: Protection of Structure Older than 60 years Section 35: Protection of Heritage Resources S36: Protection of graves and burial grounds Section 38: Heritage Impact Assessment for linear development exceeding 300m in length, development exceeding 5000m <sup>2</sup> in extent. It provides for the protection and management of conservation-worthy places and areas by local authorities and preservation. A Letter of Exemption for undertaking Heritage Impact Assessment was obtained from the Heritage Specialist.	National Heritage Resources Agency	28 April 1999
National Water Act (Act No. 36)	Chapter 3 – Protection of Water	Department of Water and	06

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of 1998)	<p>Resources.</p> <p>Section 19 – Prevention and remedying effects of pollution.</p> <p>Section 20 – Control of emergency incidents.</p> <p>Chapter 4 – Use of Water</p> <p>Section 21: Licensing of Water Uses</p> <p>It provides for the rights of access to basic water supply. Since construction will be within a watercourse, it is imperative that measures are in place to protect and use water without any wastage. The applicant should ensure that the provisions of the act aimed at protecting the water quality.</p>	Sanitation	December 1999
Mineral and Petroleum Resources Development Act (Act 28 of 2002)	<p>Chapter 4: Mineral and Environmental Regulation</p> <p>Section 38A</p> <p>It provides for equitable access to and sustainable development of the nation's mineral and petroleum resources.</p> <p>Environmental Authorisation must be obtained for quarries and borrow areas to be created to obtain construction material (e.g., concrete aggregates and earth embankment) alternatively material should be sourced from commercial quarries.</p>	Department of Mineral Resources	01 May 2004
Conservation of Agricultural Resources Act (Act No. 43 of 1983)	<p>Section 5: Prohibition of spreading of weeds.</p> <p>Section 6(e)(f)(j)(l): Control Measures of erosion.</p> <p>To ensure there are measures in place to control spreading of weeds and possible erosion as a result of the proposed development.</p>	Department of Agriculture, Forestry and Fisheries	01 June 1984
Occupational Health and Safety Act (Act 15 of 1993)	<p>Provisions for Occupational Health &amp; Safety in the workplace.</p> <p>Therefore, it is important that everyone involved in the project implementation is working in a safe environment without any risks to their health.</p>	Department of Labour	23 June 1993

**12. WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT**

**a) Solid waste management**

Will the activity produce solid construction waste during the construction/initiation phase?

If YES, what estimated quantity will be produced per month?

<b>YES</b>	
m <sup>3</sup>	
It is not possible to estimate the amount of solid waste that will be generated during the construction phase.	

How will the construction solid waste be disposed of (describe)?

Refuse bins with lids will be provided in the construction site and when full it will be transported from the site for disposal. The engineer will indicate how the spoil material will be disposed or re-used.

Where will the construction solid waste be disposed of (describe)?

It will be disposed at the Bothaville solid waste site

Will the activity produce solid waste during its operational phase?

If YES, what estimated quantity will be produced per month?

How will the solid waste be disposed of (describe)?

	<b>NO</b>
m <sup>3</sup>	

It will be collected in refuse bins, then disposed of at the Bothaville solid waste site when full.

If the solid waste will be disposed of into a municipal waste stream, indicate which registered landfill site will be used.

Bothaville solid waste site

Where will the solid waste be disposed of if it does not feed into a municipal waste stream (describe)?

N/A

*If the solid waste (construction or operational phases) will not be disposed of in a registered landfill site or be taken up in a municipal waste stream, then the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.*

Can any part of the solid waste be classified as hazardous in terms of the NEM:WA?

If YES, inform the competent authority and request a change to an application for scoping and EIA. An application for a waste permit in terms of the NEM:WA must also be submitted with this application.

	<b>NO</b>
--	-----------

Is the activity that is being applied for a solid waste handling or treatment facility? 

	NO
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If YES, then the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA. An application for a waste permit in terms of the NEM:WA must also be submitted with this application.

**b) Liquid effluent**

Will the activity produce effluent, other than normal sewage, that will be disposed of in a municipal sewage system? 

	NO
--	----

If YES, what estimated quantity will be produced per month? 

	m <sup>3</sup>
--	----------------

Will the activity produce any effluent that will be treated and/or disposed of on site? 

	NO
--	----

*If YES, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.*

Will the activity produce effluent that will be treated and/or disposed of at another facility? 

	NO
--	----

If YES, provide the particulars of the facility:

**Facility name:**  
**Contact person:**  
**Postal address:**  
**Postal code:**  
**Telephone:**  
**E-mail:**

Describe the measures that will be taken to ensure the optimal reuse or recycling of waste water, if any:

Due to the nature of the proposed project, no wastewater generated during the construction would be reused or recycled.

**c) Emissions into the atmosphere**

Will the activity release emissions into the atmosphere other than exhaust emissions and dust associated with construction phase activities? 

	NO
--	----

If YES, is it controlled by any legislation of any sphere of government? 

YES	NO
-----	----

If YES, the applicant must consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

If NO, describe the emissions in terms of type and concentration:

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The emission will be from construction vehicles, the carbon monoxide from the cars will be in exceptionally low quantities therefore negligible. However, construction vehicles would be kept in a good working condition. There will be excessive generation of dust from construction related activities, which is temporarily, and measures will be in place to ensure that it is controlled and does not cause any harm to human health or well-being. There is no sensitive receptor that could be affected by the dust generation and construction vehicles and equipment emissions except for the workforce.

**d) Waste permit**

Will any aspect of the activity produce waste that will require a waste permit in terms of the NEM:WA?

	<b>NO</b>
--	-----------

If YES, please submit evidence that an application for a waste permit has been submitted to the competent authority

**e) Generation of noise**

Will the activity generate noise?

<b>YES</b>	
	<b>NO</b>

If YES, is it controlled by any legislation of any sphere of government?

Describe the noise in terms of type and level:

The noise that will be generated will be associated with construction activities, e.g., excavation, earthmoving, drilling, pumping, movement of construction machinery and equipment, however, these activities would be during normal working hours. No sensitive receptors within proximity of the construction site were identified except for the workforce, therefore, it is imperative that mitigation measures are put in place to control noise emissions to acceptable standards. These measures must conform to the municipal by-laws.

**13. WATER USE**

Please indicate the source(s) of water that will be used for the activity by ticking the appropriate box(es):

<b>Municipal</b>	
------------------	--

If water is to be extracted from groundwater, river, stream, dam, lake or any other natural feature, please indicate the volume that will be extracted per month:

N/Alitres	
<b>YES</b>	

Does the activity require a water use authorisation (general authorisation or water use license) from the Department of Water Affairs?

If YES, please provide proof that the application has been submitted to the Department of Water Affairs.

**The application is not submitted because the Department of Water and Sanitation is the applicant and administering authority thus cannot review and authorise their own application, see attached DWS legal opinion attached hereto as Appendix J3.**

#### 14. ENERGY EFFICIENCY

Describe the design measures, if any, which have been taken to ensure that the activity is energy efficient:

It will be a solar powered facility.

Describe how alternative energy sources have been taken into account or been built into the design of the activity, if any:

No alternative energy source has been taken into account

## SECTION B: SITE/AREA/PROPERTY DESCRIPTION

**Important notes:**

- For linear activities (pipelines, etc) as well as activities that cover very large sites, it may be necessary to complete this section for each part of the site that has a significantly different environment. In such cases please complete copies of Section B and indicate the area, which is covered by each copy No. on the Site Plan.

Section B Copy No. (e.g. A):

- Paragraphs 1 - 6 below must be completed for each alternative.

- Has a specialist been consulted to assist with the completion of this section? **YES** [REDACTED]  
 If YES, please complete the form entitled "Details of specialist and declaration of interest" for each specialist thus appointed and attach it in Appendix I. All specialist reports must be contained in Appendix D.

**Property description/physical address:**

<b>Province</b>	Free State
<b>District Municipality</b>	Lejweleputswa
<b>Local Municipality</b>	Nala
<b>Ward Number(s)</b>	10
<b>Farm name and number</b>	Farm Botha's Drift 286 (Right Banks) Farm Winkelplaats 312 (Left Banks)
<b>Portion number</b>	-
<b>SG Code</b>	F00500000000028600000 F00500000000031200000

Where a large number of properties are involved (e.g. linear activities), please attach a full list to this application including the same information as indicated above.

**Current land-use zoning as per local municipality IDP/records:**

Undetermined

In instances where there is more than one current land-use zoning, please attach a list of current land use zonings that also indicate which portions each use pertains to, to this application.

Is a change of land-use or a consent use application required? **YES** [REDACTED]





An area sensitive to erosion

YES				
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If you are unsure about any of the above or if you are concerned that any of the above aspects may be an issue of concern in the application, an appropriate specialist should be appointed to assist in the completion of this section. Information in respect of the above will often be available as part of the project information or at the planning sections of local authorities. Where it exists, the 1:50 000 scale Regional Geotechnical Maps prepared by the Council for Geo Science may also be consulted.

#### 4. GROUNDCOVER

Indicate the types of groundcover present on the site. The location of all identified rare or endangered species or other elements should be accurately indicated on the site plan(s).

Natural veld - good condition <sup>E</sup>	Natural veld with scattered aliens <sup>E</sup>	

If any of the boxes marked with an “E “is ticked, please consult an appropriate specialist to assist in the completion of this section if the environmental assessment practitioner doesn’t have the necessary expertise.

#### 5. SURFACE WATER

Indicate the surface water present on and or adjacent to the site and alternative sites?

Perennial River	YES	
Non-Perennial River		
Permanent Wetland		
Seasonal Wetland		
Artificial Wetland		
Estuarine / Lagoonal wetland		

If any of the boxes marked YES or UNSURE is ticked, please provide a description of the relevant watercourse.

Vals River, a perennial river, falls within Middle Vaal Water Management Area (WMA 09) and associated with C60J Quaternary Surface Water Catchment and drainage area. It is situated in the C60J-2291 Sub-Quaternary Reach within the Highveld Ecoregion. The Fourth-order river flows in a north-westerly direction eventually discharging into the Vaal River, a primary National Water Resource. Its River Condition is moderately modified and the Present Ecological State (PES) 2018 is Class C, as it is Moderately Modified, the Ecosystem Threat Status (ETS) is Critically Endangered, whilst the Ecosystem Protection Level is poorly protected. According to the Aquatic Biodiversity Theme of the portion of Vals River associated with the proposed development, is rated as being of very high sensitivity and the specialist is in agreement with the rating. It is evident from a hydrological perspective that the Vals River forms an important part of the local and broader Quaternary Surface Water Catchment and Drainage area, towards the north-west. The riparian zone constitutes a seasonally/temporarily flooded semi-aquatic grassland habitat with a well-presented woody component, which is relatively representative of the relevant Highveld Alluvial Vegetation type (Aza 5). The grassland habitat of the riparian zone is mainly dominated by the hydrophytic grass species. The maximum Peak Flow volumes for the 1:100 year return event is estimated at  $1.185\text{m}^3\cdot\text{s}^{-1}$ . The Catchment and Drainage Map is shown in *Figure 1* below.

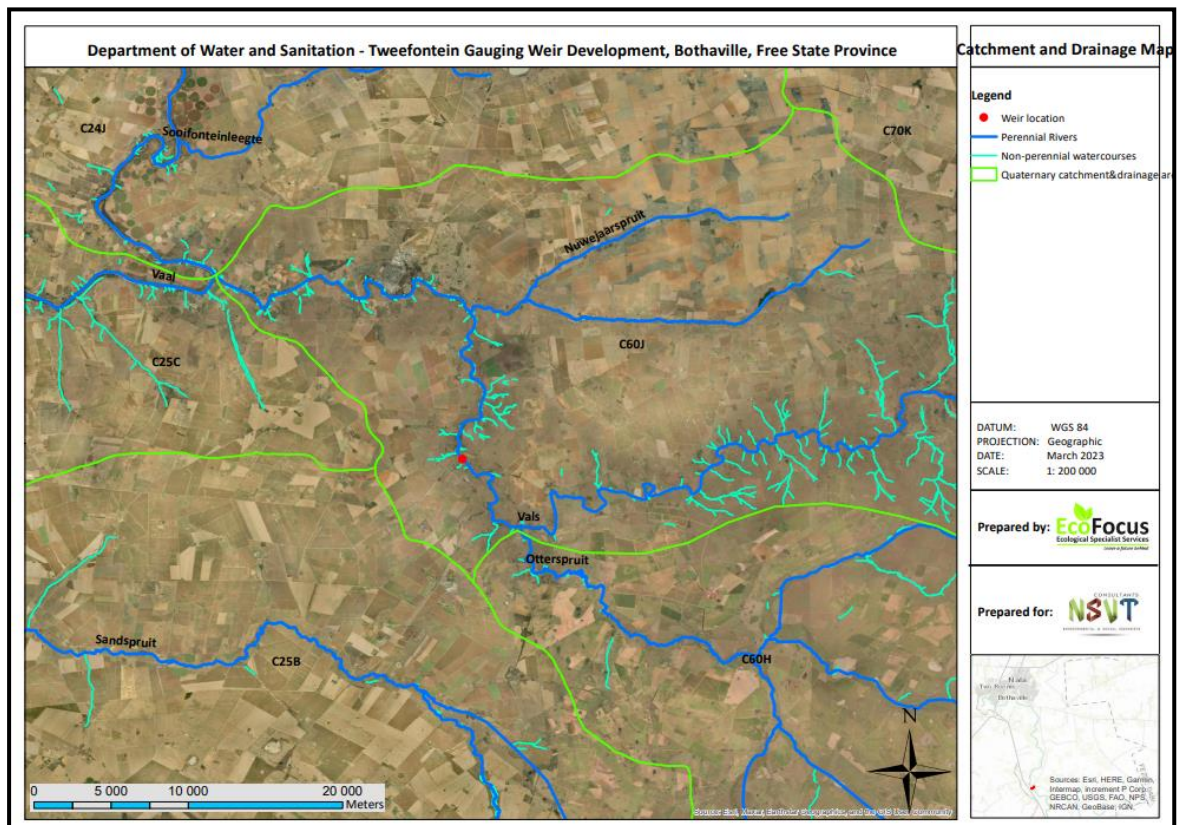


Figure 1: Catchment and Drainage Map

**6. LAND USE CHARACTER OF SURROUNDING AREA**

Indicate land uses and/or prominent features that currently occur within a 500m radius of the site and give description of how this influences the application or may be impacted upon by the application:

<b>Natural area</b>			
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 2px;"><b>Agriculture</b></td> </tr> <tr> <td style="padding: 2px;">River, stream or wetland</td> </tr> </table>	<b>Agriculture</b>	River, stream or wetland
<b>Agriculture</b>			
River, stream or wetland			
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 2px;"><b>Other land uses: Storage Weir Eskom Overhead Powerline Provincial Road R30</b></td> </tr> </table>	<b>Other land uses: Storage Weir Eskom Overhead Powerline Provincial Road R30</b>	
<b>Other land uses: Storage Weir Eskom Overhead Powerline Provincial Road R30</b>			

If any of the boxes marked with an "N" are ticked, how will this impact / be impacted upon by the proposed activity? Specify and explain:

N/A
-----

If any of the boxes marked with an "An" are ticked, how will this impact / be impacted upon by the proposed activity? Specify and explain:

N/A
-----

If any of the boxes marked with an "H" are ticked, how will this impact / be impacted upon by the proposed activity? Specify and explain:

N/A
-----

Does the proposed site (including any alternative sites) fall within any of the following:

Critical Biodiversity Area (as per provincial conservation plan)		<b>NO</b>
Core area of a protected area?		<b>NO</b>

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Buffer area of a protected area?		<b>NO</b>
Planned expansion area of an existing protected area?		<b>NO</b>
Existing offset area associated with a previous Environmental Authorisation?		<b>NO</b>
Buffer area of the SKA?		<b>NO</b>

If the answer to any of these questions was YES, a map indicating the affected area must be included in Appendix A.

The Conservation Status Map is attached hereto as **Appendix A4**.

### 7. CULTURAL/HISTORICAL FEATURES

Are there any signs of culturally or historically significant elements, as defined in section 2 of the National Heritage Resources Act, 1999, (Act No. 25 of 1999), including Archaeological or paleontological sites, on or close (within 20m) to the site? If YES, explain:		<b>NO</b>
		Uncertain
<b>N/A</b>		

If uncertain, conduct a specialist investigation by a recognised specialist in the field (archaeology or palaeontology) to establish whether there is such a feature(s) present on or close to the site. Briefly explain the findings of the specialist:

Given the degree of current and prior degradation of the surface potentially intact alluvial deposits at the site, the proposed development footprint is not considered palaeontologically or archaeologically vulnerable and is assigned a site rating of Generally Protected C (Significance: low / Mitigation: destruction). It is recommended that the proposed development is exempt from further Heritage Impact Assessments. The Letter of Exemption is contained in **Appendix D1**.

Will any building or structure older than 60 years be affected in any way?		<b>NO</b>
Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?		<b>NO</b>
If YES, please provide proof that this permit application has been submitted to SAHRA or the relevant provincial authority.		

### 8. SOCIO-ECONOMIC CHARACTER

#### a) Local Municipality

Please provide details on the socio-economic character of the local municipality in which the proposed site(s) are situated.

Level of unemployment:

Nala Local Municipality IDP 2022-2027

**Table 7: Distribution of Nala Local Municipality population aged between 15 and 64 years by employment status, gender and unemployment rate**

Employment Status	Gender		Total	Unemployment rate
	Male	Female		
Employed	9897	5889	15786	35.9
Unemployed	3868	4957	8825	
Not economically active	10034	15352	25386	

Data source: Statistics South Africa, Census 2011

Nala Local Municipality has a high unemployment rate among the economically active population and a growing ageing population that depends on government grants. According to the Community Survey 2016, the dependency ratio has decreased from 62% in Census 2011 to 58% in 2016.

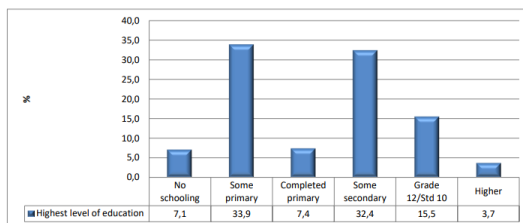
Economic profile of local municipality:

Bothaville is the maize farming town. the main economic sectors in Bothaville consists of grain cultivation, stock farming, fresh flowers, game farming etc. Light industrial manufacturing includes a Karet trailer manufacturing plant, manufacturing of agricultural implements and light engineering works. Supporting sectors are tourism, light industrial, governmental, medical and health services. (<https://www.bothaville.info/about-bothaville>).

Level of education:

Nala Local Municipality IDP 2022-2027

**Figure 6: Percentage distribution of Nala Local Municipality population aged 5 years and older by highest level of education attained**



Data source: Statistics South Africa, Census 2011

It is evident that Nala Local Municipality had the highest number of people who obtained some primary education followed by some secondary education with higher education being the lowest. According to the Community Survey 2016, more males had no schooling than females and the highest proportion of population attained grade 12.

**b) Socio-economic value of the activity**

What is the expected capital value of the activity on completion?	R40 million rands
What is the expected yearly income that will be generated by or as a result of the activity?	R0
Will the activity contribute to service infrastructure?	<b>YES</b>
Is the activity a public amenity?	<b>NO</b>
How many new employment opportunities will be created in the development and construction phase of the activity/ies?	30
What is the expected value of the employment opportunities during the development and construction phase?	R240 000 per month
What percentage of this will accrue to previously disadvantaged individuals?	+80%
How many permanent new employment opportunities will be created during the operational phase of the activity?	0
What is the expected current value of the employment opportunities during the first 10 years?	RN/A
What percentage of this will accrue to previously disadvantaged individuals?	N/A%

**9. BIODIVERSITY**

Please note: The Department may request specialist input/studies depending on the nature of the biodiversity occurring on the site and potential impact(s) of the proposed activity/ies. To assist with the identification of the biodiversity occurring on site and the ecosystem status consult <http://bgis.sanbi.org> or [BGIShelp@sanbi.org](mailto:BGIShelp@sanbi.org). Information is also available on compact disc (cd) from the Biodiversity-GIS Unit, Ph (021) 799 8698. This information may be updated from time to time and it is the applicant/ EAP's responsibility to ensure that the latest version is used. A map of the relevant biodiversity information (including an indication of the habitat conditions as per (b) below) and must be provided as an overlay map to the property/site plan as Appendix D to this report.

- a) Indicate the applicable biodiversity planning categories of all areas on site and indicate the reason(s) provided in the biodiversity plan for the selection of the specific area as part of the specific category)**



Systematic Biodiversity Planning Category	If CBA or ESA, indicate the reason(s) for its selection in biodiversity plan
<div style="background-color: black; width: 100%; height: 100%; display: flex; align-items: center; justify-content: center;"> <div style="background-color: white; padding: 10px; text-align: center;"> <b>Ecological Support Area (ESA)</b> </div> </div>	<p>The entire assessment area is categorised as Ecological Support Area one (ESA 1), according to the Free State Provincial Spatial Biodiversity Plan (Collins, 2018), which sets out biodiversity priority areas in the province. ESA's are areas that must be maintained in at least fair ecological condition (semi-natural/moderately modified state) in order to support the ecological functioning of a Critical Biodiversity Area (CBA) or protected area, or to generate or deliver ecosystem services, or to meet remaining biodiversity targets for ecosystem types or species when it is not possible or not necessary to meet them in natural or near-natural areas (Collins, 2018).</p>

**b) Indicate and describe the habitat condition on site**

Habitat Condition	Percentage of habitat condition class (adding up to 100%)	Description and additional Comments and Observations (including additional insight into condition, e.g. poor land management practises, presence of quarries, grazing, harvesting regimes etc).
Natural	80%	<p>There is undeveloped natural grassland habitat, which is present along the length of the Vals River. The habitat of the riparian zone is overwhelmingly dominated by the sage species <i>Cyperus</i> spp. while the reed species <i>Phragmites australis</i> is merely sparsely present. Low-growing tree and shrub individuals of the woody species <i>Salix mucronata</i> are merely sporadically present. No Red Data Listed-, nationally protected- or provincially protected plant species or any other plant species of conservational significance/value, were found to be present throughout the downstream riparian zone. Due to the vertical water level drop into the river caused by the existing old weir, combined with the reduction in water depth and -flow velocity through the downstream tailwater portion, the downstream riparian zone is mostly confined to the instream portion situated below the vertical drop of the</p>



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		eroded riverbanks. Alien invasive species were found to be present within the riparian zone, eg., <i>Verbena bonariensis</i> and <i>Xanthium strumarium</i> (both Category 1b).
Near Natural (includes areas with low to moderate level of alien invasive plants)	18%	The site identified for the temporary construction camp is situated within terrestrial landscape surrounding the portion of the Vals River associated with the proposed development. It forms part of an undeveloped medium-height terrestrial grassland habitat, which is in a slight to moderate disturbed ecological state. Reasons for the disturbance are unknown. The locations of the two temporary site camps are therefore not reminiscent of the natural climatic state of the surrounding Highveld Alluvial Vegetation (Aza 5) or the Endangered Vaal-Vet Sand Grassland (Gh 10) vegetation types, which reduces the conservational significance of the area.
Degraded (includes areas heavily invaded by alien plants)	0%	
Transformed (includes cultivation, dams, urban, plantation, roads, etc)	2%	There is an existing storage diversion weir upstream of the proposed site.

**c) Complete the table to indicate:**

- (i) the type of vegetation, including its ecosystem status, present on the site; and
- (ii) whether an aquatic ecosystem is present on site.

Terrestrial Ecosystems		Aquatic Ecosystems				
Ecosystem threat status as per the National Environmental Management: Biodiversity Act (Act No. 10 of 2004)	<b>Critical Endangered Vulnerable</b>	Wetland (including rivers, depressions, channelled and unchannelled wetlands, flats, seeps pans, and artificial wetlands)	Estuary		Coastline	
	Least Threatened (Least Concerned)		<b>YES</b>	<b>NO</b>	<b>NO</b>	

- d) **Please provide a description of the vegetation type and/or aquatic ecosystem present on site, including any important biodiversity features/information identified on site (e.g. threatened species and special habitats)**

As indicated in the Ecological Report attached hereto as **Appendix D2**, the assessment falls within the Highveld Alluvial vegetation type (Aza 5), which mainly consists of flat topography supporting riparian thickets accompanied by seasonally flooded grasslands. The vegetation type is classified as Least Concerned. The proposed gauging weir to be developed in a portion of the Vals River, which is moderately modified and the grassland habitat of the riparian zone is mainly dominated by the hydrophytic grass species. The directly upstream portion of the Vals River possesses a distinct narrow natural riparian zone, which is mainly associated with the flattened-out area and the vertical drop into the river. The grassland habitat of the riparian zone is mainly dominated by the hydrophytic grass species *Paspalum dilatatum*, while the grass species *Cynodon dactylon*, *Setaria spp.* and *Eragrostis plana* were also found to be present but to a significantly lesser extent. The reed species *Phragmites australis* and sedge species *Cyperus spp.* are also sparsely present but confined to the banks of the river situated below the vertical drop. Medium-sized to large tree- and shrub individuals of the woody species *Salix babylonica* (exotic), *S mucronata*, *Ziziphus mucronata*, *Searsia pyroides* as well as the legally declared alien invasive species *Eucalyptus spp.* (Category 1b in riparian zones) are well-represented along the banks of the river situated above the vertical drop. A single large tree individual of the legally declared alien invasive species tree *Morus alba* (Category 3) was also found to be present. The habitat of the riparian zone is overwhelmingly dominated by the sedge species *Cyperus spp.* while the reed species *Phragmites australis* is merely sparsely present. Low-growing tree and shrub individuals of the woody species *Salix mucronata* are merely sporadically present. No Red Data Listed-, nationally protected- or provincially protected plant species or any other plant species of conservational significance/value, were found to be present throughout the upstream riparian zone. According to the spatial information contained on SANBI's website, the portion of the C60J - 2291 Sub Quaternary Reach (SQR) associated with the assessment area, is not considered a fish support area or fish sanctuary. No populations of Critically Endangered, Endangered, Vulnerable or Near threatened fish species have been recorded throughout the local or boarder downstream region or are expected to specifically utilise the assessment area as refuge or for breeding, foraging and/or persistence purposes. The Globally Near-Threatened Red Listed fish species *Labeobarbus kimberleyensis* (Largemouth yellowfish) is however indicated on the IUCN Red List of Threatened Species (<https://www.iucnredlist.org>) as being present throughout the local and broader quaternary surface water catchment- and drainage area. According to the landowner, individuals of the legally declared alien invasive fish species *Ctenopharyngodon idella* (Grass carp; Category 3), have recently been observed in and around the mouth of the Vals River where it discharges into the Vaal River. Due to the significant steep vertical water level drop caused by the existing old weir, it acts as a significant physical fish movement-restricting/impeding barrier between the upstream- and downstream portions of the Vals River. Fish species and individuals are therefore not provided the opportunity to move upstream continuously and freely, although this can and does occur during significant flood events. The specialist is in agreement with the Very High sensitivity rating for the Aquatic Biodiversity Theme as indicated in the Environmental Screening Tool Report, and the Theme of the local and broader surrounding landscape is however rated as being of low sensitivity.

The temporary construction camp within the terrestrial landscape surrounding the portion of the Vals River associated with the proposed development, which slopes moderately towards the river from both sides. According to the Environmental Screening Report, Plant Biodiversity Theme is rated Low Sensitivity and specialist is in agreement. The proposed site does not fall within any important Bird Area (IBA) as per latest IBA map obtained from Birdlife SA website. There is no conservationally significant, or important bird species/nest or locally distinct avifaunal habitats were observed. No conservationally significant or important faunal species or locally distinct faunal habitats were observed. According to the landowner, individuals and pairs of the large raptor bird of prey species *Haliaeetus vocifer* (African Fish Eagle) has been known to nest further upstream of the new gauging weir, within a significant distance away from the new weir location. An individual of the range-restricted semi-aquatic reptilia species *Varanus niloticus* (Water Monitor Lizard). The Globally Near-Threatened Red Listed mammalian species *Hydrictis maculicollis* (Spotted-necked otter) and *Aonyx capensis* (African clawless otter) are furthermore indicated on the IUCN Red List of Threatened Species (<https://www.iucnredlist.org>) as being present throughout the local and broader quaternary surface water catchment- and drainage area. According to the information received from the landowner, otter individuals have been known to frequent the portion of the river located directly upstream of the proposed new gauging weir location. The Site Ecological Importance of the temporary construction camp is low, thus activities of medium to high impact are acceptable if followed by appropriate restoration activities. The PES is classified as Class C as it is moderately modified and the EIS is Class C, moderate. However, the basic ecosystem functionality has however remained predominantly unchanged.

The Screening Tool and Site Verification Report are attached hereto as **Appendix J4A** and **B** respectively

## SECTION C: PUBLIC PARTICIPATION

### 1. ADVERTISEMENT AND NOTICE

<b>Publication name</b>	Vista News	
<b>Date published</b>	2 <sup>nd</sup> February 2023	
<b>Site notice position</b>	<b>Latitude</b>	<b>Longitude</b>
	27°29'27.23"	26°39'9.45"
<b>Date placed</b>	27 <sup>th</sup> January 2023	

Include proof of the placement of the relevant advertisements and notices in Appendix E1.

Proof of Newspaper Advertisement, On Site Notice and Posters are attached hereto as **Appendix E1**.

### 2. DETERMINATION OF APPROPRIATE MEASURES

Provide details of the measures taken to include all potential I&APs as required by Regulation 41(2)(e) and 41(6) of GN 326

The measures that were undertaken to include the potential I&APs are as follows:

Posters were placed at the Bothaville and Kgotsong libraries and municipal offices. Telephonic discussion was held and subsequent to that the Background information document was sent to the key stakeholder, *i.e.*, Ward 10 Councillor and landowners.

No public meetings were held as no-one registered as an interested and affected party and no concerns/objections were received from the notification phase of the public participation process.

Key stakeholders (other than organs of state) identified in terms of Regulation 41(2)(b) of GN 326

<b>Title, Name and Surname</b>	<b>Affiliation/ key stakeholder status</b>	<b>Contact details (tel number or e-mail address)</b>
Ms. Johanna Klue	Landowner (Farm Botha's Drift)	079 490 9220 <a href="mailto:j.s.klue@gmail.com">j.s.klue@gmail.com</a>
Mr. Izak Coetzer	Landowner (Farm Winkelplaats)	082 858 9772 <a href="mailto:saseka@gmail.com">saseka@gmail.com</a>
Mr. Moshane	Councillor	071 098 5356 <a href="mailto:Zmoshane7@gmail.com">Zmoshane7@gmail.com</a>

Include proof that the key stakeholder received written notification of the proposed activities as Appendix E2. This proof may include any of the following:

- e-mail delivery reports;

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- registered mail receipts;
- courier waybills;
- signed acknowledgements of receipt; and/or
- or any other proof as agreed upon by the competent authority.

The Background Information Document was emailed to the Ward Councillor and landowners as contained in Appendix E6, but no read receipt was received.

### 3. ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

Summary of main issues raised by I&APs	Summary of response from EAP
Department of Police, Roads and Transport supports the proposed gauging weir with conditions mentioned below.	Comment noted
Exact location of the gauging weir cannot be derived from the information provided.	Exact location will be provided in the Draft Basic Assessment Report
No structure may be erected within 95m measured from centre line of the provincial road without approval from the department.	The gauging weir is located approximately 250m from the centre line of Primary Road P43/4
The Department will only consider and approve any specific accesses on receipt of a completed application and drawing that shows the geometric layout and exact locality of the accesses.	The information regarding the temporary access roads will be included in the Draft BAR.
The condition of the provincial gravel road S722 is not in good condition. The increase in traffic during construction phase of the proposed gauging weir will require more intense routine maintenance and certain sections will have to be re-gravelled. The applicant will therefore be required to carry out such maintenance at their expenditure.	The department indicated that if they are to use any provincial road, they will take pictures of the current condition and compare with the post construction condition to ensure that it will not be left in a worse state thus it was found. The existing dirt road that branches from Provincial Road R30 on the left bank will be used to access the site.
No work on bridge structure no. 244 may be done without prior consultation with and approval by this department. An application for any intended work on the above-mentioned bridge structure must therefore be timeously submitted to the Department. The application must also be accompanied by appropriate drawings.	The proposed gauging weir is located more than 600m from the bridge, therefore, it will not be impacted or disturbed by the development or construction activities.
The raising of the water of a river, spruit or dam, to encroach upon a public road, is not allowed in terms of Section (20)(1)(b) of the Roads	The proposed gauging weir will not cause any raising water to encroach upon a public road.

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Ordinance, 1968	
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### 4. COMMENTS AND RESPONSE REPORT

The practitioner must record all comments received from I&APs and respond to each comment before the Draft BAR is submitted. The comments and responses must be captured in a comments and response report as prescribed in the EIA regulations and be attached to the Final BAR as Appendix E3.

Comments and/or issues during the notification phase are included in Appendix E3, Comments and Responses Trail. The Comments and Responses Report will be compiled including those received from reviewing of the Draft Basic Assessment Report and it will be attached to the Final Basic Assessment Report.

### 5. AUTHORITY PARTICIPATION

Authorities and organs of state identified as key stakeholders:

Authority/Organ of State	Contact person (Title, Name and Surname)	Tel No	Fax No	e-mail	Postal address
Nala Local Municipality	Mr. Sekonyela Lehloenyana	056 514 9200	056 515 3922	<a href="mailto:mm@nala.org.za">mm@nala.org.za</a>	Private Bag X15 Bothaville 9660
Department of Water and Sanitation	Mr. George Nel	051 405 9000	051 430 8146	<a href="mailto:nelg@dws.gov.za">nelg@dws.gov.za</a>	P.O. Box 528 Bloemfontein 9300
Department of Agriculture and Rural Development	Mr. Jack Morton	051 861 8511	051 861 8578	<a href="mailto:mortonj@dard.gov.za">mortonj@dard.gov.za</a>	Private Bag X01 Glen Building Bloemfontein 9360
Department of Police, Roads, and Transport	Mr. Hannes Maree	082 059 9725		<a href="mailto:fsroadplanning@gmail.com">fsroadplanning@gmail.com</a>	P.O. Box 119 Bloemfontein 9300
DESTEA	Ms. Nomonde Molokwane	051 400 4800	-	<a href="mailto:mokolwaneN@destea.gov.za">mokolwaneN@destea.gov.za</a>	Private Bag X20801 Bloemfontein 9300
South African	SAHRIS	021 462	021	SAHRIS	P.O. Box

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Heritage Resources Agency		4502	462 4509		4637 Cape Town 80000
Eskom	Ms. Mahlatse Moeng	051 404 5031		<a href="mailto:moengmk@eskom.co.za">moengmk@eskom.co.za</a>	P.O. Box 356 Bloemfontein 9301

Include proof that the Authorities and Organs of State received written notification of the proposed activities as appendix E4.

In the case of renewable energy projects, Eskom and the SKA Project Office must be included in the list of Organs of State.

### 6. CONSULTATION WITH OTHER STAKEHOLDERS

Note that, for any activities (linear or other) where deviation from the public participation requirements may be appropriate, the person conducting the public participation process may deviate from the requirements of that sub-regulation to the extent and in the manner as may be agreed to by the competent authority.

Proof of any such agreement must be provided, where applicable. Application for any deviation from the regulations relating to the public participation process must be submitted prior to the commencement of the public participation process.

A list of registered I&APs must be included as appendix E5.

No-one registered as I&APs, but the IA&Ps database maintained for the Public Participation Process is attached hereto as Appendix E5.

Copies of any correspondence and minutes of any meetings held must be included in Appendix E6.

Copies of electronic notifications sent to identified I&APs, the comments received, and responses are attached hereto Appendix E6.

## SECTION D: IMPACT ASSESSMENT

The assessment of impacts must adhere to the minimum requirements in the EIA Regulations, 2014 as amended and should take applicable official guidelines into account. The issues raised by interested and affected parties should also be addressed in the assessment of impacts.

**Issues raised by the Department of Roads, Police and Transport were addressed thus will not be assessed further.**

### 1. IMPACTS THAT MAY FROM THE PLANNING AND THE DESIGN, CONSTRUCTION, OPERATIONAL, DECOMMISSIONING AND CLOSURE PHASES AS WELL AS PROPOSED MANAGEMENT OF IDENTIFIED IMPACTS AND PROPOSED MITIGATION MEASURES

Provide a summary and anticipated significance of the potential direct, indirect and cumulative impacts that are likely to occur as a result of the planning and design phase, construction phase, operational phase, decommissioning and closure phase, including impacts relating to the choice of site/activity/technology alternatives as well as the mitigation measures that may eliminate or reduce the potential impacts listed. This impact assessment must be applied to all the identified alternatives to the activities identified in Section A(2) of this report.

Activity	Impact summary	Significance	Proposed mitigation
<b>Alternative 1 (preferred alternative)</b>			
Poor design of the gauging weir resulting collapse of the structure and creating a migration barrier for aquatic life.	<b>Direct impacts:</b>	High	The design of the gauging weir meets the requirements set by DWS. The proposed gauging weir doesn't include a fish ladder so that the current migration patterns are not altered by the development as the existing storage weir does not have a fish ladder.
	<b>Indirect impacts:</b>		
	<b>Cumulative impacts:</b>	None	
Continuation of the project without obtaining relevant authorisations, licenses, etc.	<b>Direct impacts:</b>	Very High	Construction of the proposed gauging weir may only commence once the Environmental Authorisation is issued.
	<b>Indirect impacts:</b>		
	<b>Cumulative impacts:</b>	None	
Employment opportunities for the local community and	<b>Direct impacts:</b> Improvement of the local economy and decrease in unemployment although short	Low	Involvement of the local authority is recommended. Most of the unskilled job opportunities should be for



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<b>Activity</b>	<b>Impact summary</b>	<b>Significance</b>	<b>Proposed mitigation</b>
SMMEs (Positive impact)	term.		the local labourers and involvement as well as upskilling of local SMMEs should be considered.
	<b>Indirect impacts:</b>		
	<b>Cumulative impacts:</b>	None	
Clearance of indigenous vegetation resulting in destruction of Red Data Listed Species, Nationally and/or Provincially Protected Species	<b>Direct impacts:</b>	Medium	Vegetation clearance including construction activities must be confined to the development footprint. No Red Data Listed Species, Nationally and/or Provincially Protected Species
	<b>Indirect impacts:</b>		
	<b>Cumulative impacts:</b>	None	
Destruction of riparian vegetation thus impacting habitat that is used by fauna and loss of vegetation	<b>Direct impacts:</b>	Medium	The construction must be adequately cordoned off to ensure that the removal of vegetation is limited to the development footprint. Excavated topsoils must be reinstated in reverse order of removal to retain the correct stratification characteristics of alluvial soil within the riparian zone to enable plant succession post construction.
	<b>Indirect impacts:</b>		
	<b>Cumulative impacts:</b>	None	
Soil erosion due to increased runoff as a result of vegetation clearance.	<b>Direct impacts:</b>		
	<b>Indirect impacts:</b>	Medium	Vegetation clearance must be confined to the development footprint and topsoil must be stripped on work areas as needed to avoid prolonged exposure of bare soil to harsh conditions.

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Activity	Impact summary	Significance	Proposed mitigation
			Adequate stormwater and erosion management measures must be in place. Environmental Compliance Officer must routinely inspect erosion management features.
	<b>Cumulative impacts:</b>	Low	Areas that show signs of erosion within the development footprint must be attended to as they risk causing long-term damages.
Soil contamination from leaks and spills of construction vehicles, machinery, and equipment.	<b>Direct impacts:</b>		
	<b>Indirect impacts:</b>	High	Regular check ups and routine maintenance and designated parking space. In case of leaks or spills, they should be reported immediately to the site engineer to schedule a repair appointment. No emergency repairs within 32m of the watercourse.
	<b>Cumulative impacts:</b>	None	
Spread of alien invasive species	<b>Direct impacts:</b>		
	<b>Indirect impacts:</b>	Medium-High	All identified alien invasive species must be actively eradicated. Alien Invasive Species Establishment Management and Prevention Plan must be compiled and implemented
	<b>Cumulative impacts:</b>	Low	Alien species found within the development footprint and surrounding areas must be removed
Contamination of Vals River due to contaminated runoff	<b>Direct impacts:</b>	High	Construction vehicles must be operated efficiently and according to the specifications of the manufacturer. Mixing of

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Activity	Impact summary	Significance	Proposed mitigation
			concrete must be done in impermeable surfaces. No chemical toilets must be placed within 100m of the watercourse. No storage of hydrocarbons within 100m of the watercourse. Adequate stormwater and erosion management measures must be implemented.
	<b>Indirect impacts:</b>		
	<b>Cumulative impacts:</b>	None	
Diverting flow of water thus affecting aquatic life.	<b>Direct impacts:</b>		
	<b>Indirect impacts:</b>	Medium-High	
	<b>Cumulative impacts:</b>	Yes	Immediate steps must be taken by the Municipality to locate and remediate the source of the contamination from historical and continued raw sewage leaks and discharges into the spruit.
Inhibiting the ecological services provided by the Vals River	<b>Direct impacts:</b>	Medium-High	Contractor must take reasonable measures to prevent unnecessary destruction of the receiving environment so that identified environmental impacts are lessened to a greater extent. Rehabilitation plan must be developed by a suitably qualified and experienced Ecologist.
	<b>Indirect impacts:</b>		
	<b>Cumulative impacts:</b>	None	
Poor handling, storage of waste generated during construction resulting in contamination of the receiving	<b>Direct impacts:</b>		
	<b>Indirect impacts:</b>	Medium High	Waste management measures must be in place to prevent litter and debris from entering the watercourse. Refuse bins with lids must be provided and dedicated area

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<b>Activity</b>	<b>Impact summary</b>	<b>Significance</b>	<b>Proposed mitigation</b>
environment			for temporary storage of waste before disposal must be identified and communicated to the workforce. Waste generated from demolition of the storage weir must be removed and disposed properly.
	<b>Cumulative impacts:</b>	None	
Impact on the Health and Safety of the Workers and Public	<b>Direct impacts:</b>		
	<b>Indirect impacts:</b>	Medium-High	Construction must adhere to the Occupational Health and Safety Act (Act 85 of 1993) requirements and employees must be provided with suitable equipment to protect them from hazards being presented. An emergency preparedness plan must be compiled. No workers allowed in the river during high-flows.
	<b>Cumulative impacts:</b>		
Increased possibility of erosion	<b>Direct impacts:</b>	Medium-High	The design of the gauging weir includes erosion protection measures. Thus routine inspection of the features must be in place.
	<b>Indirect impacts:</b>		
	<b>Cumulative impacts:</b>		
<b>Alternative 2</b>			
	<b>Direct impacts:</b>		
	<b>Indirect impacts:</b>		
	<b>Cumulative impacts:</b>		

Activity	Impact summary	Significance	Proposed mitigation
<b>Alternative 3</b>			
	<i>Direct impacts:</i>		
	<i>Indirect impacts:</i>		
	<i>Cumulative impacts:</i>		
<b>No-go option</b>			
Continued recording of inaccurate data at C6H001@Rooiwal station	<i>Direct impacts:</i>	Medium-High	The proposed development must go ahead as planned.
	<i>Indirect impacts:</i>		
	<i>Cumulative impacts:</i>		

Impacts associated with the increase in the upstream water level and changes in the downstream conditions due to the remaining structure post construction that could occur during operation but were not assessed further because of they were addressed during the design phase.

Cumulative Impact:

Cumulative impacts due to the proposed development concerning soil erosion and alien invasive species must be addressed so that long term impacts and environmental degradation could be avoided.

A complete impact assessment in terms of Regulation 19(3) of GN 326 must be included as Appendix F.

Impact Assessment is attached hereto as **Appendix F**.

## 2. ENVIRONMENTAL IMPACT STATEMENT

Taking the assessment of potential impacts into account, please provide an environmental impact statement that summarises the impact that the proposed activity and its alternatives may have on the environment after the management and mitigation of impacts have been taken into account, with specific reference to types of impact, duration of impacts, likelihood of potential impacts actually occurring and the significance of impacts.

### Alternative A (preferred alternative)

The report is prepared in accordance with the NEMA requirements and meets EIA regulations. It contains information on assessed potential impacts and mitigation measures provided to ensure that the impact of the proposed gauging weir on the receiving environment, i.e., portion of Vals River and the surrounding environment is avoided or reduced to lesser extent. The impacts including both the negative and positive, were identified based on different phases that will be undertaken if the project is authorised to go ahead. The identified positive impact for construction is creation of job

opportunities, which should benefit the local community as a management measure, so that they are able to improve the local economy, although the impact is temporary, the general workers and subcontractors will have a new skill and an improvement in their Construction Industry Development Board grading level. It is important that local procurement of construction material is prioritized.

As part of the planning phase, it is imperative for the Free State Department of Water and Sanitation to ensure the proposed development complies with relevant environmental legislation to prevent a socio-economic impact as continuation of an activity without adhering to environmental compliance could result in an administration fine or jail term, however, if the proposed measures are outlined, then this impact will be avoided. Most of the identified negative impacts are temporary and will occur during the construction phase, whereby they will affect the biophysical aspects, which includes, vegetation clearance resulting in loss of indigenous and riparian vegetation, soil and water contamination due to construction activities, increased risk of soil erosion, spread of alien invasive species that could infest the assessment area and surroundings due to disturbance, inhibition ecological services offered by the Vals River, health and safety, as well as the hydrological impacts due to diversion of water.

The design of the proposed weir will have almost the same height as the existing storage weir, which will be demolished on completion of the construction phase, thus there aren't much anticipated changes in the upstream and downstream water levels as well as the ecological services provided by the river, hence the impact was not assessed further. The inclusion of erosion protection measures will also abate any residual risks of erosion on the riverbanks and floodplain during operation. For other impacts with careful planning and adoption of the recommendations, the provided adequate mitigation and management measures with input from the specialist, the significance of the impacts will be reduced from high and to medium high significance to low because the extent will be limited to the development footprint and on completion of the construction phase, they will cease to occur thus limited residual impact expected.

From the Ecological (Terrestrial and Aquatic) and Hydrological studies conducted, no grounds were founded to suspend the proposed development and recommendations outlined to minimize the impact were deemed adequate. The proposed development was exempted from Heritage Impact Assessment because of the degree of current and prior degradation of the surface potentially intact alluvial deposits.

Good construction practise and effective site supervision must be in place. If the proper mitigation procedures are followed during the construction phase, the impacts on the environment during the operational phase will be insignificant and residual impacts limited. The impacted environment will be able to return to a functional state on completion of rehabilitation phase and the likelihood of any environmental degradation post-construction will be reduced significantly.

From the public participation process undertaken, no objections were received as yet but the process is still ongoing. Therefore, it is evident that the proposed gauging weir is deemed socially acceptable.

In addition to the mitigation measures outlined, the draft Environmental Management Programme is compiled to ensure that other issues that were not identified as key during the assessment process will still be mitigated.

Given the above, it is recommended that the proposed development should go ahead as planned as it would provide the real time accurate flow record information that would be correlated with the readings from C6H001 to adjust the hydrological data to be used with C6H009 required for the release of water at Bloemhof Dam.

**Alternative B**

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**Alternative C**

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**No-go alternative (compulsory)**

If the proposed project does not take place, then inadequate flow data will continue to be received from C6H001 and this will affect the release of water from Bloemhof Dam.

## SECTION E. RECOMMENDATION OF PRACTITIONER

Is the information contained in this report and the documentation attached hereto sufficient to make a decision in respect of the activity applied for (in the view of the environmental assessment practitioner)?

NO

If "NO", indicate the aspects that should be assessed further as part of a Scoping and EIA process before a decision can be made (list the aspects that require further assessment).

If "YES", please list any recommended conditions, including mitigation measures that should be considered for inclusion in any authorisation that may be granted by the competent authority in respect of the application.

- The coffer dam must be built to a suitable height so as to create a dry and safe working area for civil works. They will be used to divert the water so that there is continuous flow during construction.
- The proposed development is exempt from further Heritage Impact Assessment.
- Heavy machinery movement should be kept small to minimise soil compaction, which increases runoff generated on site.
- Fish ladder must not be included so that the current migration patterns, which occurs during floods, are not altered. The existing storage weir does not have a fish ladder thus inclusion of one in the design could disturb the current integrity and functionality of the watercourse. In this regard the EAP is of the opinion that appointment of an Ichthyologist is not warranted.
- The draft EMPr on acceptance by DESTEA must form part of the tender documentation for construction activities during provision of services and approval of the building plans so that contractors and subcontractors can adhere to it during the construction phase.
- The following plans must be compiled and implemented:
  - An Alien Invasive Species Establishment and Management Prevention Plan
  - An Erosion and Stormwater Management Plan
  - Rehabilitation Plan.
- The local community must be informed prior to the commencement of construction activities so that they are motivated and promote involvement from the locals including businesses. The implementation of the recruitment of the general workers/unskilled labourers must be done according to the municipality's standards and the councillor of the ward must be involved in the process.



## DRAFT BASIC ASSESSMENT REPORT

- All individuals of the identified alien invasive species must be actively eradicated from the assessment area in accordance with NEMBA and Alien and Invasive Species Regulations, 2014. Repetitive follow-up actions will be mandatory until the required control is achieved.
- An Environmental Control Officer must be appointed prior to the commencement of construction activities as indicated in the EMPr.
- Should unexpected Archaeological and/or Palaeontological Finds be made, then SAHRA must be notified accordingly. A professional Archaeologist or Palaeontologist must be contacted to inspect the heritage resources. If the newly discovered heritage resource proves to be of archaeological or palaeontological significance, then a rescue operation must be undertaken subject to permits issued by SAHRA. If unmarked human burials are uncovered, the SAHRA Burial Grounds and Graves Unit must be contacted.
- Disturbed areas within and immediately surrounding the weir clearance and excavation site associated with the assessment area, must be adequately rehabilitated concurrently with the construction process.

Is an EMPr attached?

YES

The EMPr must be attached as Appendix G.

The details of the EAP who compiled the BAR and the expertise of the EAP to perform the Basic Assessment process must be included as Appendix H.

The details of the EAP and expertise are attached hereto as **Appendix H**.

If any specialist reports were used during the compilation of this BAR, please attach the declaration of interest for each specialist in Appendix I.

The Declaration of Interest for the Specialist are attached hereto as **Appendix I**.

Any other information relevant to this application and not previously included must be attached in Appendix J.

Additional Information attached hereto as **Appendix J** is as follows:

- 1a. Scope of Works
2. Preliminary Design Report and Drawings
3. DWS Legal Opinion
- 4a. Screening Tool Report
- 4b. Site Verification Report

Lorato Tigatedi Reg. EAP (EAPASA) Pr. Sci. Nat.

NAME OF EAP

\_\_\_\_\_  
SIGNATURE OF EAP

\_\_\_\_\_  
DATE

## **SECTION F: APPENDIXES**

The following appendixes must be attached:

Appendix A: Maps

Appendix B: Photographs

Appendix C: Facility illustration(s)

Appendix D: Specialist reports (including terms of reference)

Appendix E: Public Participation

Appendix F: Impact Assessment

Appendix G: Environmental Management Programme (EMPr)

Appendix H: Details of EAP and expertise

Appendix I: Specialist's declaration of interest

Appendix J: Additional Information

# APPENDIX A

## MAPS AND PLAN

# APPENDIX A1

## LOCALITY MAP

## APPENDIX A2

## SITE PLAN

# APPENDIX A3

## SENSITIVITY MAP

# APPENDIX A4

## CONSERVATION STATUS MAP

# APPENDIX B

# PHOTOGRAPHS



**PROPOSED TWEEFONTEIN GAUGING WEIR, BOTHAVILLE, NALA LOCAL MUNICIPALITY  
FREE STATE DEPARTMENT OF WATER AND SANITATION  
DESTEA REF. NO.: EMB/12(i)(a),19,12(b)(iv)/23/06**



**Photo 1: Panoramic View of the Proposed Site**



**Photo 2: Damaged bridge on S722 Road**



**Photo 3: North eastern view across Vals River (Botha's Drift)**

## APPENDIX C

### FACILITY ILLUSTRATION (Appendix E of Appendix J2)

# APPENDIX D

## SPECIALISTS' REPORT

## APPENDIX D1

# LETTER OF EXEMPTION (HERITAGE)

PROPOSED TWEEFONTEIN GAUGING WEIR, BOTHAVILLE, NALA LOCAL MUNICIPALITY  
FREE STATE DEPARTMENT OF WATER AND SANITATION  
DESTEA REF. NO.: EMB/12(i)(a),19,12(b)(iv)/23/06

# APPENDIX D2

## ECOLOGICAL REPORT

# APPENDIX D3

## HYDROLOGICAL REPORT

# APPENDIX E

## PUBLIC PARTICIPATION RECORDS

# APPENDIX F

## IMPACT ASSESSMENT



## APPENDIX G

# DRAFT ENVIRONMENTAL MANAGEMENT PROGRAMME

## APPENDIX H

# DETAILS OF EAP AND EXPERTISE

## APPENDIX I

# DECLARATION OF SPECIALIST

## APPENDIX I1

# HERITAGE SPECIALIST DECLARATION

# APPENDIX I2

## ECOLOGIST DECLARATION

# APPENDIX I3

## HYDROLOGIST DECLARATION

## APPENDIX J

### OTHER: ADDITIONAL INFORMATION

# APPENDIX J1

## SCOPEE OF WORKS



## APPENDIX J2

# PRELIMINARY DESIGN REPORT AND DRAWINGS

## APPENDIX J3

### DWS LEGAL OPINION

# APPENDIX J4a

## SCREENING TOOL REPORT

## APPENDIX J4b

# SITE SENSITIVITY VERIFICATION REPORT