



Gauteng Department of Agriculture and Rural Development (GDARD)

Basic Assessment Report in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended, and the Environmental Impact Assessment Regulations, 2010

List of all organs of state and State Departments where the draft report has been submitted, their full contact details and contact person

Kindly note that:

1. This **Basic Assessment Report** is the standard report required by GDARD in terms of the EIA Regulations, 2010 and must be submitted together with the application form.
 2. This application form is current as of 2 August 2010. It is the responsibility of the EAP to ascertain whether subsequent versions of the form have been published or produced by the competent authority.
 3. **A draft Basic Assessment Report must be submitted to all State Departments administering a law relating to a matter likely to be affected by the activity to be undertaken; the submission of such a draft report to such State Departments must be done on the day of submission of the draft report to the competent authority, this Department. (Attach a signed proof of such submission).**
 4. 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.
 5. Selected boxes must be indicated by a cross and, when the form is completed electronically, must also be highlighted.
 6. An incomplete report may be returned to the applicant for revision.
 7. 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.
 8. Five (5) copies (3 hard copies and 2 CDs-PDF) of the final report and attachments must be handed in at offices of the relevant competent authority, as detailed below.
 9. No faxed or e-mailed reports will be accepted. Only hand delivered or posted applications will be accepted.
 10. Unless protected by law, and clearly indicated as such, all information filled in on this application will become public information on receipt by the competent authority. The applicant/EAP must provide any interested and affected party with the information contained in this application on request, during any stage of the application process.
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DEPARTMENTAL DETAILS

Gauteng Department of Agriculture and Rural Development
Attention: Administrative Unit of the Sustainable Utilisation of the Environment (SUE) Branch
P.O. Box 8769
Johannesburg
2000

Administrative Unit of the Sustainable Utilisation of the Environment (SUE) Branch
18th floor Glen Cairn Building
73 Market Street, Johannesburg

Admin Unit telephone number: (011) 355 1345
Department central telephone number: (011) 355 1900

BASIC ASSESSMENT REPORT [REGULATION 22(1)]

(For official use only)

File Reference Number:						
Application Number:						
Date Received:						

(i) Submission to State Department (Section 3 above)

(A) Has a draft report for this application been submitted to all State Department administering a law relating to a matter likely to be affected as a result of the activity? **YES**

(B) Is a list of State Departments referred to in section A above been attached to this report, if no, state reasons for not attaching the list. **NO**

The draft BAR has been submitted to the following State Departments:

- The Department of Water Affairs
- The City of Johannesburg Metropolitan Municipality

SECTION A: ACTIVITY INFORMATION

1. ACTIVITY DESCRIPTION

Project title (must be the same name as per application form):

Proposed installation of a litter trap in the Jukskei River where it traverses a Portion of the Remainder of Portion 1 of the Farm Waterval 5-IR

Select the appropriate box

The application is for an upgrade of an existing development The application is for a new development Other, specify

Describe the activity and associated infrastructure, which is being applied for, in detail

The application is for the construction of a litter trap to facilitate the removal of litter and debris in the Jukskei River.

C-Plan Civil Engineers were commissioned to conduct a litter trap design proposal (**Refer to the attached Annexure G1**).

In order for C-Plan to determine the most preferred litter trap design an assessment of the drainage region and Jukskei River pollutants was conducted, a formal litter trap selection process was conducted which included *inter alia* assessing the regional pollutant contributors, contextual aspects, reviewing litter trap preferences, design flows, maintenance costs and disposal costs, and lastly C-Plan conducted an assessment of the total litter load in the waterways, storm load in the waterways, basic litter trap capacity, installation costs and capital recovery.

C-Plan identified the effective **catchment region** as being approximately 202.17Km² in extent and consisting of the region upstream of Jukskei River located before the Ben Schoeman Highway (N1), including Doornfontein, Bezuidenzout Valley to the south, Alexandra, Kelvin to the west , Isando, Croydon to the east and Randjespark and President Park to the north. A total of 87 basic sub-catchments were identified and classified into 7 basic categories. The pollutant contribution

generated by the specified groups varies in litter quantities. Below is a chart and map indicating the categories pertaining to the effective hydrological catchment region affecting the downstream areas:

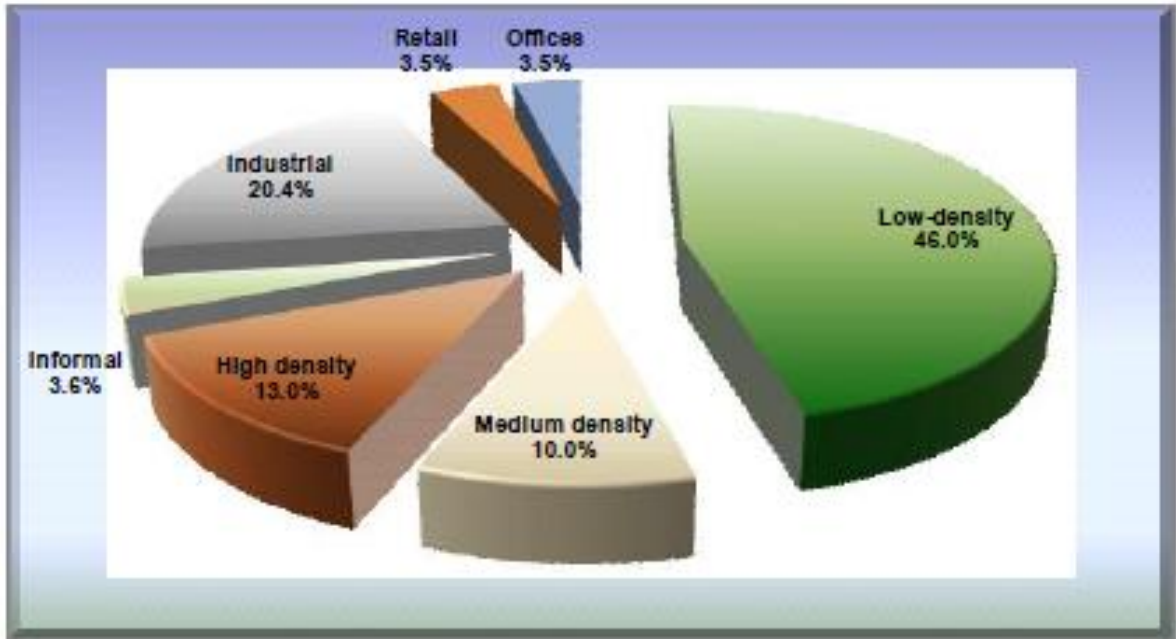


Fig: 1 Chart indicating the percentage of land use categories contained within the catchment

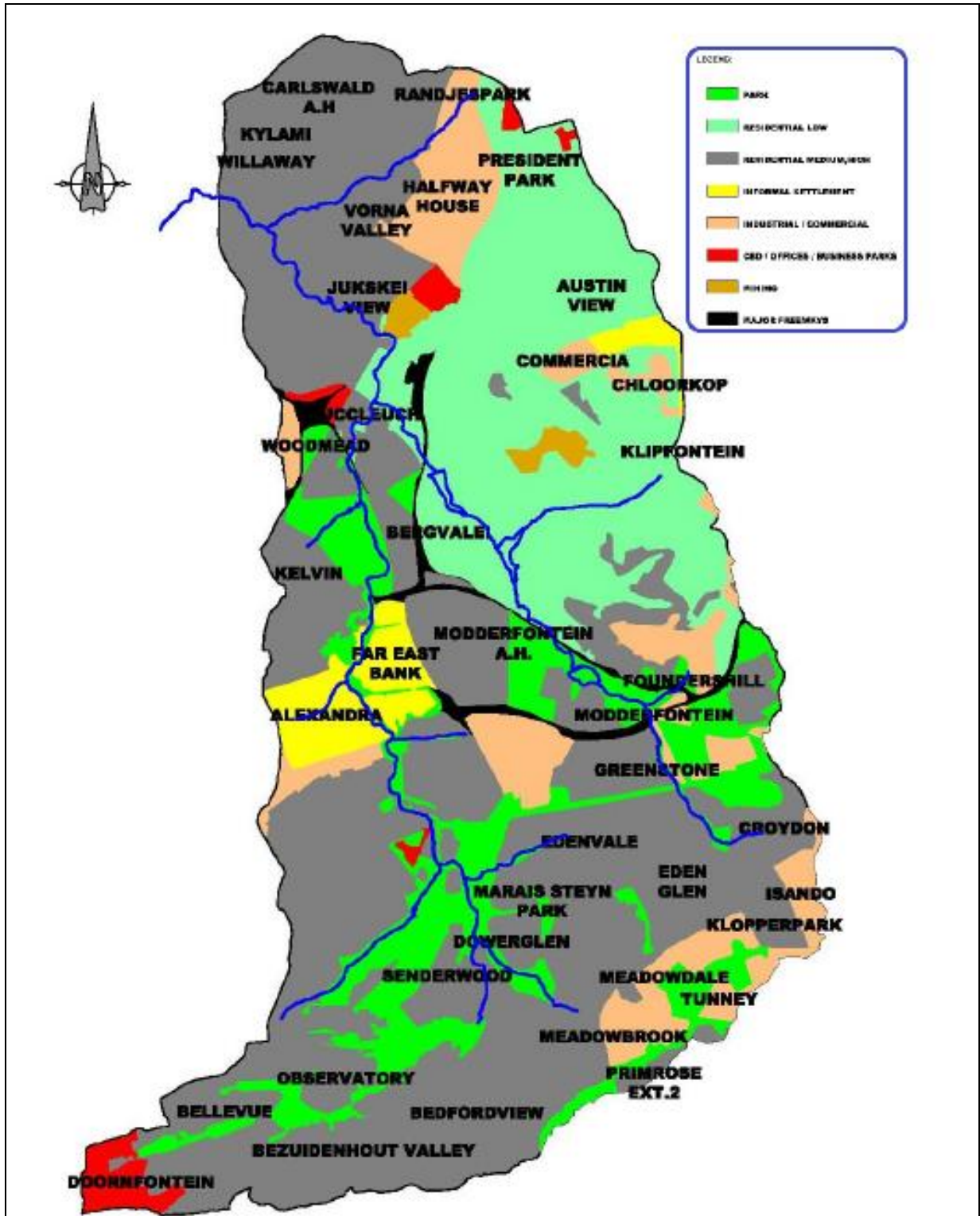


Fig: 2 Map indicating the various land use categories within the catchment

Typical pollutant material found in the Jukeskei River includes plastics (shopping bags, containers, bottles, crates etc.), polystyrene (fast food containers etc.), paper (newspapers, advertising flyers, food and drink containers etc.), metals (cans, number plates, bottle tops etc.), glass (broken windscreens, bottles, etc.), vegetation (branches, leaves rotten fruit, garden refuse etc.), animals (dead domestic animals and skeletal remains), construction material (shutters, broken lumps of concrete and broken bricks etc.) and other miscellaneous items (clothing, shoes, blankets, medical waste, tyres etc.)

C-Plan furthermore noted that in recent years, illegal dumping of construction materials into the river is on the increase, resulting in additional pollutant loads, creating irreparable damage to the existing waterway structures such as bridges and culverts.

C-Plan undertook a study, looking at the success and failure of both historical and current pollutant removal structures locally and globally. Taking into consideration all aspects of their design criteria, functionality, durability, practicability, maintenance, disposal and costs with the intention of developing a litter removal system that is suitable in effectively assisting with the removal of the solid pollutants deposited in the Jukskei river within the northern Johannesburg region.

The **estimated gross contributors of litter within the effective catchment region**, according to C-Plan, are:

- Residential 69%
- Commercial / industrial 27%
- Informal settlements 4%

The **selection of a litter trap** depends on social and political considerations. These were taken in account on a case by case basis. A list of items influenced, are listed below.

- Potential odour concerns at a location
- Likelihood of pests and vermin such as mosquitoes or rats.
- Impact on the aesthetics of the area
- Potential trapping of fauna (e.g. turtles, frogs and fish)
- Owing to the size of the hydrological catchment, the litter traps need to comply with the catchment area.

There are various methods in removing litter. The most effective of these results in a combination of the management of the structural treatments and non-structural measures (eg. education, public participation etc.).

Many litter trap designs are available; however, there are certain criteria that these structures need to comply to. Below is a table indicating a **variety of litter trap options**:

BASIC ASSESSMENT REPORT [REGULATION 22(1)]

Structure device	Catchment area (ha)	Trapping Efficiency						Cleaning frequencies	Head	Installation costs	maintenance costs
		gross pollutants	coarse sediments	medium pollutants	fine pollutants	attached pollutants	dissolved pollutants				
Litter collection baskets	0 - 150	M/H	L/M	N	N	N	N	weekly / monthly	M/H	M/H	M/H
Trash racks	20 - 500	L	N/L	N/L	N	N	N	monthly	L/M	M/H	L/M
Circular screens	5 - 150	VH	H	M	L/M	L	N	quarterly	L	H	M
down-wardly inclined screens	5 - 500	H/VH	N	N	N	N	N	monthly quarterly	H	M/H	L/M
flexible floating boom	> 100	N/L	N	N	N	N	N	weekly / monthly	L	L	M
floating debris traps	> 100	L	N	N	N	N	N	weekly / monthly	L	L	M
Sediment settling basins	10 - 500	N/L	M/H	M	L	N/L	N	half-yearly	L	L/M	L/M

N = negligible, L = low, M = moderate, H = high, VH = very high

Reference: Urban stormwater - Best Practice environmental Management Guidelines, Victorian Stormwater Committee, 1999

Reference: A decision support system for determining appropriate trapping strategies for gross pollutants, 1998, cooperative Research Centre for Catchment Hydrology, research report 98/3

Fig 3: Table indicating a variety of litter trap options.

The **most commonly used litter trap is an in-line screen** which consists of metal bars mounted on the floor of the channel and raked at some angle between 25° to 90° to the invert of the channel in the direction of flow. Comprising of a compilation of nets around the outlets of stormwater pipes or steel baskets. This type of trap is easily blocked and damaged and hard to maintain.

The **proposed litter trap is a self-cleaning screen** which is considered to work because of the large velocities, velocity gradient and or gravitational components in the plane of the screen which provides the required forces in preventing the build-up of pollutant materials. Frequently the gravitational force i.e. head, is at a maximum and consequently the self-cleaning action relies entirely on velocity and the velocity gradient (which causes shear and drag forces). In a linear system, this can only be achieved for short periods of time, because unless the screen is infinitely long, blockage will commence from the downstream stop-end. Making the screen stretch from bank to bank, and provided that the flow moves continuously over the entire screen surface, it is theoretically possible for it to be permanently non-clogging.

It is important to note that horizontal grids result in the accumulation of litter on the screen and eventual blockage. Increasing the angle of declination over and above the specified angles, will eventually result in the litter tumbling off the end of the screen without requiring additional build up. The accumulative litter eventually causes a combination of hydrostatic and hydrodynamic forces resulting in the debris sliding a little so as to open a flow path through the screen upstream of the blockage. Additional material deposition build-up and / or a change in flow rate would cause a corresponding movement of the litter along the screen at much the same rate as it was being deposited. The screen declined at the angle specified leads to a collection shelf for the litter. The water flowing through the screen either goes under the collection shelf, or around it (Low profile). The litter is readily removed by a TLB, skid-steer loader (Bobcat or similar) which gains access from a concrete ramp leading onto the low lying bridge downstream of the structure. The standing wave that is formed on the collection shelf helps to redistribute litter and minimizing blockages. In order for the structure to effectively work it is recommended that a minimum practicable head loss in the

order of 400mm be implemented. The bars must be strengthened with spacers generally welded to the under-side of the bars. The bars should be sufficiently rigid to prevent current induced vibration and bar deformation. Care should be taken to ensure that the spacers do not jeopardise the entry and withdrawal of the teeth of the litter-rack.

The **design flows** for the proposed litter trap are as follows:

The rationale is to safeguard the functionality of the litter trap, during high floods, with protection measures in place to safeguard the structure against excessive scouring caused by pollutants and the flooding. The trap is designed to accommodate flows between Q 3-months and Q 1-year, with the operation of the by-pass once these flows are exceeded. The 1:5 year flow was utilised as the base year in calculating the following flows:

- Q -3 months = 0.20 x Q -5 years,
- Q -6 months = 0.33 x Q -5 years,
- Q -1 year = 0.50 x Q -5 years.

Reference: the following figures originate from the Melbourne Water draft, Best Practice guidelines

Based on the hydrological catchment region, the expected flow for a 1:5 years situated at the N1 (Ben Schoeman) is $Q_5 = 221\text{m}^3/\text{s}$

Therefore based on the above formulation

$$Q_3 \text{ (month)} = (0.2) \times 221\text{m}^3/\text{s} = 44.2 \text{ m}^3/\text{s}$$

$$Q_6 \text{ (month)} = (0.33) \times 221\text{m}^3/\text{s} = 72.93 \text{ m}^3/\text{s}$$

$$Q_1 \text{ (year)} = (0.50) \times 221\text{m}^3/\text{s} = 110.50 \text{ m}^3/\text{s}$$

C-Plan notes that **maintenance costs** are more difficult (but are sometimes the most critical variable) to estimate than the installation costs due to the variances in the techniques used, the amount of material removed, and the unknown nature of the pollutants exported from a catchment. In many cases maintenance costs are the most significant cost of a treatment measure. It is therefore imperative to carefully consider the maintenance requirements and estimated costs when selecting litter traps. C-Plan highlighted a list of maintenance considerations that should be applied to all litter traps:

i. Maintenance equipment requirements

- Is special maintenance equipment required? E.g. large cranes, vacuum trucks or truck-mounted cranes. Does this equipment need to be bought or hired - at what cost?
- Is special inspection equipment needed (e.g. access pits)?
- Are any services required (e.g. wash-down water, sewer access)?
- Are there overhead restrictions such as power lines or trees?
- Does the water need to be emptied before the pollutants - if so how will it be done, where will it be put and what will it cost?
- Can the device be isolated for cleaning (especially relevant in tidal areas)?

ii. Construction additions for maintenance

- Are road closures required and how much disturbance will this cause?
- Are special access routes required for maintenance (e.g. access roads or concrete pads to lift from) – and what are these likely to cost?
- Is there a need for dewatering areas (e.g. for draining sump baskets)?

With regards to **disposal costs** C-Plan notes that these will vary depending on whether the collected material is retained in wet or dry conditions (ie. either under water or left so it can drain). Handling of wet material is more expensive and will require sealed handling vehicles.

- Is the material in a wet or dry condition and what cost implications are there?
- Are there particular hazardous materials that may be collected and will they require special

disposal requirements (eg. contaminated waste –what cost implications are there?

- What is the expected load of material and what are the likely disposal costs?

Loads can be estimated using certain decision support systems which require rainfall and land-use information and that in determining the load, the gross pollutants (litter and vegetation) must be considered as no litter trap can distinguish between litter and organic material and therefore in order to remove litter they must also collect debris in the same way.

Lastly C-Plan conducted an assessment of the total litter load in the waterways, storm load in the waterways, basic litter trap capacity, installation costs and capital recovery. Refer to Annexure G1 for more details on the afore-mentioned assessments.

Following the assessment of the total litter and storm loads in the waterways (Refer to Annexure G1 for more details) a trap efficiency of 70% has been utilised, and based on this C-Plan concluded the following:

Average number of days between trap clear outs = 6 days

The basic storage capacity required is $V_t = 2\,724.42\text{m}^3$

Numerous litter trap designs have been tested and are used all over the world, but in general the ideal litter trap should have the following features (Armitage et al., 1998):

- Reliability,
- Economical to construct and operate,
- No moving parts,
- No power required,
- Minimal water head requirement i.e. can be applied on a flat gradient,
- Does not increase flood levels upstream of the structure, and
- Have a high litter removal efficiency.

The **suggested litter trap composition (Refer to Fig 4 and Annexure G1)** consists of a concrete free standing edifice comprising of designated openings, inhibiting water flow as little as possible and enabling all forms of aquatic life to pass through with minimal hindrance and disruption, with a horizontal grating system lodged downstream between the access road and the wall, extending across the width of the river at the selected position.

The purpose of the structure operates as an energy dissipater, reducing the flow of energy, enabling litter in floating over the crest at a reduced velocity, depositing pollutants onto the grating, allowing the litter to be manually removed from the downstream access road with relative ease. The objective is to provide a maintenance system that is simple and effective enough, in retrieving both normal and hazardous materials by eliminating the distress of additional safety issues and the use of a handbook or manual.

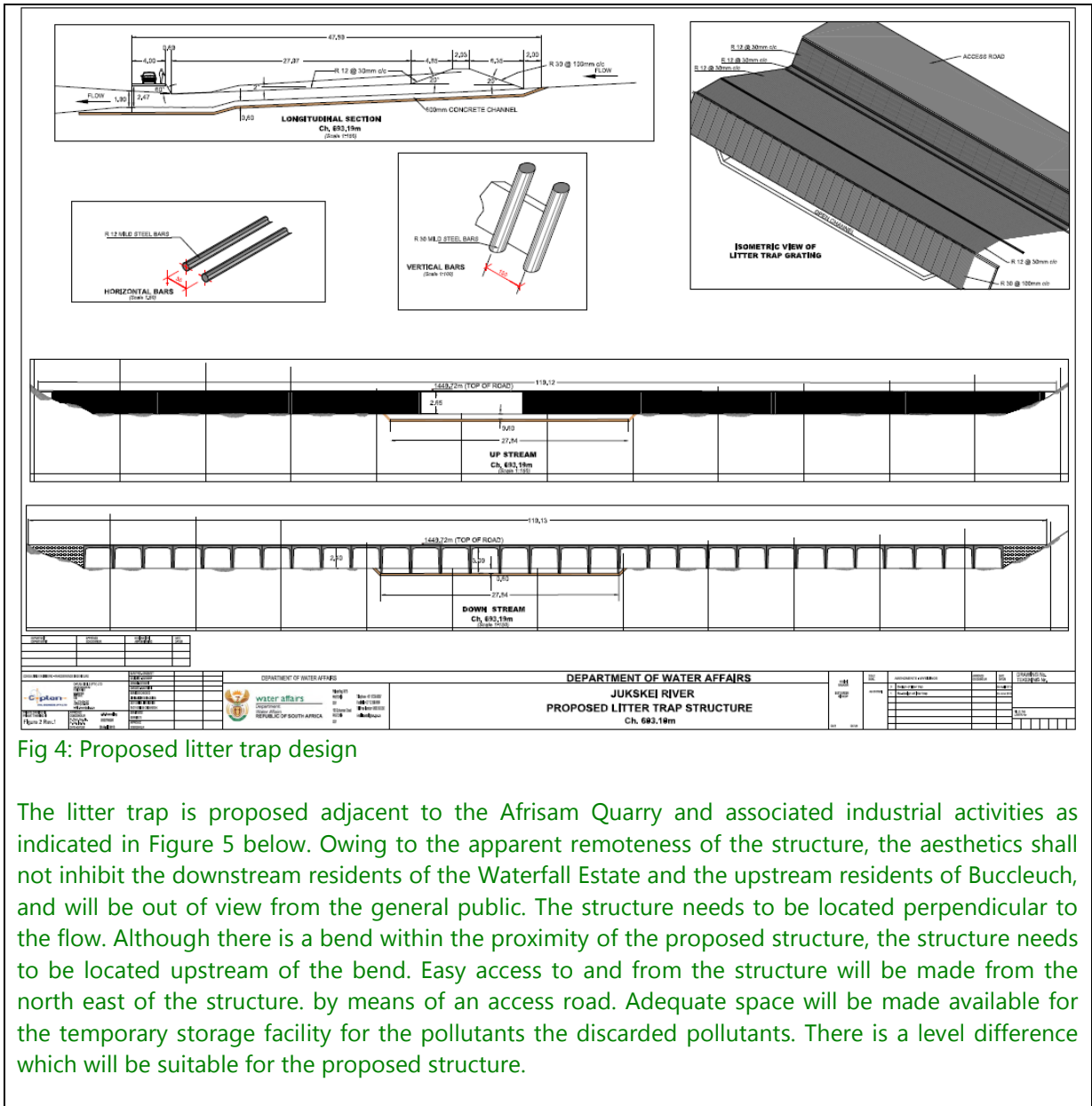


Fig 4: Proposed litter trap design

The litter trap is proposed adjacent to the Afrisam Quarry and associated industrial activities as indicated in Figure 5 below. Owing to the apparent remoteness of the structure, the aesthetics shall not inhibit the downstream residents of the Waterfall Estate and the upstream residents of Buccleuch, and will be out of view from the general public. The structure needs to be located perpendicular to the flow. Although there is a bend within the proximity of the proposed structure, the structure needs to be located upstream of the bend. Easy access to and from the structure will be made from the north east of the structure. by means of an access road. Adequate space will be made available for the temporary storage facility for the pollutants the discarded pollutants. There is a level difference which will be suitable for the proposed structure.



Fig 5: Proposed location of litter trap.

2. 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:

Title of legislation, policy or guideline	Administering authority	Promulgation date
National Environmental Management Act No. 107 of 1998 as amended.	National & Provincial	27 November 1998
<p>GNR 544, Listing Notice 1, Activity 11 (iii) & (xi)</p> <p>The construction of bridges and infrastructure or structures covering 50m² or more where such construction occurs within a watercourse or within 32 metres of a watercourse, measured from the edge of the watercourse, excluding where such construction will occur behind the development setback line.</p> <p><i>The proposed litter trap is approximately 120m in length and 45m wide i.e. approximately 5400m² surface area.</i></p>	Gauteng Department of Agriculture and Rural Development (GDARD)	18 June 2010
<p>GNR 544, Listing Notice 1, Activity 18 (i)</p> <p>The infilling or depositing of any material of more than 5 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock from a watercourse.</p>		

<p><i>The proposed litter trap consists of an extensive grid and culvert bridge which exceeds 5m³.</i></p> <p>GNR 544, Listing Notice 1, Activity 12 (a)</p> <p>The clearance of an area of 300m² or more of vegetation where 75% or more of the vegetative cover constitutes indigenous vegetation</p> <p><i>Although the position of the litter is within an area that is extremely degraded the extended surrounding area is classified as Egoli Granite Grassland.</i></p> <p>GNR 544, Listing Notice 1, Activity 16(iv)(b)(iii)&(v)</p> <p>The construction of infrastructure covering 10m² or more where such construction occurs within a watercourse or within 32metres of a watercourse measured from the edge of the watercourse, in Gauteng in sensitive areas as identified in an Environmental Management Framework as contemplated in Chapter 5 of the Act and as adopted by the Competent Authority and on sites identified as irreplaceable or important in the Gauteng Conservation Plan</p> <p><i>The Gauteng Conservation Plan highlights the Jukskei River and the area surrounding it at this proposed location for the litter trap as an important site for vegetation and ecological processes.</i></p>		
National Water Act (Act 36 of 1998)	Department of Water Affairs	1998
SANS 1200 Series: Standardise Specifications for Civil Engineering Construction	South African Bureau of Standards	1981 – 1996
Guideline Documents 3,4 & 5 to EIA Regulations, 2006	DEAT	2006
IEM Guideline Series 5 and 7, Companion to the NEMA EIA Regulations 2010	DEAT	2010
Occupational Health and Safety Act (Act 85 of 1993)	Department of Labour	1993

3. ALTERNATIVES

Describe the proposal and alternatives that are considered in this application. Alternatives should include a consideration of all possible means by which the purpose and need of the proposed activity could be accomplished. The determination of whether the 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.

The no-go option must in all cases be included in the assessment phase as the baseline against which the impacts of the other alternatives are assessed. **Do not** include the no go option into the alternative table below.

Note: 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.

Provide a description of the alternatives considered

No.	Alternative type, either alternative: site on property, properties, activity, design, technology, operational or other (provide details of "other")	Description
1.	<p>Preferred Alternative</p> <p>Proposal for the construction of one litter trap within the Jukskei River</p>	<p>The application is for the construction of a litter trap to facilitate the removal of litter and debris in the Jukskei River located adjacent to the AfriSam Quarry and associated industrial activities. The suggested litter trap composition (Refer to Fig 4 and Annexure C) consists of an open channel to accommodate low flows, a series of horizontal and angled steel bars forming the grating that will trap the litter and a series of concrete culverts downstream which will inhibit water flow as little as possible and enable all forms of aquatic life to pass through with minimal hindrance and disruption. An access road for litter removal and maintenance is accommodated on top of the concrete culverts.</p>
2.	<p>Proposal for the construction of a number of litter traps within the Jukskei River</p>	<p>It is proposed that due to the extent of litter experienced in the Jukskei River that a series of 5 (five) litter traps be implemented within the catchment area specifically from the stretch of river downstream from Alexandra towards to the Waterfall Estate between Marlboro Drive and the N1 Highway. Due to the challenges involved in terms of land owners and stake holders in implementing a series of litter traps it is deemed preferential to rather implement one litter trap successfully. Refer to Fig 6 below which highlights the position of the five proposed litter traps.</p>

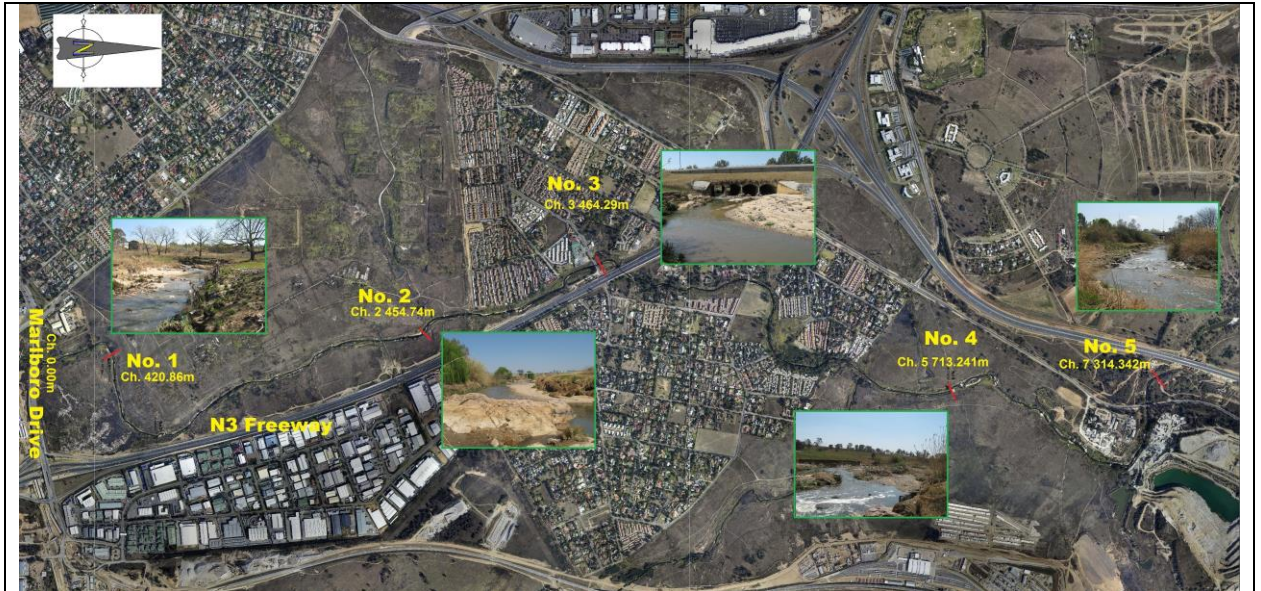


Fig 6: Proposed positions for 5 litter traps in the Jukskei River (Alternative 2)

Note that the preferred Alternative 1 for the installation of one litter trap is located in the vicinity of the proposed litter trap position 5 of Alternative 2.

NOTE: The numbering in the above table must be consistently applied throughout the application report and process

4. PHYSICAL SIZE OF THE ACTIVITY

Indicate the total physical size (footprint) of the proposal as well as alternatives. Footprints are to include all new infrastructure (roads, services etc), impermeable surfaces and landscaped areas:

Alternative:

Alternative 1 (Proposed activity)

Alternative 2

Alternative 3 (if any)

Size of the activity:

Approx. 6500m ²
Approx. 32500m ²
N/A
Ha/ m ²

or, for linear activities:

Alternative:

Alternative 1(Proposed activity)

Alternative 2 (if any)

Alternative 3 (if any)

Length of the activity:

N/A
N/A
N/A
m/km

Indicate the size of the site(s) or servitudes (within which the above footprints will occur):

Note: The litter traps are located in the Jukskei River on farm portions of relatively large extent. The size of the construction area has therefore been deemed more relevant to this application and therefore indicated below.

Alternative:

Alternative 1 (Preferred Alternative)

Alternative 2

Alternative 3 (if any)

Size of the site/servitude:

Approx. 10000m ²
Approx. 50000m ²
N/A
Ha/m ²

5. SITE ACCESS

Alternative 1 (Proposal)

Does ready access to the site exist, or is access directly from an existing road?

YES	NO
m	

If NO, what is the distance over which a new access road will be built

Describe the type of access road planned:

The general area surrounding the litter trap is extremely degraded due to the existing quarry and a number of informal dirt roads are located in this area which can be used to access the litter trap for maintenance and litter removal purposes.

Include the position of the access road on the site plan.

Alternative 2

Does ready access to the site exist, or is access directly from an existing road?

YES	NO
Undetermined	

If NO, what is the distance over which a new access road will be built

Describe the type of access road planned:

Service roads will be required for each of the proposed litter traps. Negotiations with the surrounding landowners would be required to ascertain the exact location and therefore length of the service roads.

Include the position of the access road on the site plan.

Alternative 3

Does ready access to the site exist, or is access directly from an existing road?

YES	NO
m	

If NO, what is the distance over which a new access road will be built

Describe the type of access road planned:

N/A

Include the position of the access road on the site plan.

PLEASE NOTE: Points 6 to 8 of Section A must be duplicated where relevant for alternatives

Section A 6-8 has been duplicated

0

Number of times

(only complete when applicable)

Note: As alternative 2 is not the preferred alternative and the proposed positions are preliminary, a detailed site plan for alternative 2 is not provided.

6. SITE OR ROUTE PLAN REFER TO APPENDIX A

A detailed site or route (for linear activities) 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 scale of the plan, which must be at least a scale of 1:2000 (scale can not be larger than 1:2000 i.e. scale can not be 1:2500 but could where applicable be 1:1500)
- the property boundaries and numbers of all the properties within 50m of the site;
- the current land use as well as the land use zoning of each of the properties adjoining the site or sites;
- the exact position of each element of the application as well as any other structures on the site;
- the position of services, including electricity supply cables (indicate above or underground), water supply pipelines, boreholes, street lights, sewage pipelines, septic tanks, storm water infrastructure and telecommunication infrastructure;
- walls and fencing including details of the height and construction material;
- servitudes indicating the purpose of the servitude;
- sensitive environmental elements on and within 100m of the site or sites including (but not limited thereto):
 - Rivers and wetlands;
 - the 1:100 and 1:50 year flood line;
 - ridges;
 - cultural and historical features;
 - areas with indigenous vegetation (even if it is degraded or infested with alien species);
- for gentle slopes the 1m contour intervals must be indicated on the plan and whenever the slope of the site exceeds 1:10, the 500mm contours must be indicated on the plan; and
- the positions from where photographs of the site were taken.
- Where a watercourse is located on the site at least one cross section of the water course must be included (to allow the 32m position from the bank to be clearly indicated)

7. SITE PHOTOGRAPHS REFER TO APPENDIX B

Colour photographs from the center 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 the appropriate Appendix. It should be supplemented with additional photographs of relevant features on the site, where applicable.

8. FACILITY ILLUSTRATION REFER TO APPENDIX C

A detailed illustration of the activity must be provided at a scale of 1:200 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. To be attached in the appropriate Appendix.

SECTION B: DESCRIPTION OF RECEIVING ENVIRONMENT

Note: Complete Section B for the proposal

Further:

Instructions for completion of Section B for linear activities

- 1) For linear activities (pipelines etc) it may be necessary to complete Section B for each section of the site that has a significantly different environment.
- 2) Indicate on a plan(s) the different environments identified
- 3) Complete Section B for each of the above areas identified
- 4) Attach to this form in a chronological order
- 5) Each copy of Section B must clearly indicate the corresponding sections of the route at the top of the next page.

Section B has been duplicated for sections of the route times

Instructions for completion of Section B for location/route alternatives

- 1) For each location/route alternative identified the entire Section B needs to be completed
- 2) Each alternative location/route needs to be clearly indicated at the top of the next page
- 3) Attach the above documents in a chronological order

Section B has been duplicated for location/route alternatives times

(complete only when appropriate)

Note: Alternative 2's Position 5 is the preferred single position for Alternative 1. This section of the report has therefore not been repeated.

Instructions for completion of Section B when both location/route alternatives and linear activities are applicable for the application

Section B is to be completed and attachments order in the following way

- All significantly different environments identified for Alternative 2 is to be completed and attached in a chronological order; then
- all significantly different environments identified for Alternative 3 is to be completed and attached chronological order
- etc

Section B — Section of Route (complete only when appropriate for above)

Section B — Location/route Alternative No. (complete only when appropriate for above)

1. PROPERTY DESCRIPTION

Property description:

The proposed five positions are located within the Jukskei River between the Marlboro Drive and N1 Highway on the Farms Waterval 5 IR and Bergvalei 37 IR. The preferred alternative position is located next to the Afri-Sam Quarry and is described as Position 5 and is located on the Farm Waterval 5 IR. The site falls within the jurisdictional boundary of the Johannesburg Metropolitan Municipality.

EcoAgent CC conducted an evaluation of the biodiversity of the site (**Refer to Appendix G1**) and describes the site as follows:

This stretch of the river is situated in Bankenveld, as described by Acocks (1988). Low & Rebelo (1996) described the vegetation of the area as Rocky Highveld Grassland. In the new vegetation map of South Africa (Mucina & Rutherford 2006) the area falls within the Egoli Granite Grassland. According to DEAT & SANBI (2009) the Egoli Granite Grassland is considered to be an Endangered Ecosystem. However, the natural vegetation of the particular five sites, represented by the riparian vegetation of the Jukskei River is quite disturbed and rather transformed.

Litter Trap Position 1

This position is on the property of the University of the Witwatersrand. The Jukskei River cuts here through undulating landscape with plant species rich Egoli granite Grassland.

Litter Trap Position 2

This position is on the property of the University of the Witwatersrand. The Jukskei River cuts here through slightly undulating to flat landscape, most of the area covered by *Eragrostis curvula* dominated old fields / planted pasture. Kikuyu grass (*Pennisetum clandestinum*) and Medicago sativa (lucerne) are also prominent.

Litter Trap Position 3

This position is in Buccleuch, between a Caltex petrol station and the N3 Highway, on highly disturbed land. The Jukskei River cuts here through slightly undulating to flat landscape, most totally transformed, with no natural indigenous vegetation remaining.

Litter Trap Position 4

This Position is on an open space on the Farm Waterval 5 IR. The Jukskei River cuts here through undulating landscape. The Position is close to the junction of the Modderfontein Spruit with the Jukskei River. Although the surrounding grassland is species rich Egoli Granite Grassland, the banks of the River are highly disturbed and covered with weeds and alien woody species.

Litter Trap Position 5 (Preferred Alternative 1)

This position is east of the R101, immediately south of the big quarry/ crusher on highly disturbed land. The Jukskei River cuts

here through slightly undulating to flat landscape, almost totally transformed, with no natural indigenous vegetation remaining. The River bank is largely destroyed by crusher dumps that have been deposited up to the River edge. This would now be totally illegal.

2. ACTIVITY POSITION

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

Alternative 1	Latitude (S):	Longitude (E):
Litter Trap Position 5	-26°2'0"	28°6'51"

In the case of linear activities:

Starting point of the activity	Latitude (S):	Longitude (E):
Middle point of the activity		
End point of the activity		

For route alternatives that are longer than 500m, please provide co-ordinates taken every 250 meters along the route and attached in the appropriate Appendix

Addendum of route alternatives attached N/A

3. GRADIENT OF THE SITE

Indicate the general gradient of the site.

Flat	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5
-------------	-------------	-------------	-------------	--------------	-------------	------------------

4. LOCATION IN LANDSCAPE

Indicate the landform(s) that best describes the site.

Ridgeline	Plateau	Side slope of hill/ridge	Valley	Plain	Undulating plain/low hills	River front
-----------	---------	--------------------------	--------	-------	-----------------------------------	-------------

5. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

a) Is the site located on any of the following?

Shallow water table (less than 1.5m deep)	YES	NO
Dolomite, sinkhole or doline areas	YES	NO
Seasonally wet soils (often close to water bodies) (contained within the Jukskei River)	YES	NO
Unstable rocky slopes or steep slopes with loose soil	YES	NO
Dispersive soils (soils that dissolve in water)	YES	NO
Soils with high clay content (clay fraction more than 40%)	YES	NO
Any other unstable soil or geological feature	YES	NO
An area sensitive to erosion	YES	NO

(Information in respect of the above will often be available at the planning sections of local authorities. Where it exists, the 1:50 000 scale Regional Geotechnical Maps prepared by Geological Survey may also be used).

b) are any caves located on the site(s) YES NO

If yes to above provide location details in terms of latitude and longitude and indicate location on site or route map(s)

Latitude (S):	Longitude (E):
°	°

c) are any caves located within a 300m radius of the site(s) YES NO

If yes to above provide location details in terms of latitude and longitude and indicate location on site or route map(s)

Latitude (S):	Longitude (E):
°	°

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d) are any sinkholes located within a 300m radius of the site(s)

YES	NO
-----	----

If yes to above provide location details in terms of latitude and longitude and indicate location on site or route map(s)

Latitude (S): _____ **Longitude (E):** _____

If any of the answers to the above are "YES" or "unsure", specialist input may be requested by the Department

6. AGRICULTURE

Does the site have high potential agricultural soils as contemplated in the Gauteng Agricultural Potential Atlas (GAPA)? **The area has low agricultural potential according to the Gauteng Biodiversity Gap Analysis Project Conservation Plan Version 3 (C-Plan). The Gauteng Agricultural potential Atlas (GAPA 3) also indicates that the subject property is not on a site denoted as an Agricultural Hub.**

YES	NO
-----	----

Please note: The Department may request specialist input/studies depending on the nature of the soil type and location of the site

7. GROUNDCOVER

To be noted that the location of all identified rare or endangered species or other elements should be accurately indicated on the site plan(s).

Indicate the types of groundcover present on the site and include the estimated percentage found on site **(Alternative 1 – Litter trap Position 5 indicated only).**

Natural veld - good condition % =	Natural veld with scattered aliens % =	Natural veld with heavy alien infestation % =	Veld dominated by alien species 90 %	Landscaped (vegetation) % =
Sport field % =	Cultivated land % =	Paved surface (hard landscaping) % =	Building or other structure % =	Bare soil % = 10%

Please note: The Department may request specialist input/studies depending on the nature of the groundcover and potential impact(s) of the proposed activity/ies.

Are there any rare or endangered flora or fauna species (including red list species) present on the site.

GDARD requested that the possible presence of the red data plant species *Brachycorythis conica*, *Gnaphalium nelsonii* and *Trachyandra erythrorrhiza* on the sites be investigated. The habitat in the wet zone was probably suitable for *Trachyandra erythrorrhiza*, and also for *Habenaria bicolor*, but the habitats close to the river are completely destroyed, consequently none of these species were found and the chances that they could still occur are very remote. No species of conservation concern currently occur on the sites investigated.

Neither the spotted-necked otter nor the clawless otter are presently permanent residents of the Jukskei River between Litter Trap Positions 1 and 5.

No rare or threatened avian species were observed although it was noted by the avian specialist that only the Lanner Falcon and Melodius Lark have the possibility of being frequent visitors to the habitats near the sites.

If YES, specify and explain:

YES	NO
-----	----

N/A

Are there any rare or endangered flora or fauna species (including red list species) present within a 200m (if within urban edge, May 2002) or within 600m (if outside the urban edge, May 2002) radius of the site

Although no rare or endangered flora species were found it is slightly possible that, due to the location of Litter Trap Positions 1 and 4 within rich Egoli Granite Grassland, some species could be present. It is unlikely that rare or endangered flora species would be found near Litter Trap Position 2 or 3 due to these areas being transformed and it is highly probable that no rare or endangered flora species would be found near Litter Trap Position 5 due to this area being completely destroyed by the quarry.

Otters are most unlikely to wander more than 20 meters away from the riparian zone and no otters or signs of their residence were observed within 20m of the river. The fauna specialist noted that it is superfluous to have to regard the possible presence of Otters further than 20m from the river.

No rare or threatened avian species were observed although the Lanner Falcon and Melodius Lark have the possibility of being frequent visitors to the habitats near the sites.

If YES, specify and explain:

YES	NO
-----	----

N/A

Are there any special or sensitive habitats or other natural features present on the site?

If YES, specify and explain:

YES	NO
-----	----

The Litter Trap/s are located within the Jukskei River. An Aquatic Ecology Assessment: was conducted by Ecotone Freshwater Consultants (**Refer to Appendix G2**). The field assessment included a characterisation of instream and riparian areas. The assessment concluded that the reach of the Jukskei River assessed was in a Largely to Seriously Modified ecosystem state overall. The main findings of the study were as follows:

Water Quality

With the exception of nitrogen, all other in situ and chemical constituents assessed were within benchmark criteria. Elevated Nitrogen levels indicate nutrient enrichment and organic pollution in the reach.

Diatom Assessment

The diatom assemblages mostly consisted of pollution tolerant species, characteristic of circumneutral to alkaline, low oxygenated, eutrophic waters. The general water quality of the sites was of a Poor and Bad quality according to the diatoms, indicating that the ecological state of the sites was heavily impacted by anthropogenic activities. The percentage Pollution Tolerant Values showed anthropogenic induced organic pollution, particularly at Position 1 and 3. Position 1 was the most impacted site compared to 2 and 3 during the November 2012 survey, and Position 5 during the June 2012 survey compared to Position 4.

Habitat Integrity

The surrounding catchment utilisation has contributed to the major decline in habitat integrity as a result of flow, bed and channel modification, alteration in inundation, a decrease in indigenous vegetation within the riparian zone, exotic vegetation encroachment, bank erosion and reduced water quality. With the exception of JR2, the remainder of the sites assessed classed in a D Ecological Category inferring a Largely Modified state. Position 2, however, showed a slightly more intact instream and riparian habitat, thereby classing in a C Ecological Category, indicating a Moderately Modified state.

Macroinvertebrate Assessment

All the sites assessed indicated that the aquatic macroinvertebrate assemblage was in a Critically Modified state with extremely low species diversity. A total of 17 taxa were sampled at all sites, with the majority of the taxa sampled tolerant to pollution.

Fish Assessment

The fish community associated with the reach assessed was in a Seriously Modified state where only Position 5 yielded two fish species, despite the availability of suitable habitat present at the remainder of sites assessed.

Riparian Vegetation Assessment

The riparian zone for the entire reach reflects an impaired state. Positions 1, 2 and 5 fall within a D/E Ecological Category and translates into a Largely Modified state, while Positions 3 and 4 fall into an E/F Ecological Category and infers a Seriously Modified state. The main reasons for the decrease in riparian zone integrity are vegetation removal, alien vegetation infestation, alteration in hydrology and water poor quality.

The system assessed showed a Largely to Critically Modified Present Ecological State (PES) and low Ecological Importance and Sensitivity (EIS).

A Wetland Assessment for the proposed litter traps: Jukskei River was conducted by Spatial Ecological Consulting CC (**Refer to Appendix G3**). Wetlands present at the five litter traps were assessed and can a general description is as follows:

The litter trap position 1

Seepage wetlands are present on the northern and southern banks of the Jukskei at this position. The seepage wetland on the northern bank has a number of small individuals of *Populus alba*. The seepage entering the river from the south is dominated by *Typha capensis*. It appears that this wetland receives some water from the road. Seepage zones are common in these grassland areas located on granite, especially where the soil is shallow.

The litter trap position 2

Seepage wetlands are present on the eastern bank of the Jukskei at this position. It appears that this wetland receives some water from the road (N3). Seepage zones are common in these grassland areas located on granite, especially where the soil is shallow. A number of wetland species are present west of the Jukskei in the disturbed grassland zone. Several soil disturbances are present, including old ruins.

The litter trap position 3

The Jukskei river passes through Buccluech at this location and is deeply channelled. Development takes place up to the edge of the macro-channel of the river and the area is very disturbed. The N3 passes over the river downstream of the site and Buccluech Drive crosses the river upstream.

The litter trap position 4

No wetland is present at this location, but a river is present. The river is deeply eroded.

The litter trap position 5

The initial approximate position of Litter Trap Position 5 was proposed to be slightly down stream to the west of the current proposed preferred position. Following due consideration and in depth studies by C-Plan Consulting Engineers the litter trap is proposed slightly upstream just before the bend in the river. The river at this point is deeply eroded and receives sediment from the brick making facilities located on the northern bank of the river. The brick making activities are present up to the bank of the channel and the riparian zone on the northern bank has been destroyed. An Unchannelled Valley Bottom Wetland is located on the eastern embankment of the River at the new proposed litter trap position 5. This wetland was not assessed as part of the initial wetland assessment. The wetland will be assessed and the results of the assessment included in the Final BAR.

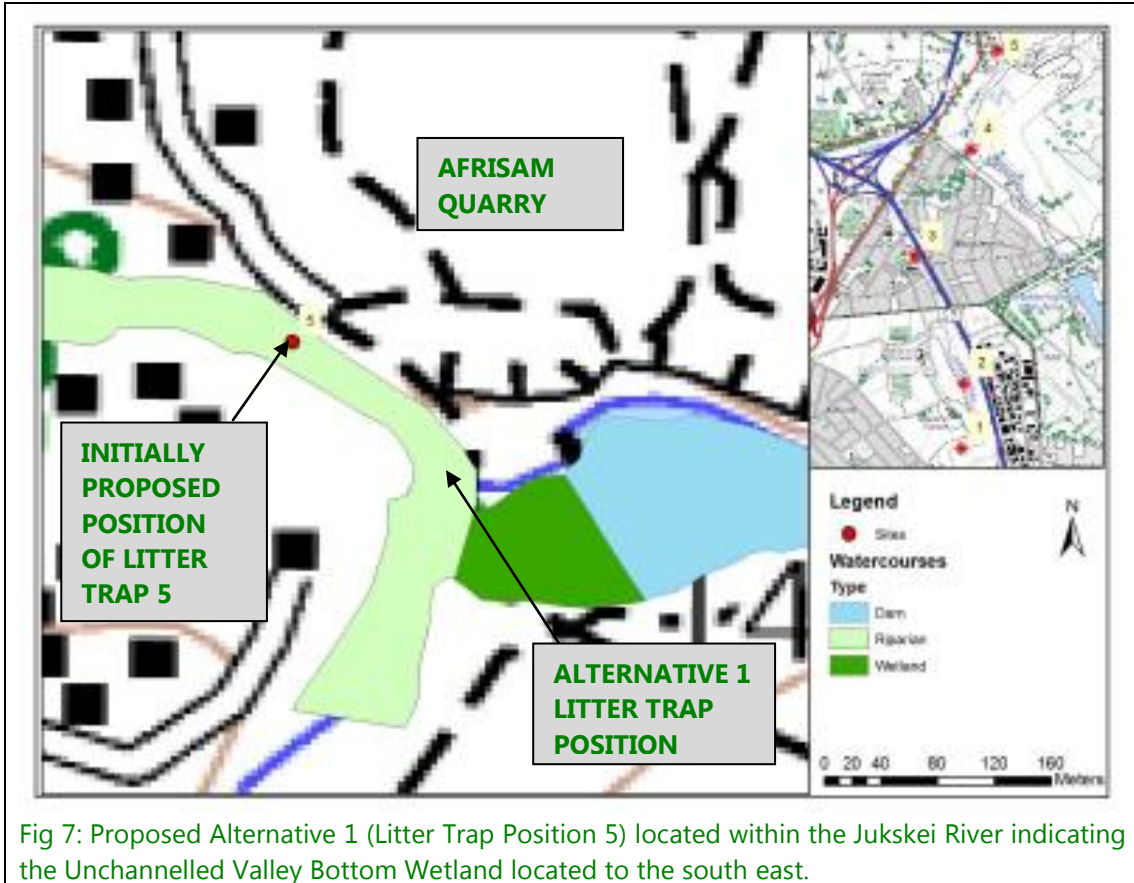


Fig 7: Proposed Alternative 1 (Litter Trap Position 5) located within the Jukskei River indicating the Unchannelled Valley Bottom Wetland located to the south east.

Was a specialist consulted to assist with completing this section	YES	NO
If yes complete specialist details		
Name of the specialist:	EcoAgent CC	
Qualification(s) of the specialist:	GJ Bredenkamp: DSc PrSciNat IL Rautenbach: PhD PrSciNat AC Kemp: PhD PrSciNat	
Postal address:	PO Box 23355, Monument Park	
Postal code:	0181	
Telephone:	012 460 2525	Cell: 082 5767046
E-mail:	george@ecoagent.co.za	Fax: 012 460 2525
Are any further specialist studies recommended by the specialist?	YES	NO
If YES, specify:	N/A	
If YES, is such a report(s) attached?	YES	NO
If YES list the specialist reports attached below	N/A	

Signature of specialist: _____ Date: _____

Name of the specialist:	Ecotone Freshwater Consultants	
Qualification(s) of the specialist:	Gina Walsh: M.Sc (Zoology) and Pri. Sci. Nat.	
Postal address:	PO Box 84, Florida	
Postal code:	1710	
Telephone:	011 672 1375	Cell: _____

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E-mail: contact@ecotone-sa.co.za Fax: 011 673 1192

Are any further specialist studies recommended by the specialist? YES NO
 If YES, specify: N/A

If YES, is such a report(s) attached? YES NO
 If YES list the specialist reports attached below
N/A

Signature of specialist: _____ Date:

Name of the specialist: Spatial Ecological Consulting CC
 Qualification(s) of the specialist: Andre Grobler: B.Sc hons UP Pri.Sci.Nat
Ina Venter: MSc UP Pr.Sci.Nat
 Postal address: _____
 Postal code: _____
 Telephone: _____ Cell: 083 370 0850
 E-mail: inaventer@spatial-ecological.co.za Fax: _____

Are any further specialist studies recommended by the specialist? YES NO
 If YES, specify: N/A

If YES, is such a report(s) attached? YES NO
 If YES list the specialist reports attached below
N/A

Signature of specialist: _____ Date:

Please note; If more than one specialist was consulted to assist with the filling in of this section then this table must be appropriately duplicated

8. LAND USE CHARACTER OF SURROUNDING AREA

Using the associated number of the relevant current land use or prominent feature from the table below, fill in the position of these land-uses in the vacant blocks below which represent a 500m radius around the site.

Note: Land use character surrounding preferred Alternative 1 (Litter Trap Position 5) only, has been indicated below.

1. Vacant land	2. River, stream, wetland (Jukskei River)	3. Nature conservation area	4. Public open space	5. Koppie or ridge
6. Dam or reservoir	7. Agriculture	8. Low density residential	9. Medium to high density residential	10. Informal residential
11. Old age home	12. Retail	13. Offices	14. Commercial & warehousing	15. Light industrial
16. Heavy industrial ^{AN}	17. Hospitality facility	18. Church	19. Education facilities	20. Sport facilities
21. Golf course/ polo fields	22. Airport ^N	23. Train station or shunting yard ^N	24. Railway line ^N	25. Major road (4 lanes or more) ^N
26. Sewage treatment plant ^A	27. Landfill or waste treatment site ^A	28. Historical building	29. Graveyard	30. Archeological site
31. Open cast mine	32. Underground mine	33. Spoil heap or slimes dam ^A	34. Small Holdings	
Other land uses (describe):				

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NOTE: Each block represents an area of 250m X 250m

NORTH				
31	31	31	31	31
15	15	2	31	31
15	15	SITE	1	6
15	15	2	1	1
1	1	1	1	1
SOUTH				

WEST
EAST

Note: More than one (1) Land-use may be indicated in a block

Please note: The Department may request specialist input/studies depending on the nature of the land use character of the area and potential impact(s) of the proposed activity/ies. Specialist reports that look at health & air quality and noise impacts may be required for any feature above and in particular those features marked with an "A" and with an "N" respectively.

Have specialist reports been attached

YES

NO

If yes indicate the type of reports below

- An Evaluation of the Biodiversity of the Proposed Development of Five litter traps in the Jukskei River by EcoAgent CC (**Appendix G1**)
- Aquatic Ecology Assessment: Proposed Litter Traps, Jukskei River by Ecotone Freshwater Consultants (**Appendix G2**)
- Wetland Assessment for the proposed litter traps: Jukskei River by Spec CC (**Appendix G3**)

9. SOCIO-ECONOMIC CONTEXT

Describe the existing social and economic characteristics of the area and the community condition as baseline information to assess the potential social, economic and community impacts.

As per figure 2 and 6 above the stretch of the Jukskei within which the five litter traps are proposed are surrounded by a mix of land uses ranging from open space/park (litter trap positions 1,2 and 4) to residential (litter tap position 3) and mining and industrial (litter trap position 5). The Woodmead, and Jukskei View areas, specifically, are subject to future expansion, with the Waterfall Business and Residential Developments growing at a rapid rate. The installation of a litter trap/s will greatly improve the state of the Jukskei River enhancing the surrounding area and decreasing the current health hazards to the surrounding community.

10. CULTURAL/HISTORICAL FEATURES

Please be advised that if section 38 of the National Heritage Resources Act 25 of 1999 is applicable to your proposal or alternatives, then you are requested to furnish this Department with written comment from the South African Heritage Resource Agency (SAHRA) – Attach comment in appropriate annexure

38. (1) Subject to the provisions of subsections (7), (8) and (9), any person who intends to undertake a development categorised as-
- (a) the construction of a road, wall, powerline, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length;
 - (b) the construction of a bridge or similar structure exceeding 50m in length;
 - (c) any development or other activity which will change the character of a site-
 - (i) exceeding 5 000 m² in extent; or
 - (ii) involving three or more existing erven or subdivisions thereof; or

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- (iii) involving three or more erven or divisions thereof which have been consolidated within the past five years; or
- (iv) the costs of which will exceed a sum set in terms of regulations by SAHRA or a provincial heritage resources authority;
- (d) the re-zoning of a site exceeding 10 000 m2 in extent; or
- (e) any other category of development provided for in regulations by SAHRA or a provincial heritage resources authority, must at the very earliest stages of initiating such a development, notify the responsible heritage resources authority and furnish it with details regarding the location, nature and extent of the proposed development.

Are there any signs of culturally (aesthetic, social, spiritual, environmental) or historically significant elements, as defined in section 2 of the National Heritage Resources Act, 1999, (Act No. 25 of 1999), including archaeological or palaeontological sites, on or close (within 20m) to the site?

YES	NO
-----	----

If YES, explain:

A Heritage Scoping Report was conducted by Cultmatrix cc as part of the Environmental Authorisation process for Jukskei View x 19 which forms part of the Waterfall City development. A number of sites with some heritage value were located on the Remainder of the Farm Waterval 5-IR (Refer to Fig 7 below).

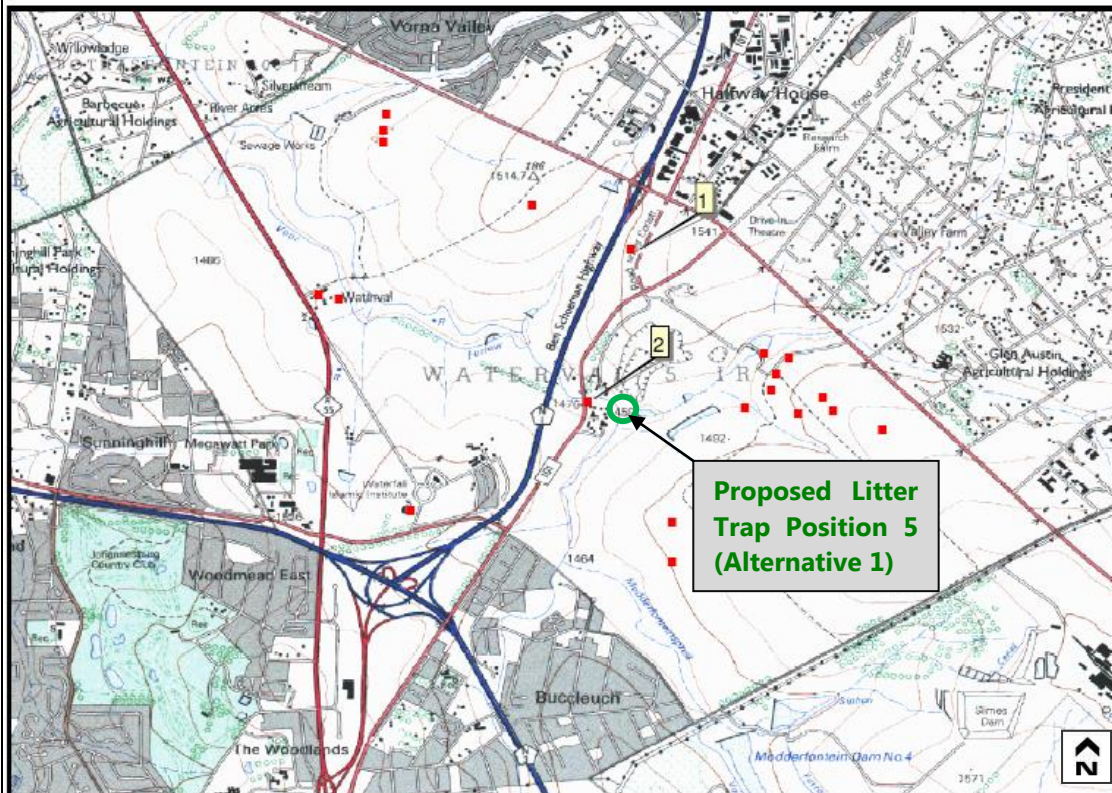


Fig 7: Map showing location of all known sites of cultural significance on the Farm Waterval 5-IR.

No sites, features or objects of cultural heritage significance are located within 20m of the litter traps, with specific reference to litter trap 5 (Alternative 1).

If uncertain, the Department may request that specialist input be provided to establish whether there is such a feature(s) present on or close to the site.

Briefly explain the findings of the specialist if one was already appointed:

N/A

Will any building or structure older than 60 years be affected in any way?

YES	NO
-----	----

Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?

YES	NO
-----	----

If yes, please attached the comments from SAHRA in the appropriate Appendix

SECTION C: PUBLIC PARTICIPATION

1. ADVERTISEMENT

The Environmental Assessment Practitioner must follow any relevant guidelines adopted by the competent authority in respect of public participation and must at least –

- 1(a) Fix a notice in a conspicuous place, on the property where it is intended to undertake the activity which states that an application will be submitted to the competent authority in terms of these regulations and which provides information on the proposed nature and location of the activity, where further information on the proposed activity can be obtained and the manner in which representations on the application may be made.
- 1(b) inform landowners and occupiers of adjacent land of the applicant's intention to submit an application to the competent authority
- 1(c) inform landowners and occupiers of land within 100 metres of the boundary of the property where it is proposed to undertake the activity and whom may be directly affected by the proposed activity of the applicant's intention to submit an application to the competent authority;
- 1(d) inform the ward councillor and any organisation that represents the community in the area of the applicant's intention to submit an application to the competent authority;
- 1(e) inform the municipality which has jurisdiction over the area in which the proposed activity will be undertaken of the applicant's intention to submit an application to the competent authority; and
- 1(f) inform any organ of state that may have jurisdiction over any aspect of the activity of the applicant's intention to submit an application to the competent authority; and
- 1(g) place a notice in one local newspaper and any *Gazette* that is published specifically for the purpose of providing notice to the public of applications made in terms of these regulations.

2. LOCAL AUTHORITY PARTICIPATION

Local authorities are key interested and affected parties in each application and no decision on any application will be made before the relevant local authority is provided with the opportunity to give input. The planning and the environmental sections of the local authority must be informed of the application at least 30 (thirty) calendar days before the submission of the application.

Has any comment been received from the local authority?

YES	NO
-----	----

If "YES", briefly describe the comment below (also attach any correspondence to and from the local authority to this application):

A meeting was held on 1 February 2013 between ILA, C-Plan Consulting Engineers and representatives of the City of Johannesburg Metropolitan Municipality. **Refer to Annexure E5 for the attendance register and notes of the meeting.** The meeting can be summarised as follows:

The aim of the meeting was to highlight potential issues to be addressed in the EIA process and to obtain inputs from the CoJ. As the Municipality is experiencing their own challenges with the Bruma Lake Litter Trap in terms of budget and responsibility for operation and maintenance they have stated that they would have no resources to take over maintenance of a privately constructed litter trap. The Municipality highlighted some specific issues to be addressed in the EIA process, namely:

- What problem is being addressed by the proposal, its source and extent?
- Why the litter trap?
- Where the litter trap can be best placed to solve the problem?
- Is there sewer infrastructure located along the river? Are there any sewer leakages or stormwater outlets opening into the stream/ other sources of litter? Odours can be a big problem.
- How the challenge in terms of security will be addressed?
- How maintenance will be done and responsibility?
- The geology and hydrology of the area must be considered. The geology of the area and the proposed development will result in a significant increase in flows in the future. Look at future flows and consider that in designs. Siltation bound to occur. Risk of litter trap being washed away? Risk of exacerbating flooding to downstream developments?
- The problem must be solved in a holistic manner and there must be no negative impacts for future residents.

It was confirmed that the Basic Assessment Report would be circulated to the CoJ for review.

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If "NO" briefly explain why no comments have been received

N/A

3. CONSULTATION WITH OTHER STAKEHOLDERS

Any stakeholder that has a direct interest in the site or property, such as servitude holders and service providers, should be informed of the application at least 30 (thirty) calendar days before the submission of the application and be provided with the opportunity to comment.

Has any comment been received from stakeholders?

YES	NO
-----	----

If "YES", briefly describe the feedback below (also attach copies of any correspondence to and from the stakeholders to this application):

Three (3) meetings have been held with The Buccleuch Residents Action Community (BRACe) Jukskei River Sub-forum on 26 July 2012, 1 October 2012 and 21 February 2013. The purpose of the meetings was to establish a possible combined effort between the applicant and the BRACe in implementing the proposed litter trap/s. Various litter trap designs and the role of BRACe and the applicant was discussed at the meetings. **Refer to Annexure E5 for relevant correspondence w.r.t the meetings.**

A meeting was held between ILA and Kim Keiser of the Soul Foundation on 12 June 2012. The objective was to establish how the applicant could contribute to the Soul Foundation through membership and becoming involved in the foundation's proposed Integrated Waste program upstream of Waterfall Estates and a solution to the ongoing pollution of the entire catchment and specifically the impact on Waterfall Estates and downstream land owners. **Refer to Annexure E4 for relevant correspondence with Kim Keiser.**

If "NO" briefly explain why no comments have been received

N/A

4. GENERAL PUBLIC PARTICIPATION REQUIREMENTS

The Environmental Assessment Practitioner must ensure that the public participation is adequate and must determine whether a public meeting or any other additional measure is appropriate or not based on the particular nature of each case. Special attention should be given to the involvement of local community structures such as Ward Committees and ratepayers associations. Please note that public concerns that emerge at a later stage that should have been addressed may cause the competent authority to withdraw any authorisation it may have issued if it becomes apparent that the public participation process was inadequate.

The practitioner must record all comments and respond to each comment of the public / interested and affected party before the application is submitted. The comments and responses must be captured in a Comments and Responses Report as prescribed in the regulations and be attached to this application.

5. APPENDICES FOR PUBLIC PARTICIPATION

All public participation information is to be attached in the appropriate Appendix. The information in this Appendix is to be ordered as detailed below

Appendix E1: Proof of site notices

Appendix E2: Written notices issued to those persons detailed in 1(b) to 1(f) above

Appendix E3: Proof of newspaper advertisements

Appendix E4: Communications to and from persons detailed in Point 2 and 3

Appendix E5: Minutes of any public and or stakeholder meetings

Appendix E6: Comments and Responses Report

~~Appendix E7: Comments from I&APs on Basic Assessment (BA) Report (Not applicable – to be included in Final BAR)~~

~~Appendix E8: Comments from I&APs on amendments to the BA report (Not applicable)~~

Appendix E9: Copy of the register of I & AP's

~~Appendix E10: Comments from I&APs on the application (Not applicable, refer to E4)~~

~~Appendix E11: Other (Not applicable)~~

SECTION D: RESOURCE USE AND PROCESS DETAILS

Note: Section D is to be completed for the proposal

Instructions for completion of Section D for alternatives

- 1) For each alternative under investigation, where such alternatives will have different resource and process details (e.g. technology alternative), the entire Section D needs to be completed
- 4) Each alternative needs to be clearly indicated in the box below
- 5) Attach the above documents in a chronological order

Section D has been duplicated for alternatives times (complete only when appropriate)

Note: Section D has only been completed for the Preferred Alternative 1

Section D Alternative No. (complete only when appropriate for above)

1. WASTE, EFFLUENT, AND EMISSION MANAGEMENT

Solid waste management

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

YES	NO
-----	----

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

±12 m ³

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

All solid waste generated during the construction process will be placed in a bulk waste skip and disposed regularly by a recognised Waste Contractor at the nearest landfill site. Any hazardous materials that require disposal will be disposed of at a registered hazardous landfill site.

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

At a registered municipal waste site.

Will the activity produce solid waste during its operational phase? (The litter trap will collect waste from the Jukskei River)

YES	NO
-----	----

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

Approx. 5300m ³

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

The waste will be collected from the service by-pass road and transported to a waste skip for removal by a registered waste contractor.

Has the municipality or relevant service provider confirmed that sufficient air space exists for treating/disposing of the solid waste to be generated by this activity?

YES	NO
-----	----

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

Confirmation from Pikitup still to be obtained.

Note: 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, 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 relevant legislation?

YES	NO
-----	----

If yes, inform the competent authority and request a change to an application for scoping and EIA. Is the activity that is being applied for a solid waste handling or treatment facility?

YES	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. Describe the measures, if any, that will be taken to ensure the optimal reuse or recycling of materials:

Should it deem feasible the applicant will implement a sorting yard whereby the recyclables will be sorted from the waste to be removed by a recognised recycling company.

Liquid effluent (other than domestic sewage)

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

YES	NO
-----	----

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

N/A

If yes, has the municipality confirmed that sufficient capacity exist for treating / disposing of the liquid effluent to be generated by this activity(ies)?

YES	NO
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Will the activity produce any effluent that will be treated and/or disposed of on site?

YES	NO
m ³	

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

If yes describe the nature of the effluent and how it will be disposed.

N/A

Note that if effluent is to be treated or disposed on site 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?

YES	NO
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If yes, provide the particulars of the facility:

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

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

N/A

Liquid effluent (domestic sewage)

Will the activity produce domestic effluent that will be disposed of in a municipal sewage system?

YES	NO
-----	----

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

N/A	
-----	--

If yes, has the municipality confirmed that sufficient capacity exist for treating / disposing of the domestic effluent to be generated by this activity(ies)?

YES	NO
-----	----

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

YES	NO
-----	----

If yes describe how it will be treated and disposed of.

N/A

Emissions into the atmosphere

Will the activity release emissions into the atmosphere?

YES	NO
-----	----

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

YES	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.

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

N/A

2. WATER USE

Indicate the source(s) of water that will be used for the activity

municipal	Directly from water board	groundwater	river, stream, dam or lake	other	the activity will not use water
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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:

	liters
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If Yes, please attach proof of assurance of water supply, e.g. yield of borehole, in the appropriate Appendix

Does the activity require a water use permit from the Department of Water Affairs and Forestry?

YES	NO
-----	----

If yes, list the permits required

A Water Use License is required from the Department of Water Affairs in terms of the National Water Act Section 21 (c) and (i)

If yes, have you applied for the water use permit(s)? The Applicant has appointed ILA to conduct the WULA and ILA is in the process of compiling the application.

YES	NO
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If yes, have you received approval(s)? (attached in appropriate appendix)

YES	NO
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3. POWER SUPPLY

Please indicate the source of power supply eg. Municipality / Eskom / Renewable energy source

N/A

If power supply is not available, where will power be sourced from?

N/A

4. ENERGY EFFICIENCY

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

N/A

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

N/A

SECTION E: IMPACT ASSESSMENT

The assessment of impacts must adhere to the minimum requirements in the EIA Regulations, 2006, 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.

1. ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

Summarise the issues raised by interested and affected parties.

The need for and design of the litter trap must be such that it will not pose more challenges in terms of maintenance and security and that it will assist in solving the litter in the Jukskei River holistically without causing further damage to the water course and surrounding community..

Summary of response from the practitioner to the issues raised by the interested and affected parties
(A full response must be provided in the Comments and Response Report that must be attached to this report):

- **Why the litter trap?**

The application is for the construction of a litter trap to facilitate the removal of litter and debris in the Jukskei River. The estimated gross contributors of litter within the effective catchment region, according to C-Plan, are; Residential 69%, Commercial / industrial 27% and Informal settlements 4%. The total litter load in the waterways = 84 911m³ litter/year.

- **Where the litter trap can be best placed to solve the problem?**

The litter trap is proposed adjacent to the Afrisam Quarry and associated industrial activities as indicated in Figure 5. Owing to the apparent remoteness of the structure, the aesthetics shall not inhibit the downstream residents of the Waterfall Estate and the upstream residents of Buccleuch, and will be out of view from the general public. The structure needs to be located perpendicular to the flow. Although there is a bend within the proximity of the proposed structure, the structure needs to be located upstream of the bend. Easy access to and from the structure will be made from the north east of the structure by means of an access road. Adequate space will be made available for the temporary storage facility for the pollutants the discarded pollutants. There is a level difference which will be suitable for the proposed structure.

- **Is there sewer infrastructure located along the river? Are there any sewer leakages or stormwater outlets opening into the stream/ other sources of litter? Odours can be a big problem.**

Odours are usually associated with blockages of the litter trap and upstream damming and subsequent stagnation of water. The proposed design of the litter trap is such to minimize the inhibiting of water flow as much as possible and prevention of the blockage due to a self-cleaning trap instead of an in-line screen.

- **How the challenge in terms of security will be addressed?**

The trap is designed such that any vandalism that could occur would be relatively simple to remedy. The possible theft of the steel grid would require some heavy lifting and in the event of this occurring, this would only render the system non-functional for a limited duration until such time that the grid is replaced. Cleaning of the system will be via a service by-pass bridge so the issue of safety is resolved as it is not necessary for any submergence in the river or

climbing on the system to remove the litter from the grid.

• **How maintenance will be done and responsibility?**

The water flowing through the screen either goes under the collection shelf, or around it (Low profile). The litter is readily removed by a TLB, skid-steer loader (Bobcat or similar) which gains access from a concrete ramp leading onto the low lying bridge downstream of the structure. It is estimated that the trap be cleared every 6 days. The litter will be placed in a waste collection skip for collection by a recognised waste contractor. Should it be deemed feasible by the applicant a sorting yard will be established and the recyclables will be sorted for removal by a registered recycling company.

• **The geology and hydrology of the area must be considered. The geology of the area and the proposed development will result in a significant increase in flows in the future. Look at future flows and consider that in designs. Siltation bound to occur. Risk of litter trap being washed away? Risk of exacerbating flooding to downstream developments?**

The rationale is to safeguard the functionality of the litter trap, during high floods, with protection measures in place to safeguard the structure against excessive scouring caused by pollutants and flooding. The trap is designed to accommodate flows between Q 3-months and Q 1-year, with the operation of the by-pass once these flows are exceeded. The 1:5 year flow was utilised as the base year in calculating the following flows:

$$Q-3 \text{ months} = 0.20 \times Q -5 \text{ years}$$

$$Q-6 \text{ months} = 0.33 \times Q -5 \text{ years}$$

$$Q-1 \text{ year} = 0.50 \times Q -5 \text{ years}$$

C-Plan Engineers have incorporated future proposed uses in their assessment of the catchment area and their design flows are based on these future developments.

It was noted by EcoTone (Refer to Annexure G3 for the Aquatic Assessment) that the construction of the proposed litter traps in the Jukskei River system will lead to changes in habitat due to mobilisation of sediment and disturbance of the riparian zone. The post-construction phase of the litter traps may lead to a decrease in sediment supply in the downstream reach of the river, and sedimentation of the litter traps themselves. A decrease in sedimentation in the Jukskei River downstream of the litter trap could possibly have a positive effect on the biotic community, as presently there is an increase in sediment input in the system. The Litter Trap design incorporates openings which inhibit the water flow as little as possible and therefore minimizes the build-up of sediment. The proposal for a self-cleaning trap instead of an in-line screen also decreases the possibility of sediment build-up due to the minimising of blockages of the system.

• **The problem must be solved in a holistic manner and there must be no negative impacts for future residents.**

Ecotone note that numerous litter trap designs have been tested and are used all over the world, but in general the ideal litter trap should have the following features (Armitage et al., 1998):

- Reliability,
- Economical to construct and operate,
- No moving parts,
- No power required,
- Minimal water head requirement i.e. can be applied on a flat gradient,
- Does not increase flood levels upstream of the structure, and
- Have a high litter removal efficiency.

Unfortunately, no current litter trap design has all these features, and most are a compromise of a combination of these features. The selection of the litter trap and litter trap location

should be based on the circumstances present at each site. Ideally, a litter trap should form part of a total litter removal strategy that includes removal of litter at the source i.e. streets before it enters into the storm water system and rivers (Armitage et al., 1998). As litter can be extremely variable (any size, any shape, any density and any hardness) it is challenging to design a litter trap that will cater for all the eventualities. Some designs will often work well in low flows but not during high flows or vice versa while some work well for certain litter but not with others. The major problem with many litter traps are the required cleaning that a certain design necessitates (Armitage, 2007).

The Jukskei River receives a large degree of litter from the Johannesburg and Ekurhuleni metropolitan areas with a large variety of litter observed during the site visits by Ecotone specifically in June and November 2012. The variability in flow was also evident at the sites assessed with litter debris visible at significant heights above the present flow heights.

The proposed litter trap is seen to form part of a litter removal system and as such is designed with a trap efficiency of 70%. The litter trap has been designed to accommodate flows between Q 3-months and Q 1-year with the operation of the bypass once these flows are exceeded. The trap has been designed to be as cost effective as possible in terms of construction and maintenance, to be easily and safely maintained and repaired in the event of damage, and to inhibit water flow and movement of aquatic life as little as possible.

2. IMPACTS THAT MAY RESULT FROM THE CONSTRUCTION AND OPERATIONAL PHASE

Briefly describe the methodology utilised in the rating of significance of impacts

The Significance Assessment Methodology in accordance with the DEAT (2006) Guideline Document 5 (Assessment of Impacts) is being followed. The mentioned document states that the significance of impacts can be determined through a synthesis of the aspects produced in terms of the nature, duration, intensity, extent and probability of identified impacts. Furthermore the significance of an impact is the product of a probability rating and a severity rating. A detailed description of the mentioned methodology follows:

SIGNIFICANCE

Significance is the product of probability and severity.

PROBABILITY (P)

Probability describes the likelihood of the impact actually occurring, and is rated as follows:

- **Improbable:** Low possibility of impact to occur due to design or history **Rating: 2**
- **Probable:** Distinct possibility that impact will occur **Rating: 3**
- **Highly probable:** Most likely that impact will occur **Rating: 4**
- **Definite:** Impact will occur regardless of any prevention measures **Rating: 5**

SEVERITY RATING (SR)

The severity rating is calculated from the factors allocated to intensity and duration. Intensity and duration factors are awarded to each impact, as described below.

INTENSITY FACTOR (I)

The **intensity factor** is awarded to each impact according to the following method:

- **Low intensity:** nature and/or man-made functions not affected (minor process damage or human/ wildlife injury could occur. **Factor 1**
- **Medium intensity:** environment affected but natural and/or manmade functions and processes continue (Some process damage or human/ wildlife injury may have occurred). **Factor 2**

- **High intensity:** environment affected to the extent that natural and/or human-made functions are altered to the extent that it will temporarily or permanently cease (Major process damage or human/wildlife injury could occur). **Factor 4**

DURATION (D)

Duration is assessed and a **factor** awarded in accordance with the following:

- **Short term:** ≤1 to 5 years **Factor 2**
- **Medium term:** 5 to 15 years **Factor 3**
- **Long term:** impact will only cease after the operational life of the activity has ended, either because of natural process or by human intervention **Factor 4**
- **Permanent:** mitigation, either by natural process or by human intervention, will not occur in such a way or in such a time span that the impact can be considered transient **Factor 4**

SEVERITY FACTOR (SF)

The **severity rating** is obtained from calculating a **severity factor**, and comparing the severity factor to the rating in the table below. For example:

The Severity factor = Intensity factor X Duration factor
 = 2 x 3
 = 6

A severity factor of six (6) equals a Severity Rating of Medium severity (Rating 3) as per **Table 1**.

TABLE 1: SEVERITY RATINGS

RATING	FACTOR
Low Severity (Rating 2)	Calculated values 2 to 4
Medium Severity (Rating 3)	Calculated values 5 to 8
High Severity (Rating 4)	Calculated values 9 to 12
Very High severity (Rating 5)	Calculated values 13 to 16
Severity factors below 3 indicate no significant impact	

SIGNIFICANCE RATING

A Significance Rating is calculated by multiplying the Severity Rating with the Probability Rating. The significance rating should influence the development project as described below:

- **Low significance (calculated Significance Rating 4 to 6)**
 - **Positive** and **negative impacts** of low significance should have no significant influence on the proposed development project.
- **Medium significance (calculated Significance Rating ≥ 7 to 12)**
 - **Positive impact:**
Should weigh towards a decision to continue
 - **Negative impact:**
Should be mitigated before project can be approved.
- **High significance (calculated Significance Rating ≥ 13 to 18)**
 - **Positive impact:**
Should weigh towards a decision to continue, should be enhanced in final design.
 - **Negative impact:**
Should weigh towards a decision to terminate proposal, or mitigation should be

performed to reduce significance to at least a low significance rating.

- **Very High significance (calculated Significance Rating ≥ 19 to 25)**
 - **Positive impact:**
Continue
 - **Negative impact:**
If mitigation cannot be implemented effectively, proposal should be terminated.

Briefly describe and compare the potential impacts (as appropriate), significance rating of impacts, proposed mitigation and significance rating of impacts after mitigation that are likely to occur as a result of the construction phase for the various alternatives of the proposed development. This must include an assessment of the significance of all impacts.

Alternative 1: Installation of a Litter Trap in the Jukskei River

Potential impacts:	Significance rating of impacts:	Proposed mitigation	Significance rating of impacts after mitigation:
CONSTRUCTION PHASE			
BENEFICIAL IMPACTS			
Rehabilitation of disturbed areas, removal of exotic plant species and establishment of indigenous vegetation.	6 Low P – 2 I – 2, D – 3, SF – 6 SR – 3	<ul style="list-style-type: none"> • A Rehabilitation Plan should be prepared by a qualified Landscape Architect and/or Rehabilitation Specialist to be approved by the Local Municipality and all disturbed areas must be rehabilitated as soon as possible after construction has been completed. • The Rehabilitation Plan must strictly make use of indigenous vegetation. No exotic species must be used. • All classified Invader Species in terms of the Conservation of Agricultural Resources Act, 1983 (Act 43 of 1983) to be identified, eradicated and controlled. • Eradication of exotic invader plant species by means of an appropriate method, as specified by the ECO. • Dead weeds/exotic invader species must be discarded and disposed of at a registered landfill site. 	15 High P – 5 I – 2, D – 4, SF – 8 SR – 3
Skills development and job opportunities.	6 Low P – 2 I – 2, D – 4, SF – 8 SR – 3	<ul style="list-style-type: none"> • As far as reasonably possible people from surrounding communities must be employed by the building contractor and sub-contractors. This should be included in the contract upon appointment of successful tenderer. • Constructing the proposed litter trap/s will result in direct jobs being created for the construction of the facility. 	12 Medium P – 4 I – 2 D – 4, SF – 8 SR – 3
ADVERSE IMPACTS			
Traffic impact on surrounding roads and driver safety due to construction related vehicles	10 Medium P – 5 I – 1, D – 2, SF – 2 SR – 2	<ul style="list-style-type: none"> • Access routes to be limited to one access to minimize impact on surrounding road network. • Appropriate traffic routing and scheduling of construction related 	6 Low P – 3 I – 1, D – 2, SF – 2 SR – 2

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		<p>vehicles to be planned by a competent traffic engineer.</p> <ul style="list-style-type: none"> The contractor must provide a competent traffic marshal for situations where heavy construction traffic may impede normal traffic flows on any roads adjacent to the site. 	
Noise Pollution associated with construction activity	<p>8 Medium P – 4 I – 1, D – 2, SF – 2 SR – 2</p>	<ul style="list-style-type: none"> Noise levels shall be kept within acceptable limits, and construction crew must abide by National Noise Laws and local by-laws regarding noise. If work is to be undertaken outside of normal work hours, the Contractor is to advise the potentially affected neighbouring residents prior to commencing any such activity. Notification could include letter-drops. No sound amplification equipment such as sirens, loud hailers or hooters are to be used on site except in emergencies and no amplified music is permitted on site. Construction/management activities involving use of the service vehicle, machinery, hammering etc., must be limited to the hours between 7:00am and 5:30pm weekdays; 7:00am and 1:30pm on Saturdays; no noisy activities may take place on Sundays or Public Holidays. Activities that may disrupt neighbours (e.g. delivery trucks, excessively noisy activities etc) must be preceded by notice being given to the affected neighbours at least 24 hours in advance. 	<p>6 Low P – 3 I – 1, D – 2, SF – 2 SR – 2</p>
Habitat loss and destruction of flora and fauna as a result of site clearance	<p>12 Medium P – 4 I – 2, D – 4, SF – 8 SR – 3</p>	<ul style="list-style-type: none"> All disturbed areas should be rehabilitated as soon as possible after construction has been completed. This must be done according to specifications in the approved rehabilitation plan. Disturbance to birds, animals and reptiles and their habitats should be prevented at all times. Wherever possible, work should be restricted to one area at a time. This will give smaller birds, mammals, reptiles and amphibians an opportunity to move into undisturbed areas close to their natural habitat. All animals unearthed or disturbed must be released in an appropriate habitat away from the development. Such a 	<p>6 Low P – 3 I – 2, D – 2, SF – 4 SR – 2</p>

		<p>process must be dealt with as per the specifications of the appointed ECO.</p> <ul style="list-style-type: none"> • The developer must ensure that no faunal species are disturbed, trapped, hunted or killed during the construction phase. The illegal hunting or capture of wildlife will not be tolerated. Such matters will be handed over to the relevant authorities for prosecution. • Site clearing is to be limited to only the area necessary for carrying out the specified works and the destruction of vegetation should be minimised. • Cleared indigenous vegetation can be stockpiled for possible reuse in later rehabilitation or landscaping, or as a brush pack for erosion prevention. • Stockpiles of vegetation are only to be located in areas approved by the ECO, and may not exceed 2 m in height. Methods of stacking must take cognisance of the possible creation of a fire hazard. • No burning of stockpiled vegetation is permitted. • Care must be taken to avoid the introduction of alien plant species to the site and surrounding areas. (Particular attention must be paid to imported material). • The alien plants on site must be removed during construction. • Table 3 from the Conservation of Agricultural Resources Act (Act No. 43 of 1983) (CARA) Regulation 15 lists all alien plants that occur in South Africa. None of these species may be introduced and they must all be controlled. • Alien vegetation re-growth must be controlled throughout the entire site during the construction period. • The top 20 cm of soil must be stripped as fertile top soil and stockpiled aside at a designated place to be used in the rehabilitation and landscaping of the site in the final phase of construction. 	
<p>Soil, ground water and surface water pollution including the impact on the water quality and ecological integrity of the Jukskei River and</p>	<p>16 High P – 4 I – 4, D – 3, SF – 12 SR – 4</p>	<ul style="list-style-type: none"> • Selection of construction camp to be undertaken in consultation with Environmental Control Officer (ECO) and Engineer. Camp to be located outside of the 1:100 year floodline and buffer zones. 	<p>6 Low P – 3 I – 2, D – 2, SF – 4 SR – 2</p>

<p>associated watercourses further downstream</p>		<ul style="list-style-type: none"> • Site plan of construction camp to be prepared, which must be approved by the ECO. • Camp site to be demarcated and to be screened off. • No accommodation to be provided at camp, apart from security. • Appropriate storage facilities (secure, enclosed and bunded) to be provided for fuel, paint, cement bags, and other material with a potential to cause harm to the environment. • Construction must only take place during the dry season when run off volumes will be low. • Construction waste to be dumped in specifically demarcated areas. Areas to be verified by the appointed ECO. • Ensure that construction waste is removed as quickly as possible and not left to heap. • No construction materials to be stored below the 1:100 year floodline or within the buffer areas. • Construction activities may not spread beyond the demarcated areas, except with the prior approval of the ECO. • Water for human consumption should be available at the site offices and at other convenient locations on site. • The utilisation of the water course for washing/drinking and the disposal of water used for washing should be strictly prohibited. • All effluent water from the camp/office sites shall be disposed of in a properly designed and constructed system, situated so as not to adversely affect the Jukskei River. Only domestic type wastewater shall be allowed to enter the aforementioned system. • All construction vehicles, machinery and equipment must be properly maintained to prevent leaks. • All vehicles and equipment used during construction and general operation of the litter trap/s to be maintained and serviced outside the 1:100 year flood line and buffer zones. • Vehicles are to be repaired immediately upon developing leaks. Drip trays shall be supplied for all repair work 	
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		<p>undertaken on machinery on site or campsite area.</p> <ul style="list-style-type: none"> • Drip trays are to be utilised during daily greasing and re-fuelling of machinery and to catch incidental spills and pollutants. • Drip trays are to be inspected daily for leaks and effectiveness, and emptied when necessary. This is to be closely monitored during rain events to prevent overflow. • Fuels or lubricants spilled from construction vehicles should be prevented. Accidental spills should be cleaned as per the specifications provided in the EMP and ECO. • Prevent contaminated run-off from flowing directly into the Jukskei River through the implementation of berms to provide secondary containment against any leaks and spills. • Strict litter control measures should be implemented. • Rigorous erosion control measures should be implemented. • A biomonitoring regime and general erosion control monitoring are recommended upstream and downstream of the litter trap prior to construction, during construction and during operational phase. 	
<p>Sedimentation of the Jukskei River due to clearance of vegetation and soil erosion</p>	<p>12 Medium P – 4 I – 2, D – 4, SF – 8 SR – 3</p>	<ul style="list-style-type: none"> • Silt trap/s to be installed on the banks where a possibility of sedimentation would occur. • Top soil removed during construction should be covered and silt trap/s put in place to avoid increased sedimentation. • Avoid erosion at all times • As far as possible, no slopes with a gradient exceeding 1:3 should be allowed. • Appropriate flow diversion and erosion control structures (i.e. earth embankments) must be put in place where soil may be exposed to high levels of erosion due to steep slopes, soil structure etc. • All cleared areas should be top-soiled and vegetated as soon as possible to reduce the exposure of the soil to water and wind action. • Any erosion formed during the 	<p>6 Low P – 3 I – 2, D – 2, SF – 4 SR – 2</p>

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		<p>construction phase or during the vegetation establishment period should be backfilled and compacted, and the areas restored to an acceptable condition (80% vegetation cover).</p> <ul style="list-style-type: none"> Regular monitoring by the ECO should identify areas where erosion is occurring. 	
Change in hydrological regime	<p>12 Medium P – 4 I – 2, D – 4, SF – 8 SR – 3</p>	<ul style="list-style-type: none"> Construction to take place during the dry months. Construction time to be limited as far as reasonably possible and a strict programme to be adhered to. A biomonitoring regime and general erosion control monitoring are recommended upstream and downstream of the litter trap prior to construction, during construction and during operational phase. 	<p>6 Low P – 3 I – 2, D – 2, SF – 4 SR – 2</p>
Crime may increase as a result of contract workers in the area	<p>8 Medium P – 4 I – 2, D – 2, SF – 4 SR – 2</p>	<ul style="list-style-type: none"> No construction activities to be allowed after hours during weekdays and no activities allowed on Sundays Only a limited number of two night watchmen to be allowed to overnight on the property to ensure safety of equipment stored on site. 	<p>6 Low P – 3 I – 1, D – 2, SF – 2 SR – 2</p>
Visual intrusion & light pollution	<p>8 Medium P – 4 I – 1, D – 2, SF – 2 SR – 2</p>	<ul style="list-style-type: none"> Demarcated construction servitude to be screened off with appropriate material. Camp site to be demarcated and to be screened off. The site must be managed appropriately and all rubbish and rubble removed to a recognised waste facility. Excess soil and bedrock should be disposed of at an appropriate facility. A certificate of disposal must be obtained for any waste that is disposed of. Waste must not remain on site for more than 2 weeks. Refuse bins with lids must be provided by the Contractor for rubbish to be placed in by staff. No waste may be placed in any excavations on site. Light pollutions should be minimised. Lighting on site is to be sufficient for safety and security purposes, but shall not be intrusive to neighbouring residents, disturb wildlife, or interfere with road traffic. Should overtime/night work be authorised (maximum of two nights), the 	<p>6 Low P – 3 I – 1, D – 2, SF – 3 SR – 2</p>

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		<p>Contractor shall be responsible to ensure that lighting does not cause undue disturbance to neighbouring residents. In this situation low flux and frequency lighting shall be utilised.</p>	
<p>Impact on air quality and environment as a whole due to general site cleanliness</p>	<p>6 Low P – 3 I – 1, D – 2, SF – 2 SR – 2</p>	<ul style="list-style-type: none"> • The contractor must adhere to all the relevant laws and regulations applicable to the disposal of construction waste and rubble. • No littering by construction workers is permitted. Any litter will be collected and removed off-site to a registered waste site. • The contractor shall provide sufficient closed containers on site, as well as waste skips, which must be placed in the construction camp, to handle the amount of litter, wastes, and builder’s wastes generated on site. • Containers shall be emptied once weekly by a licensed waste contractor and disposed of at a municipal waste site. No solid waste or any materials used may be disposed of on site • No rubble or discarded building material may remain on site for more than one week. • Burning of waste on site is not permitted. • Chemical containers and packaging brought onto the site must be removed for disposal at a suitable site. • No material may be dumped in the surrounding region. Written proof of disposal at a registered waste disposal site must be given to the EO on every load of construction waste removed from the site. • Liquid wastes to be collected in original containers. Liquid waste to be stored in banded area. Banded area to have complete seal and a volume equal to 110% of the total volume of liquid stored in the area. Liquid waste to be disposed of at a class HH site only. • Concrete shall be mixed on mixing trays only, not on exposed soil. Concrete shall be mixed only in areas, which have been specially demarcated for this purpose. • All concrete that is spilled outside these areas must be promptly removed by the Contractor and taken to an approved 	<p>4 Low P – 2 I – 1, D – 2, SF – 2 SR – 2</p>

		<p>dumpsite.</p> <ul style="list-style-type: none"> • After all the concrete mixing is complete all waste concrete must be removed from the batching area and disposed of at an approved dumpsite. • No concrete residue is to be washed off into stormwater channels. • Waste bins with lids shall be provided on site for all waste pertaining to food and drinks. These shall be supplied in close proximity to the area where the workers eat. • The waste bins shall be cleared by a waste truck on a weekly basis • Vehicles to be used during the construction phase are to be kept in good working condition and should not be the source of excessive fumes. • The building area is to be physically screened off with a shade cloth fence at least 1.8m in height, to prevent dust from being blown onto the road or neighbouring properties. • Dust generation should be kept to a minimum. • Dust must be suppressed on access roads and construction areas during dry periods by the regular application of water or a biodegradable soil stabilisation agent. • Speed limits must be implemented in all areas to limit the levels of dust pollution. • It is recommended that the clearing of vegetation from the site should be selective and done just before construction so as to minimise erosion and dust. • Should construction in areas that have been stripped not be commencing within a short period of time the exposed areas shall be re-vegetated or stabilised as per the specifications of the ECO • Sand stockpiles are to be covered with Hessian, shade cloth or DPC plastic. • Where possible stockpiles are to be located in sheltered areas and the usable/cut face orientated away from the direction of the prevailing wind for that season. • Excavating, handling or transporting erodible materials in high wind or when 	
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BASIC ASSESSMENT REPORT [REGULATION 22(1)]

		<p>dust plumes are visible should be avoided.</p> <ul style="list-style-type: none"> • All materials transported to site must be transported in such a manner that they do not fly or fall off the vehicle. This may necessitate covering or wetting friable materials. • No burning of refuse or vegetation is permitted. 	
<p>Impact on safety & security of construction workers and surrounding community</p>	<p>6 Low P – 3 I – 1, D – 2, SF – 2 SR – 2</p>	<ul style="list-style-type: none"> • Signs should be erected on all entrance gates indicating that no temporary jobs are available, thereby limiting opportunistic labourers and crime. • The site and crew are to be managed in strict accordance with the Occupational Health and Safety Act (Act No. 85 of 1993) and the National Building Regulations • Potentially hazardous areas such as trenches are to be cordoned off and clearly marked at all times. • The Contractor is to ensure traffic safety at all times, and shall implement road safety precautions for this purpose when works are undertaken near public roads. • Necessary Personal Protective Equipment (PPE) and safety gear appropriate to the task being undertaken is to be provided to all site personnel (e.g. hard hats, safety boots, masks etc.). • All vehicles and equipment used on site must be operated by appropriately trained and/or licensed individuals in compliance with all safety measures as laid out in the Occupational Health and Safety Act (Act 85 of 1993) (OHSA). • An environmental awareness training programme for all staff members shall be put in place by the Contractor. Before commencing with any work, all staff members shall be appropriately briefed about the EMP and relevant occupational health and safety issues. • All construction workers shall be issued with ID badges and clearly identifiable uniforms. • No unauthorized firearms are permitted on site. • Emergency procedures must be produced and communicated to all the employees on site. This will ensure that 	<p>4 Low P – 2 I – 1, D – 2, SF – 2 SR – 2</p>

		<p>accidents are responded to appropriately and the impacts thereof are minimised. This will also ensure that potential liabilities and damage to life and the environment are avoided.</p> <ul style="list-style-type: none"> • Adequate emergency facilities must be provided for the treatment of any emergency on the site. • The nearest emergency service provider must be identified during all phases of the project as well as its capacity and the magnitude of accidents it will be able to handle. Emergency contact numbers are to be displayed conspicuously at prominent locations around the construction site and the construction camp at all times. • The Contractor must have a basic spill control kit available at the construction camp. 	
<p>Impact on general hygiene of construction workers and surrounding community</p>	<p>8 Medium P – 4 I – 2, D – 2, SF – 4 SR – 2</p>	<ul style="list-style-type: none"> • The Contractor shall make available safe drinking water fit for human consumption at the construction camp and site offices and all other working areas. • Washing and toilet facilities shall be provided on site and in the Contractors camp. • Care should be taken to adequately drain areas surrounding water points in order to avoid the development of pools of standing water, as these tend to be a breeding source of flies, mosquitoes and other vectors. • Adequate numbers of chemical toilets must be maintained in the Contractors camp to service the staff using this area. At least 1 toilet must be available per 8 workers using the camp. Toilet paper must be provided. Strict penalties in remuneration must be applied for workers that use other surrounding open areas for this purpose. • The chemical toilets servicing the camp must be maintained in a good state, and any spills or overflows must be attended to immediately. • The chemical toilets must be emptied on a regular basis. • The chemical toilets must be sited taking into account the possibility of the prevailing wind unfavourably dispersing 	<p>4 Low P – 2 I – 2, D – 2, SF – 4 SR – 2</p>

BASIC ASSESSMENT REPORT [REGULATION 22(1)]

		<p>unpleasant odours.</p> <ul style="list-style-type: none"> • The Contractors site must be located on the high side of the site so any leakages or spillages will be contained on site. • Tick repellent must also be provided if necessary (Bayticol is available from certain pharmacies and should be sprayed on the clothing in contact with grass, etc.). • HIV AIDS awareness and education should be undertaken by all Contractor staff. 	
Possible damage/loss of subterranean artefacts	<p>9 Medium P – 3 I – 2, D – 4, SF – 8 SR – 3</p>	<ul style="list-style-type: none"> • Should archaeological structures/artefacts be found during the construction phase, these may not be removed, destroyed or interfered with. The area should be cordoned off until it can be investigated by an archaeological specialist or by the Provincial Authority PHRA-G • The Contractor must immediately cease construction activities and inform the ECO and PHRA-G within 24 hours, should they come across any archaeological artefacts/sites. • In terms of the National Heritage Resources Act (No. 25 of 1999), graves older than 60 years (not in a municipal graveyard) are protected. • The relevant heritage resources authority and the archaeologist must be informed as a matter of urgency should any human remains be exposed on the terrain. • Human remains younger than 60 years should only be handled by a registered undertaker or an institution declared under the Human Tissues Act. 	<p>6 Low P – 2 I – 2, D – 4, SF – 8 SR – 3</p>
OPERATIONAL PHASE			
BENEFICIAL IMPACTS			
Job opportunities and economic upliftment	<p>12 Medium P – 4 I – 2, D – 4, SF – 8 SR – 3</p>	<ul style="list-style-type: none"> • The proposed development will increase skills development and also local employment in the area as the litter trap/s will require regular clean up. 	<p>12 Medium P – 4 I – 2, D – 4, SF – 8 SR – 3</p>
Decrease in sedimentation downstream of litter trap/s	<p>12 Medium P – 4 I – 2, D – 4, SF – 8 SR – 3</p>	<ul style="list-style-type: none"> • The installation of a litter trap/s could lead to a decrease in sediment supply in the downstream reach of the river. A decrease in sedimentation in the Jukskei River downstream of the litter trap/s could possibly have a positive effect on the biotic community, as presently there 	<p>12 Medium P – 4 I – 2, D – 4, SF – 8 SR – 3</p>

BASIC ASSESSMENT REPORT [REGULATION 22(1)]

		is an increase in sediment input in the system.	
Implementation of the litter trap/s will reduce the litter and debris currently being washed into the river, improving the health and diversity of the river	12 Medium P – 4 I – 2, D – 4, SF – 8 SR – 3	<ul style="list-style-type: none"> Implementation of the litter trap/s as per the design and specification of the engineer. Regular litter removal and maintenance to ensure it functions optimally. 	20 Very High P – 4 I – 4, D – 4, SF – 16 SR – 5
Implementation of rehabilitation plan and establishment of indigenous riverine vegetation will contribute to the provision of habitat and improve water quality	9 Medium P – 3 I – 2, D – 4, SF – 8 SR – 3	<ul style="list-style-type: none"> A rehabilitation plan must be compiled by a qualified Landscape Architect or Rehabilitation Specialist to be approved by the local municipality. 	20 Very High P – 4 I – 4, D – 4, SF – 16 SR – 5
ADVERSE IMPACTS			
Sedimentation of the litter trap/s themselves which will decrease the efficiency of the trap/s over time which could potentially also lead to flooding upstream of the litter trap/s if the litter is not removed or cleaned regularly.	12 Medium P – 4 I – 2, D – 4, SF – 8 SR – 3	<ul style="list-style-type: none"> Litter to be removed regularly as per the recommendations made by the engineer. Litter trap/s to be designed to ensure that water flow is inhibited as litter as possible and sedimentation is minimized. Sedimentation to be removed from the trap/s at regular intervals as per the recommendations made by the engineer. 	6 Low P – 3 I – 1, D – 2, SF – 2 SR – 2
Safety of the service contractor and general public	20 Very High P – 4 I – 4, D – 4, SF – 16 SR – 5	<ul style="list-style-type: none"> Safety signage and balustrading must be implemented. Signage indicating that the service bypass bridge is strictly prohibited to the general public and only for use by the relevant service and maintenance contractors must be erected. The maintenance and service contractor's crew are to be managed in strict accordance with the Occupational Health and Safety Act (Act No. 85 of 1993) and the National Building Regulations. The Contractor is to ensure traffic safety at all times, and shall implement road safety precautions. Necessary Personal Protective Equipment (PPE) and safety gear appropriate to the task being undertaken is to be provided to all site personnel (e.g. hard hats, safety boots, masks etc.). All vehicles and equipment used on site 	6 Low P – 2 I – 2, D – 4, SF – 8 SR – 3

BASIC ASSESSMENT REPORT [REGULATION 22(1)]

		<p>must be operated by appropriately trained and/or licensed individuals in compliance with all safety measures as laid out in the Occupational Health and Safety Act (Act 85 of 1993) (OHSA).</p> <ul style="list-style-type: none"> The nearest emergency service provider must be identified and the contractor must provide the necessary training to his/her crew with regards to safety procedures and measures to be taken in the case of an emergency. 	
Impact on downstream water quality if regular maintenance does not take place as the litter trapped could potentially degrade and release harmful pollutants	<p>20 Very High P – 4 I – 4, D – 4, SF – 16 SR – 5</p>	<ul style="list-style-type: none"> Regular clean-up of the litter trap/s must occur as per the recommendations made by the engineer. Regular inspections to take place and repairs to be carried-out immediately upon detection thereof. Waste to be disposed of according to best practice methodologies. A biomonitoring regime and general erosion control monitoring are recommended upstream and downstream of the litter trap prior to construction, during construction and during operational phase. 	<p>4 Low P – 2 I – 2, D – 2, SF – 4 SR – 2</p>
Change in hydrological regime	<p>12 Medium P – 4 I – 2, D – 4, SF – 8 SR – 3</p>	<ul style="list-style-type: none"> The litter trap/s must be designed to ensure base flow is able to pass through the trap/s ensuring that there is no decrease in flow downstream. The trap/s must be cleaned regularly to ensure higher flow events can pass through which is important in preventing flooding upstream and important for various aquatic biota in regards to spawning. A biomonitoring regime and general erosion control monitoring are recommended upstream and downstream of the litter trap prior to construction, during construction and during operational phase. 	<p>6 Low P – 3 I – 2, D – 2, SF – 4 SR – 2</p>

Alternative 2 (The implementation of 5 litter traps in the Jukskei River)

Note: Impacts are the same for Alternatives 1 and 2; however, ratings after mitigation would with the implementation of more litter traps render a cumulatively higher significance.

Alternative 3

Potential impacts:	Significance rating of impacts:	Proposed mitigation:	Significance rating of impacts after mitigation:

BASIC ASSESSMENT REPORT [REGULATION 22(1)]

List any specialist reports that were used to fill in the above tables. Such reports are to be attached in the appropriate Annexure.

- C-Plan Consulting Engineers Jukskei River Litter Trap Design Proposal (**Appendix G1**)
- An Evaluation of the Biodiversity of the Proposed Development of Five litter traps in the Jukskei River by EcoAgent CC (**Annexure G2**)
- Aquatic Ecology Assessment: Proposed Litter Traps, Jukskei River by Ecotone Freshwater Consultants (**Appendix G3**)
- Wetland Assessment for the proposed litter traps: Jukskei River by Spec CC (**Appendix G4**)

3. IMPACTS THAT MAY RESULT FROM THE DECOMMISSIONING AND CLOSURE PHASE

Briefly describe and compare the potential impacts (as appropriate), significance rating of impacts, proposed mitigation and significance rating of impacts after mitigation that are likely to occur as a result of the decommissioning and closure phase for the various alternatives of the proposed development. This must include an assessment of the significance of all impacts.

Alternative 1 and 2

The site will only be decommissioned if the litter trap is no longer required. Due to the extent of litter in the Jukskei River and the enormous effort involved in implementing measures to clear-up the litter at source it is anticipated that no decommissioning will take place in the foreseeable future.

List any specialist reports that were used to fill in the above tables. Such reports are to be attached in the appropriate Annexure.

N/A

4. CUMULATIVE IMPACTS

Describe potential impacts that, on their own may not be significant, but is significant when added to the impact of other activities or existing impacts in the environment. Substantiate response:

ALTERNATIVE 1 and 2

Construction Phase

Beneficial Impacts

- *Rehabilitation of disturbed areas, removal of exotic plant species and establishment of indigenous vegetation*
 - As the footprint of the litter trap/s is small the removal of exotic vegetation and establishment of indigenous vegetation will be limited and not have much of a cumulative impact.
- *Skills development and job opportunities*
 - The installation cost of nearly R1mil per litter trap as well as the annual cost of each litter trap for cleaning and maintenance of approximately R2,3mil will contribute cumulatively to skills development and job opportunities during the construction and operational phase of the litter trap/s.

Adverse Impacts

- *Socio-economic impacts during the construction phase (namely, traffic impact on surrounding roads, noise pollution, possible increase in crime, visual intrusion and light pollution, impact on air quality and the environment as a whole, impact on safety and security of construction workers and the surrounding community, impact on general hygiene of construction workers and the surrounding community, and possible damage/loss of subterranean artefacts)*
 - These will have a minor cumulative impact due to the fact that it would be limited to the construction phase and construction is deemed to be limited to a few months.
- *Habitat loss and destruction of flora and fauna, soil, groundwater and surface water pollution, sedimentation of the Jukskei River,*
 - During the construction phase will have a limited cumulative impact provided that the mitigation measures are adhered to.

Construction Phase

Beneficial Impacts

- *Job opportunities and economic upliftment*
 - The annual cost of each litter trap for cleaning and maintenance of approximately R2,3mil will contribute cumulatively to job opportunities and economic upliftment during the construction and operational phase of the litter trap/s.
- *Biophysical impacts namely, the decrease in sedimentation, reduction in the litter and debris in the Jukskei River and establishment of indigenous riverine vegetation.*
 - The removal of litter on a regular basis from the Jukskei River will continue to have a cumulative beneficial impact on the general state of the river.

Adverse Impacts

- Both the social and biophysical impacts are not considered to have a high cumulative significance rating provided that the mitigation measures are strictly adhered to.

5. ENVIRONMENTAL IMPACT STATEMENT

Taking the assessment of potential impacts into account, please provide an environmental impact statement that sums up the impact that the proposal 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 1 (Implementation of one (1) litter trap in the Jukskei River adjacent to the AfriSam Quarry)

The potential negative impacts associated with this proposal can be mitigated to decrease their significance (refer to Section E2 above).

Adverse and beneficial impacts were identified for the proposed activity. The following adverse impacts have been identified (note that the significance rating indicated is after implementation of management and mitigation measures):

CONSTRUCTION PHASE:

- Traffic impact on surrounding roads (**LOW**);
- Noise pollution associated with construction activity (**LOW**);
- Habitat loss and destruction of flora & fauna (**LOW**);
- Soil, ground water and surface water pollution including the impact on the water quality and ecological integrity of the Jukskei River and associated watercourses further downstream (**LOW**);
- Sedimentation of the Jukskei River due to clearance of vegetation and soil erosion (**LOW**);
- Change in hydrological regime (**LOW**);
- Crime may increase as a result of contract workers in the area (**LOW**);
- Visual intrusion and light pollution (**LOW**);
- Impact on air quality and environment as a whole due to general site cleanliness (**LOW**);
- Impact on safety and security of construction workers and surrounding community (**LOW**);
- Impact on general hygiene of construction workers and surrounding community (**LOW**); and
- Possible damage/loss of subterranean artefacts (**LOW**).

OPERATIONAL PHASE:

- Sedimentation of the litter trap/s themselves which will decrease the efficiency of the trap/s over time which could potentially also lead to flooding upstream of the litter trap/s if litter is not removed or cleaned regularly (**LOW**);
- Safety of the service contractor and general public (**LOW**);
- Impact on downstream water quality if regular maintenance does not take place as the litter trapped could potentially degrade and release harmful pollutants (**LOW**); and
- Change in hydrological regime (**LOW**).

It will be noted that with implementation of the mitigation measures as indicated in Section E, all of the anticipated adverse impacts can be successfully mitigated to a low significance.

It is recommended that the attached EMPr (**Annexure H**) be included in the conditions of the Environmental Authorisation to ensure that activities on site are adequately managed and monitored.

The following beneficial impacts have been identified:

CONSTRUCTION PHASE:

- Rehabilitation of disturbed areas, removal of exotic plant species and establishment of indigenous vegetation (**HIGH**); and
- Skills development and job opportunities (**MEDIUM**).

OPERATIONAL PHASE:

- Job opportunities & economic upliftment (**MEDIUM**);
- Decrease in sedimentation downstream of litter trap/s (**MEDIUM**);
- Implementation of the litter trap/s will reduce the litter and debris currently being washed into the river, improving the health and diversity of the river (**VERY HIGH**); and
- Implementation of a rehabilitation plan and establishment of indigenous riverine vegetation will contribute to the provision of habitat and improve water quality (**VERY HIGH**).

Alternative 2 (Implementation of five (5) litter traps in the Jukskei River between Marlboro Drive and the N1 Highway)

The impacts associated with Alternative 2 are as per the statement above for Alternative 1. Each litter trap implemented would result in the same impacts although the cumulative impact of implementing all the litter traps simultaneously could result in the further degradation of the Jukskei River should the mitigation measures not be strictly adhered to i.e. should the traps not be cleaned on a regular basis this would result in a build-up of litter, sedimentation and flooding upstream of the traps.

No-go (compulsory)

The direct impacts associated with the litter trap/s not being constructed include:

- Litter will keep accumulating in the Jukskei River making it an unsightly and unpleasant, unhealthy watercourse.
- The pollution problem will worsen over time and the river will continue to degrade.
- The positive socio-economic activities in terms of job creation would not occur.
- In essence, the no-go alternative would ultimately imply that the state of the environment would be retained as it is presently, with obvious advantages and disadvantages to the natural environment.
- Should the current status quo of the application site and associated activities remain, the adverse impacts associated with construction activities would not occur (nuisance to neighbours, heavy vehicle traffic increase, etc.). These impacts would, however be for a limited duration.
- Identified impacts during the operational phase are low and therefore do not weigh towards the no-go option being considered a feasible alternative.

6. IMPACT SUMMARY OF PREFERRED PROPOSAL

Identify preferred proposal

The preferred proposal is Alternative 1 (the implementation of one (1) litter trap in the Jukskei River adjacent to the AfriSam Quarry)

Having assessed the significance of impacts of the proposal and various alternatives, please provide an overall summary and reasons for selecting the preferred project proposal.

The implementation of one litter trap at the AfriSam Quarry is seen to be preferred due to the fact that existing access for maintenance and removal of litter is more readily available than at the other proposed sites. The cost involved in maintenance and removal of litter renders the implementation of one litter trap more feasible than five. The surrounding area at the proposed location adjacent to the AfriSam Quarry is in an extremely degraded state and the impact that the implementation of a litter trap at this location would have on the surrounding environment is very low. The Jukskei River system showed a largely to critically modified present ecological state (PES) and low Ecological Importance and Sensitivity (EIS). Most identified impacts during both the construction and operational phases are rendered of a low significance provided that the mitigation measures are strictly adhered to. The design of the litter trap has taken cognisance of all relevant issues and will be able to successfully improve the state of the River provided that the recommended clean-up and maintenance measures are implemented.

7. 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).

YES	NO
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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):

N/A

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 EMPr must form part of the approval by the deciding authority;
- The litter trap must be installed strictly according to the proposed design by C-Plan Engineers;
- A rehabilitation plan must be compiled by a qualified Landscape Architect or Rehabilitation Specialist;
- A biomonitoring regime and general erosion control monitoring are recommended upstream and downstream of the litter trap prior construction, during construction and during operation phase;
- The wetland specialist must assess the Unchannelled Valley Bottom Wetland located to the east of the proposed position 5 (Alternative 1) and all recommendations made by the specialist in this regard to be incorporated in the design of the Litter Trap to be included in the Final BAR to be submitted to the deciding authority;
- The applicant must enter into agreements with the necessary solid waste service providers and contractors who will be removing the litter from the trap to the nearest land fill site; and
- The litter must be removed from the trap on a regular basis as per the recommendations made by C-Plan Engineers.

8. ENVIRONMENTAL MANAGEMENT PLAN (EMP)

If the EAP answers yes to Point 7 above then an EMP is to be attached to this report as an Annexure

EMP attached YES

SECTION F: ANNEXURES

The following annexures must be attached as appropriate:

It is required that if more than one item is enclosed that a table of contents is included in the annexure

Annexure A: Site plan(s)

Annexure B: Photographs

Annexure C: Facility illustration(s)

~~Annexure D: Route position information~~

Annexure E: Public participation information

Annexure E1: Proof of site notice

Annexure E2: Written notices issued to those persons detailed in 1(b) to 1(f) above

Annexure E3: Proof of newspaper advertisements

Annexure E4: Communications to and from persons detailed in Point 2 and 3 above

Annexure E5: Minutes of any public and or stakeholder meetings

Annexure E6: Comments and Responses Report

~~Annexure E7: Comments from I&APs on Basic Assessment (BA) Report~~

~~Annexure E8: Comments from I&APs on amendments to the BA report~~

Annexure E9: Copy of the register of I&APs

~~Annexure E10: Comments from I&APs on the application~~

~~Annexure E11: Other~~

~~Annexure F: Water use license(s), SAHRA information, service letters from municipalities, water supply information~~

Annexure G: Specialist reports

Annexure G1: An Evaluation of the Biodiversity of the Proposed Development of Five litter traps in the Jukskei River by EcoAgent CC

Annexure G2: Aquatic Ecology Assessment: Proposed Litter Traps, Jukskei River by Ecotone Freshwater Consultants

Annexure G3: Wetland Assessment for the proposed litter traps: Jukskei River by Spec CC

Annexure G4: C-Plan Consulting Engineers Jukskei River Litter Trap Design Proposal

Annexure H: EMP

~~Annexure I: Other information~~